

Administration Guide

The ExtraView Administrator's Guide is designed to give users of the ExtraView web-based business issue tracking system the knowledge and proficiency needed to accomplish two general goals:

1. Customize ExtraView to conform to their company's workflow processes, business rules, and inter-organizational vocabulary, with all the appropriate data fields and security privileges that are required.
2. Give Administrators the ability to successfully administer ExtraView on an ongoing basis in order to efficiently respond to user inquiries, concerns, and requests.

In writing this guide, we anticipate that the reader is at least somewhat familiar with many of the standard issue tracking and business management functions found in ExtraView. Accordingly, this guide will assume this familiarity, and will focus on describing the administrative functions of ExtraView.

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Key Concepts

ExtraView is Web-based issue-tracking and workflow software that is designed to meet the following objectives:

- Easy to install, configure and administer, minimizing your organization's setup and ongoing cost of ownership
- Provide functionality that is easily extensible over time
- Able to support your business processes and your workflow, with straightforward configuration
- Capable of implementing multiple tracking systems, all within a single database, with each tracking system operating independently, or inter-related with the other tracking applications (multiple tenants)
- Scalable to support large numbers of users and issues
- Easily configured to reflect your company's terminology, and data hierarchies, and able to provide extensive validation for data that describes your organization, products, and services
- Provide varied and extensive reporting and charting
- Easily integrate with other enterprise software systems
- Be extensible by adding additional code into the environment, **without changing the base product**

To understand the key concepts in ExtraView, it is recommended that you read through the pages referenced below.

Installation & Configuration

This process is best executed with advanced planning. The purpose of this guide is to give you complete details on the administrative portion of the initial setup as well as ongoing support for your installation. Please consult the ExtraView Installation Guide for your specific platform for full details on the installation of the servers and ExtraView application. ExtraView Corporation's technical support personnel can help with recommendations for suitable platforms. You can view the server requirements by clicking [here](#).

New Installations Downloaded Directly from the ExtraView Website

If you are using the standard ExtraView product, downloaded directly from our website installation is very simple and includes all the components required for a fully functioning system, including a database. Just follow the download instructions.

ExtraView Installed with your own Server and Database

If you are installing and configuring ExtraView with your own database and servers, you can view the [Installation Guide](#) here.

Configuration

This Administrator's Guide covers the design of your system and how to provide the features you need for your company. Briefly, the tasks that need to be accomplished are as follows. Note that many of the tasks do not need to be performed in sequence, but can be executed in an arbitrary order.

- Install the license key provided by ExtraView
- Create a user account with administrative privileges for your own use

- Set up a small number of global behavior settings. These will be the foundation to the successful running of ExtraView in your environment
- Configure any special connectivity needs to remote databases, such as LDAP or Active Directory for remote directory services and / or SSO for single sign on authorization
- Define and create the user defined fields in your system, that will complement the inbuilt fields
- Define the relationships between record types and fields, such as how different record types are related and where parent child-relationships exist between list values
- Define and implement the various user roles, or categories of users who will access the system
- Design and lay out screens to support the fields you create
- Create a structure of permissions that support access to each screen for each user role that was defined
- Set up the workflow that will control the processes in your company. For complex workflows this may involve the design and programming of customized “user exit” routines, written in the Java or JavaScript languages
- Design standard reports that will be “public” for your users
- Add user accounts to the system
- Test the completed system

Defining Your Process

ExtraView allows the System Administrator to define a process that conforms to the way the company works. It does not impose a fixed methodology on the company. The administrator can, without programming, set up rules appropriate to the company’s needs.

Each issue you submit can be moved between any number of status values that you define, with each status being visible only to the user role that is permitted to work on the individual status. For example, an *Open* issue may only be changed by the Engineering group, who may only mark it *Fixed* or *Issue* not found after working on it. This same Engineering group may not *Close* the issue since that is a state that only a different role such as Quality Control may access.

A user role is created for all people who should follow the same rules. Typically, these would fall along the lines of customers, support staff, engineering, quality assurance, managers, administrators, etc., but complete flexibility exists to define what user roles you create and how many you create.

In addition, you can program a significant amount of logic into each **Add** or **Edit** screen form within ExtraView. For example, you can set some fields to only display dependent on the contents of a specific field, or you can specify sub-layouts within the form that are conditional upon the value of a specific field.

Should you have a workflow process that cannot be accommodated within ExtraView’s standard functionality, the product can be extended with additional code written in the Java language and inserted into a “user exit” routine using ExtraView’s UserCustom Class. ExtraView was designed to make it easy to alter or add functionality within the source code, but without needing to modify the source code of the base product. In this way, your investment is protected when you update or upgrade ExtraView.

Customizable User Interface

ExtraView can be modified in a number of ways in order to tailor its look and feel to any company’s needs.

The following changes can be made simply, either by you or by ExtraView Corporation’s Professional Services team:

- Alter screen colors and fonts
- Add your company logo
- Edit all text labels to reflect your own terminology
- Rename menu items
- Create / modify navigation buttons in any style / color
- Create / modify menubar buttons in any style / color
- Create alternative screen layouts for different groups of users
- Create alternative report and email layouts for different user roles

To simplify the creation of a good-looking interface, there is an administrative utility that allows you to select a theme from a library of preconfigured options.

Note that ExtraView has been designed to support users with disabilities. In particular, there is broad support for the US Section 508 of the Rehabilitation Act of 1973, as amended in 1998. However, it is the administrator's responsibility to configure ExtraView to their organization's needs to support Section 508. For example, when an administrator creates a new field, they should ensure that it has a tooltip with appropriate content that can be used by screen readers. Similarly, the administrator should select or create color themes that provide for color-blindness.

For more information, please see the following pages:

- [Section 508 - Disability Support](#)
- [VPAT for ExtraView](#)

Users

Users are specific people who have an authorized sign on capability to ExtraView. Each user has an individual account and the user or a system administrator can modify personal behavior settings within the account.

The administrator has additional privileges to manage user accounts. For example, they can create new accounts, disable existing accounts and can add and remove users from user roles and privacy groups.

User accounts may be created by a self-registration process. However, if a user self registers, they are only given basic access until a system administrator grants them additional rights.

There are two special accounts within the system, named *admin* and *system*. The *admin* account has the following characteristics:

- It should not be used to create or manage any issues
- Issues cannot be assigned to the *admin* user
- The *admin* user is not counted within the number of available licenses
- The *admin* user does not view the sign on message area, allowing them to bypass any potentially bad HTML that was inserted into this area by an administrator
- The *admin* user has additional privileges in the data dictionary, where they may enter and update the SQL statements that are used by ExtraView to extract and update information in the database
- The *admin* user bypasses all status change rules.

The *system* account is reserved for use by ExtraView personnel, in the event that any customer of the product has locked all users out of their system, and require ExtraView personnel need to restore access. If you accept the risk, and understand that ExtraView support may not be able to access your system quickly, you can ask ExtraView support to give you ownership of this account.

Users may be defined and maintained in an external directory, such as an LDAP directory or a Microsoft Active Directory. Various policies for synchronizing the external directory and ExtraView's internal directory may be adopted.

Users may sign on more than once and they will still occupy a single license within ExtraView. However, there is a limit for each unique user in that they may only sign in and have up to five active sessions. For each five active sessions, one license is consumed.

User Roles and Security

Individual users belong to one or more user roles and share the same characteristics and permissions. For example, one user role may have read and write access to a particular field, while another role may only be able to view the same field. Another user role may not even be able to see the field.

All fields, menus and screens have security permission keys to protect the object. For example, a security key exists for accessing the security module itself. Another security key exists for the *product* menu item on the Administration screen. Another example is that a security key exists to control access to the *description* field. All of the fields that are visible can be turned on or off based on user role privileges. There are literally hundreds of security keys within ExtraView, and each time you create a new user-defined field, two new security keys are automatically created to allow you to protect the newly created object. These two keys allow you to control access to the field when adding a new item to the database and to control access to the field when either updating or reporting.

The Grant Security Privileges section controls all these accessibility features in your version of ExtraView. In a matrix view, the intersection of the security key and the user role is a read and write switch. Therefore, for every item that has a defined security key, you can allow or prohibit any user role to access that feature.

Business Areas

This key concept is used to define a structure where you may define multiple tracking systems within a single instance of ExtraView. Each of these tracking systems is termed a Business Area, and each of these Business Areas may have its own set of screens, fields, processes, rules and workflow. Business Areas may also share these objects. An administrator may have control over the entire installation or sub-administrator roles may be created, each having control over a part of the installation. With this capability, ExtraView is termed a multi-tenanted database.

For example, the Business Areas can correspond to issue tracking processes such as defect tracking, requirements planning, customer issues, adverse event tracking, change management and/or safety issues. The administrator may create as many Business Areas as

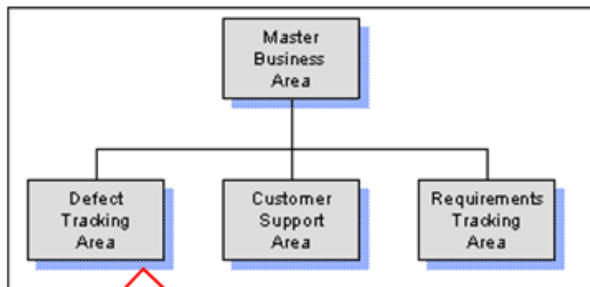
required. Within each Business Area, multiple Projects can also be defined. These Projects have the same characteristics as Business Areas. Projects will typically be used to provide alternative processes or screens or workflow within a defined Business Area.

The administrator can limit a user's access to the issue-tracking database to individual Business Areas, and to individual Projects.

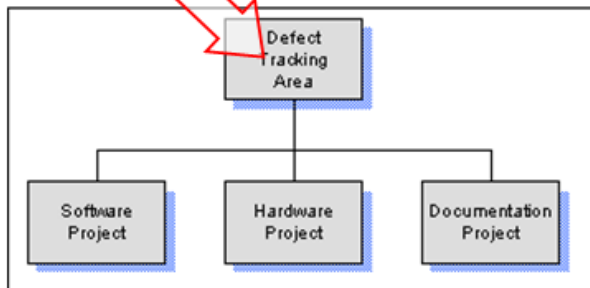
Different screen layouts and default reports with different fields can be designed for each Business Area and each Project, as well as different workflow and business rules, thus ensuring the optimization of ExtraView for each part of the organization.

Using common fields, management information can still be consolidated across Business Areas or the entire organization.

The fundamental principle that governs the use of Business Areas and Projects is [inheritance](#). The top-level Business Area within ExtraView is termed the Global Area. The Global Area has a single Project, named the Master Project. Layouts and security permissions always exist for the Global Area and its Master Project. Beneath the Global Area, further Business Areas and Projects can be defined, where inherited values apply. Each of these child Business Areas has a Default Project, and may have any number of individual Projects. At any level, alternative layouts, fields and security permissions for fields can be defined, over-riding the inherited values.



Example Business Area Structure



Example Project Structure within a Business Area

All ExtraView's inbuilt fields are global in scope. Fields you define yourself as an administrator may be global in their scope or may be defined for a single Business Area, or defined for a single Project within a single Business Area.

Many of the options in this guide are dependent upon Business Area and Project. However, for clarity, reference is only made within this guide, when it is important to explain a significant fact. Simply, the Business Area and Project will appear on administration screens such as security permissions and layouts, when they are required, and will not be present if the Business Area and Project capability is turned off.

Another key attribute of Business Areas is that you may create relationships between items (or issues) stored in different Business Areas. This is an extremely powerful feature that allows you to define multiple record structures that can interoperate with each other. These relationships can extend many levels in a hierarchical structure. A simple example may be that you store "customers" in one Business Area, and that you store "customer issues" in a separate Business Area. You may then relate these two areas together, based upon a common attribute such as the customer name. I.e, when a customer issue is entered, the customer name is selected and all the other attributes of the customer are then visible within the customer issue record. When reporting, you can use the relationship to show fields from the "customer" record along with fields from the "customer issues".

Note: You should not store data for your installation within the Global Business Area and Master Project. These should be reserved for the setting of default security permissions and layouts to provide the inheritance to all other Business Areas and Projects. This gives you the most flexibility in maintaining and extending your system.

Note: If you are configuring ExtraView for a single purpose, such as defect tracking, we do not recommend that you simply configure the Global Business Area, and use that to store your data. Although this will work, it will make future changes difficult, should you decide to introduce additional tracking systems.

The Enterprise version of ExtraView allows an unlimited number of Business Areas and Projects to be created. Other versions have constraints on the numbers that may be created.

Business Areas and Projects can be turned on and off with the behavior settings named ENABLE_AREAS and ENABLE_PROJECTS. These are found on the Environment Settings menu within Administration. **It is recommended that you never alter the default settings for these behavior settings.**

Queries

Queries may be formed and executed on any issue data stored within ExtraView.

Queries are composed using either standard or advanced filters. The results are presented using either a Quicklist or a Detailed Report. The results may be output to the user's browser, to Microsoft Word, Microsoft Excel, Adobe PDF or to text.

The standard filters require the composition of a layout of the type SEARCH_QUICK. This should contain the most frequently used fields for queries. Users can select any number of filters on this layout to compose a query. When multiple filters are selected, the query engine places an "AND" conjunction between the filters. The user can select expanded query filters, in which case, multiple values can be selected within each field. This is an "OR" operation with the values of the filter field.

Advanced filters require the selection of the filters to be used in the query, one-by-one. However, the user can select from the entire range of fields to which they have read permission. The user may also set a conjunction between each filter, using "AND", "OR", "UNION", "INTERSECT" or "MINUS". Advanced filters take more time to set up, but offer significantly more capability. This includes the introduction of parentheses into compound queries.

Once prepared, filters sets may be stored and recalled.

Within the administration section of ExtraView the most important aspect that affects querying is to correctly set the following Data Dictionary fields, as explained in the Data Dictionary section of this guide:

- Allow selection on reports
- Total field on reports
- Filter criteria
- Is sortable

Reports

Reports are composed of two basic elements, a set of query filters, and a definition of the data to be output. There is a wide range of report types, as explained in the End User Guide. The results may be output to the user's browser, to Microsoft Word, Microsoft Excel, Adobe PDF or to text.

Each report has filters, which are composed using either standard or advanced filters. The standard filters require the composition of a layout of the type SEARCH_QUICK. This should contain the most frequently used fields for queries. Users can select any number of filters on this layout to compose a query. When multiple filters are selected, the query engine places an "AND" conjunction between the filters. The user can select expanded query filters, in which case, multiple values can be selected within each field. This is an "OR" operation with the values of the filter field.

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For most report types there is the capability to define hierarchies for the filters, allowing the selection of parent and child records for output to the report.

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- Allow selection on reports
- Total field on reports
- Filter criteria
- Is sortable

If you are using relationships within your installation, reporting hierarchies may be created, allowing parent / child / grandchild type reporting.

Fixed Names & Screen Titles

These terms are used widely throughout the administration guide.

Fixed names are defined as terms that are used within the ExtraView database to refer to a field or object. Once created, names for an object do not change and they are a fixed reference. Each name will have a corresponding screen title. If you have turned on the localization feature of ExtraView, there may be more than one title for any named object, i.e. there may be one title for each locale or language. Screen titles for any fixed name may be changed by the administrator.

The screen title is defined as the reference to an object by which it is referred to throughout the user interface to the end user of ExtraView. Thus, every title within ExtraView may be altered, but the underlying name that it refers to will not alter.

In this way, the title (or label) that refers to each field and object can be changed at will by the administrator, but the underlying data remains without change. For example, the field with the name of **ID** may have its title changed from *Defect #*, to *Tracking Number*. From the moment of this change, all screens, reports and other screens that refer to **ID** will use the new title.

Changes made in this way to metadata by administrators are logged by ExtraView, giving an audit trail of who made what change, and when they made it.

Fixed names used for any object type are unique within ExtraView Names can only consist of the characters A to Z, 0 to 9, and ‘_’. The first character of a fixed name must be alphabetic and the name can be up to 30 characters in length. Names cannot contain characters from non-English alphabets. Further restrictions are that you may not have two underscore characters together in a name and the last character may not be an underscore.

Screen titles are not required to be unique for an object type across an ExtraView installation. However, consideration should be given to using non-unique titles. In some installations, this makes perfect sense, in others it may not. Titles can consist of most characters, but “special” characters such as ‘!’, ‘"’, ‘#’, ‘\$’, ‘%’, ‘&’, ‘’’, ‘(’, ‘)’, ‘@’, ‘~’, ‘:’, ‘;’ and ‘`’ may not work in all places. For reliability, you should use alphabetic characters only in titles. However, titles can be localized and may contain characters from any alphabet, including double-byte character set alphabets.

With a small number of exceptions, you may not insert HTML into a screen title. This is to preserve security where a user may have the ability to alter a title and uses this ability to inject HTML that consists of a script into a screen. Such scripts may not be innocuous and therefore the ability to introduce HTML of any type into a title is restricted.

Note that if you take advantage of this feature, then any output through the API or CLI will contain and display the embedded HTML within the screen title.

Data Dictionary

The [Data Dictionary](#) is the central place where all field definitions are stored and maintained. All User Defined Fields (UDF's) are defined in the Data Dictionary. In addition, this core component of ExtraView controls many of the attributes of each field, such as where it is used, its display type, display title, whether the field is selectable on reports, its default value, default attributes and help text. Global attributes may be defined for a field. These optional attributes determine properties of the field which can be inherited wherever the field is used. For example, you might provide a SIZE global attribute to a text field. Wherever this field is used as input, it will then adopt this SIZE, although the size might be overridden on an individual form.

Correct settings in the Data Dictionary are essential to a smooth running system. Although it is possible to alter every field within the ExtraView, it is recommended that you only make changes when you thoroughly understand what the consequences will be.

Design Center

This feature is the principal area where you will configure your system.

This feature allows you to configure the layout of the *Add Issue*, *Edit Issue*, *Query* and other screen layouts. In addition, key reports such as the *Quicklist* and the *Detailed Report* also use layouts defined within the Design Center. Layouts can be defined for different user roles within your system, offering a tremendous amount of flexibility. You may create and define fields within the Design Center, or you may use the Data Dictionary for this purpose.

Layouts work in conjunction with security permissions for each field. Therefore, simply placing a field on a screen does not automatically give all users the ability to read or write to the field. You can alter the permissions to each field within the Design Center, or you may use the **Grant Security Privileges** option to define which fields are visible and updateable to each group of users. The security privilege for the field overrides the fact that a field may be placed on a screen or report.

One layout may be embedded within another layout. In addition to this, you may specify alternate layouts that appear, dependent upon the value of a specific field. For example, you may have a category list field that has the values of *Software*, *Hardware* and *Documentation*. Depending on which value is chosen, a sub-layout can be displayed that contains the fields pertinent to gathering the

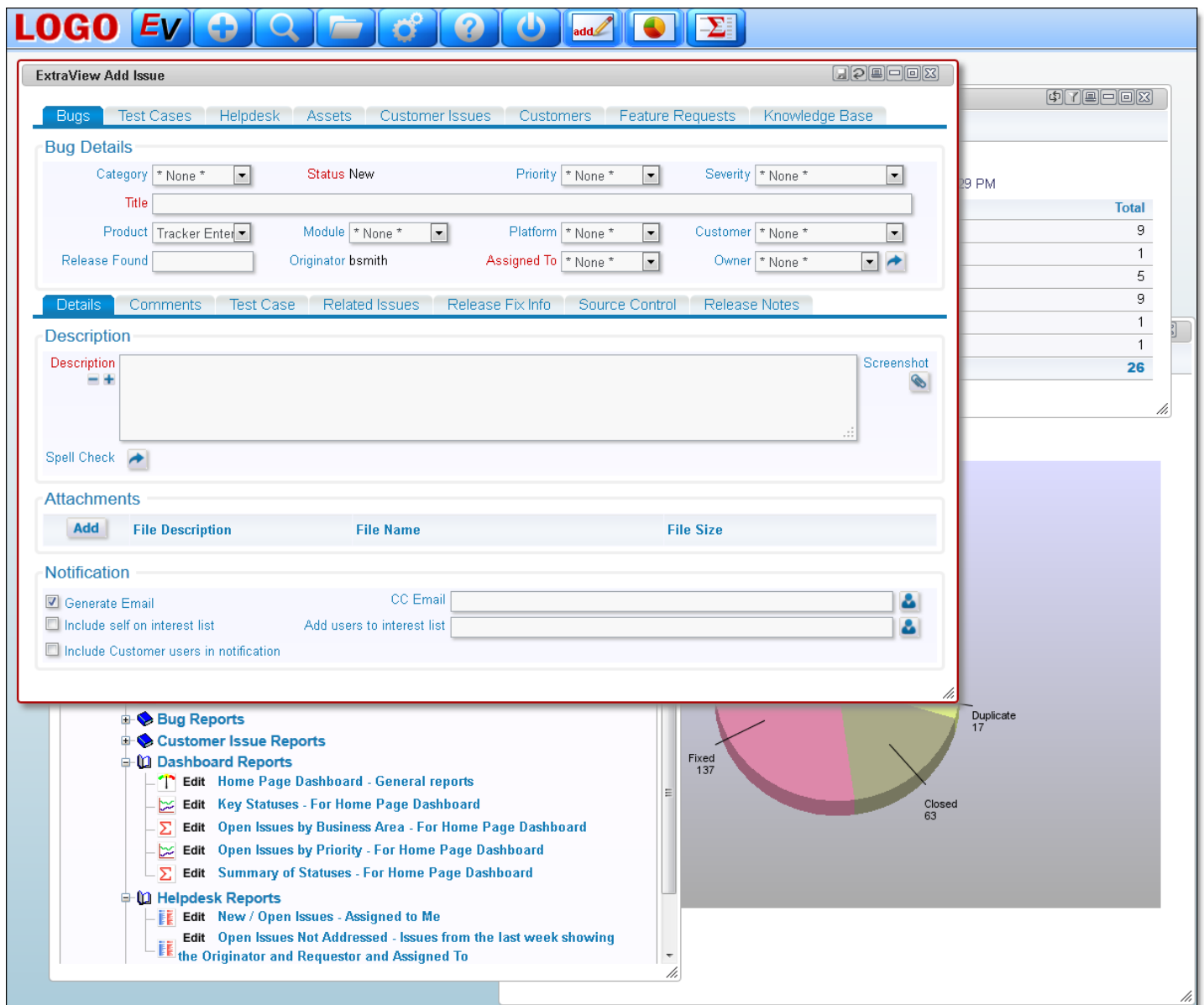
information needed about each of these categories. These sub-layouts or embedded layouts may only be embedded within an *Add* or *Edit Issue* layout. There is no need for them on other layouts.

Fields within each layout may have one or more attributes defined. These layout cell attributes affect the display of the field, or the way in which it is processed. For example, an attribute may provide the field with an alternate title, just for the one layout, or the attribute may define that the field is only visible if another field is of a specific value.

There are two special type of layouts which may only be embedded within other layouts. These allow the definition of **Related Issue Layouts** and **Repeating Row Layouts**.

Workspaces

Workspaces provide a single browser window within which you can run all of ExtraView's end-user functions. Within the browser window, a separate panel will be opened for each function. For example, you might open an *add* screen, an *edit* screen, and several reports, all at the same time. Each panel has a title bar that contains buttons to control the functions within the window, as well as buttons to minimize, maximize, and close the panel.



A typical workspace

A user may have any number of workspaces, and each may contain different panels. The user may save the state of the workspaces, and these will be restored when they reopen each workspace. The workspace is provided as an alternative user interface to the traditional user interface. With permission, the user may start their ExtraView session in the traditional interface, or within the workspace interface. The user may also switch between the interfaces. At this time, the ExtraView Administration functions will not appear within a workspace window and will always use a separate browser window.

Email Notification

Whenever issues are inserted or updated, email notification may be triggered to send information to users connected with the issue. These notifications are typically used to inform users such as the originator, the assigned to and the person who last updated the issue.

Interest lists allow users to subscribe to issues where they have a particular connection. These are a powerful feature of ExtraView, ensuring automatic notification of events to appropriate individuals within an organization. Interest lists can be defined within the Data Dictionary on any field that may have a list of values. For example, you may define an interest list that notifies individuals on all issues that have a severity level of *critical*, or you may define an interest list that notifies individuals whenever an issue affects a particular *module*.

Business rules may be defined to override the standard notification rules.

Notification may also take place which escalates issues which have remained in a particular status for longer than a given period, or are approaching or have exceeded a date such as the due date of a repair.

If a notification that is being sent exceeds the size specified in the behavior setting named EMAIL_MAX_SIZE_MB, all embedded images, attachments and embedded documents will be removed, to ensure the notification can be sent without causing an error. The user should sign onto ExtraView and view the embedded objects there if they were removed.

Programming Interfaces

RESTful Application Programming Interface

This web-orientated API to ExtraView allows the user to extend ExtraView's functionality. The key features of the RESTful (Representational State Transfer) interface are:

- A set of URL functions utilizing the HTTP protocol that access ExtraView to perform user functions such as adding and updating issues. This eliminates the need for expensive software such as Oracle SQLNet on each client computer
- A set of URL functions that allow limited administration of ExtraView. For example, you can add users and alter user passwords
- A full Command Line Interface (CLI) implemented on top of the API, that allows users to access functions such as adding, updating, deleting and searching from a command line. This is typically used from a UNIX, Linux or Windows 2000 command shell

Web Services Application Programming Interface

This Simple Object Access Protocol (SOAP) interface provides a complete set of API functions, similar to the WOA interface, but utilizing the more standardized methods of a SOAP interface.

The interface may be accessed through both Java and .Net. A full set of examples is provided with an interface implemented on top of Visual Studio.

Command Line Interface (CLI)

The CLI is implemented using the ExtraView API. It comprises a set of Perl scripts that perform many functions such as:

- Adding or updating issues in a batch or interactive mode from a telnet session
- Performing limited administrative functions
- The CLI functions can be further scripted by an ExtraView user, to create their own functions, running in interactive or batch mode.

Please see the following guides for further information:

- [Application Programming Interface Guide](#)
- [Web Services Interface Guide](#)
- [Command Line Interface Guide](#)

Client Browser Support

Supported Desktop Browsers

ExtraView for this release is certified to support the following browsers.

- Microsoft Edge (all versions)
- Mozilla Firefox is supported using version 25 and greater
- Apple Safari (on Macintosh only) is supported, using version 10.1 or greater
- Google Chrome is supported, using version 30 or greater.

These browsers are supported on the following platforms (where available) – Windows 8.1, 10.0, Apple Macintosh, and Linux. The exception is Apple Safari which is not supported on Microsoft Windows platforms.

Supported Mobile Devices

All Apple iOS devices with version 12.0 or greater are supported. Android devices with version 9.0 or greater are supported, but not all manufacturer's devices have been tested.

Screen Resolution

The resolution of desktop monitors or screens on which users should use ExtraView should be a minimum of 1280 x 1024 pixels. While ExtraView will work at lower resolutions than this, users may have to scroll up, down and sideways more than they would like. The administrator can make decisions in the design phase that will affect this. For example, the settings in the style sheets that control the small, medium and large font sizes can be tailored, as can the number of columns and rows that appear on screen layouts. If the users are utilizing the Workspace feature, the recommendation is to use screens with as high a resolution as possible, to maximize the number of viewable panels. The recommendation is that administrators should design their layouts to fit within a resolution of 1280 x 1024 pixels.

Cookies in the Browser

Most browsers have cookies turned on as a default setting and this is what ExtraView expects. If cookies are not turned on, ExtraView will warn the user, and will not function until they are turned on.

When the administrator enables the behavior setting `ALLOW_CHANGE_LOCALE_AT_SIGNON`. In this case, a cookie retains the preferred locale setting for the user who signs on for a 30 day period. No other information is stored within the user's computer.

When the administrator enables the behavior settings `ENABLE_TWO_FACTOR_ATH` and `ENABLE_DEVICE_VERIFICATION`, and a user elects to remember their sign on details within a particular browser on a specific computer, a cookie is also set to remember this information.

JavaScript in the Browser

JavaScript must be turned on within the client browser.

The Browser Back Button

Users should never use the browser's back button within ExtraView. They should only navigate by the buttons that are displayed on ExtraView's menus. The reason is that ExtraView must maintain integrity of its information at all times. For example, if you press the button on ExtraView's *Add Issue screen* to add a new record, then pressed the back button and pressed the add button again, you will have two records inserted. Similar problems occur if the user attempts to go back to a record he has edited, or to go back to a screen that was refreshed from the server during adding or editing an issue.

The Browser Refresh Button

Similar to the Back button, the Refresh button within your browser should not be used. At the times that a Refresh is allowable, ExtraView will offer a Refresh button in its menu bar.

Bookmarks and URLs within your Browser

Many, but not all, pages displayed by ExtraView within your browser may be bookmarked, and shared with other users. Bookmarks are created by using the normal conventions appropriate to your browser. This is slightly different for each supported browser, but simply follow the appropriate steps from your browser manufacturer. For most commonly accessed screens you can copy the URL in the address bar of your browser, and paste the URL into emails or documents and share these with other users. Note that all security permissions are obeyed when you share a URL. If the receiving user does not have permission to a given feature, or to specific fields, they will not be able to use these features or view the fields, no matter the permissions of the sending user. When a user pastes a URL into the address bar of their browser, they are required to sign on if they are not already authenticated. The most common URLs that you may want to share are:

- The Sign On page
- Your Home Page - but note a receiving user will observe their personal Home Page when they use the URL that you send
- *Add* screens within any Business Area and Project
- The *Edit* screen of any issue
- The address of any report that can be run - note that there are shortcuts for any report available from the Report screen. When you right-click with your mouse on any report title, there is an option to copy the URL for that report to your local clipboard. Note that you cannot bookmark or share the address of a report being edited, or the output observed when the report is run from within the report editor
- The output from any report you run - sharing the URL allows the recipient to directly run the report and see the output within their browser. This includes the output from Detailed Reports and Quicklist Reports.

Note that individual administration screens cannot be bookmarked or shared.

Character Sets within the Browser

ExtraView must work consistently with a single character set, in order that information entered within different browsers across an organization will be compatible, and can be stored on and retrieved from the ExtraView server in a consistent manner. This is less of a problem with languages based on the Roman alphabetic, but is an essential ingredient of correctly configuring a system where users use double-byte languages such as Japanese and Chinese. There is a behavior setting (see the following section) named HTTP_CHARSET that defines the character encoding for input from all browsers, for all users of the ExtraView instance. By default this is set to UTF-8, a character set that is universal and supports all languages. The recommendation is to have all users set their local browser character set to UTF-8. If this is to be changed, then it must be changed on the server and in every client browser.

Note: It is strongly recommended that HTTP_CHARSET is set to a value of UTF-8, and that all users only set their browser character set to UTF-8, so that characters will be displayed correctly and consistently.

Administrative Functions

Administrative functions are split into the following groups:

- **Operational Tasks** - These are the day-to-day tasks such as administering users and setting up escalation tasks
- **Site Configuration** - This is where the majority of operations that configure your site are managed
- **Initial Setup** - These are typically the features that need to be set up in a new installation
- **Import/Export** - This is where you export and import data to and from ExtraView
- **Advanced** - These are advanced features that only need to be accessed on an occasional basis.

There is some crossover in the groups of functions. For example, the administrator will need to occasionally access a Site Configuration feature for a day-to-day operation.

Mobile Device Configuration

[Click here for end user documentation](#)

ExtraView supports mobile platforms. Mobile clients can be downloaded from the Apple App Store, or from Google Play, depending on the device you are running. Given that layouts designed for desktop usage may well be too wide and too tall to be used without a significant amount of scrolling on a mobile device, ExtraView provides the capability to create layouts for different display targets as follows:

- **Desktop** - these layouts are the default and will always be presented to a user if no Tablet or Phone layout exists. Given that there are always a set of default Desktop layouts in a system, this means that a layout will always be presented to a mobile user, even if it has not been optimized for use
- **Tablet** - these layouts will be presented to a user when they have been configured, and ExtraView detects it is running on a tablet-sized device. These layouts may have fewer rows and fewer columns than a Desktop layout, depending on how many fields need to be placed on the layout. The end user can override the Tablet display target selection and elect to use either the Desktop or Phone layouts, if they desire, within the sign on information for the connection
- **Phone** - these layouts will be presented to a user when they have been configured, and ExtraView detects it is running on a smart phone-sized device. Typically these layouts will have fewer rows and only one or two columns. The end user can override the Phone display target selection and elect to use either the Desktop or Tablet layouts, if they desire, within the sign on information for the connection.

Mobile configurations may also be implemented to be more restrictive than the desktop configuration, for example to only allow the end user to add a specific issue and no more, often without the need for the user to sign on with a valid User ID and password. See the section further down this page, entitled **Configuring Limited Access**.

Implementation Considerations

You can globally turn mobile access on and off with the behavior setting named ALLOW_MOBILE_CLIENTS

Given the smaller screen sizes of Tablet and Phone devices, you will almost certainly want to configure different layouts for these. Here are some recommendations:

- Do not configure the mobile layouts until you have completed the configuration of the Desktop target layouts. This allows you to debug your workflow and other logic first, then simply do a "save as" type of operation to create the Tablet and Phone layouts from the Desktop layouts. Then it is a relatively simple exercise to alter the presentation of the layouts, while retaining the underlying logic. If your Desktop layout does not have more than 3 columns and more than about 10 rows, then Tablet users may often be able to use this as their layout. It is recommended that you configure your Phone layouts with a single column and perhaps 5 or 6 rows per screen. See [here](#) for instructions on creating layouts
- Consider the introduction of screen pages within your mobile layouts. These are configured using the PAGE_PRE_XXX and PAGE_POST_XXX fields. These provide a neat interface to the user, only displaying a screenful of fields with *next* and *previous* page buttons to move between the different parts of a layout. These are most useful on Phone layouts. See [here](#) for instructions on using pagination
- Many reports will be overly large to display on mobile devices, particularly on mobile phones. For each report type that is enabled for mobile working, you can choose within the individual report editor screens to allow or disallow the user to see and run that report on a mobile device. While you may allow the end user to decide for themselves which personal reports they should be able to view, consider the Shared reports and whether they are suitable for mobile viewing. You might create some reports just for mobile working. You can also use the **Administrative Report Management** utility to review and update all the reports to decide which you want to make available to mobile users. If you are familiar with the shared reports, this is a faster way to turn on reports for mobile working, compared to individually reviewing the reports
- It is worthwhile introducing specific navigation bars for mobile working. These can direct users to the specific pages that are important for their use. In addition, you might introduce a report menu, with access to a limited number of reports specifically designed for mobile working, and not allow access to reporting in general
- Do not use the inbuilt ADMIN user account to test the mobile interface. This account should only be used on desktop interfaces
- There are some limitations with mobile clients, principally because of design limitations of the devices. For example, Apple iOS devices do not allow access to their file system to be able to upload documents. See [here](#), for a full list of limitations
- Although there are some limitations, there are also opportunities to introduce new features into your workflow with mobile devices. For example, you can directly access the camera and photo albums within mobile devices. You can also use a canvas to capture a user's signature on the screen and upload this directly into an image display type field. The opportunity to configure these items present new features that cannot be met from a desktop computer
- Users may have the equivalent of a desktop home page report. This can be set on the Personal Options screen within the mobile app, or can be set in the Report Options section of a user's account within a browser on a desktop or laptop computer.

Configuring Limited Access

A typical use case for limiting user access within the mobile client is to allow users to simply report issues, as opposed to having access to all of ExtraView's functionality. The following configuration options allow for up to five screens within the mobile client to be configured, with optional access to the sign on screen, to reports and to other functions:

Behavior Settings

MOBILE_DIRECT_ACCESS_1 to MOBILE_DIRECT_ACCESS_5	These are 5 separate behavior settings that allow for the optional placement of five separate buttons on the Sign On screen of the mobile client. If not configured, no button appears. If configured, the entry should be of the form: <i>Button Title:URL</i> The <i>Button Title</i> will appear on the Sign On screen and the <i>URL</i> must be a valid URL within ExtraView to which the user is directed when the button is pressed. It is assumed that a User ID and password are parameters within the URL. Typically this URL will also have an AREA, a PROJECT and ROLE defined and be directed to an <i>add</i> screen within ExtraView.
HIDE_MOBILE_SIGNON_SCREEN	This setting may have the value of YES, NO or SIGNON_BUTTON. When the value is NO, the User ID and Password fields are always visible. When the setting is YES, the input fields for the User ID and Password are never viewable and the client is reliant on one or more of the behavior settings named MOBILE_DIRECT_ACCESS_1 through MOBILE_DIRECT_ACCESS_5 providing direct access to screens within ExtraView.

When the value is SIGNON_BUTTON, there is a button with the title **Sign On** and when this is clicked, the User ID and Password fields become visible.

The default value for this setting is NO, so that the user has the ability to sign on.

Security Permission Keys

MENU_MOBILE_NAV_BAR	This allows the navigation bar that is configured to only appear when there is read and write access to the permission key. The most frequent use of this setting is to suppress the navigation menus for users within the mobile client, locking them into the functionality provided by the behavior settings named MOBILE_DIRECT_ACCESS_1 to MOBILE_DIRECT_ACCESS_5
PR_ADD_PROBLEM.CONFIRM_ALLOW_EDIT	This security permission key will remove the Edit button from the confirmation screen displayed to the user following the successful addition of an issue through an <i>add</i> screen.

Uploading Images and Files

The following matrix shows how you may upload files and images from your mobile device to ExtraView

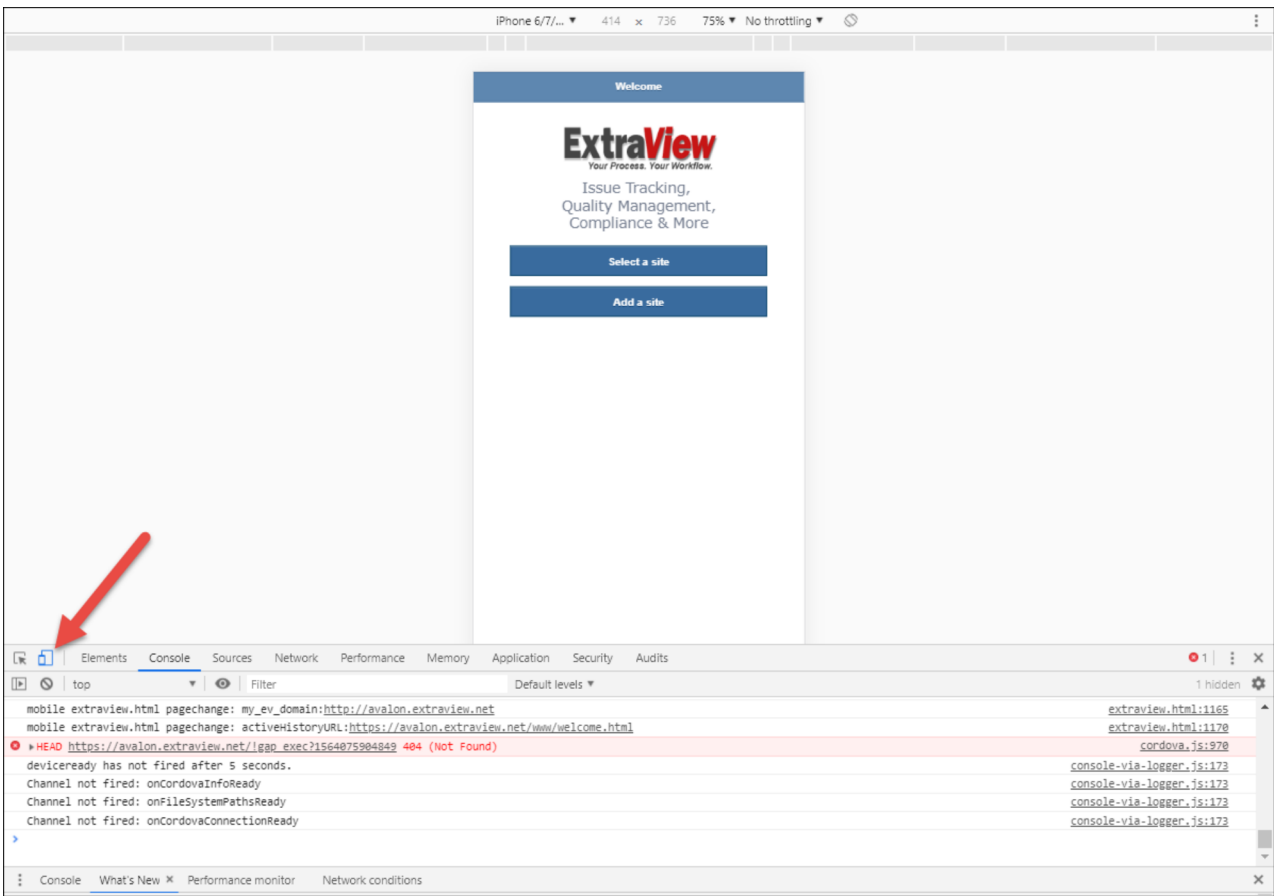
Issue Attachments	Image Display Type Fields	Document Display Type Fields
Direct from camera	Direct from camera	Stored Files
Stored Files	Stored Photos in Album	Stored Photos
Stored Photos	Canvas (you can write on the screen. e.g. capture signatures)	

[Click here for end user documentation](#)

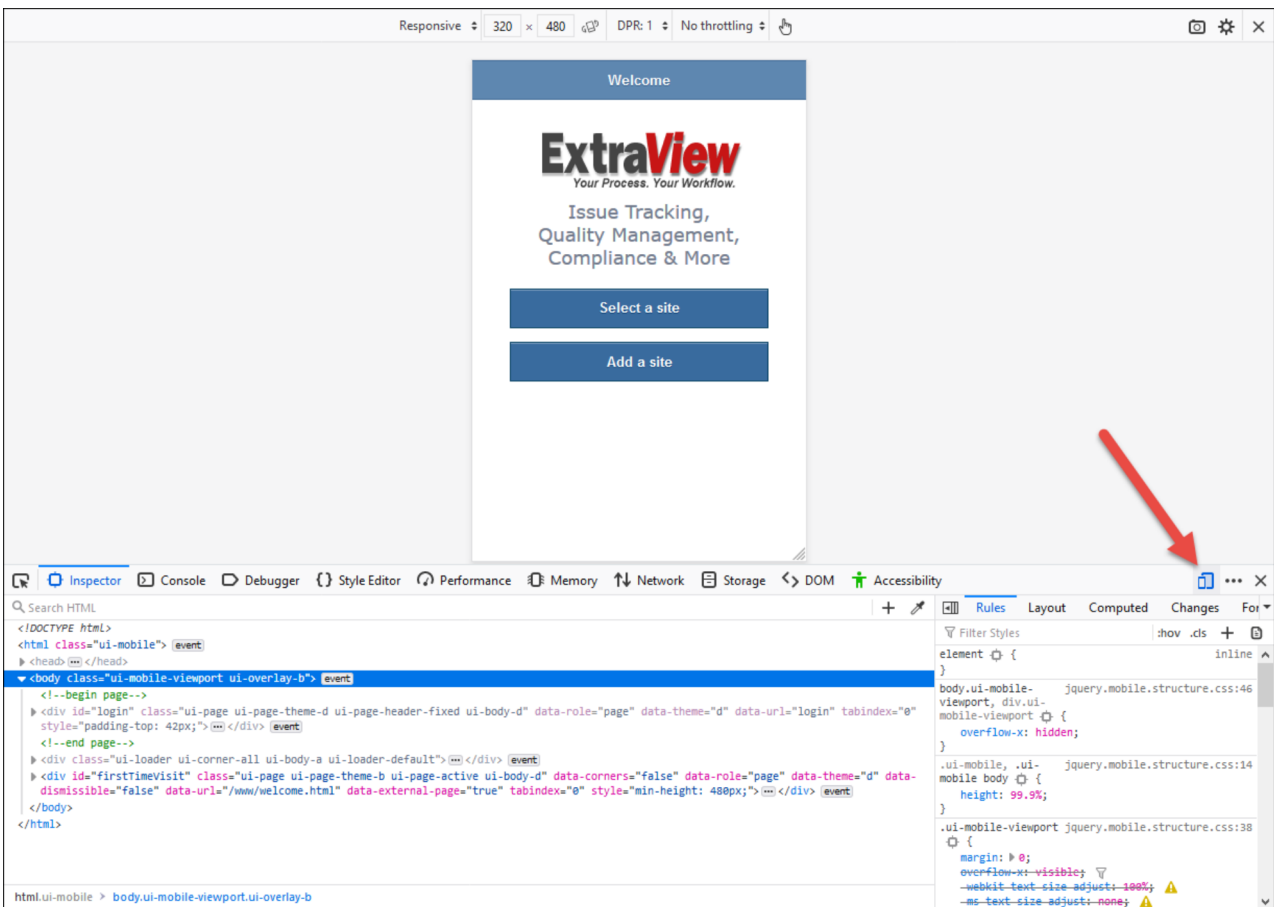
Desktop Emulation of Mobile Devices

It can be useful to emulate a mobile device from a desktop browser. This is mainly used to debug problems you might experience with the mobile client. To accomplish this, recognize that you are going to use your desktop browser as the mobile client and that it will then remotely access the ExtraView installation. To achieve this, the mobile client software must first be installed on web server so it can be accessed by the browser. This needs a different implementation than is provided with the Apple iOS and the Android distribution versions. Contact ExtraView support should you need this and they will provide access to this software on a test basis.

Both Mozilla Firefox and Google Chrome browsers support emulation, so you should use one of these. In both cases, click the F12 button to enter the browser debug mode. Click the emulation button to start an emulation session:



Emulation Button in Chrome



Once you have established an emulation connection to the mobile client, the browser will act the same as if you were on a mobile device. Each of the mobile emulators has capabilities to allow you to set mobile device type as well as features such as rotating the screen by 90°.

Section 508 - Disability Support

In 1998, the US Congress amended the Rehabilitation Act of 1973 to require US Federal agencies to make their electronic and information technology (EIT) accessible to people with disabilities. The law (29 U.S.C. § 794 (d)) applies to all US Federal agencies when they develop, procure, maintain, or use electronic and information technology. Under Section 508, agencies must give disabled employees and members of the public access to information that is comparable to access available to others. The appropriate code is 36 CFAR Part 1194.22.

ExtraView provides extensive support to build Section 508 compliant applications. ExtraView's inbuilt functionality automatically provides this support, but it is the responsibility of the administrator to ensure that they configure their application specific functions to support Section 508.

As guidance, this page states the current regulations in 36 CFAR Part 1194.22 and provides guidance on how ExtraView applications support Section 508.

1194.22 Web-based intranet and internet information and applications

(a) A text equivalent for every non-text element shall be provided (e.g., via “alt”, “longdesc”, or in element content).

Every button, clickable image, link, help tip and other navigation elements have a help tip that can be interpreted by screen reader and other equivalent disability supporting software. ExtraView relies upon the manufacturers of supported internet browsers to support screen reading software. ExtraView may be customized extensively with the addition of User Defined Fields (UDFs). For each and every field that an administrator creates, they should create the appropriate text equivalent within the data dictionary, using the Help Text attribute.

(b) Equivalent alternatives for any multimedia presentation shall be synchronized with the presentation.

ExtraView is not designed to support multimedia presentations, hence this requirement is not applicable.

(c) Web pages shall be designed so that all information conveyed with color is also available without color, for example from context or markup.

All colors are configurable by the administrator, and it is thus their responsibility to set appropriate colors and styles that are unambiguous. For example, administrators may configure required field entries to contain markup characters as well as color. A single behavior setting can ensure that all required fields may be displayed as follows:

- Without Section 508 compliance - Required Field Name
- With Section 508 compliance - *Required Field Name*

The specific markup used is completely configurable by the administrator.

(d) Documents shall be organized so they are readable without requiring an associated style sheet.

Documents stored within ExtraView can be configured so that they do not require any style sheets. For example, administrators should configure standard Text Area fields to store documents, as opposed to configuring HTML Area fields which may contain style sheet information.

(e) Redundant text links shall be provided for each active region of a server-side image map.

There are no server-side generated image maps within the ExtraView application, hence this requirement is not applicable.

(f) Client-side image maps shall be provided instead of server-side image maps except where the regions cannot be defined with an available geometric shape.

There are no server-side generated image maps within the ExtraView application, hence this requirement is not applicable.

(g) Row and column headers shall be identified for data tables.

The ExtraView application adheres to this requirement when generating all data tables, such as those found in reports. Note that this requirement is adhered to when outputting data to the user's internet browser, but the user may also output data to spreadsheets and Adobe PDF documents that do not adhere to this requirement.

(h) Markup shall be used to associate data cells and header cells for data tables that have two or more logical levels of row or column headers.

There is no built-in feature that requires data tables with more than one logical level, although it is possible for the administrator to configure such elements. ExtraView Corporation's recommendation is that the administrator of a Section 508 site should not configure tables with more than a single logical level.

(i) Frames shall be titled with text that facilitates frame identification and navigation.

ExtraView uses one or at most two frames on every screen. These may be configured with identification text. When there are two frames on a screen, the first frame is always the navigation and is always placed at the top of the screen, and the second frame contains data, reducing any confusion for a disabled user.

(j) Pages shall be designed to avoid causing the screen to flicker with a frequency greater than 2 Hz and lower than 55 Hz.

This is never an issue with the ExtraView application as it fundamentally presents alpha-numeric information and static images.

(k) A text-only page, with equivalent information or functionality, shall be provided to make a web site comply with the provisions of this part, when compliance cannot be accomplished in any other way. The content of the text-only page shall be updated whenever the primary page changes.

While it is expected that the administrator configures screens that adhere to Section 508, the administrator can also configure text-only pages whenever needed, and link these to their configuration. For example, there is an optional help button on each screen which can access text content specific to the installation, and each UDF title may become a clickable link to a text-only page.

(l) When pages utilize scripting languages to display content, or to create interface elements, the information provided by the script shall be identified with functional text that can be read by assistive technology.

Given ExtraView's presentation of HTML pages that are all generated on a server and displayed in a user's internet browser, all elements are generated with the appropriate attributes that are required by assistive screen reader technology.

(m) When a web page requires that an applet, plug-in or other application be present on the client system to interpret page content, the page must provide a link to a plug-in or applet that complies with §1194.21(a) through (l).

This is not applicable within the ExtraView product.

(n) When electronic forms are designed to be completed on-line, the form shall allow people using assistive technology to access the information, field elements, and functionality required for completion and submission of the form, including all directions and cues.

All forms, whether inbuilt into ExtraView, or configured by an administrator are specifically generated by the server to meet this requirement. All fields have titles and input elements that support Section 508 requirements providing the administrator adheres to best practices when configuring the screens.

(o) A method shall be provided that permits users to skip repetitive navigation links.

The only place where repetitive navigation links are used are within forms that input and update records. By default these are at the top and bottom of the form. However, a single behavior setting allows the administrator to turn off the bottom navigation link, thereby creating a compliant form.

(p) When a timed response is required, the user shall be alerted and given sufficient time to indicate more time is required.

The only place where a timed response is required is an optional administrator defined timeout for inactive users. The timer for this input is controlled by the administrator who can ensure timeouts never occur for any user.

Voluntary Product Accessibility Template (VPAT)

In January 2009, the Information Technology Industry Council (ITI) asked for the development of a specification that could be used for ITI's Voluntary Product Accessibility Template (VPAT). This VPAT has been embraced by the U.S. General Services Administration as a way to simplify government market research on IT products with accessible features.

The VPAT for ExtraView may be seen [here](#).

Behavior Settings

Behavior settings control basic functionality within ExtraView and allow your installation to be tailored quickly for your hardware, and your company's requirements with the platform.

The behavior settings are grouped into different categories that can be selected within the **Behavior Settings** administration function.

Behavior Setting Categories

- API
- Authentication
- Company Information
- Display
- Email
- Environment
- Reporting / Querying
- Security and Session
- User
- Workflow

Commonly used behavior settings

With more than 200 behavior settings, it can be somewhat complex to understand the purpose and behavior of each setting. The settings that are most frequently used are gathered in this section.

Category	Setting	Purpose
User	USER_SELF_REGISTRATION	You can allow your users to self-register, or you can be the registrar. When this is set to Yes, a prompt appears on the Sign On screen, allowing a user to navigate to a page where they can register themselves as a user in ExtraView. When a user registers in this way, they will only be given the privileges of the user role defined in the behavior setting named LIMITED_USER_ROLE, but no user role is set in their account. When a user self-registers, an email is sent to an administrator, as defined by the following settings with Email Settings on the Email Notification administration menu. The user created will be in the business area and project defined by those of the ADMIN user account.
User	USERNAME_DISPLAY	You have the ability to display usernames by First, Last or by ID based on your company's methodology. First – will produce names like David Smith Last – will produce names like Smith, David ID – will produce names like dsmith You may also customize your own display pattern. You use the tokens \$\$FIRST_NAME\$\$, \$\$LAST_NAME\$\$ and \$\$USER_ID\$\$ along with any text characters to compose your own display. For example: \$\$USER_ID\$\$ \$\$LAST_NAME\$\$, \$\$FIRST_NAME\$\$ will produce dsmith Smith, David
Display	ABBREVIATED_HISTORY	A value of YES will show changed fields only in history records and will not use the History layout to display the audit trail. A value of NO will use the History layout to display the audit trail. The displayed results with YES are more concise than NO, but there is not a fixed layout to easily spot the changes
Display	SUPPORT_LINK	If you have an HTML page that you would like your users to go when they need support, you can put the link plus a message here
Workflow	ENFORCE_STATE_CHANGE_RULES	Gives you the opportunity to turn Status Change Rules on or off

Email	EMAIL_ADMINISTRATOR_NAME	This is the email address or alias for the ExtraView administrator. Emails that are automatically generated by ExtraView are originated with this name. Examples are emails sent upon the self registration of a user, or an unauthorized access attempt
Email	EMAIL_ADMINISTRATOR_USER_ID	This is the email address to which emails originating within ExtraView are sent. This is usually the administrator's email address or an alias for the administrator
Email	EMAIL_FROM_USER_ID	Emails sent from ExtraView will show this as the sender's address. For example, use support@myco.com
Email	EMAIL_SUBJECT_TEMPLATE	This allows you to use fields within the record and place them within the subject line of the email that is generated. The field that you want to include is enclosed between \$\$ and \$\$\$. For example, the issue title is \$\$\$SHORT_DESCR\$\$\$. The value of: ExtraView Notification [\$\$ID\$\$]: \$\$STATUS\$\$ - \$\$\$SHORT_DESCR\$\$ will produce an email subject line like: ExtraView Notification [12345]: Open – Report of a failure
Company Information	COMPANY_NAME	The name of your company

Security Permissions

Depending on which version of ExtraView layouts are installed with your new installation, different permission settings may exist. These different layouts may be a minimal set of layouts, where you will do most of the customization yourself, or they may be one or more of a series of layouts for “best practices” implementations such as bug tracking or customer support.

The visibility of individual fields or items within your installation may not be quite what you need. Firstly, if you are not certain, note the ADMIN user supplied with all ExtraView installations overrides the security permission settings, therefore if an item is visible using the ADMIN user, it is certain that a permission is not set the way you require. Secondly if you cannot see a field you require or you create a field and do not see it where you expect, check the field has been placed on the appropriate layouts as well as checking that the field has the correct permissions. Other sections of this guide explain all these items, but this is a short list of the permissions that frequently need to be checked and altered on a new installation:

Security permission key	Purpose
AREA.nn	nn is the internal ID of the business areas, and if you do not see a business area you expect, check these keys
CF_AREA	Visibility of business areas. This includes the ability to add or edit the list of business areas in administration
CF_PROJECT	Visibility of projects This includes the ability to add or edit the list of projects in administration
CF_PERSONAL_OPTIONS	Gives the ability to edit your personal options
STATUS.xxxxxx	xxxxxx is name of each status value in your installation. If you do not see a status value in a list on the add or edit screens, it is likely you did not give the correct permission to its security permission key

Internationalization / Localization

ExtraView has been designed to work in a global setting. The following attributes should be understood when looking at ExtraView working over multiple countries and languages:

- **Locales** - Locales identify specific languages and geographic regions. Within ExtraView you create an entry for each of the locales you require. A locale is defined as a combination of the Language and the Region. For example, here are some definitions:

Language	Language Code	Region	Region Code
English	en	Great Britain	GB

English	<i>en</i>	United States	<i>US</i>
Japanese	<i>ja</i>	Japan	<i>JP</i>
French	<i>fr</i>	France	<i>FR</i>
French	<i>fr</i>	Canada	<i>CA</i>

For each locale you create, ExtraView will maintain a set of information for the messages to display, the numeric formats to use when displaying data, date formats and sort orders. The two-letter language codes are defined within an ISO standard (ISO 3166-1). The two-letter region codes extend the language code to indicate the geographic region. One language may have many regions. For example, there are approximately 20 Spanish speaking countries or regions.

Each user belongs to a single locale, set within their Account Administration screen. For example, you may have users in Japan, Great Britain and Germany. Each user will see date formats in their own locale, with no resulting confusion because of the differing and conflicting date formats in use over the world. If Extraview has been localized for a specific locale, then a user who sets that locale will see the localized messages for that locale. In this way different users in different countries can all see and use ExtraView within their own language. Note that the language translations must be provided for each region. If there is no language translation for any message or title, ExtraView will display the value in the DEFAULT_LANGUAGE, usually English

- **Language Translation** - Each installation has a default language, defined in the behavior setting DEFAULT_LANGUAGE. Usually, this is *en* for English. For each locale that is defined, the administrator can define an alternative to each and every system message and to each and every metadata list value entered when configuring the system. If a user is working within a locale, and no translation has been created for a specific message, ExtraView will display the message using the DEFAULT_LANGUAGE.
- **Date Formats** - For each locale, ExtraView will display date formats with the appropriate local format. For example, if the date is January 10, 2015 and you have selected a SHORT date format, the date will be displayed as 01/10/15 if the locale is *en-US* and displayed as 10/01/15 if the locale is *en-GB*
- **Numeric Formats** - Numbers will be displayed according to the conventions of the locale set for the user. For example, the number 123,456.789 in the en-US locale will be displayed as 123.456,789 in the *de-DE* German locale
- **Sort Order** - Given the different alphabets for different locales, ExtraView will sort lists and results according to the rules of the locale
- **Time zones** - There is support for every time zone around the world. Each user can select the time zone within which he is working. ExtraView will account for time zones in all its calculations. For example, if you have two users in different time zones, and one updates an issue in the Pacific Time zone, and the other views the issue in the European Central time zone, the user in the European Central time zone will see the issue expressed in their time zone. There is support for two types of date fields; fields with a display type of *date* will always be corrected as just mentioned. There are also *day* fields where no correction is made for time. This can be used for events such as a birth date where you never want to correct for time zone
- **Automatic translation of data** - It is possible to configure different text area fields where a field in one language within one field may automatically be translated to a different language in a different field. This uses Google's web service API to perform the translation

As far as possible, ExtraView relies on foundation technology such as the database and the Java language to provide many of these features. For further information on this topic, please consider visiting these reference sources:

- [Internationalization: Understanding Locale in the Java Platform](#)
- [Language localisation - Wikipedia](#)
- [Globalization support in Oracle Database](#)

ExtraView Licensing Schemes

ExtraView is a licensed product. Several types of licensing schemes are available, according to your purchase of the license from ExtraView Corporation. The license details of the ExtraView installation can be viewed in the section named **Company Information Settings** in the **System Controls** section of **Administration**.

Named User Licensing Scheme

Named users are identified as single-person entities that each has a unique User ID within ExtraView. You may create more end users than the number of licenses you have purchased, but the maximum number of active users cannot exceed the number of licensed users. You may disable any account or accounts to remain in compliance with the license. Note that users who only occupy the role identified in the behavior setting named LIMITED_USER_ROLE are not counted in the licensing scheme, and they will always have access to ExtraView.

Concurrent User Licensing Scheme

You may create any number of user ID's with the concurrent licensing scheme, but not all users may be able to sign on and work within ExtraView at one time. This is because the software restricts the number of users who can sign on at any time to the number of concurrent licenses purchased. If users in excess of this number attempt to sign on, they will receive a message asking them to contact the ExtraView administrator. As administrator, you can control the length of time a

license remains active, if a user becomes idle, through a behavior setting. After the expiry time, if a user remains idle, their session is expired allowing another user to occupy the license.

If a user configured with a concurrent license signs on from a single computer, with more than one browser, they occupy a single concurrent license for each two browser connections. For example, they may sign on with both Mozilla Firefox and Google Chrome browsers and only occupy a single license, but if they then sign on again with Microsoft Edge, they will occupy a second license. If the same user ID is used from different computers, a concurrent license is counted for each computer.

With EVMail usage, whereby an ExtraView issue is either inserted or updated from an incoming email, the sender's address of the incoming email is determined. If the sender's ExtraView account has a concurrent license, or the sender is not a user within ExtraView, a concurrent license is consumed when the email is processed and an issue is inserted or updated. The expiry time of this license is fixed at 30 minutes. If there are insufficient concurrent licenses available at the time EVMail attempts to insert or update an issue, an email is sent to the system administrator and an email is sent to the sender of the incoming email advising them that their email could not be processed.

Mixed or Hybrid Licensing Scheme

When a mixed license is purchased, there will be a maximum number for named users and a maximum number for concurrent users. When any new user is created, they are automatically given the ability to use a concurrent license. The administrator may use the end user account maintenance screen to move any user (up to the number of named licenses purchased) from a concurrent license to become a named user license. Note that users who only occupy the role identified in the behavior setting named LIMITED_USER_ROLE are not counted in the licensing scheme, and they will always have access to ExtraView. These users should not be given a named user license, but should occupy a concurrent license. This is the default behavior.

End-User Licenses without Cost

A single user role within ExtraView, identified by the behavior setting named LIMITED_USER_ROLE, may be used to identify users who are licensed at no cost. There are several limitations with users who belong to this user role:

- They may not update any issues
- They may not become the owner of an issue
- No issue can be assigned to a person with this role
- The user may only belong to single role and may not switch roles.

The ADMIN user account is supplied without any cost. This user account should not be used to insert or update issues as it has special properties.

Initial Setup

This is the recommended sequence of operations to set up an ExtraView installation, immediately following its installation.

Upload your License Key

When you first install ExtraView, or you purchase additional ExtraView licenses or make other changes to your ExtraView license you import the new license with the utility titled **Upload New License Activation Key**. If you were sent your license activation key via email, save the attachment that contains the license key to your computer, remembering the location where you are saving it. When installing the product for the first time, the following screen comes up automatically, after you accept the end-user license agreement. If you are updating your license file for any other reason, navigate to **Admin, Initial Setup, Upload License Activation Key** to see the screen.

Upload New License Key

Upload File Return Print Page

Directions

- 1 Press the **Browse** button and select the license file to install
- 2 Press the **Upload File** button and ExtraView will install new the license

Actions

Choose file to upload:

Browse...

Upload File Return Print Page

Importing a new license key

Simply use the **Browse** button, navigate to where you saved the the license activation key file provided by ExtraView and then press **Upload File**. You will see a confirmation screen indicating the parameters of the activation key you uploaded. Your new license key takes immediate effect.

Alter the Sign On Message

Many organizations use the Sign on Message screen as a bulletin board for system-wide messaging to the members of the organization. The Sign On message may be global, or may be customized for any combination of the Business Area, Project and the user's role. Sign On messages are displayed according to the following inheritance rules:

- When a user signs on, their current Business Area, current Project and current user role are utilized to define the Sign On message that is displayed
- If an entry for this is not present, the Sign On message for the user's current Business Area, the default Project and their current user role is displayed
- If an entry for this is not present, the Sign On message for the Global Business Area, its default Project and the current user role is displayed
- If an entry for this is not present, the Sign On message for the current Business Area, the current Project and for all user roles is displayed
- If an entry for this is not present, the Sign On message for the current Business Area, its default Project and for all user roles is displayed
- If an entry for this is not present, the Sign On message for the Global Business Area, its default Project and for all user roles is displayed. This Sign On message is the global message. It cannot be deleted as ExtraView defaults to this message if no others are defined. However, you can save it as an empty message if you do not want to display any Sign On message.

You may use all the capabilities of HTML to customize your own Sign on message within the editor. You can add a new Sign On message for any Business Area, Project, user role combination, or you may click the Edit button to update any existing Sign On message.

From the Administration screen, under the **Initial Setup Menu**, click on **Sign On Message**.

The following screen appears:

Return Print Page Sign On Message ?

+ Add a new Home Page Sign On message

Show Filters

Business Area	Project	Role	Created	Last updated
<input type="checkbox"/> * Global Area *	* Master Project *	Default sign on message for all user roles	* None * Jul 17, 2008	Bill Smith Feb 4, 2019
<input type="checkbox"/> Customer Issues	Customer Support Issues Defaults	Default sign on message for all user roles	Bill Smith Mar 20, 2019	Bill Smith Mar 20, 2019
<input type="checkbox"/> Bugs	Bugs Defaults	Development Engineer	Bill Smith Mar 20, 2019	Bill Smith Mar 20, 2019
<input type="checkbox"/> Customers	Customer Information	Customer Support	Bill Smith Mar 20, 2019	Bill Smith Mar 20, 2019

Return Print Page 4 record(s) selected from a total of 4 record(s)

A typical Sign On message editor screen look like:

Update Return Print Page Sign On Message ?

Directions

Edit the Home Page Sign On message below, and then press the **Update** button to save your changes.

Select Area ? Select the Project ? Select User Role ?

* Global Area * * Master Project * * Default Sign On message for all user roles *

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Update Return Print Page

Within the sign on message, it is recommended that you use CSS styles as opposed to HTML tags to style the of the message to be displayed. This will ensure that styles you want for your characters will take effect. Some HTML styling of the text may not appear because of the precedence of styles used in the overall document.

As an example, you should use `Here is some text` as opposed to `Here is some text`

Note that it is possible to include references to JavaScript functions in the UserJavaScript.js file.

Below is an example of a Home screen with the above Sign On message:

LOGO Account: Bill Smith Administrator

Search * Bugs * Select a report *

Home Add Query Report Workspace Administration Help Sign Off

Print Page ExtraView Home ?

Resources & Documentation *Need More?*

- Online documentation
- Free daily training
- Contact ExtraView Corporation
- Solutions & configurations
- Online product tours
- Support & upgrade pricing

Home Page Dashboard

Summary of Statuses

Status ▲	Total #	Percent #
New	236	45.8%
Open	47	9.1%
Fixed	128	24.9%
Closed	68	13.2%
Duplicate	17	3.3%
Not Found	19	3.7%
Total	515	100.0%

Line Chart Open Issues by Priority

Key Statuses

Open Issues by Priority

Select home page reports

Home Page Dashboard * Select a report * * Select a report *

Additional Sign On Screen Info

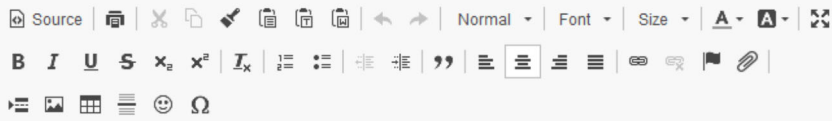
This utility allows you to define one or two additional panels on your user's sign on screens. These optional segments of the sign on screen can be filled with any valid HTML, but they should be somewhat concise and not occupy too much real estate on the screen. To access the utility, navigate to **Admin --> Initial Setup --> Additional Sign On Information**. Once you have entered some content, will see a screen similar to this:

Directions

The first panel will appear on the Sign On screen after the logo and before the User ID / Password information. The second panel will appear after the User ID / Password information. Click Update when you have entered your text. The behavior setting named GUI_VERSION must have a value of 20.1 or greater to use this feature.

Remember - Compliance training for all hands, next Wednesday at 9:00 AM in the West conference room.

Details can be found by clicking here



div p

When a user navigates to the sign on screen, it will look something similar to this:



Remember - Compliance training for all hands, next Wednesday at 9:00 AM in the West conference room.

Details can be found by clicking here

ExtraView User Sign On

User ID

Password

Sign On

[New User Registration](#)
[Change Password](#)
[Forget your User ID or Password?](#)



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ExtraView Enterprise - Version carl_temp - Release 20.1 on WS_A
[ExtraView Support Site](#)

This release is in memory of our friend and colleague, Denise Hendsbee.

Of course, the HTML content you create may contain images, links and other valid HTML objects. To assist your content creation, the content you supply for each panel is contained in a **div** tag. The width of the sign on panel with the User ID and password is 540 pixels. There is no vertical spacing defined before or after the sign on panel. You should provide your own spacing.

Upload your Company Logo

The company logo that appears in the top left hand corner of the navigation bar can be replaced with your own image. Click on the link named **Upload Your Company Logo** within the Initial Setup Menu admin screen. You will see the following:

Directions

Upload your company logo. This should be of either GIF, JPG or PNG image format.

After viewing the logo on the preview, use the behavior settings to alter the size of the navigation bar and the position of the logo.

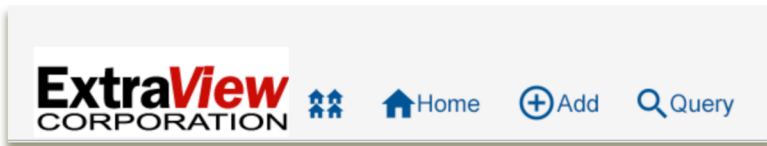


Click the Add button to upload a new Company Logo to replace the one shown below

ExtraView
CORPORATION

Preview

Application Default Name	Value	Description
MENU_SIZE	106	The height of the navigation bar menu in pixels. Note that you must sign off from ExtraView and sign on again for a change in this setting to take effect.
NAV_BAR_LOGO_STYLE	position:absolute;left:20px;top:32px;	This style is used to position the CompanyLogo.gif image on the navigation bar

**Uploading your company logo**

When you click the **Add** button, a dialog box appears, allowing you to choose an image file from your local computer to upload.

If you upload a logo that is too large for the available space on the navigation bar, ExtraView will resize the logo so that it fits in the space. This is accomplished by using the height of the navigation bar defined in the behavior setting named MENU_SIZE.

If your application server and your web server are on different physical servers, you will need to have a mount point within the application server to ensure that the logo you upload is served up from the application server, not the web server.

Only files of type GIF, PNG and JPG may be uploaded.

To assist in the process of placing your logo in the optimum spot on the navigation bar, this screen also allows you to modify two associated behavior settings, MENU_SIZE and NAV_BAR_LOGO_STYLE. MENU_SIZE is the height of the navigation bar in pixels. NAV_BAR_LOGO_STYLE is the setting that uses CSS to place the navigation buttons.

Note: The new company logo image may not appear immediately on your page, especially if the new one you uploaded is of identical size to the previous one. The reason for this is that the browser caches the image, and does not always detect that it should download a fresh copy. Please click on the Home button on the navigation bar to see the new logo in situ. If this does not display the new logo, sign off and sign on again.

The same logo is placed on the sign on screen. There may be some occasions when, for aesthetic reasons, you want to place a different logo on the sign on screen. This is possible, utilizing two behavior settings, under the Display Settings menu. You will find two behavior settings there:

SIGN_ON_SCREEN_LOGO	This is the path to the logo used for the sign on screen logo. By default, this points to ../images/CompanyLogo.gif. This is the location of the company logo that is uploaded with this utility. You can point to any other valid location with an absolute or relative URL. You must place this logo on the file system of the server yourself. This allows you to place any logo image on your sign on screen.
SIGN_ON_SCREEN_LOGO_STYLE	This setting is typically used to place the logo in SIGN_ON_SCREEN_LOGO at a specific location on the sign on screen. The default is to use a style of position: absolute; left:10px;top:10px which places the logo 10 pixels from the top left-hand corner of the screen.

Note: You cannot use this feature if you are running ExtraView from within a deployed War file. Simply copy the logo file to the correct path on the server.

Note: The logo you upload will also be used in Workspaces. It will be resized automatically to fit the space in the Workspace screen.

- [Add new comment](#)

Choose a User Interface Theme

This administrative function provides a means to set the overall theme of the screens displayed to users. Select **User Interface Themes** from the **Administration --> Initial Setup** menu. The screen displayed is a little different, dependent on whether you are using **STYLEs** or **IMAGEs** for your navigation bar buttons. This selection is made using the behavior setting named **NAV_BAR_DISPLAY**. Using a value of **STYLE** is more flexible and offers the ability to precisely set a design for your navigation bar buttons without the need to design custom images if you have custom buttons on your navigation bar. You may also choose an icon for the button from a large library. There are a number of preset themes for both the **STYLE** and **IMAGE** interfaces. The **STYLE** interface is also easier to customize to precise colors that may match your company logo on the navigation bar.

STYLE Navigation Bar Button Setting

This uses HTML images and CSS to compose the buttons. This is extremely flexible interface and easier to customize than using **IMAGEs**.

The screenshot displays the 'User Interface Theme' configuration page. At the top, there are buttons for 'Update', 'Return', and 'Print Page'. The main content area is titled 'Navigation Bar Theme' and contains a list of eight theme options. Each option consists of a radio button, a preview of the navigation bar, and a descriptive text. The themes are:

- Small blue navigation buttons on a white background. All menubar buttons and screen functions have icons
- Plain blue buttons with a red underline when selected. All buttons within the screens have pictorial icons
- Light green navigation buttons with icons at the top of the titles. All buttons within the screens have pictorial icons
- Simple style with grey navigation buttons and pictorial icons
- Bold black and white style with grey navigation buttons and pictorial icons
- Blue navigation text and icons on a white background with pictorial icons. All buttons within the screens have pictorial icons
- Fuchsia navigation text and icons on a white background with pictorial icons. All buttons within the screens have pictorial icons
- Light brown icons with pictorial icons. All buttons within the screens have pictorial icons

- Select the user interface theme which you prefer
- Click the **Update** button on the menubar of the screen
- You will be prompted to sign off and sign on again to view the theme you selected
- You can repeat this step as often as needed to try out the various themes

When in a workspace, an entirely different navigation bar is displayed. This is colored to be in tone with the selection you make for the navigation bar.

With any of the themes you select, you can further customize the look and feel of the navigation bar buttons as explained on the following pages.

IMAGE Navigation Bar Buttons Setting

Image files are used to compose the navigation bar buttons. Two buttons are required for each button, one for the "off" state and one for when the user passes their mouse over the button. Buttons are typically composed with a graphics application such as Adobe Photoshop.

Select the site theme then click Update

Navigation Bar Theme

Update Return Print Page User Interface Theme ?

- Blue color navigation bar. All buttons have text
- Flat grey color navigation bar. All buttons within the screens have pictorial icons
- Light grey color navigation bar with blue tones and icons. All buttons within the screens have pictorial icons
- Flat blue color navigation bar. All buttons within the screens have pictorial icons
- Blue and red color navigation bar. All buttons within the screens have pictorial icons.
- Fuchsia color navigation bar. All buttons within the screens have pictorial icons.
- Pale blues color navigation bar. All buttons have text
- Light blues color navigation bar. All buttons have text
- Green color navigation bar. All buttons have text
- Grey color navigation bar with cyan text. All buttons have text
- Blue button color on a narrow navigation bar. No space for reports on navigation bar. All buttons have text
- Grey color with maroon text on a narrow navigation bar. No space for reports on navigation bar. All buttons have text
- Blue-grey color navigation bar. No space for reports on navigation bar. All buttons have text
- Medium blue narrow navigation bar. All buttons have

- Select the user interface theme which you prefer
- Click the **Update** button on the menubar of the screen
- You will be prompted to sign off and sign on again to view the theme you selected
- You can repeat this step as often as needed to try out the various themes

The buttons on the menubars will always be displayed with words, as opposed to icons, and the options vary from screen to screen.

When in a workspace, an entirely different navigation bar is displayed. This is colored to be in tone with the selection you make for the navigation bar.

It is possible to have a completely different theme for the site, for example using an existing company style that you have in other applications. Instructions to create this are [here](#). You may also contact ExtraView support for assistance in configuring a different theme.

With any of the themes you select, you can further customize the look and feel of the navigation bar buttons as explained on the following pages.

Configure Changes to the User Interface

You may leave this step until later, but this entry provides details on some of the customizations you might want to make.

The ExtraView user interface is composed of the following components. Each of these may be configured to your own preference.

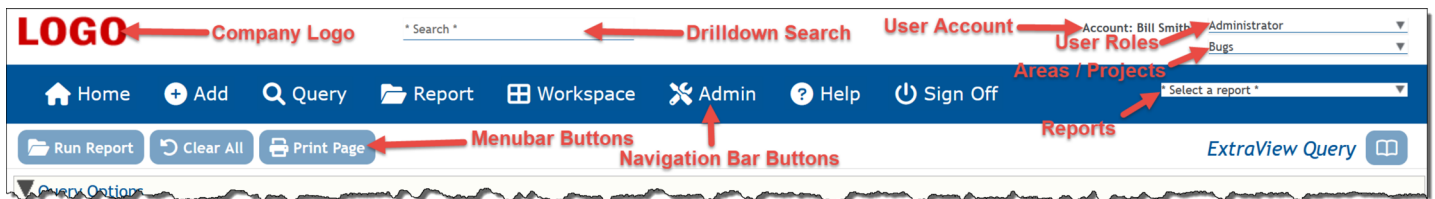
- **The Navigation Bar.** This appears horizontally at the top of the screen or vertically down the left-hand edge of the screen. This typically contains the main navigation buttons and a drilldown box to search for issues
- **The Menu Bar.** This appears at the top of each screen (beneath the Navigation Bar if it is set for a horizontal appearance). If there is a horizontal navigation bar, then it appears beneath the navigation bar, else it appears at the top of the screen
- You can make more detailed and more subtle changes to the user interface via a variety of methods discussed in the following sections.

Navigation Bar

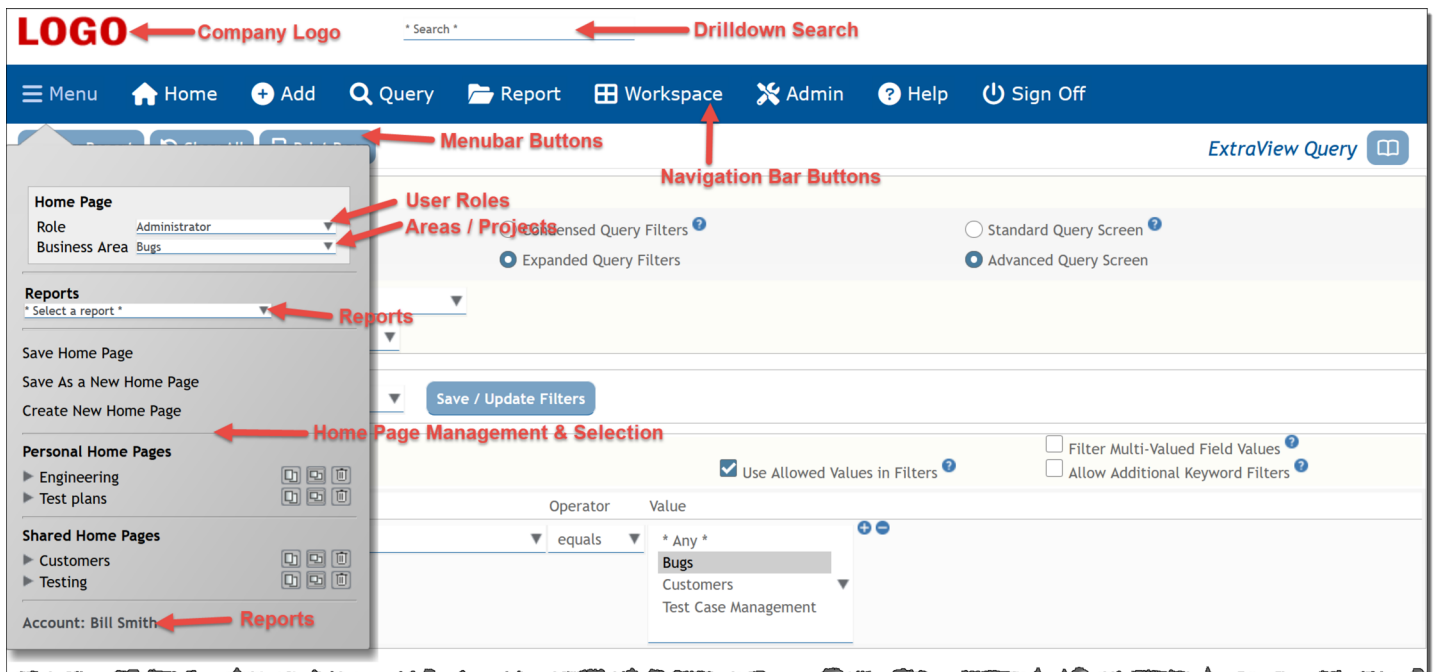
This page discusses the overall display components of the navigation bar. Look at the following pages for details of how the individual navigation bar buttons are configured and styled.

The navigation bar is a set of horizontal buttons and links that appear at the top of the browser window. The navigation buttons that are presented may be different, according to a number of criteria:

- Buttons may be made visible / invisible by using security permission keys for user roles
- The button styles are determined by the user interface theme
- Different navigation bars may be set up for different roles within the system. With this feature, different navigation bars within the system may also have different button styles for the different roles
- There are two distinct configurations for the navigation bar.
 - The first places the **User Account** access, the **User Role** selection and the **Report Selection** lists visible at all times:



- The second places the **User Account** access, the **User Role** selection and the **Report Selection** lists within a **Menu** navigation bar button. The options appear when the user clicks on the **Menu** button. This configuration lends itself to allowing the user access to multiple independent Home Pages, as well as providing a cleaner look on the screen:



The configuration of the different navigation bar styles is achieved with the following security permission settings:

Permission key	Purpose
MENU_MULTIPLE_HOME_PAGES	When these permission keys are set to N / N for a role, this provides the first configuration. When set to Y / Y, the Menu button is placed on the navigation bar and the User Account access, the User Role selection and the Report Selection lists are placed within a dropdown selection box beneath the Menu button
MENU.EV_NAV_BAR_BUTTON_HOME_CTRL	This controls the presence of the Menu button on the navigation bar

The components of the navigation bar are:

- Your company logo
- Navigation buttons. The **Home**, **Help**, and **Sign Off** buttons are always present. The **Add**, **Query**, **Report**, **Workspace** and **Admin** buttons are present if the user's current role has permission to see and use these buttons
- The Menu button is present depending upon the configuration explained above
- The user's name with a link to their personal account information
- A reports list from which the user may execute reports to which they have permission
- A list from which the user can alter their current role
- A list from which the user can alter their current business area and / or project
- A drilldown box into which a user can enter one or more ID's and drilldown into these issues
- A contextual menubar beneath the main navigation buttons. The buttons that appear on the menubar are dependent upon the page you are visiting. The menubar also has the name of the screen. The position of the buttons and the screen name can be switched with the behavior setting named MENU_BUTTON_POSITION.

To aid the configuration of the navigation bar, there are several behavior settings in the Display category, as follows:

Behavior setting	Purpose
NAV_BAR_DISPLAY	This is a key behavior setting. If it set to a value of IMAGE, then traditional image files will be used to display the buttons on the navigation bar. There are approximately 10 sets of images provided. When the setting has a value of STYLE, then HTML and CSS are used to generate the navigation bar buttons. These do not require image editors and can be style in an endless variety of styles and colors. It is recommended that the STYLE value is selected
NAV_BAR_DRILLDOWN_BOX_STYLE	The CSS style to be applied to the table containing the drilldown box on the navigation bar. This is only used when the MENU_DIRECTION is set to HORIZONTAL with horizontal style navigation bars and is used to alter the position of the drilldown box for different styles of navigation bar. Most frequently, you can position the drilldown box in an absolute position on the navigation bar, but you can also use effects such as altering the background-color to change the presentation of the control
NAV_BAR_LOGO_STYLE	This style is used to position the CompanyLogo.gif on the navigation bar, when the MENU_DIRECTION is set to HORIZONTAL
NAV_BAR_STYLE	This allows you to apply a CSS style to the navigation bar buttons.
NAV_BAR_GO_BUTTON	This places a Go button onto the navigation bar by the drilldown box
LOGO_STYLE	This is an optional CSS style that is applied to the ExtraViewLogo.gif image on the navigation bar if the MENU_DIRECTION is set to HORIZONTAL.
MENU_TEXT_COLOR	This allows you to select the color of text of the select lists on the navigation bar, to ensure a contrasting color to the background

The following security permission keys control the ability for a user role to edit / alter their access to the options in the title bar:

Menu Bar Entry	Control
Account	The CF_PERSONAL_OPTIONS controls access to the user's account details and options. If the user's role has only read access to this key, then the user name will appear in the title bar, but they are not able to drill down into the personal options screen. Write permission is needed in order to be able to drill down into the personal options screen
Reports	The SR_MENUBAR_REPORTS security permission key controls the presence of this entry on the navigation bar. It is worth noting that if you have an installation where each user has access to many hundreds of reports, there is a noticeable amount of time needed to generate this list, each time the user hits a button that navigates to a new screen. In this case, the recommendation is to turn this permission key off, and have the users reach reports via the Query button on the navigation bar. This one additional mouse click may save them one or more seconds each time they move to a new screen.

Role	If the user has only a single role defined, this title bar entry will not appear. If the user may adopt two or more roles, this entry appears and the user can drill down to a screen to alter their current role
Area and Project	The security permission keys named CF_AREA and CF_PROJECT control access to whether the user's role may alter their current business area and project

Navigation Bar Buttons

The navigation bar buttons can be rendered using images or using styles. Images are the traditional method, and require the building of a set of buttons using a graphics program such as Adobe Photoshop. This is somewhat time-consuming and requires knowledge of a rather complex program to achieve good results.

Using the behavior setting named NAV_BAR_DISPLAY, the administrator can elect to render the navigation bar buttons with styles. This requires no expert knowledge to build navigation buttons complete with icons. These buttons can be colored in any way desired, and different colors for the button title and backgrounds can be provided when the user places their mouse over the button. In addition, an icon for each button can be selected from a library. As a further advantage, the styling for each button can be overridden from a default set. Although not essential, a minimal knowledge of CSS allows buttons with your own mouseover or hover styles to be designed.

Navigation Buttons with Styles

Using styles as your navigation bar buttons is enabled with the behavior setting NAV_BAR_DISPLAY set to a value of STYLE.

There are a set of behavior settings that define the look of the navigation bar buttons. However, it is possible within the Navigation Bar editor to pverride the style of any individual button with a different style, both for its "off" state, and its "on" state when the user places their mouse over the button.

The settings that control the default navigation bar buttons are:

Behavior Setting	Purpose
NAV_BAR_DISPLAY	This must have a value of STYLE to enable the entire feature
NAV_BAR_ICON_POSITION	This setting places the icon to the TOP or LEFT of the title
NAV_BAR_FONT	This selects the default font to use to display the title on the navigation bar buttons
NAV_BAR_FONT_SIZE	This selects the default size of the font used to display the buttons. This can be an integer number, or can be followed by pt or px to set points or pizels as the dimension. If pt or px is not entered, points are assumed
NAV_BAR_TEXT_COLOR	This is the hexadecimal color value, or a valid HTML color for the text and icon on the navigation bar buttons
NAV_BAR_BG_COLOR	This is the hexadecimal color value, or a valid HTML color for the background color to the navigation bar buttons
NAV_BAR_BG_STYLE	This setting is an optional CSS style that is applied to the background of the entire navigation bar. When not provided, the NAV_BAR_BG_COLOR is applied to the background of the navigation bar
NAV_BAR_TEXT_HOVER_STYLE	This is an optional CSS style used for the text and icon on the navigation bar buttons. This is entered as a valid CSS expression. Multiple CSS styles can be set by using a semi-colon between each style
NAV_BAR_HOVER_COLOR	This is the hexadecimal color value, or a valid HTML color for the background color to the navigation bar buttons when the user places their mouse over the buttons
NAV_BAR_BUTTON_STYLE	This is an optional style, used to apply a rectangular box behind the text and icon, giving the appearance of a traditional on-screen button

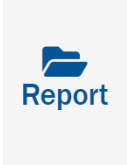
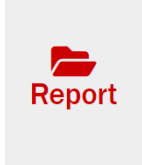



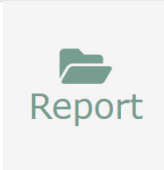
Note that NAV_BAR_TEXT_HOVER_STYLE is expressed as a CSS value rather than a simple color value. This allows for more interesting and complex effects when the user mouses over the buttons, and multiple effects can be chained together using a semi-colon.




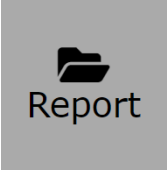




The background color of the entire navigation bar area outside of the navigation buttons takes the color of the setting NAV_BAR_BG_COLOR.

Tips

- Use the administrative utility to set a complete theme, without needing to alter the behavior settings
- The following settings are global - i.e. they are the basis for all navigation bars that are defined within your installation
- Most settings can be overridden within any custom navigation bar you define, allowing individual buttons or entire custom menus to adopt different styles
- The settings that are only available globally are NAV_BAR_DISPLAY and NAV_BAR_ICON_POSITION
- Once you have set a theme with the administrative utility, you can tailor it with any of the settings, for example altering the colors or the overall size of the navigation bar buttons.

Examples

"Off" state	"On" State	Setting	Value
		NAV_BAR_ICON_POSITION NAV_BAR_FONT NAV_BAR_FONT_SIZE NAV_BAR_TEXT_COLOR NAV_BAR_BG_COLOR NAV_BAR_BG_STYLE NAV_BAR_TEXT_HOVER_STYLE NAV_BAR_HOVER_COLOR NAV_BAR_BUTTON_STYLE	TOP Franklin Gothic, Arial 14 #015597 #f5f5f5 color:#9bb7d4 #dedede
		NAV_BAR_ICON_POSITION NAV_BAR_FONT NAV_BAR_FONT_SIZE NAV_BAR_TEXT_COLOR NAV_BAR_BG_COLOR NAV_BAR_BG_STYLE NAV_BAR_TEXT_HOVER_STYLE NAV_BAR_HOVER_COLOR NAV_BAR_BUTTON_STYLE	LEFT Arial 16 #0075c9 #fff color: #0000cc #fff
		NAV_BAR_ICON_POSITION NAV_BAR_FONT NAV_BAR_FONT_SIZE NAV_BAR_TEXT_COLOR NAV_BAR_BG_COLOR NAV_BAR_BG_STYLE NAV_BAR_TEXT_HOVER_STYLE NAV_BAR_HOVER_COLOR NAV_BAR_BUTTON_STYLE	TOP Verdana 16 #779e91 #4e7f71 color: #ddd transparent

		NAV_BAR_ICON_POSITION NAV_BAR_FONT NAV_BAR_FONT_SIZE NAV_BAR_TEXT_COLOR NAV_BAR_BG_COLOR NAV_BAR_BG_STYLE NAV_BAR_TEXT_HOVER_STYLE NAV_BAR_HOVER_COLOR NAV_BAR_BUTTON_STYLE	LEFT Algerian 16 #f29e3b #fff border-bottom:4px red solid #fff
		NAV_BAR_ICON_POSITION NAV_BAR_FONT NAV_BAR_FONT_SIZE NAV_BAR_TEXT_COLOR NAV_BAR_BG_COLOR NAV_BAR_BG_STYLE NAV_BAR_TEXT_HOVER_STYLE NAV_BAR_HOVER_COLOR NAV_BAR_BUTTON_STYLE	TOP Verdana 16 #fff #000 color: #000 #aaa
		NAV_BAR_ICON_POSITION NAV_BAR_FONT NAV_BAR_FONT_SIZE NAV_BAR_TEXT_COLOR NAV_BAR_BG_COLOR NAV_BAR_BG_STYLE NAV_BAR_TEXT_HOVER_STYLE NAV_BAR_HOVER_COLOR NAV_BAR_BUTTON_STYLE	LEFT Verdana 12 #fff #fff color:#c1d3f3 #fff background-color: #015597; padding:5px 10px 5px 10px; border-radius: 6px; position: relative; top: 30px
		MENU_SIZE NAV_BAR_ICON_POSITION NAV_BAR_FONT NAV_BAR_FONT_SIZE NAV_BAR_TEXT_COLOR	100 LEFT Verdana, Arial 12 #fff

	NAV_BAR_BG_COLOR	#005599
	NAV_BAR_BG_STYLE	border-top: 50px solid #fff
	NAV_BAR_TEXT_HOVER_STYLE	color:#c1d3f3
	NAV_BAR_HOVER_COLOR	
	NAV_BAR_BUTTON_STYLE	background-color: #015597; padding:5px

Navigation Buttons with Images

If ExtraView Corporation is hosting your installation, you do not have direct access to the file system of the server to configure, alter or use this feature without contacting ExtraView support.

Using images as your navigation bar buttons is enabled with the behavior setting NAV_BAR_DISPLAY set to a value of IMAGE.








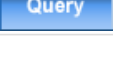
Navigation and action buttons within ExtraView are created and stored as png files. They reside in two *images* directories, which are defined by the paths in the IMG_HOME and the IMG_NAV_BAR_HOME behavior settings. The IMG_NAV_BAR_HOME setting contains all the images required by the standard interface navigation bar. There is a sub-directory of this directory, named **workspace**, which contains a set of images with the same name, but used for the Workspace interface. The remaining images are stored in IMG_HOME. Any image can be replaced with an alternative or you may create a new directory and place a complete set of images within the new directory. You then define the path to the new directory in the IMG_HOME and / or the IMG_NAV_BAR_HOME behavior settings. Care should be taken not to provide images that are too large, and cause your browser to display them with unsatisfactory results. The following table shows the standard images that can be altered by the user, and their suggested size (width x height).







Note that the file named CompanyLogo.gif does not reside within the IMG_HOME or the IMG_NAV_BAR_HOME location, but sits directly under the directory named **/images**. This allows your company logo to sit in one place, but be accessible to any set of issues you select. Also note that there is an administrative function that allows you to upload the file CompanyLogo.gif, without needing access to the file system of the server.

If you want to create your own navigation bar image buttons, the original Adobe Photoshop files used to create the buttons for all themes are provided in the installed ExtraView directory, at *extraview_installed_directory/web/en_US/images_nav_bar*. Note that the navigation bar buttons for all workspace themes are stored in a single file named *nav_bar_workspace.psd*.





















Navigation Bar Images in the IMG_NAV_BAR_HOME Directory

Note again that under this directory is a directory named **workspace**, which is where the navigation bar buttons for the workspace reside. Navigation bar buttons within the workspace are recommended to have a size of 60 pixels wide, by 40 pixels high.







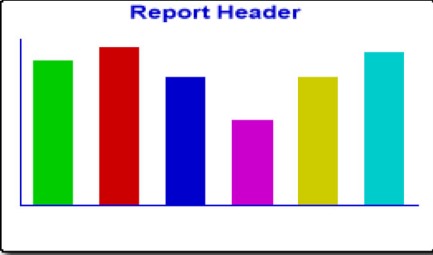
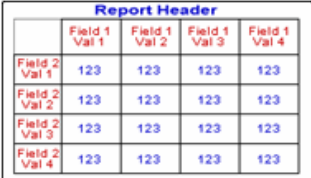
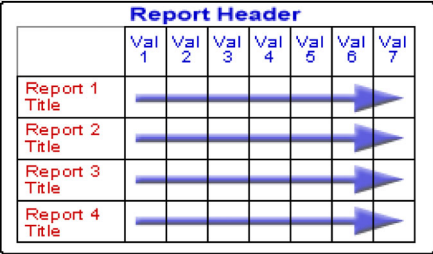
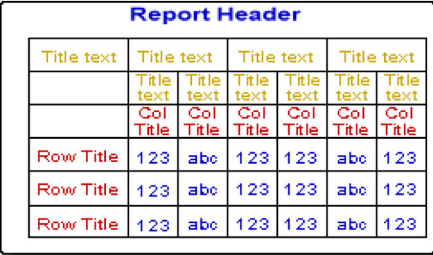
Sample Image	Filename	Size	Purpose
	bHomeOff.png	V=100x25 H=80 x 30	The off state for the homepage button
	bHomeOn.png	V=100x25 H=80 x 30	The on state for the homepage button
	bSystemConfigOff.png	V=100x25 H=80 x 30	The off state for the administration button
	bSystemConfigOn.png	V=100x25 H=80 x 30	The on state for the administration button
	bAddProblemOff.png	V=100x25 H=80 x 30	The off state for the add issue button
	bAddProblemOn.png	V=100x25 H=80 x 30	The on state for the add issue button
	bSearchOff.png	V=100x25 H=80 x 30	The off state for the search/report button
	bSearchOn.png	V=100x25 H=80 x 30	The on state for the search/report button

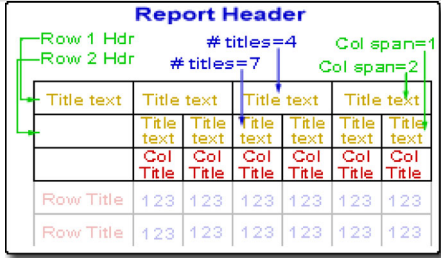
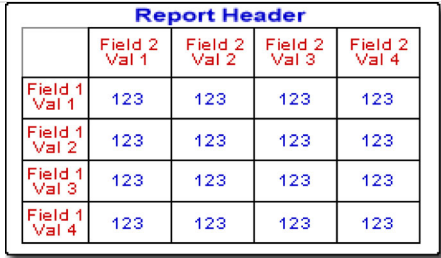
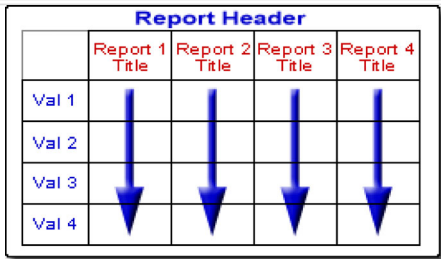
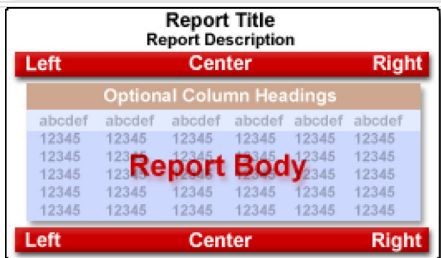
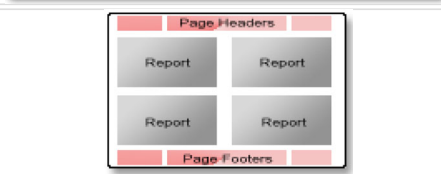
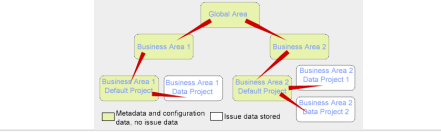


	bHelpOff.png	V=100x25 H=80 x 30	The off state for the help button
	bHelpOn.png	V=100x25 H=80 x 30	The on state for the help button
	bLogoffOff.png	V=100x25 H=80 x 30	The off state of the sign off button
	BannerBackground.png	V=any reasonable size x 85 H=130 x any reasonable size	Image background for the main menu
	ExtraViewLogo.gif	V=any reasonable size x 37 H=100 x any reasonable size	The ExtraView logo that appears on the navigation bar
	GoButton.png	V=any reasonable size x 37 H=100 x any reasonable size	Optional button displayed by the drilldown box on the navigation bar

Other Images in the IMG_HOME Directory

Sample Image	Filename	Size	Purpose
	AddButton.png	40 x 20	This is a general use add button used throughout
	DescButton.png	40 x 20	Used to access the metadata for file attachments
	DeleteButton.png	40 x 20	The delete button on the layout editor screen or on a report
	DeleteButtonWide.png	60 x 20	The delete button on the layout editor screen or on a report
	DnDButton.png	40 x 20	Used as a handle for drag objects
	EditButton.png	40 x 20	This is a general use edit button used throughout
	HideCategories.png	137 x 20	Used within administration screen lists
	HideFilters.png	137 x 20	Used within administration screen lists
	HistoryButton.png	40 x 20	Used to access History from a report
	InsertButton.png	40 x 20	The insert button on the layout editor screen
	ListButton.png	40 x 20	This is a general purpose list button
	MapButton.png	40 x 20	Used in the import functions
	QuickEditButton.png	40 x 20	Used to access the Quickedit mode
	RemoveButton.png	60 x 20	Used to remove issues from relationship groups
	SaveButton.png	40 x 20	General purpose
	SetGUITheme.png	60 x 20	Used to set the theme within administration
	ShowCategories.png	137 x 20	Used within administration screen lists
	ShowFilters.png	137 x 20	Used within administration screen lists
	UpdateButton.png	40 x 20	Update button in metadata screens
	UploadButton.png	60 x 20	Used to upload files
	ViewButton.png	40 x 20	The button used to view a detailed report
	NextButton.png	18 x 18	The button used to select the next page of a report

	PreviousButton.png	18 x 18	The button used to select the previous page of a report
	Calendar.png	19 x 18	Button used to access the calendar
	ColorPicker.png	19 x 18	Used to indicate the color-picker popup
	LinkButton.png	19 x 18	The button used to provide on-screen links to other functions
	PermissionsButton.png	19 x 18	Provides access to security permissions
	QmarkButton.png	19 x 18	Button used to access a pop-up list of users
	timerOff.png	19 x 18	Used for the timer field
	timerOn.png	19 x 18	Used for the timer field
	Style.png	19 x 18	Access to the style of an object
	AgingIcon.gif	19 x 18	Icon used to signify a report is an aging report
	ChartIcon.gif	15 x 15	Icon used to signify a report is a chart
	ContainerIcon.gif	15 x 15	Icon used to signify a report is a container report
	ExternalReportIcon.gif	15 x 15	Icon used to signify a report is an external report
	MatrixIcon.gif	15 x 15	Icon used to signify a report is a matrix report
	PageLayoutIcon.gif	15 x 15	Icon used to signify a report is a layout
	ReportIcon.gif	15 x 15	Icon used to signify a report is a columnar report
	StatisticsReportIcon.gif	15 x 15	Icon used to signify a report is a statistics report
	SummaryIcon.gif	15 x 15	Icon used to signify a report is a summary report
	AgingIconBig.gif	19 x 19	Icon used to signify a report is an aging report
	ChartIconBig.gif	19 x 19	Icon used to signify a report is a chart
	ContainerIconBig.gif	19 x 19	Icon used to signify a report is a container report
	ExternalReportIconBig.gif	19 x 19	Icon used to signify a report is an external report
	MatrixIconBig.gif	19 x 19	Icon used to signify a report is a matrix report
	PageLayoutIconBig.gif	19 x 19	Icon used to signify a report is a layout
	ReportIconBig.gif	19 x 19	Icon used to signify a report is a columnar report
	StatisticsReportIconBig.gif	19 x 19	Icon used to signify a report is a statistics report
	SummaryIconBig.gif	19 x 19	Icon used to signify a report is a summary report
	GrowButton.png	10 x 10	Button used to enlarge a text area when editing
	ShrinkButton.png	10 x 10	Button used to reduce the size of a text area when editing
	smallbullet.gif	10 x 10	General purpose small button
	ArrowSelectOff.png	12 x 12	Icon used to signify report columns that can be sorted
	ArrowSelectOn.png	12 x 12	Icon used to show the column currently used as the descending sort key for a report
	B0.gif...B9.png	20 x 20	Ten Separate gifs with the numerals 0 to 9, used in many places
	Arrow.gif	11 x 9	Used on the menubar to indicate entries with sub-menus

	promote.gif	15 x 15	Used in reports to indicate a group heading that may be promoted
	SelectorOff.gif	15 x 15	Used as the off indicator for the record selector
	SelectorOn.gif	15 x 15	Used as the on indicator for the record selector
	SortAscend.gif	15 x 15	Used to indicate ascending sort
	SortDescend.gif	15 x 15	Used to indicate descending sort
Add	TreeAddButton.gif	40 x 15	Tree button to add elements
Edit	TreeEditButton.png	40 x 15	Tree button to edit elements
Delete	TreeDeleteButton.png	40 x 15	Tree button to delete elements
View	TreeViewButton.png	40 x 15	Tree button to view elements
Opt-in	TreeOptInButton.png	40 x 15	Tree button to opt-in
Opt-out	TreeOptOutButton.png	40 x 15	Tree button to opt-out
	ChartLayout.gif	270 x 160	Part of PDF preparation
	GroupChartPic.gif	270 x 160	Part of PDF preparation
	GroupColDGPic.gif	270 x 160	Part of PDF preparation
	GroupColPic.gif	270 x 160	Part of PDF preparation
	GroupColReportPic.gif	270 x 160	Part of PDF preparation

 <p>Report Header</p> <p>Row 1 Hdr # titles=4 Col span=1 Row 2 Hdr # titles=7 Col span=2</p> <table border="1"> <tr><td>Title text</td><td>Title text</td><td>Title text</td><td>Title text</td></tr> <tr><td></td><td>Title text</td><td>Title text</td><td>Title text</td></tr> <tr><td></td><td>Col Title</td><td>Col Title</td><td>Col Title</td></tr> <tr><td>Row Title</td><td>123</td><td>123</td><td>123</td></tr> <tr><td>Row Title</td><td>123</td><td>123</td><td>123</td></tr> </table>	Title text	Title text	Title text	Title text		Title text	Title text	Title text		Col Title	Col Title	Col Title	Row Title	123	123	123	Row Title	123	123	123	GroupHeadersPic.gif	270 x 160	Part of PDF preparation										
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Field 1 Val 3	123	123	123	123																													
Field 1 Val 4	123	123	123	123																													
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Val 3	↓	↓	↓	↓																													
Val 4	↓	↓	↓	↓																													
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Report	Report																																
Report	Report																																
 <p>Business Area 1 Business Area 2 Business Area 1 Data Project Business Area 2 Data Project</p>	AreaProjectFlow.gif	500 x 250	Exemplifies the Area / Project structure																														
	TransitionArrow.gif	30 x 20	Used as part of the Status Transition diagram																														
	TransitionArrow.gif	20 x 20	Used as part of the Status Transition diagram																														

Background, Text Colors and Menubar Icons

The following screen shots give the names of many of the behavior settings that can be altered within the Display category of behavior settings.

Refresh Group Issues Mass Update Issues Return Filters Print Page Owners of open bugs

Records 1 to 9 of 9 Sorted by owner

Status = Open AND Area = Bugs **← LABEL_COLOR** **WINDOW_BG_COLOR**
 Prepared by Bill Smith on 9/5/11 11:43 AM

	ID #	Owner	Status	Priority	Title
View Edit	10544	Bill Smith	Open	P 1	Testing the translation engine
View Edit	10454	Chris Robinson	Open	P 2	Test
View Edit	10552	George Miller	Open	P 3	The box label may be off center ← MOUSEOVER_COLOR
View Edit	10269	Greg Goldberg	Open	P 2	New entry point to be created
View Edit	10475	Jimmy Duncan	Open	P 4	This is a Coca-Cola issue reported by the customer when they were performing research into a issue #23232 ← BG_COLOR
View Edit	10272	Jimmy Duncan	Open	P 1	This will be mapped to EV
View Edit	10565	Susan Green	Open	P 1	Provision of TNCP problem
View Edit	10226	Susan Green	Open	P 1	Provision of TNCP problem
View Edit	10557		Open	P 3	There is a defect in the admin module when a user makes an error

Count: 9 records

Records 1 to 9 of 9 **← HIGHLIGHT_COLOR**

Refresh Group Issues Mass Update Issues Return Filters Print Page

Color Names

Submit Clear Print Page ExtraView Add Issue

Bugs Test Cases Helpdesk Assets **Customer Issues** Customers Feature Requests Knowledge Base

Select Customer **← TAB_OFF_COLOR** **TAB_ON_COLOR**
 Search Filters **← TAB_OFF_FONT_COLOR** **TAB_ON_FONT_COLOR**
 Customer *Any* Customer Contact Phone Number
 Customer Email Cell Phone

Select a Result
 Click to get results Fetch Selected Record(s) *Provide Filters and then Get Filtered Results*

Issue Details **HIGHLIGHT_COLOR** **LABEL_COLOR**

Customer Name Customer Contact Phone Number Cell Phone
 Customer Email Fax Number
 Source Email Category *None* Product Tracker Enterprise Module *None*
 Status New Originator Bill Smith Assigned To Software Bug?
 Due by Estimated Time (hrs) Actual Time (hrs) Time on call 00:00:00:22
 Title Priority *None*

Details Comments / Activity RMA Related Issues / Defects Contract Information

Description Screenshot

Attachments

Add	File Description	File Name	File Size
-----	------------------	-----------	-----------

Notification

Generate Email CC Email
 Include self on interest list Add users to interest list
 Include Customer users in notification

Submit Clear Print Page

Color Names

There is a behavior setting named DISPLAY_ICONS_ON_MENU_BUTTONS. When this is set to a value of YES, each of the menubar buttons has an icon on the button, alongside the text with the title of the button.

Main Screen Image Sets

To select any of these, alter the behavior setting named IMG_HOME in the Environment Settings menu beneath the Administration Advanced tab, and set the behavior settings to those shown. Consider using the themes to select a color set, as all settings are made for you.

Pale Blue Theme

These images offer theme of pale blue colors with light blue buttons.

Setting	Value
IMG_HOME	../images/images_light_blue/
BG_ALT_COLOR	#F7F7FB
BG_COLOR	#F0F1FC
BORDER_COLOR	#1292EA
LABEL_COLOR	#333366
MOUSEOVER_COLOR	#FAE992
REPORT_HEADER_FOOTER_COLOR	#ADBFD0
REPORT_SUMMARY_TOTAL_COLOR	#ADBFD0
SCREEN_HEADER_FOOTER_BG_COLOR	#D5DEE9
TAB_FONT_OFF_COLOR	#333366
TAB_FONT_ON_COLOR	#FFFFFF
TAB_OFF_COLOR	ADBFD0

TAB_ON_COLOR	3F5A7A
WINDOW_BG_COLOR	#FFFFFF

Dark Blue Theme

These images offer theme of rich blue colors with dark blue buttons.

Setting	Value
IMG_HOME	../images/images_dark_blue/
BG_ALT_COLOR	#EBF1F9
BG_COLOR	#E0EDF9
BORDER_COLOR	#1292EA
LABEL_COLOR	#405E87
MOUSEOVER_COLOR	#EFEFEF
REPORT_HEADER_FOOTER_COLOR	#B4C6F2
REPORT_SUMMARY_TOTAL_COLOR	#B4C6F2
SCREEN_HEADER_FOOTER_BG_COLOR	#D5DEE9
TAB_FONT_OFF_COLOR	#615499
TAB_FONT_ON_COLOR	#FFFFFF
TAB_OFF_COLOR	E0EDF9
TAB_ON_COLOR	3F5A7A
WINDOW_BG_COLOR	#FFFFFF

Light Blue Theme

These colors are a mix of light blues, with contrasting highlights.

ExtraView Add Issue

Bugs Test Cases Helpdesk Assets Customer Issues Customers Feature Requests Knowledge Base

Bug Details

Category * None * Status New Priority * None * Severity * None *

Title

Product Tracker Enter Module * None * Platform * None * Customer * None *

Release Found Originator Bill Smith Assigned To Owner * None *

Details Comments Test Case Related Issues Release Fix Info Source Control Release Notes

Description

Description Screenshot

Spell Check

Attachments

Add	File Description	File Name	File Size

Notification

Generate Email CC Email

Include self on interest list Add users to interest list

Include Customer users in notification

Submit Clear Print Page

Setting	Value
IMG_HOME	../images/images_light_blue/
BG_ALT_COLOR	#D5E3EB
BG_COLOR	#F5F5FF
BORDER_COLOR	#1292EA
LABEL_COLOR	#405E87
MOUSEOVER_COLOR	#E0E8F3
REPORT_HEADER_FOOTER_COLOR	#ADBFD0
REPORT_SUMMARY_TOTAL_COLOR	#ADBFD0
SCREEN_HEADER_FOOTER_BG_COLOR	#D5DEE9
TAB_FONT_OFF_COLOR	#FFFFFF
TAB_FONT_ON_COLOR	#FFFFFF
TAB_OFF_COLOR	ADBFD0
TAB_ON_COLOR	3F5A7A
WINDOW_BG_COLOR	#FFFFFF

Green Theme

A palette of green tones.

ExtraView Add Issue

[Submit](#) [Clear](#) [Print Page](#)

[Bugs](#) [Test Cases](#) [Helpdesk](#) [Assets](#) [Customer Issues](#) [Customers](#) [Feature Requests](#) [Knowledge Base](#)

Bug Details

Category * None * Status New Priority * None * Severity * None *
 Title
 Product Tracker Enter Module * None * Platform * None * Customer * None *
 Release Found Originator Bill Smith Assigned To Owner * None *

[Details](#) [Comments](#) [Test Case](#) [Related Issues](#) [Release Fix Info](#) [Source Control](#) [Release Notes](#)

Description

Description [Screenshot](#)
 Spell Check [➔](#)

Attachments

Add	File Description	File Name	File Size

Notification

Generate Email CC Email
 Include self on interest list Add users to interest list
 Include Customer users in notification

[Submit](#) [Clear](#) [Print Page](#)

Setting	Value
IMG_HOME	../images/images_green/
BG_ALT_COLOR	#E8F7E7
BG_COLOR	#FFFFFFE
BORDER_COLOR	#1292EA
LABEL_COLOR	#389538
MOUSEOVER_COLOR	#D4F0B4
REPORT_HEADER_FOOTER_COLOR	#98DB98
REPORT_SUMMARY_TOTAL_COLOR	#98DB98
SCREEN_HEADER_FOOTER_BG_COLOR	#DDE8A0
TAB_FONT_OFF_COLOR	#FFFFFFF
TAB_FONT_ON_COLOR	#FFFFFFF
TAB_OFF_COLOR	99CC99
TAB_ON_COLOR	389538
WINDOW_BG_COLOR	#FFFFFFF

Grey Theme

This theme provides a mixture of grey tones complemented by dark red highlights.

ExtraView Add Issue

[Submit](#) [Clear](#) [Print Page](#)

[Bugs](#) [Test Cases](#) [Helpdesk](#) [Assets](#) [Customer Issues](#) [Customers](#) [Feature Requests](#) [Knowledge Base](#)

Bug Details
 Category * None * Status New Priority * None * Severity * None *
 Title
 Product Tracker Enter Module * None * Platform * None * Customer * None *
 Release Found Originator Bill Smith Assigned To Owner * None *

[Details](#) [Comments](#) [Test Case](#) [Related Issues](#) [Release Fix Info](#) [Source Control](#) [Release Notes](#)

Description
 Description Screenshot
 Spell Check

Attachments

Add	File Description	File Name	File Size

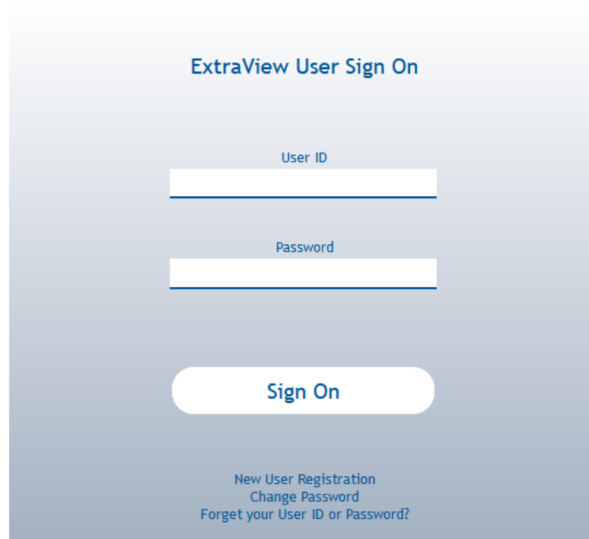
Notification
 Generate Email CC Email
 Include self on interest list Add users to interest list
 Include Customer users in notification

[Submit](#) [Clear](#) [Print Page](#)

Setting	Value
IMG_HOME	../images/images_grey/
BG_ALT_COLOR	#FAFAFA
BG_COLOR	#F6F6F6
BORDER_COLOR	#1292EA
LABEL_COLOR	#444444
MOUSEOVER_COLOR	#E7DBDD
REPORT_HEADER_FOOTER_COLOR	#BABABA
REPORT_SUMMARY_TOTAL_COLOR	#BABABA
SCREEN_HEADER_FOOTER_BG_COLOR	#DDDDDD
TAB_FONT_OFF_COLOR	#000000
TAB_FONT_ON_COLOR	#FFFFFF
TAB_OFF_COLOR	CCCCCC
TAB_ON_COLOR	990000
WINDOW_BG_COLOR	#FFFFFF

Sign On Screen

With color variations based on the user interface theme that is selected, The Sign On screen will appear similar to this:



There are several options that can be turned on and off beneath the Sign On button. These are switched with the following behavior settings:

Behavior Setting	Purpose
ALLOW_CHANGE_LOCALE_AT_SIGNON	If this setting is set to YES, then there is an additional prompt on the sign on screen, where users may elect to alter their language setting as they sign on. This only has meaning in a multi-locale system and where users are regularly changing which language they use
ALLOW_PASSWORD_CHG_AT_SIGNON	This setting controls the visibility of the Change Password link on the user sign on screen. If the value is YES, the link is shown, if the value is NO, the link is not shown. Also note this link is inoperable if the setting named LDAP_USER_LOOKUP is equal to YES.
CONTACT_ADMINISTRATOR	When this setting is YES, a prompt appears on the sign on page, with a default message of "Contact Site Administrator?". When this link is pressed, a mailto to the user defined in the setting named EMAIL_ADMINISTRATOR_USER_ID is started, allowing the user to send a message. When the setting is NO, the prompt does not appear. This feature may not work correctly with Asian character sets or European accented characters with all email clients. The mailto protocol allows pass-through of non-ASCII characters in the subject and body using the RFC-2047 standard, which is not implemented correctly in many email clients. At this time, the only mail client that appears to be fully compliant with the standard is Mozilla Thunderbird. The RFC-2047 allows the specification of the character set for the subject and body (and other header fields) for the mailto protocol URI. The character set that ExtraView uses is the character set specified in the EMAIL_CHARACTER_SET behavior setting, or UTF-8 if this is not specified. RFC-2047 only comes into play for these fields when non-7-bit-printable ASCII appear in the subject and/or body fields. Thus, the fields will be encoded when double-byte or European accented characters are present in those fields. ExtraView uses the "B" (base64) encoding in all cases to transmit non-ASCII characters.

USER_SELF_REGISTRATION	<p>You can allow your users to self-register, or you can be the registrar. When this is set to YES, a prompt appears on the Sign On screen, allowing a user to navigate to a page where they can register themselves as a user in ExtraView. When a user registers in this way, they will only be given the privileges of the user role defined in the behavior setting named LIMITED_USER_ROLE, but no user role is set in their account. When a user self-registers, an email is sent to an administrator, as defined by the following settings with Email Settings on the Email Notification administration menu. The user created will be in the business area and project defined by the behavior settings named SELF_REG_DEFAULT_AREA and SELF_REG_DEFAULT_PROJECT. Note that for users to be able to self-register, that the GUEST user role must have read and write permission to user fields. The most important of these is USER.USER_LAST_NAME. The user's default AREA and PROJECT is assigned from the behaviour settings named SELF_REG_DEFAULT_AREA and SELF_REG_DEFAULT_PROJECT. You should ensure that these behavior settings have valid entries when you wish to allow users to self-register. The EMAIL_NOTIFICATION setting must be set to YES as well, in order for user self-registration to be active.</p>
PASSWORD_FORGOTTEN	<p>When this is set to YES, then a prompt "Forgotten Password?" appears on the sign on screen and users will be able to reset their password without intervention from the administrator</p>

There is also a mechanism to add your own information into the Sign On screen, above and below the panel with the User ID and password. These are added with the utility found at **Admin --> Initial Setup --> Additional Sign On Information**. You can create suitable information using the HTML editors on that screen. This could provide a Sign On screen similar to this:



Remember - Compliance training for all hands, next Wednesday at 9:00 AM in the West conference room.

Details can be found by clicking here

ExtraView User Sign On

User ID

Password

Sign On

New User Registration
Change Password
Forget your User ID or Password?



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Licensed to: EXTRAVIEW CORPORATION - EVID: 1000
ExtraView Enterprise - Version carl_temp - Release 20.1 on WS_A
[ExtraView Support Site](#)

This release is in memory of our friend and colleague, Denise Hendsbee.

Backwards Compatibility with Versions prior to 20.1

For customers who want to retain their Sign On screen format when upgrading from versions prior to version 20.1, there is a behavior setting named GUI_VERSION. Simply delete the value in that setting and the Sign On screen will revert to the prior format.

Consider this example sign on screen:



ExtraView User Sign On

User ID

Password

[Change Password](#)

[New User Registration](#)

[Forgot your User ID or password?](#)



Health. Education. Services. Support.



It is composed of the following areas:



These areas are configurable in the following way:

Sign On Logo Area

This is a single image whose location is defined by the behavior setting named SIGN_ON_SCREEN_LOGO. The default for this is the image named CompanyLogo.gif, but you can set this to any valid image file. You can apply a CSS style to the image with the behavior setting named SIGN_ON_SCREEN_LOGO_STYLE. Typically you can use this style to provide an absolute position to the image

Sign On Area

This area is generated internally by ExtraView and its presentation may not be altered. However, it's background color is set by the display theme chosen

Display Area 1

This is an optional area that is insert onto the sign on screen within an IFRAME. It may contain any valid HTML. The HTML is located on a server at the location defined in the behavior setting named DISPLAY_SIGNON_URL_1. The size of the IFRAME area is 500 pixels wide by 600 pixels high. The behavior setting named DISPLAY_SIGNON_PROD_INFO must be set to a value of YES to turn this feature on

Display Area 2

This is an optional area that is insert onto the sign on screen within an IFRAME. It may contain any valid HTML. The HTML is located on a server at the location defined in the behavior setting named DISPLAY_SIGNON_URL_2. The size of the IFRAME area is

350 pixels wide by 300 pixels high. The behavior setting named DISPLAY_SIGNON_PROD_INFO must be set to a value of YES to turn this feature on

Cascading Style Sheets

If ExtraView Corporation is hosting your installation, you do not have direct access to the file system of the server to configure, alter or use this feature without contacting ExtraView support.

Each user can select between one of three font sizes as a personal option. These are named small, medium and large. When the user selects one of these, ExtraView loads a corresponding cascading style sheet (CSS). The style sheets installed by ExtraView are within your web server environment, defaulting to the directory named IMG_HOME/stylesheets. This contains a number of sections with font sizes and other style parameters.

If you want to create your own version of the style sheets, it is typical that you want to do this in conjunction with creating your own image set for all buttons. It is recommended that you retain the same structure of the existing image sets and stylesheets by creating a new directory and subdirectory within locales/en_US/images and copy an existing image set into this directory. You use the IMG_HOME behavior setting to point to this new directory, and then make all your changes within there. In this way future upgrades of ExtraView will not write over your files, although you may need to extend these files if new entries, images or stylesheet settings are part of the upgrade. Note that if you are using or creating localized versions of the image sets, you will need also to place the stylesheets in other locale directories. Your stylesheets/ directory must contain the following files:

File	Purpose
small.css	The main stylesheet when the user selects the <i>small text personal option</i>
medium.css	The main stylesheet when the user selects the <i>medium text personal option</i>
large.css	The main stylesheet when the user selects the <i>large text personal option</i>
dnd.css	The style used to control the presentation of drag and drop objects
menustyle.css	The style of the menu used at the top of most screens
popupwindow.css	This style is used for window popups that are generated from within the browser, as opposed to being generated from the server
popupwindowsafari.css	This is similar to popupwindow.css, but is only used for the Apple Safari browser
tooltip.css	The style of popup tooltips that appear on many screens

Typically you will not alter any of the existing styles. If you do so, then whatever changes you apply will need to be reapplied when you update your site.

Also, you must be careful in altering the existing styles as some of these are used for accurate positioning or sizing of objects on ExtraView screens. As a rule of thumb, you can alter colors safely, but you should be careful about altering all other style information.

The recommended strategy for altering styles is to add additional entries in the file stylesheets/user_stylesheets/user_stylesheet.css. You can override any of the built in styles or add your own styles within this file.

Consult a good HTML or Cascading Style Sheet manual for full details of options available to set up alternate styles.

Configure Quickfind

It is recommended that you set up and configure Quickfind, a mechanism that greatly increases the speed of text searches through the ExtraView database. This utility defines exactly what text will be indexed, and where the indexes will be stored. The Quickfind indexing mechanism is based upon the Apache Foundation Lucene technology.

The installation instructions are found [here](#).

The instructions to manage Quickfind are found [here](#).

Operational Task Menu

The Operational Task menu contains the majority of administrative functions that are used day-to-day, to maintain key data such as user information, and to manage logs and sessions. More frequently changing administrative data, such as that used to define business calendars, report schedules and escalation rules are also found here.

User Account Maintenance

This section of the Administration Guide discusses users, how they are defined and how they are maintained. It also explains how user roles are formed and used. Security is a strong point within ExtraView and there is an explanation of how this may be configured in many ways to enhance your ExtraView installation.

Another key concept surrounding users is privacy and how issues may use a feature known as Privacy Groups.

ADMIN User Account Properties

This section deals with all aspects of user administration. Within this section, you will learn how users are created and maintained.

The ADMIN User Account

This account exists in all ExtraView installations and is provided at no cost. This user has special properties and should not, under any circumstances, be used to create and update issues. This is because it bypasses virtually all of the security permissions and workflow controls within the system. Because of this, you should take extra care with the password for this user. It is provided primarily for three reasons:

- This is the user account you use when ExtraView is first installed, allowing you to enter and create your own user ID's.
- If you ever get into a situation where you accidentally lock yourself out of ExtraView, for example by turning off all permissions, then this account will still be active.
- On occasions ExtraView Corporation support personnel may direct you to use this account to help identify a problem.
- If you are utilizing the behavior setting named `USER_SELF_REGISTRATION`, then users who self register will be given the default business area and project specified in the behavior settings named `SELF_REG_DEFAULT_AREA` and `SELF_REG_DEFAULT_PROJECT`.

Accessing User Accounts Without the Needing to Know a User's Password

The ADMIN user has one other property. It allows the administrator to sign in as a different user, without knowing that user's password. This can be very useful for problem solving, or to help a user set up a feature such as their Home Page or a report. To achieve this, the ADMIN user signs on with the following convention:

```
ADMIN|OTHER_USER_ID
```

where they substitute the other user's ID for `OTHER_USER_ID`. They must, of course, enter the ADMIN user password.

Adding Users

Once the required user roles have been created, an administrator may add new users to any of the roles that are active within the system and to which they themselves have permission. Note that users may be assigned privileges for more than one role at a time. From the Administration menu, under the **Users** tab, click the **User Account Maintenance** link. A screen similar to the following screens appears:

User Account Maintenance Return Email users Print Page

There are currently 10 activated named licensed users.
This installation is licensed for 20 users.

Add Add a new user

Select users by activation status or role Select users by privacy group

- Bank of America
- Bear Inc.
- Chrysler
- Cisco

The letters in the list indicate the first character of the filter column selected. First, select the column to use as the filter. Secondly, click on a letter to produce a list of just these items, or enter a search pattern, including a wildcard (*). You may also use the Export button to produce a CSV file of the results currently displayed on the screen

1 Select filter column for report

2 Click on a letter A | B | C | D | E | G | I | J | M | O | S | T | <all>

or enter a search expression and press the Enter key or click the Go button

	User ID	User name	Email Address	Company	Enabled	License type	Last access	Created	Last updated
<input type="button" value="Edit"/>	ADMIN	System Administrator	admin@xxx.com	Superior Software Corp	Yes	Named	1/23/07 13:57	ExtraView 10/1/03 0:00	System Administrator 10/19/06 16:39
<input type="button" value="Edit"/>	BSMITH	Bill Smith	bsmith@x.com	Superior Software Corp	Yes	Named	1/31/07 15:02	ExtraView 10/1/03 0:00	Bill Smith 1/30/07 14:25
<input type="button" value="Edit"/>	CSR	Chris Robinson	csr@xxx.com	Superior Software Corp	Yes	Named	8/2/06 3:59	ExtraView 10/1/03 0:00	Bill Smith 7/14/06 11:18
<input type="button" value="Edit"/>	DEV	Jimmy Duncan	jimmy@xxxx.com	Superior Software Corp	Yes	Named	1/7/07 0:02	ExtraView 10/1/03 0:00	Bill Smith 1/14/07 12:06
<input type="button" value="Edit"/>	EVP4D	SCM Daemon		Superior Software Corp	Yes	Named	8/10/05 11:36	ExtraView 10/1/03 0:00	Bill Smith 11/22/05 23:19
<input type="button" value="Edit"/>	GREG	Greg Goldberg	greg@extraview.com	Superior Software Corp	Yes	Named	8/10/05 11:36	ExtraView 10/1/03 0:00	System Administrator 8/9/05 10:54
<input type="button" value="Edit"/>	GUEST	Guest User	guest@acme.com	Guest Company	Yes	Named	8/10/05 11:36	ExtraView 10/1/03 0:00	Bill Smith 7/19/06 16:57
<input type="button" value="Edit"/>	IT	George Miller	gmillar@xxx.com	Superior Software Corp	Yes	Named	8/10/05 11:35	ExtraView 10/1/03 0:00	George Miller 8/10/05 11:35
<input type="button" value="Edit"/>	JOHN	John Customer	john@xxx.com	ABC Software	Yes	Named	8/10/05 11:34	ExtraView 10/1/03 0:00	System Administrator 8/9/05 15:30
<input type="button" value="Edit"/>	MARY	Mary Dickens	mary@ssc.com	Superior Software Corp	Yes	Named	8/10/05 11:31	ExtraView 10/1/03 0:00	Mary Dickens 8/10/05 11:33
<input type="button" value="Edit"/>	QA	Mary Brown	qa@xxx.com	Superior Software Corp	Yes	Named	6/30/06 14:44	ExtraView 10/1/03 0:00	Mary Brown 6/30/06 14:44
<input type="button" value="Edit"/>	SHUNT	Sally Hunt	shunt@extraview.com	Superior Software Corp	Yes	Named	6/4/06 18:00	ExtraView 10/1/03 0:00	System Administrator 6/4/06 18:02
<input type="button" value="Edit"/>	TEST	Susan Green	sgreen@xxx.com	Superior Software Corp	Yes	Named	6/20/06 3:09	ExtraView 10/1/03 0:00	Susan Green 6/20/06 3:09

13 record(s) selected from a total of 13 record(s) Return Email users Print Page

User Accounts screen

Note the search capabilities of the screen. Not only can you choose to search by active and inactive users, but you can choose to search by any of the columns of information in the list, such as by **User name**, or **Company**. Use the filter column for the report specified in the select list, then either click on a letter that represents the first character of each entry in the list, or enter an expression in the text input box with the entry **Enter search expression**. You can then press the **Go** button to execute the search and retrieve the records that match the filter and search expression.

Note that if there are a large numbers of users who would be returned to the screen with the filter you set, only the first set of users will be displayed, and there is an opportunity to page through the results.

If you press the **Export** button after executing the search, then all records that are displayed on the screen will be exported to a CSV (Comma Separated Value) file. You can use this file outside of ExtraView for any purpose. The export file will contain any role and attribute information in the form of delimited lists within a single cell in the spreadsheet.

Click the **Add** button to add a new user. The following screen appears:

Submit Cancel Print Page Add new user ?

PERSONAL INFORMATION PERSONAL OPTIONS REPORT OPTIONS NOTIFICATION OPTIONS PRIVACY GROUPS ATTRIBUTES

User Information

User ID ?

First name ?

Last name ?

Password ?

Verify password ?

Email address ?

Company name ?

Address ?

City ?

State / Province ?

Zip / Postal code ?

Country ?

Work phone ?

Home phone ?

Cell phone ?

Fax ?

Pager ?

Security Information

Enabled User ?

Expiry Interval ?

Expire password now ?

Days to password expiry ?

Select user roles ? Administrator
 Customer
 Customer Support
 Development Engineer
 IT Support
 Quality Assurance
 Tester


Click to check or uncheck all the groups

Default Business Area & Project


Set default Business Area ?

Set default Project ?

Photograph ?



Signature ?



Submit Cancel Print Page

Add New User screen

The tabs across the top of the screen are for the following purposes:

Tab	Purpose
Personal Information	The key demographic details of the user. All the essential fields to set up and maintain a user are on this tab
Personal Options	The user's personal options that they will also be able to control by themselves
Report Options	The reporting options for the user, including their Home Page reports
Notification Options	The user's email notification options
Privacy Groups	This tab only appears if the behavior setting named ENABLE_PRIVACY_GROUPS is set to YES. The tab is where you control each user's access to privacy groups

Personal Information

This is where you assign the user a unique User ID (which they will use when logging in to the system), their password and other information about the account. You must enter data into all of the required fields, plus any optional fields that you wish to complete.

Submit Cancel Print Page Add new user ?

PERSONAL INFORMATION PERSONAL OPTIONS REPORT OPTIONS NOTIFICATION OPTIONS PRIVACY GROUPS ATTRIBUTES

User Information

User ID ?

First name ?

Last name ?

Password ?

Verify password ?

Email address ?

Company name ?

Address ?

City ?

State / Province ?

Zip / Postal code ?

Country ?

Work phone ?

Home phone ?

Cell phone ?

Fax ?

Pager ?

Security Information

Enabled User ?

Expiry Interval ?

Expire password now ?

Days to password expiry ?

Select user roles ? Administrator
 Customer
 Customer Support
 Development Engineer
 IT Support
 Quality Assurance
 Tester


Click to check or uncheck all the groups

Default Business Area & Project


Set default Business Area ?

Set default Project ?

Photograph ?



Signature ?



Submit Cancel Print Page

Basic Information screen

User Information

User Information Fields	Purpose
User ID	The name that the new user will use to login to the system (required). User names the following letters, numbers and characters: A – Z 0 – 9 - _ . @ The user ID must be unique. User ID's may be up to 128 characters in length
Alternative User ID	This field is turned off with the security permission keys named USER.LOGIN_ID and USER.LOGIN_ID_ON_ADD. When you enter the User ID for a new user, the alternative User ID is populated with the same value. This may be changed. Alternative User ID's are available to allow the changing of a user's sign on ID. User ID's are attached to many items of data within ExtraView and are used as foreign key constraints in the database. It would be complex to change all of these if you required to change the User ID for a purpose such as a name change for a user. The Alternative User ID allows the administrator to change the sign on credentials for a user, yet maintain underlying data integrity within the database
First Name	First name. On the Change a user's details screen, you can control access to this field with the security permission key named USER.USER_FIRST_NAME
Last Name	User's last name (always required). Note that if you attempt to add a user where the combination of first name and last name already exists, then you will receive a warning, but you will be able to go ahead with the update if you decided this is correct. . On the Change a user's details screen, you can control access to this field with the security permission key named USER.USER_LAST_NAME. If the administrator does not have write permission to this key, they are prohibited from creating new users. The field is always visible as ExtraView is unusable if a user's last name is not visible. Thus you cannot turn off read permission for the field.
Password	The user's password. You can control access to this field with the security permission key named USER.USER_SECURITY_PASSWORD. The only occasion that you are likely to make this field not visible is when you are using a LDAP server for user authentication. There is also a security permission key named USER.USER_PASSWORD_MANAGEMENT. This controls the ability to expire user's passwords, and the time interval information associated with passwords, such as the password expiration interval and the number of days

	until the password expiry. Write access is needed to alter these fields. . If the administrator does not have write permission to USER.USER_SECURITY_PASSWORD, they are prohibited from creating new users.
Verify Password	Retype the User's password. The same security permission key as for the Password field is applicable.
Primary Email Address	The email address to which automatic email notification will be sent. This is required if the behavior setting named EMAIL_NOTIFICATION is set to YES. Note that if you attempt to add a user where the email address already exists, then you will receive a warning, but you will be able to go ahead with the update if you decided this is correct. The security permission key named USER.USER_EMAIL_ADDRESS controls access to this field, but only when editing a user. The user's email address is always writable when you are creating a new user. When you are updating a user, this field may be given read or read/write permission, or no permissions, in which case it will be invisible.
Job Title	The user's job title. Permission to access this field is controlled with the security permission key named USER.USER_JOB_TITLE.
Company Name	For internal users, this should reflect the same value as COMPANY_NAME in installation setup, especially if you are using the Privacy Group feature of the product as this match is used to determine whether a user may or may not see specific issues. As this field is instrumental in setting up privacy groups accuracy in setting the entry here is important. If you have several or many users in different companies that all access your ExtraView installation, you should consider using the COMPANY_NAME_LIST_UDF setting to provide a list of company names, to complement the manual entry of each company name and potentially spelling these differently for different users. The control for this is a behavior setting named COMPANY_NAME_LIST_UDF. If this is empty, then the Company Name for each user is entered and updated manually. When a new user is created, the field is given a default value of the value of the COMPANY_NAME behavior setting. If you place the name of a User Defined Field (UDF) with a display type of List into the COMPANY_NAME_LIST_UDF behavior setting, then the Company Name becomes a choice of entering a new value or selecting from the list of these values, eliminating the possibility of misspellings and simplifying the population of the field. The UDF field is a normal UDF in all respects, and you may share its use on add and edit screens as well as use it on reports. Note that the internal company name configured in the COMPANY_NAME behavior setting, does not appear in this list and is never added to the list. When a user self registers to access ExtraView, this field is set to a value of their email address, ensuring uniqueness and that the user cannot become a member of a Privacy group, thereby seeing issues which he is not authorized to view. When updating the user's account, this field can be controlled with the USER.COMPANY_NAME field.
Address	This is two-line field that is always present on the user account screen
City	The city of the user. This is always present
State / Province	The state or province of the user's address. This is always present
Zip / Postal Code	The zip or postal code of the user's address. This is always present
Country	The country of the user's address. This is always present
Work phone	The user's work phone. This is always present.
Home phone	The user's home phone. This is always present.
Cell phone	The user's cell phone number. This is always present.
Fax	The user's fax number. This is always present.
Pager	The user's pager number. This is always present.
User field 1 - User field 10	This series of ten fields are turned off by default, using the security permission keys named USER.USER_DEFINED_1 through USER.USER_DEFINED_10. You may enable the security permission keys and alter the titles of these fields with their entries in the inbuilt field section of the data dictionary, thereby using these fields for any purpose.

Security Information

Security Information Fields	Purpose
Enabled User	This checkbox controls whether the user is enabled or disabled. User's accounts are never deleted from ExtraView; instead they are disabled and the user may no longer access their account. In addition, the user's name will not appear selectable in lists in the normal fashion. If enabled with the behavior setting named ALLOW_SEARCH_DEACTIVATED_USERS, users may still use deactivated users as a filter to search for records. The reason that user's accounts are not deleted but rather deactivated is because you may still wish to view users' names who originated issues or otherwise have their name set as a value in a field within an issue.
Named User	This field appears if you have a mixed mode license to ExtraView with both named and concurrent users. If this box is checked, then the user will occupy a named license, else they will occupy a concurrent license
Expiry Interval	This is a number that defines how many days should elapse between the user being prompted to change his password.If the value is zero, the behavior setting named PASSWORD_EXPIRE_TIME_DAYS is used to

	determine the interval.
Expire Password Now	If the administrator checks this option, then the user's password is expired immediately. On the next occasion that the user attempts to sign on, they are forced to alter their password. Note that this option does not appear if an LDAP server is controlling user authentication.
Days to password expiry	The label to this field also shows the number of days left, before the password expires. You can set this field to any number of days to choose a new expiry date. If you set this number to -1, the current password may be used once, and the user must provide a new password on the next occasion they sign on. If the behavior setting named PASSWORD_EXPIRE_TIME_DAYS is set to zero, then user's passwords are not expired automatically.
Select User Roles	Functional teams where members have the same set of privileges. Simply click on one or more roles that you want the user to be able to adopt. If the user is not granted any role, then they will assume the role nominated by the behavior setting named DEFAULT_USER_ROLE. If they are granted more than one role, then the user will see a select list in the navigation bar, and they can assume any of their valid roles by making a selection from this list

Default Area & Project

Default Area / Project Fields	Purpose
Set Default Area	This is where you set the default Business Area for the user. This is the Business Area they will point to when they sign on
Set Default Project	This is where you set the default Project for the user. This is the Project they will point to when they sign on

Photograph

User's photographs can be uploaded. Valid image file types are GIF, JPG and PNG. Images can be cropped and they are automatically resized to be correct for inclusion on screens and reports. Once a user's photograph is uploaded and saved, you may use it as part of user fields within *add* or *edit* screen of an issue and on reports.

You may also refer to the user's photograph within Business Rules, for example to assign the photograph to a UDF field. If you have a field name USER_PHOTO on a screen, you can populate it within rules as follows:

```
<== load ==>
USER_PHOTO = USER.{image};
```

Signature

If you wish to store users' signatures, they can be uploaded. Valid image file types are GIF, JPG and PNG. Signatures are resized to 750 pixels wide by 300 pixels in height. Once a user's signature is uploaded and saved, you may use it within workflow, for example to print the user's signature on outgoing correspondence. Assume the correspondence to be printed is held within an HTML Area field on the *edit* screen of your issues. Placing the signature within the correspondence is a two-step process. First, create and hide a field on the *edit* screen which will receive the signature. This field is populated with rules, such as:

```
<== load ==>
USER_SIGNATURE = USER.{signature};
```

Within the HTML Area field, include a token for the signature field. In this case, the token would be \$\$USER_SIGNATURE\$\$.

When the HTML Area field is used as the content for an email (probably using a rule that sends the HTML Area field as an email, the token is replaced with the image of the user's signature.

Signatures are typically scanned into your computer, and then uploaded into ExtraView. It's important to upload a signature of a usable size. There is no point scanning an entire sheet of paper with the signature somewhere in the middle, as the white space surrounding the signature will be included in the uploaded image. Scanning software often includes tools that crop images, and most desktop operating systems such as Microsoft Windows include tools that crop images. There are also many third-party utilities that perform the function. To assist you in scanning a signature of the correct size, use the template that you may [download here](#), to aid in scanning an image to the correct size, before cropping. Print the template and ask users to sign within the box before the signature is scanned.

Personal Options

The personal options screen allows the administrator or user to set their basic parameters for their use of ExtraView.

Update User Cancel Print Page Change user's details: BSMITH (Enabled) ?

PERSONAL INFORMATION PERSONAL OPTIONS REPORT OPTIONS NOTIFICATION OPTIONS PRIVACY GROUPS

Text size ? Medium ▾

Language ? English(United States) ▾

Time zone ? (GMT -8:00) America/Los_Angeles ▾

Date format ? Long w/time: December 9, 2016 3:50:52 PM PST ▾

Custom date mask ?

Time in 24 hour format ? Yes No

Browser character set ? UTF-8 Unicode 8-bit Transfer ▾

MS Office char. set ? UTF-16LE Unicode 16-bit LittleEndian ▾

File attachment char. set ? UTF-8 Unicode 8-bit Transfer ▾

Email character set ? UTF-8 Unicode 8-bit Transfer ▾

Chart / PDF output font ? Arial ▾

Start page ? Report Screen ▾

Workspace Settings

Default Workspace ? Test Case Management Workspace (Administrator) ▾

Size of icons on panels ? Small Large

Drilldown from Reports ? Reuse the same workspace panel Create new workspace panels

Auto-scroll to Panels ? Yes No

Scroll Panels ? Panels Need Focus Panels Do Not Need Focus

Vertical Offset for New Panels ? Yes No

Update User Cancel Print Page

Personal Options screen

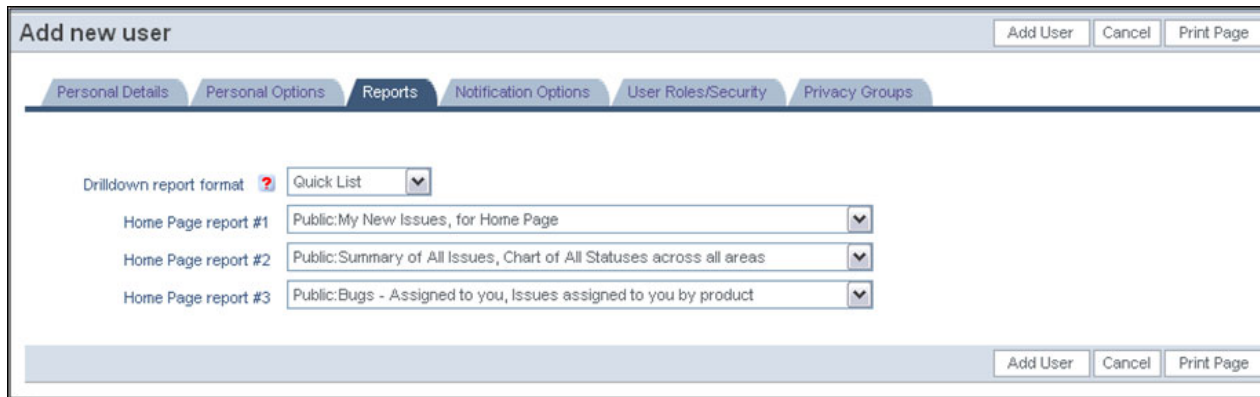
Personal Option Fields	Purpose
Text size	Choose Small, Medium or Large from the list, according to the size of the font to be used for the user's display.
Language	Choose from the list of available languages for the installation. The user's user interface to ExtraView will then use all localized messages available for the installation.
Time Zone	Time zone selection applies for the user system-wide
Date Format	Date format selection applies for the new user. All places where the date is visible to the user will use this format. Alternatively a custom date mask can be set, and a date format designed to the specification required
Custom Date Format	The date mask allows the setting of a date format, should the inbuilt formats not be sufficient for your needs. See Appendix A for a detailed explanation of custom date formats.
Time in 24 Hour Format	Should be Yes or No
Chart / PDF output font	The font saved in the user's profile must be a valid chart font for the locale in which the user is configured. If it is not valid, then the behavior setting for DEFAULT_CHART_FONT is inspected; if the default chart font is not valid, then the first valid font from the list of available fonts on the application server is used. If ExtraView cannot find the font or a font without the correct character set is defined, it is likely that both charts and reports sent to PDF output will not display correctly. This is most typically an issue with Asian users who require double-byte character sets.
Start page	The user may select a start page. This is the page to which a user is directed, when they first sign on to ExtraView. By default, this is the Home Page, but it may be selected from the list of available start pages in this list. This option may be turned off completely, with the behavior setting named USER_DEFINED_START_PAGE. The administrator may add additional start pages with the advanced administration feature named Manage the list of start pages available to users . The user must also have permission to use a start page, before they are allowed to view the page. The initial values available, when this feature is turned on are the Home Page, the Search / Report page, the Add Issue screen and the Administration screen
Default Workspace	This provides a choice between all the saved workspaces for a user, as to which one will be opened when the user first signs on to a workspace. This only appears if the user has permission to access workspaces

Drilldown from Reports	This provides an option for the user when they are using workspaces. The user may either choose to drilldown from queries and reports to a single Quicklist panel within the workspace, or to open a different workspace for each drilldown operation. This option only appears if the user has permission to access workspaces
Browser Character Set	This only appears to administrative users. Choose the character set for the user's display. Typically this is set to UTF-8 Unicode 8-bit Transfer . It is unlikely that this should ever be set to anything other than UTF-8 Unicode 8-bit Transfer .
MS Office Char. Set	This only appears to administrative users and to individual users when their language is not set to the base locale of English. Choose the character set for exporting information from ExtraView to Microsoft Office products. The default is UTF-16LE Unicode 16-bit LittleEndian . This setting works with most language versions (and certainly all English language versions) of Microsoft Office products. If the user has difficulty reading some characters on reports exported to Microsoft Excel or other Office products, they should find out which character set their Microsoft product is set to use, and make the setting in this list the same.
File Attachment Char. Set	This only appears to administrative users and to individual users when their language is not set to the base locale of English. This is the default character set for attachments that the user will upload when they are managing issues. The initial value of this default is provided in the behavior setting named DEFAULT_ATTACHMENT_CHARSET .
Email character set	This only appears to administrative users and to individual users when their language is not set to the base locale of English. This is the default character set that is used for sending email to the user. The default for this is UTF-8. The default can be changed with the behavior setting named EMAIL_CHARSET
Workspace Settings	<p>If you have been granted permission to utilize workspaces, then you may set some options for your personal preferences.</p> <ul style="list-style-type: none"> • Default Workspace - you can set the default workspace to be loaded when you first enter the workspace feature • Size of icons on panels - Choose small or large icons in the panel menubars • Drilldown for Reports - you can select whether your personal preference is to minimize the number of Quicklist panels opened when you drill down from reports. You may prefer to keep this number to a minimum, or to create a new panel with each new drilldown • Auto-scroll to Panels - you may choose what action that ExtraView takes when you click on a panel within a workspace. The default is that the panel obtains the focus and you work within that. However, you can choose to have ExtraView auto-scroll as much of the panel as it can, into view, from the top left-hand corner of the workspace that's visible. The first choice is better if you do a lot of dragging and dropping of issues between panels, as the panels will remain in their place within your browser. The second choice is better if you work mainly in <i>add</i> or <i>edit</i> screens, and want to see as much of their contents as possible, when you click on a panel. In both cases, clicking on a panel's icon within the navigation bar, will auto-scroll the viewing area of the workspace to make as much of the panel visible as is possible • Scroll Panels - setting this to Panels Do Not Need Focus allows you to scroll the workspace canvas or any workspace panel or element within that panel when the mouse pointer is over the respective area. Panels do not get focus when this happens. The Panels Need Focus option signifies that you can only use your mouse to scroll the panel and its elements, if the panel has focus. You need to sign off and on again for this to take effect • Vertical Offset for New Panels - If this is set to Yes then new panels are opened to the right and down from the position where the previous panel was opened. If you set this to No then new panels are only opened to the right of the previous panel, and at the same vertical offset.

Report Options

Report Option Fields	Purpose
Drilldown Report Format	Quicklist or Detailed Report
Home Page report #1	Choose the report that you want to appear first on the Home Page for the user. This option only appears when editing the user account.
Home Page report #2	Choose the report that you want to appear second on the Home Page for the user. This option only appears when editing the user account.
Home Page report #3	Choose the report that you want to appear third on the Home Page for the user. This option only appears when editing the user account.

Note that the ability to select and set the reports on a user’s Home Page is controlled by a security permission key named SR_SET_HOME_PAGE_REPORTS. If the user does not have read access to this permission key, then they may not change their Home Page reports. However, this ability is usually retained by the administrator so it is possible for the administrator to select and freeze the reports a user sees on their Home Page.



Report Options screen

Notification Options

These options control how various notifications are made to the user.

Notification Option Fields	Purpose
Receive notifications at your primary email address	If this is set to Yes, the user will receive email at his primary email address. The primary email address is set on the Personal Details tab
Receive notifications at alternative email address	If this is set to Yes, the user will receive email at his alternative email address. The alternative email address is set on the next option. The user role must have read/write permissions to the security permission key named USER.USER_EMAIL_ADDRESS in order to control this address
Alternative email address	This is the alternative email address, controlled by the previous prompt. The user role must have read/write permissions to the security permission key named USER.USER_EMAIL_ADDRESS in order to control this address
Receive notification on own updates	Enabled will receive automatic email Disabled will not receive automatic email
Receive attachments on own updates	This allows a user account to be configured such that attachments to email notifications will be suppressed. The user will need to sign into their account to view attachments
Email format	HTML, Plain Text (brief), or Plain Text (full). The brief option provides just a few fields, enough to recognize the issue
Interest lists	Allows the opt-in or opt-out to interest lists. See the section in this guide on interest lists for full information. The key reason for interest list management on this screen is to allow users to opt-in and opt-out of interest lists to which they have permission
Escalation rules	Allows the opt-in or opt-out to escalation rules. See the section in this guide on escalation rules for full information. The key reason for escalation rule management on this screen is to allow users to opt-in and opt-out of escalation rules to which they have permission

Security permission keys separately control access to the interest list on the notification option tab for end-users. The CF_INTEREST_LIST permission key is used for this purpose. Without read/write access to this key, the end user cannot see or alter the interest list.

Change user's details: BSMITH (Enabled) Update User Cancel Print Page

Personal Details | Personal Options | Reports | **Notification Options** | User Roles/Security | Privacy Groups

Receive notifications at your primary address Yes No

Receive notifications at alternative email address Yes No

Alternative email address

Receive notification on own updates Yes No

Email format

Interest Lists **All Interest Lists**

- Interest lists I may join
 - Global Interest Lists
 - Opt-in** High Priority issues for the Tracker Product
 - Opt-in** Product = Tracker
 - Business Area : Knowledge Base
- Interest lists I belong to
 - Global Interest Lists
 - Opt-out** Customer = Bank of America
 - Opt-out** Product = Tracker Enterprise
 - Opt-out** Tracker Lite Documentation Issues
 - Issue Interest Lists

Escalation Rules **All Escalation Rules**

- Escalation rules I may join
 - Business Area : Customer Issues
 - Opt-in** Escalate Customer P 2 Issues 1 day after creation, if they are still open
- Escalation rules I belong to

Update User Cancel Print Page

Notification Options screen

Privacy Groups

Personal Option Fields	Purpose
Privacy Groups	Privacy Groups enable certain groups within ExtraView to view different specific sets of issues without making the issue PUBLIC (all users can see the issue) or PRIVATE (only internal users can see the issue)

The screenshot shows the 'Add new user' interface with the 'Privacy Groups' tab selected. The main content area is titled 'Set privacy groups' and contains a list of 16 company names, each with an unchecked checkbox to its left. The companies listed are: Bank of America, Bear Inc., Chrysler, Cisco, Citibank, Corona, Evian, GE, Hewlett Packard, Liberty, NEC, NTT, Pfizerx, SoftWorks, Toyota, and Trapeze Networks. Below this list is a checked checkbox followed by the text 'Click here to check or uncheck all the groups in the list'. The top and bottom of the window feature navigation buttons: 'Add User', 'Cancel', and 'Print Page'.

Privacy Group screen

When you have completed the entries for the user on each of the above screens, click the **Add User** button.

Note: If users are assigned to more than one user role, they should be informed they should click the **User Role** link to toggle amongst available group designations.

Note: If a new user is created and not added to any User Role, ExtraView will automatically assign them to the role defined in the behavior setting named LIMITED_USER_ROLE. This is typically the customer or guest user role.

Note: When you create a new user, the only Home Page Reports that are offered within the list boxes are Shared Reports.

Note: If you attempt to create a new user and either the combination of the first and last name already exists, or the email address is already in use with another user, you will receive a warning and you are asked to confirm that you want to create the new user account.

User Attributes

User attributes are used in two ways:

1. User Attributes are a configurable feature which is typically supported by custom code. How fields that are set up as user attributes are used is totally dependent upon the custom code. A typical use case may be to control which issues a user may read and update, by using field values within the issue to identify the user's eligibility to view and update the issue. Issues which do not have the appropriate values that correspond with the user's attributes will be totally invisible to the user, both for updating and reporting
2. The field values that are set may be applied as filters on reports, using the value * **User's Profile Value** * that will appear in the list of values for a field, if and when the attribute is set within this screen. This allows reports to take on the values as filters for any user, without the need to set the filter values manually.

Setting up user attributes requires the following steps:

- Provide permission to the user role(s) that will be allowed to administer the user attributes. This is accomplished with the permission key named SE_USER_ATTRIBUTES
- Use the above role to modify the fields in the data dictionary which will be used to control the user attributes. It is not recommended that you set up a mechanism with too many fields, as it will become cumbersome for the administrator. Typically two to four fields are used. Edit the fields, and set a value of **Yes** in the field **Used for user attributes**. Optionally set the **Sort**

sequence for user attributes field to sort the fields on the user account administration screen. Note that you may only configure List, Popup List, Tab and Radio Button display types to use this feature

- Go to the user account administration screen and edit a user. Note there is a new tab on the display, with the default title of **ATTRIBUTES**. When you click on this tab, you will see a screen similar to this:

The screenshot shows a web interface for editing user details. At the top, there are buttons for 'Update User', 'Cancel', and 'Print Page'. The title is 'Change user's details: BSMITH (Enabled)'. Below the title is a navigation bar with tabs: 'BASIC INFORMATION', 'PERSONAL OPTIONS', 'REPORT OPTIONS', 'NOTIFICATION OPTIONS', 'PRIVACY GROUPS', and 'ATTRIBUTES'. The 'ATTRIBUTES' tab is selected. The main content area has a 'Directions' section with a text box containing instructions: 'The fields presented on this screen are used in conjunction with a customization. This customization allows a set of fields and their values within any issue to be used to control the visibility of the issue to the user. The customization provides the logic to allow the appropriate level of access to issues. Please see the Administration Guide for more details, under Site Configuration, Custom Access. The customization can replace this message with directions appropriate to the installation.' Below this is a 'Source' dropdown menu with the following options: '* None *', 'Email', 'Fax', 'Letter', 'Phone', and 'Other'. At the bottom, there are again buttons for 'Update User', 'Cancel', and 'Print Page'.

When complete, the administrator uses the fields on the screen to select the values that are used within the custom code to set the desired functionality

- Develop the custom code to support the fields, utilizing the following user custom exits. These are documented in the User Custom Guide.
 - ucUAGetAttributesDescription
 - ucUAGenerateHTML
 - ucUAValidateForm
 - ucUATransactUser
 - ucUAPostUpdate
 - ucUAGetTabs

Updating User Accounts

On the User Account Maintenance screen use the filters to select the user account you wish to modify.

- Click the **Edit** button associated with the user account, and a screen similar to the following appears:

Update User Cancel Print Page Change user's details: BSMITH (Enabled)

PERSONAL INFORMATION PERSONAL OPTIONS REPORT OPTIONS NOTIFICATION OPTIONS

User Information

User ID BSMITH

First name Bill

Last name Smith

Password

Verify password

Email Address carl@extraview.com

Job title Development Engineer

Company Name Superior Software Corp * None *

Address 100 Enterprise Way
Suite C210

City Scotts Valley

State / Province CA

Zip / Postal code 95066

Country USA

Work phone (831) 461-7100

Home phone (831) 461-7100

Cell phone (831) 461-7100

Fax (831) 461-7100

Pager (831) 461-7100

Security Information

Enabled User

Named User License

Expiry Interval 0

Expire password now

Expire password date

Select user roles

- Administrator (Current Role)
- Customer
- Customer Support
- Development Engineer
- Quality Assurance


Click to check/uncheck all the roles

Default Business Area & Project


Set default Business Area Bugs

Set default Project Bugs Data

Photograph



Signature



Change a User's Details screen

A full explanation of all the fields is available under the **Adding Users** section of this guide.

- Edit user information on any of the tabs as needed, and then click the **Update User** button.
- Note that when editing a user's account information, you can select which reports to add to their Home Page, by choosing up to three reports from the lists towards the bottom of the screen. You can select from shared reports, or the user's personal reports.

Note: To deactivate a user account, click the **Personal Information** tab and use the checkbox named **Enabled User** to deactivate or reactivate an account. Once an account is deactivated, the user will no longer be able to login to the system, and their User ID will no longer appear in Assigned To or Owner pick list options, etc. If the user has any scheduled reports, the administrator is warned and provided with an option to reassign the scheduled reports to a new owner. To reactivate a user account, select **All inactive users** from the **Select Users by activation status** or role pick list on the Edit User Accounts screen. Once you have drilled down on the desired inactive account, use the **Enabled User** checkbox that appears on the **User Roles/Security** tab of the Change a User's Details screen. When you deactivate a user, they are removed from all interest lists, escalation rules as well as being removed from being the module owner of any module field value. If you reactivate a user, you will need to review all their settings for accuracy as ExtraView may reset some values such as the license type, when the account is restored.

When you manually deactivate a user account, a check is made to see whether the account is the owner of scheduled reports that are delivered via email to other users, or are sent to the document repository. If the user account owns such reports, you are offered the ability to select a different user who will become the owner of these schedules. You should select a user who has the appropriate security permissions to own and run the report schedules. If you do not want to pass the schedule for the reports to another user, use the administration utility **Manage Scheduled Reports** to remove the account owner from the schedule, or use the administration utility **Manage Reports** to delete the reports entirely.

When you manually deactivate a user account, any server OAuth2 tokens that are unexpired are immediately expired, removing the deactivated user's access to the system via these tokens.

When you update a user account, and either disable the user's account, or remove access to any role to a user, the user's account is immediately disabled. This does not apply if the user is updating their own account or if the user is updating the SYSTEM or ADMIN accounts.

When you re-activate a user account, there is an option to notify the user by email.

Note: The entry **Alternative User ID** allows a user's ID to be altered. This does not change the initial ID used to create the account, but provides an alternative that can be used by the user to sign on. This is most useful for the occasions when a user's name changes, such as when a female changes their name upon marriage. When the alternative User ID differs from the User ID, either may be used to sign on.

Note: If the behavior setting named ENFORCE_DETAILED_USER_INFO is set to “Yes”, then additional fields will become required. This is used when you want users that self-register on the system to provide a significant level of personal details.

Note: If you alter a user’s access to specific user roles, and remove their access to a user role, this will only take effect the next time they sign on. If they are signed on at the time you change their access, they will continue to have the access you are inhibiting.

Note: Users are not physically deleted from ExtraView. The reason for this is that once most users have used ExtraView, they will be recorded as the Owner, Assigned To, or other such person against issues. To preserve data integrity, ExtraView requires the user details for everyone, even though they may not continue to use and access the system.

Note: If you alter an interest list, an escalation rule entry or change the user’s language setting, there is an immediate update to the account. Pressing **Cancel** does not reverse this change.

Unauthorized User Access Attempts

If a user attempts to sign on repeatedly, without success, ExtraView will disable their account as a security precaution. The controls for this feature are within the administrative Site Configuration menu, on the **Security and Session Settings** menu.

Behavior Setting	Default Value	Description
MAX_SIGNON_ATTEMPTS	3	The maximum number of consecutive failed sign on attempts allowed by an individual user before their account is disabled. The number of failures is measured in the period defined in SIGNON_PERIOD_MINUTES
SIGNON_PERIOD_MINUTES	5	Once a user fails to sign on because of an invalid password, they will be allowed to make a total of MAX_SIGNON_ATTEMPTS in this period

If a user’s account is disabled, the system administrator is notified by email. The system administrator is also notified if a person from a specific IP address attempts to sign on repeatedly and unsuccessfully from the same address according to the above settings. If the user is using the User ID of ADMIN and attempting to sign on, then the MAX_SIGNON_ATTEMPTS is internally set to two times the value in the behavior setting. This is because it can be a significant maintenance problem if the ADMIN account is disabled and cannot be re-enabled. Thus ExtraView allows some extra sign on attempts before disabling the ADMIN account, but security considerations still ensure that there is not the ability to try to sign on repeatedly.

If the behavior setting named CUSTOM_AUTHENTICATION is set to YES, then the user’s account is not disabled if there are repeated failed sign on attempts. The assumption is that the custom authentication method, such as the LDAP server, will perform the action of disabling the user’s account and it is superfluous to disable the account in two places.

The settings for notification are in the Email Settings menu within **Email Notification** and are:

Behavior Setting	Description
EMAIL_ADMINISTRATOR_NAME	This is the email address or alias for the ExtraView administrator. Emails that are automatically generated by ExtraView are originated with this name. Examples are emails sent upon the self registration of a user, or an unauthorized access attempt
EMAIL_ADMINISTRATOR_USER_ID	This is the email address to which emails originating within ExtraView are sent. This is usually the administrator's email address or an alias for the administrator

Hierarchies of Admin User Roles

In larger organizations implementing multi-tenanted ExtraView installations, it may be useful to have multiple administrators, each of whom only have access to specific administrative functions, or only have access to modify the characteristics of specific business areas. For example, you may want to create a sub-administrative role that can only add new users and modify these user’s settings and options.

To create a hierarchy of user roles take the following steps:

- With a user who has the *Administrator* user role, enter **Administration** ==> **Site Configuration** ==> **User Roles**. Within the **User Roles** utility you can create the new user role or roles you require. You can also copy the initial permissions for the role(s)

- from the existing *Administrator* role.
- Within the **Administration** ==> **Site Configuration** menu, use the **Grant Security Privileges** function to modify the administrative permissions for the new role or role you created. Use the general category named *** All administration options keys *** to see all the keys that control access to the administrative functions
 - Remember that you can restrict or grant access to the user roles for any administrator role

Company Name Security

There is a behavior setting named `COMPANY_NAME`. ExtraView recognizes this as the main company name. Given that this is the case, a new user added with a company name that is different from the value in the field associated with `COMPANY_NAME` will not be able to see `PRIVATE` issues submitted by users in your company. This is especially beneficial if you have customers using the system, and you only want them to have limited privileges to view their own issues. If you have enabled users or customers to self-register their selves within ExtraView, they will be able to sign on to ExtraView, and they will automatically be assigned to the user role entered as the `LIMITED_USER_ROLE`. The `LIMITED_USER_ROLE` is set in the Workflow Settings administration menu. This group normally has minimal user privileges. By being added to this role, the user will only be able to view `PUBLIC` records until a System Administrator re-assigns them to one or more User Roles.

Note: When you use the company name as security, and a user moves from one company to another, and you update their record with the new company name, then all the users at that new company will have visibility of the issues that were entered by that person at their original company. You can avoid this by giving the new user a new User ID at the new company, or being diligent to make sure that all their original issues are updated to no longer refer to that person.

Note: If you are signed on with the user ID of admin, the company name security is bypassed. The admin user will see all records.

Note: There is a behavior setting named `ENABLE_PRIVACY_GRP_OVERRIDE`. If the value is set to `YES`, then internal users can see all issues regardless of the value of the `PRIVACY` field. Internal users are defined by the user's personal Company Name being identical to the company name defined by the behavior setting named `COMPANY_NAME`. If the value is set to `NO`, users may only see issues when they are a member of the privacy group to which the issue is assigned.

The Company Name and the Privacy of Issues

There is a behavior setting on the administration menu, System Controls tab under Company Information Settings that controls the interaction between the privacy of issues and the different users within different companies that enter these issues. This is entitled `ENABLE_COMPANY_NAME_ACCESS`. When this setting is `YES`, different users who have the same company name will be able to view all issues entered by any member of that company. This overrides the Privacy setting of `PRIVATE`. When the value of `ENABLE_COMPANY_NAME_ACCESS` is `NO`, the Privacy setting overrides the behavior, and all issues will be held as being strictly `PRIVATE` as described in the section on Privacy. The most typical use of this setting is to allow you to give your customers access to ExtraView, and to allow any member of an individual customer to see all the issues entered by his / her colleagues.

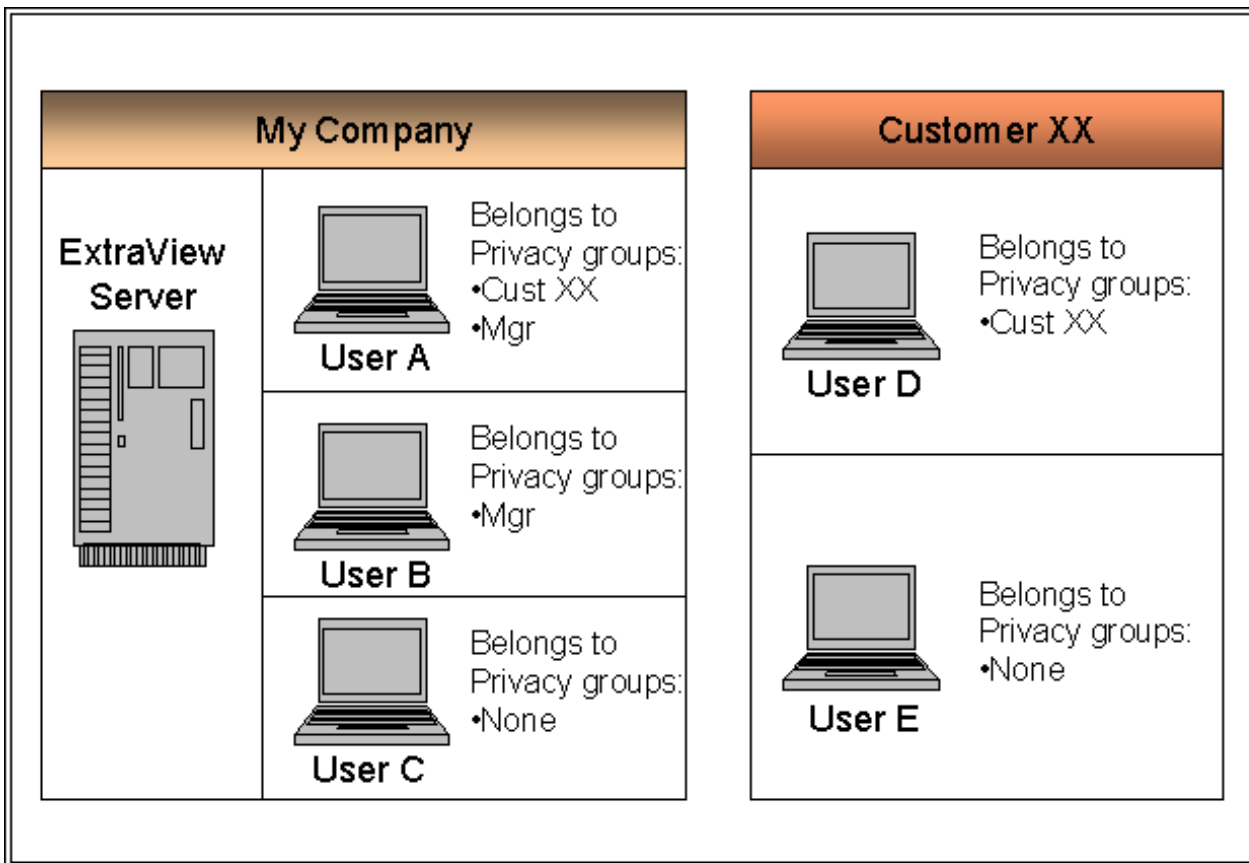
Note: A user will always be able to view an issue that they originated, irrespective of their company name.

There is a behavior setting named `COMPANY_OVERRIDE_FIELDS` that contains a comma separated list of field names with a display type of User. These fields must exist in the data dictionary. These fields contain the users that the company name security feature works with. By default, company name security works with only the `ORIGINATOR` field. This setting extends the feature to these other fields. The use case for this is as follows: The `COMPANY_NAME` is set to *Host Company*. They are the host of the ExtraView site. An issue is submitted by a user in Company A. The *Company A* user can see the issue as they are the Originator of the issue. The issue is visible to all *Host Company* users, because the default company name security allows them to see all issues. A *Host Company* user is set as the Owner of the issue. They want to assign the issue to a user who is neither a *Host Company* user, nor are they a *Company A* user. They want, for example, to assign the issue to a user who is a member of a company named *Company B*. The goal is to extend company name security in such a way that the *Company B* user is able to view the issue, originally created by the *Company A* user, because they are assigned to the issue. The *Company B* user will not see any other *Company A* originated issues, nor will they be able to see any other *Host Company* issues, because they are not the `ASSIGNED_TO` person on other issues.

The Company Name and Privacy Groups

Company name security with `ENABLE_COMPANY_NAME_ACCESS` and privacy group security are independent features of ExtraView, yet they combine together. The following example summarizes the behavior and interaction of company name security and privacy groups.

Privacy Group Example



Privacy of issues

- The COMPANY_NAME behavior setting is *My Company*
- ENABLE_COMPANY_NAME_ACCESS is set to YES
- ENABLE_PRIVACY_GROUPS is enabled
- Privacy groups have been created, named *Cust XX* and *Mgr*

User A

- Employee of *My Company* (Company Name on their user screen is set to *My Company*)
- Member of privacy group *Cust XX*
- Member of privacy group *Mgr*

User B

- User B is an employee of *My Company*
- Member of privacy group *Mgr*

User C

- User C is an employee of *My Company*
- Not a member of privacy group *Mgr*

User D

- User D is an employee of *Customer XX*, and has been granted access to *My Company's* ExtraView installation
- Member of the *Cust XX* privacy group

User E

- User E is an employee of *Customer XX*, and has been granted access to *My Company's* ExtraView installation
- They are not a member of any privacy group

Who sees which issues? This table shows issues created in different privacy groups and indicates which users will be able to see the issues. The ‘Y’ indicates that the user will be able to see the issue. Remember that security permission settings and a default setting can be used to control who can see and who can update the privacy field.

	My Company			Customer XX	
Privacy Group User	User A	User B	User C	User D	User E
PUBLIC	Y	Y	Y	Y	Y
PRIVATE	Y	Y	Y	-	-
Cust XX	Y	-	-	Y	-
Mgr	Y	Y	-	-	-

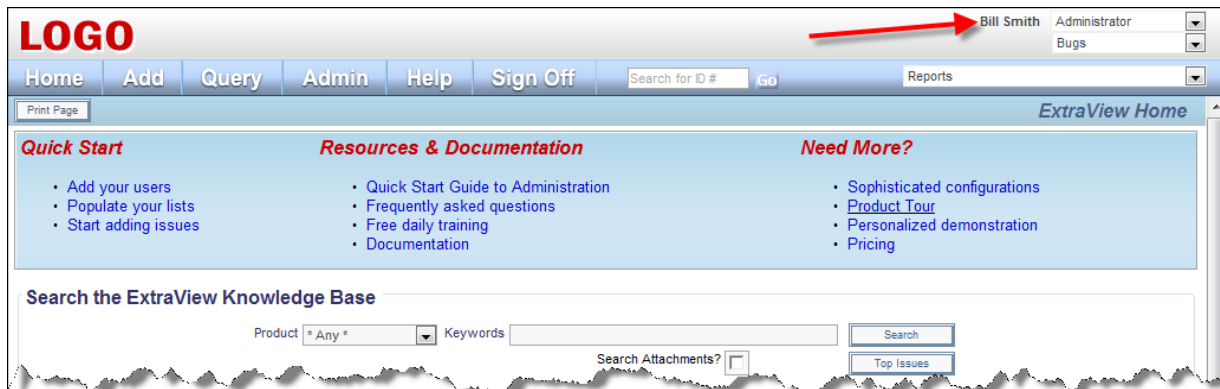
To complete the explanation, note that if it is User D or User E that originates the issue, and the issue remains PRIVATE, then all users in the above scenario will be able to access the issue (but not the users from any other companies). This is because ENABLE_COMPANY_NAME_ACCESS is set to YES.

Updating your Personal Account Details

This utility allows users to update their account details to control various personal display options, such as how they will enter dates into the system, what their password is, user information that others will see, and notification via e-mail. The feature is controlled via the CF_PERSONAL_OPTIONS securityty permission key.

To update your account details

1. Click the link with your user name:



Accounts menu on Home Page
The following screen appears:



Personal Options Password screen

2. Once you have verified your password, enter any new information on the Change a User’s Details screen. You can move to other tabs in the utility and update fields there
3. When done, click the **Update User** button.

Notes:

Update User Cancel Print Page
Change user's details: BSMITH (Enabled)

Basic Information
Personal Options
Report Options
Notification Options
Privacy Groups

User Information

User ID ? BSMITH

Alternative User ID ? BSMITH

First name Bill

Last name Smith

Password ?

Verify password ?

Primary email address bsmith@x.com

Job title Development Engineer

Company name Superior Software Corp

* None *

Address 269 Mount Hermon Road

City Scotts Valley

State / Province CA

Zip / Postal code 95066

Country USA

Work phone (831) 461-7100

Home phone (831) 461-7100

Cell phone (831) 461-7100

Fax (831) 461-7100

Pager (831) 461-7100

User field 1

Security Information

Enabled User ?

Named User ?

Expire password now ?

Days to password expiry ?

Expiry Interval ? 0

Select user roles ?

- Administrator
- Customer
- Customer Support
- Customer Support Manager
- Development Engineer
- Engineering Manager
- IT Support
- IT Support Manager
- Quality Assurance

Click to check or uncheck all the groups

Default Area & Project

Set default Area ? Bugs

Set default Project ? Bugs Data

Update User Cancel Print Page

Change Personal Details screen

Customizing User Account Details

ExtraView offers the ability to customize user accounts through a number of pre-defined fields which can be used to add new fields to each user's record. Outside of key fields which are mandatory within each user's record, each of the following fields has a security permission key which can be used to hide or enable the field.

Each of the pre-defined keys is protected with a security permission key, so you can set up different access profiles to the different user fields for different user roles.

The fields that can be customized are shown below:

Field	Purpose
USER.ACCESS_UDF_DATA	This permission key controls overall access to the complete list of user defined fields USER.USER_DEFINED_1 - USER.USER_DEFINED_10
USER.ADDRESS	The two fields that comprise the user's address
USER.CELL_PHONE	The cell phone number of the user
USER.CHART_FONT	The font used to create charts
USER.COMPANY_NAME	The user's company name
USER.CUSTOM_DATE_MASK	The custom date mask used in preference to the USER.DATE_FORMAT
USER.DATE_FORMAT	The user's date format
USER.EMAIL_FORMAT	The key used to set the format of the email notifications that a user receives
USER.FAX	The user's fax number
USER_HOURS_12_24	The key that allows a user to choose the time format for input and display

USER.LANGUAGE	The user's language
USER.LOGIN_ID	An alternative to the User ID that can be used to sign on to ExtraView. Once a user account has been established, the USER_ID cannot be altered as it is used in many places, such as recording who creates and who updates issues. In some organizations, there might be a need to provide an alternative, for example after a company takeover. Also, users may change their name, so this facility allows the user to set up an alternative to their original USER ID
USER.LOGIN_ID_ON_ADD	This key controls whether the USER.LOGIN_ID is shown on the <i>Add User</i> screen. This is not typically needed, but is available if necessary
USER.NOTIFICATION_ALTERNATIVE	The key that allows a user to choose their alternative email address
USER.NOTIFICATION_PRIMARY	The key that allows a user to choose their primary email address
USER.NOTIFY_ATTACHMENTS	Allows the user role to set the notification option to exclude attachments in email notifications
USER.IMAGE	Allows the user role to upload their photograph
USER.PAGER	The pager number of the user
USER.SIGNATURE	Allows the user role to upload their signature
USER.START_PAGE	This permission controls the ability of the user to set their start page when entering ExtraView, to a commonly used page such as the Home Page, the Add Issue screen or the Search / Report screen. This is set on their personal preferences page
USER.TEXT_SIZE	Controls the text sizes that a user may select
USER.TIME_ZONE	The key to allow the changing of the user's time zone
USER.USER_DEFINED_1 - USER.USER_DEFINED_10	These are ten user defined fields for the user record. You can set the security permission to any one of these to read and write, and alter the title of the field in the data dictionary as needed. This provides the capability to have ten user defined text fields for your installation
USER.USER_EMAIL_ADDRESS	This is used to control read/write access to the email address of the user. This only has an affect on the update screen for the user. There is always write access to the field when creating a new user
USER.USER_ENABLE	Write access is needed to this field in order to be able to enable and disable user accounts
USER.USER_FIRST_NAME	When updating the details of a user, this permission key controls read and write access to the field. If there is no read or write access when updating a user, the field is not visible. The field is always writable when creating a new user
USER.USER_INTEREST_LIST	Giving read and write access to this key allows each end user to opt-in and opt-out of interest lists to which they may belong
USER.USER_JOB_TITLE	The user's Job title
USER.USER_LAST_NAME	The user's last name
USER.USER_NAMED	This permission controls the ability for an account administrator to set a user to use an available NAMED user license when the system is in MIXED mode. The default for newly created users is that they use a CONCURRENT license. This is not used if you have only NAMED or only CONCURRENT users in your installation
USER.USER_PASSWORD_MANAGEMENT	This controls the ability to expire users' passwords, and the time interval information associated with passwords, such as the password expiration interval and the number of days until the password expiry. Write access is needed to alter these fields
USER.USER_SECURITY_PASSWORD	The user's password
USER.WORK_PHONE	The work phone number of the user

User Sign On Log

The user sign on log allows the administrator to determine all sign on, sign off and unsuccessful accesses by users. When you access the sign on log, you are offered a choice of filters. The sign on log is accessed within **Administration, Operational Tasks**.

This report may also be accessed through the **Reports** screen. The key reason why these reports appear outside of the administration screens is in order to be able to use the Report Scheduler to provide an automated means to deliver the reports.

When the user clicks on the administrative **User Sign On** screen, the following report appears:

Sign On/Sign Off	Timestamp	Result	Failure Reason	User ID	IP Address	Concurrent Users	Guest Users
SIGNON	2017-07-20 08:38:03.655 -0700	Success		Denise Hendsbee	71.198.221.239	26	3
SIGNON	2017-07-20 08:47:13.105 -0700	Success		LeeAnn Pultz	71.80.242.134	30	3
SIGNON	2017-07-20 08:50:22.533 -0700	Success		Denise Hendsbee	172.16.100.2	31	3
SIGNON	2017-07-20 08:50:38.995 -0700	Success		LeeAnn Pultz	71.80.242.134	29	3
SIGNON	2017-07-20 08:54:21.309 -0700	Success		Gregor McPherson	142.134.150.72	32	3
SIGNON	2017-07-20 08:55:36.331 -0700	Success		Hsing-Hua Wang	76.121.53.33	32	3
SIGNON	2017-07-20 09:05:38.557 -0700	Success		Allan Rofer	73.189.24.164	33	3
SIGNON	2017-07-20 09:05:50.839 -0700	Success		Dan Bibbey	192.146.101.24	33	4
SIGNON	2017-07-20 09:06:34.471 -0700	Success		LeeAnn Pultz	71.80.242.134	34	4
SIGNON	2017-07-20 09:18:10.499 -0700	Success		Carl Koppel	71.198.90.231	33	4
SIGNON	2017-07-20 09:24:23.732 -0700	Success		Carl Koppel	71.198.90.231	34	5
SIGNON	2017-07-20 10:06:51.282 -0700	Success		Carl Koppel	71.198.90.231	36	3
SIGNON	2017-07-20 10:07:45.608 -0700	Success		Carl Koppel	71.198.90.231	37	4
SIGNON	2017-07-20 10:18:13.864 -0700	Success		Ali Goksel	73.241.8.69	41	4
SIGNON	2017-07-20 10:18:20.419 -0700	Success		Carl Koppel	71.198.90.231	42	4
SIGNON	2017-07-20 10:21:49.405 -0700	Success		Gregor McPherson	142.134.150.72	38	4
SIGNON	2017-07-20 10:46:53.594 -0700	Success		LeeAnn Pultz	71.80.242.134	38	4

The length of time for which entries are kept in the log is dependent upon the behavior setting named `SYSTEM_LOG_EXPIRE_TIME_DAYS`. Large logs may take some time to download for the report. If allowed to grow with no constraints, the sign on log can grow to an enormous size, retaining information that may no longer have value. A behavior setting named `SYSTEM_LOG_EXPIRE_TIME_DAYS` controls how long information is retained in the log. The default for this time is 30 days, but can be changed by the administrator. An internal system task within ExtraView deletes sign on log messages older than this time each hour, to avoid a buildup of the task that would take a considerable amount of time.

Usage is straightforward. If you do not select any filters, the entire user sign on log will be produced. You may select a subset of the log using the date filters provided.

You can sort the report by any of the columns, by clicking on its title. An arrow shows the column currently used for the sort. Note that if you click on the column that is currently selected, the report is resorted, but in descending rather than ascending order.

The **Concurrent Users** column shows how many users were connected at the moment that the sign on took place, allowing you to monitor the number of users connected to ExtraView over time. This is an aid to capacity planning. Note that the report does not display counts for users who occupy a named user license. These users are not subject to any limitation as to when they can sign on and off.

The definitions of the columns in this report are:

Column Name	Definition
Sign On/Sign Off	Sign on or sign off
Timestamp	Date and time of sign on/sign off
Result	This will display success or failure
Failure Reason	This will show the reason the result was a failure
User ID	User ID entered
User Name	The name of the user
IP Address	Address of sign on client

Concurrent Users	<p>Number of currently used concurrent licenses, not including the ADMIN or SYSTEM users if they are signed on. This is calculated as follows:</p> <ul style="list-style-type: none"> • For each distinct, concurrent non-GUEST user, count 1 license used • For each user that is logged in 6 times or more, count 1 additional license used for each five sign on connections beyond the first sign on
Guest Users	The number of user who are occupying guest licenses, signified by the role set in the behavior setting named DEFAULT_USER_ROLE

System Log

The system log allows the administrator to determine all significant metadata transactions, except for user sign on and sign off. Sign on and sign off activity can be observed in the ExtraView Sign On log. This feature also gives access to the application server log file. When you access the system log, you are offered a choice of filters.

If you choose the defaults, you will display a listing that shows all entries for all users for the last month. You can filter by the log entry type (sign on, sign off, unsuccessful attempts to sign on) or by a single user, or by any date range.

The screenshot shows the 'System Log' interface. At the top, there are three buttons: 'View Application Server Log', 'Return', and 'Print Page'. Below this, a text box instructs the user: 'Select the entry type you wish to view from the list, along with a single user name or all users. You can specify any date range. The default date range is the last 30 days.' The interface includes several input fields: 'Select log entry type' with a dropdown menu set to '* All Entries *', 'User Name' with a dropdown menu set to '* All Users *', 'Enter start date' with a text box containing 'February 9, 2007' and a calendar icon, and 'Enter end date' with a text box containing 'March 11, 2007' and a calendar icon. A 'Search' button is located below these fields. At the bottom of the interface, there are three buttons: 'View Application Server Log', 'Return', and 'Print Page'.

Choosing the filters for accessing the system log

A sample of the system log is shown below. You can sort the list by any of the columns, Log entry #, Date, User ID, Type, Log entry. Sort the columns, by clicking on the header. An arrow shows the column currently used for the sort. Note that if you click on the column that is currently selected, the report is resorted, but in descending rather than ascending order.

Log entry #	Date	User ID	Type	Log entry
174010	February 16, 2006	ADMIN	Update Existing SECURITY_USER	update security_user set ADDRESS_LINE1 = ?, ADDRESS_LINE2 = ?, ALPHA_TIMEZONE = ?, AREA_ID = ?, CELL_PHONE = ?, CHART_FONT = ?, CITY = ?, C...
174015	February 16, 2006	ADMIN	Delete SECURITY_GROUP_USER	delete from security_group_user where security_user_id = ? (TARON)
174020	February 16, 2006	ADMIN	Add SECURITY_GROUP_USER	Add to security_group_user, insert into security_group_user(security_user_id, security_group_id) values(?, ?) (TARON,ADMIN)
174025	February 16, 2006	ADMIN	Add SECURITY_GROUP_USER	Add to security_group_user, insert into security_group_user(security_user_id, security_group_id) values(?, ?) (TARON,ADMIN)->(TARON,GUEST)
174030	February 16, 2006	ADMIN	Update Existing SECURITY_USER	update security_user set ADDRESS_LINE1 = ?, ADDRESS_LINE2 = ?, ALPHA_TIMEZONE = ?, AREA_ID = ?, CELL_PHONE = ?, CHART_FONT = ?, CITY = ?, C...
174035	February 16, 2006	ADMIN	Delete PRIVACY_GROUP_USER	delete from privacy_group_user where security_user_id = ? (TARON)
174040	February 16, 2006	TARON	Update Existing DATA_DICTIONARY	update data_dictionary set allow_add_to_list = ?, child_key = ?, column_name = ?, default_format = ?, default_size = ?, default_value = ?, dependent_sqj = ?
174045	February 16, 2006	TARON	Update Existing DATA_DICTIONARY	update data_dictionary set allow_add_to_list = ?, child_key = ?, column_name = ?, default_format = ?, default_size = ?, default_value = ?, dependent_sqj = ?
174050	February 16, 2006	TARON	Update Existing DATA_DICTIONARY	update data_dictionary set allow_add_to_list = ?, child_key = ?, column_name = ?, default_format = ?, default_size = ?, default_value = ?, dependent_sqj = ?
174055	February 16, 2006	TARON	Update Existing DATA_DICTIONARY	update data_dictionary set allow_add_to_list = ?, child_key = ?, column_name = ?, default_format = ?, default_size = ?, default_value = ?, dependent_sqj = ?
174060	February 16, 2006	TARON	Update Existing DATA_DICTIONARY	update data_dictionary set allow_add_to_list = ?, child_key = ?, column_name = ?, default_format = ?, default_size = ?, default_value = ?, dependent_sqj = ?
174065	February 16, 2006	TARON	Update Existing DATA_DICTIONARY	update data_dictionary set allow_add_to_list = ?, child_key = ?, column_name = ?, default_format = ?, default_size = ?, default_value = ?, dependent_sqj = ?
174070	February 16, 2006	TARON	Update Existing SECURITY_MENU	update SECURITY_MENU set SECURITY_MENU_ID = ?, SECURITY_MENU_TITLE = ?, SECURITY_MENU_GROUP = ?, ADMIN_TOP_LEVEL_MENU_ORDER = ?, t...
174075	February 16, 2006	TARON	Update Existing SECURITY_MENU	update SECURITY_MENU set SECURITY_MENU_ID = ?, SECURITY_MENU_TITLE = ?, SECURITY_MENU_GROUP = ?, ADMIN_TOP_LEVEL_MENU_ORDER = ?, t...
174080	February 16, 2006	TARON	Update Existing SECURITY_MENU	update SECURITY_MENU set SECURITY_MENU_ID = ?, SECURITY_MENU_TITLE = ?, SECURITY_MENU_GROUP = ?, ADMIN_TOP_LEVEL_MENU_ORDER = ?, t...

15 record(s) selected from a total of 15 record(s)

ExtraView Sign On Log

The log entries show the actual SQL used to update the ExtraView database. Note that the SQL statement contains a series of question marks. Each question mark in turn is replaced at execution time with a value from the parameter list.

If allowed to grow with no constraints, the system log can grow over a period of time to an enormous size, retaining information that may no longer have value. A behavior setting named `SYSTEM_LOG_EXPIRE_TIME_DAYS` controls how long information is retained in the log. The default for this time is 30 days, but can be changed by the administrator. An internal system task within ExtraView deletes system log messages older than this time each hour, to avoid a build up of the task that would take a considerable amount of time.

If you would like to view a copy of the application server log file, press the **View Application Server Log** button on the System Log screen. When you do this, a new window with the contents of the log file appears. This file may be very large, and it may take some time to download into this window. It may be more convenient for you to view this file with an editor directly on the file system of the server. This button only appears on the System Log administration screen if you are granted the read permission to the security permission key named `CF_VIEW_APP_SERVER_LOG`

Session Management

Sessions are managed for each user with a variety of behavior settings. The key settings are found in the **Security and Session Settings** category of the behavior settings.

Sessions do not have a one to one correspondence with the number of users who are signed on. ExtraView creates many sessions for each user, roughly in proportion to the number of tasks or reports a user executes at one time. Drilldowns from reports require additional sessions and when users do not close windows or sign off when they have completed their tasks, the amount of session information held in memory grows as ExtraView will not discard session information that a user may require again at some time in the future.

A table is used to store user sessions in the database when there is no more room in the application server memory (RAM) to store them. If a user session is not active, i.e. the user has closed their browser window without logging off, or if their computer is sitting with nobody using it but the browser is logged in, then the session is saved in the database table to make room for new sessions which are active.

Sessions can only be used by ExtraView when they are in memory, therefore if a session in the database needs to wake up and be used, the session must be recalled into memory. If there is not enough room, another session must be taken out of memory and put in the database, to make room for the first session.

If there are more active sessions needed than there is available memory, sessions will be continuously swapped between the database and memory – this is very time consuming and affects the overall performance. The parameters `SPILL_SESSION_COUNT` and `NOSPILL_SESSION_COUNT` control how many sessions are kept in memory. `NOSPILL_SESSION_COUNT` defines how many

sessions will stay in memory. Once the number of sessions in memory grows beyond `NOSPILL_SESSION_COUNT`, no more sessions will be added to memory until ExtraView can move some sessions out of memory and to the database.

`SPILL_SESSION_COUNT` must be a larger number than `NOSPILL_SESSION_COUNT`. `SPILL_SESSION_COUNT` indicates the maximum number of sessions that will ever be placed into memory. If the number of sessions in memory reaches `SPILL_SESSION_COUNT` ExtraView stops creating new sessions until the number of sessions in memory is reduced by saving sessions to the database.

For example set `NOSPILL_SESSION_COUNT` to 1000 and `SPILL_SESSION_COUNT` to 1100. With these settings, sessions are created in memory until there is a total of 1,000 sessions. When the 1,001st session is requested, one session in memory must be placed to database before the session can go into memory. This process can take some time and more requests for sessions may come in while this is occurring.

If there are 1,100 requests for sessions in memory received, no more sessions will be created, i.e. the system will not respond, until the writer process catches up and removes sessions from memory to get `SPILL_SESSION_COUNT` below the 1,100 threshold. At least 101 sessions need to be removed from memory in order to get the number of sessions below 1,000 in order for the system to catch up completely.

How many sessions are in memory at a point in time? This number is written to the application server log with the completion of each service. The number is the `cc` parameter. If this number is higher than `NOSPILL_SESSION_COUNT` then sessions are spilling over into the database and it's worth considering whether you should set the `NOSPILL_SESSION_COUNT` and `SPILL_SESSION_COUNT` to higher amounts.

Other factors can also influence how many sessions are in memory. Sessions are removed from memory and from the database once a user's session has expired, so keeping the `SESSION_EXPIRE_TIME_HOURS` to a lower amount will reduce how long older sessions are kept in memory, reducing the number of sessions taking up space.

One way to improve performance through session management is to increase the number of application server instances used. In a clustered application server environment, each instance will hold `NOSPILL_SESSION_COUNT` number of sessions in memory – so 2 application servers will hold 2,000 sessions, and 3 application servers will hold 3,000 sessions before any sessions are saved to the database. Load-balancing multiple application servers provides more memory to hold more sessions.

Conditions that sign off users automatically

The most common reason that ExtraView signs off users automatically is because they reach the timeout period you set for the license to expire. For users with named licenses, this is the time period specified in the setting `SESSION_NAME_EXPIRE_TIME_HOURS`. For users with concurrent licenses, the time period is set with `SESSION_EXPIRE_TIME_HOURS`. If the user is idle (i.e. they do not submit a request or a form to the server from their browser) for more than this period, then ExtraView only allows the user to continue after signing on again.

When ExtraView signs a user off automatically, they are asked to re-enter their user ID and password to continue working. When they were signed off the system by ExtraView, the alert shows a **Session expired or removed** message, by Administrator followed by the code.

Alert Code	Meaning
RC1	The referenced session no longer exists. The most likely reason is that the user was idle longer than the time allotted by the system administrator and the user was automatically signed out of the system. This condition may also be caused by the administrator restarting the server while you were in the middle of a task
RC2	The cookies returned by the browser don't match session cookies held on the server. There is a possibility that the user signed on with the same browser twice
RC3	The session expired in the foreground
RC4	The session was removed by administrator
RC5	Your IP address changed during the session and this is disallowed by the system administrator. Normally ExtraView performs a check for security purposes, to ensure that your IP address remains consistent. However, this check can be disabled if you part of a network where your IP address is automatically translated for any reason. This is most often seen when accessing a corporate network via a VPN or proxy server.

Note that although ExtraView attempts to keep the user signed on when their session has not expired, there are some circumstances beyond its control. If you find that user's session expire at times you cannot account for, then it is likely to be for one of the following reasons:

- If the user is behind a Proxy server or accessing ExtraView via a VPN, sessions can be disconnected early due to timeouts on other parts of the connection that ExtraView has no control over

- If a user signs on to ExtraView using multiple windows or tabs in their browser, the session expiration time generally applies from the session that the user first signed on to
- If a user signs on to ExtraView and during their work they generate new tabs and / or new pop up windows and then close the "parent" window or tab, the child windows and tabs will lose track of the parent session, and therefore lose track of the correct expiry time.

Named End-User Session Management

The setting named `SESSION_NAME_EXPIRE_HOURS` controls the period of time for the expiry of a named user license. By definition, there is not a strict need from a licensing perspective for end users who occupy a named license to ever have their session terminated automatically. However, every session requires resources on the server and these resources are finite. Apart from the user who forgets to sign off after an extended period, there is also the occasional computer or browser crash that will leave sessions hanging. After a period of time these events take a toll and performance can be reduced to other users. ExtraView's recommendation is that there is a 24 hour setting on named licenses. Provided the application server is configured correctly, this should clean up unused sessions without an undue burden on the server.

Concurrent End-User Session Management

Note: This feature is only activated when you have purchased concurrent or hybrid licenses of ExtraView, as opposed to purchasing named user licenses. It is not necessary to have this capability with named user licenses.

This feature gives the Administrator complete knowledge of who is signed on to the system at the current time. The Administrator with permission to this feature is also permitted to sign off any user. This may be needed if you have reached the limit of the count of licensed users, and you want to sign off some individual users, in order to let other users access the system.

The time that an individual user's session remains open, when there is no further activity is controlled with the behavior setting named `SESSION_EXPIRE_TIME_HOURS`. This is found within the Security and Session Settings administration menu, on the Systems Controls tab. The administrator can adjust this time to give a reasonable balance between a user's session expiring, the need to maintain available licenses to other users, and security. For efficiency, the session termination time shown on the screen for each user is only updated internally within ExtraView every few minutes, so the time shown is only approximate.

In addition, you can observe the IP address of any connected user. This can be useful for troubleshooting on networks where IP addresses are translated for any purpose. ExtraView has a behavior setting within the Security and Session Settings section that dictates whether a client connection must maintain a constant IP address during a session. This is named `CLIENT_IP_ADDRESS_CHECK`. Usually this is set to YES, but it may need to be set to NO if your server is accessed via a proxy server, and the IP address of an individual user may change through time.

A further behavior setting controls how ExtraView reacts when the user either closes their last remaining open window or closes their browser, with ExtraView being the last window open. If the behavior setting named `AUTO_SIGNOFF_ON_USER_EXIT` is set to NO (this is the default), then ExtraView will (by using a session cookie) remember that it is signed on, and an open license is retained. If the setting is YES, then when the user presses the browser back button, or other means, to go back to the ExtraView session, the user will need to sign on again, taking a fresh license.

Note that two timestamps are displayed in the report. One timestamp is shown in the personal date/time format of the current administrative user. The other is shown in an extended, unambiguous format.

Disconnect Users Return Print Page
End-user Session Management

Directions

The following users are currently signed on to ExtraView. Check the box against any user you want to disconnect, to release the license back to the common pool. Once you disconnect users, they will need to sign on again before using ExtraView.

Check box to disconnect	User ID	Alternative User ID	User name	User email	Company name	Session Termination Time User Format	Session Termination Time Global Format	IP Address	Keep Alive	License Type	Node ID
<input type="checkbox"/>	CARL.KOPPEL	C	Carl Koppel	carl@extraview.com	ExtraView Corp	Sep 3, 2012	2012-09-03 15:55:01.000 -0700	127.0.0.1	Yes	Concurrent	WS_A:
<input type="checkbox"/>	CARL.KOPPEL	C	Carl Koppel	carl@extraview.com	ExtraView Corp	Sep 3, 2012	2012-09-03 15:57:31.000 -0700	127.0.0.1	Yes	Concurrent	WS_A:
<input type="checkbox"/>	DBORLEAN	DBORLEAN	Daniel Borlean		My Company Name	Sep 3, 2012	2012-09-03 15:58:09.000 -0700	127.0.0.1	Yes	Concurrent	WS_A:
<input type="checkbox"/>	GWU	GWU	Geo WU	geow@the-mcorp.com	ExtraView Corp	Sep 3, 2012	2012-09-03 15:59:02.000 -0700	127.0.0.1	Yes	Concurrent	WS_A:

Disconnect Users Return Print Page

On the screen is also the column **Keep Alive**. This signifies whether a user's session is still current and whether it may be killed due to exceeding the idle time expiry period. If the value is No, then the session has exceeded the value of `USER_EXPIRE_TIME_HOURS`, but has yet to be terminated by ExtraView. If the user is idle, but is accessing an add or edit screen, then the value may still be **YES**, as the server will preserve the session information for the user for as long a period as possible, up until the value of time expressed by `SESSION_EXPIRE_TIME_HOURS` is reached.

Session Expiry

Session expiry is a two-stage process. For users occupying a concurrent license, when the user has been idle, (i.e. they have not accessed the server from their browser for the time defined in `USER_EXPIRE_TIME_HOURS`), they will receive a session expiry message from ExtraView when they next access the server. If the user was in the middle of a session creating a new issue or editing an existing issue, then ExtraView will attempt to restore all the data held in the user's browser from the time they last entered data. This happens after they re-authenticate their sign on credentials.

This capability comes at a price, in that the server must hold all the data necessary to restore the session within the application server's memory. With a significant number of users, this can mount up, and so there is a second time out defined in `SESSION_EXPIRE_TIME_HOURS`. If the user attempts to restore their session after this time, no data can be restored, and the user will be taken to their usual destination page upon signing on, usually the Home Page.

For users who occupy a named user license there is a separate behavior setting for control. This is named `SESSION_NAME_EXPIRE_TIME_HOURS`.

When a user receives an alert informing him that their **Session expired or was removed**, it may be for one of several reasons –

Alert Code	Meaning
RC1	The most likely reason is that the user was idle longer than the time allotted by the administrator in the behavior setting named <code>SESSION_EXPIRE_TIME_HOURS</code> . ExtraView then signs the user out of the system. This condition may also be caused by the administrator restarting the server while you were in the middle of a task
RC2	The cookies returned by the browser don't match session cookies held on the server. There are two possible reasons for this. First, the expiry may happen if the user attempts to sign on to ExtraView, from two different instances of the same browser. Secondly, if the server is first accessed by a specific URL from a user's browser, the same URL must then be used for all subsequent accesses by all users.
RC3	The session expired in the server. This is most often due to an error condition that could not be handled
RC4	The session was removed by administrator. This happens when the administrator uses the Manage Connected Users administrative function to cancel a user's session.
RC5	Your IP address changed during the session and <code>CLIENT_IP_ADDRESS_CHECK</code> is "YES". Normally ExtraView performs a check for security purposes, to ensure that your IP address remains consistent. However, this check can be disabled if you part of a network where your IP address is automatically translated for any reason. This is most often seen when accessing a corporate network via a VPN with a proxy server.

You may turn on a warning to the user, that their session is about to expire, using the two behavior settings named `SESSION_WARNING_TIME_SECS` and `SESSION_WARNING_INTERVAL_SECS`. This will give them additional warnings that their session is about to expire.

For users occupying concurrent licenses, the session expiry is controlled by a number of settings, some optional, some mandatory. The two mandatory settings are

Behavior Setting	Purpose
<code>SESSION_EXPIRE_TIME_HOURS</code>	This is the session expiry period measured in hours for a user who occupies a concurrent user license and who remains idle. Note that this is different from the period for users who occupy a named license. Their expiry period is defined in the behavior setting named <code>SESSION_NAME_EXPIRE_TIME_HOURS</code> . After the period set in <code>USER_EXPIRE_TIME_HOURS</code> and before the value of <code>SESSION_EXPIRE_TIME_HOURS</code> , ExtraView will attempt to restore a user's data when their session has expired. Beyond the time specified in <code>SESSION_EXPIRE_TIME_HOURS</code> the data will be lost. If the value of this setting is less than one minute or 0, then the session data will be kept permanently until the server is restarted. This is not recommended.
<code>USER_EXPIRE_TIME_HOURS</code>	This is the time in hours for which a user will remain signed in to ExtraView, when his computer is idle. ExtraView recognizes a user as still active when an action causes the user to access the server. When a user's session expires, ExtraView will ask the user to sign in again, and will attempt to restore any data being inserted or updated, and take the user to the point where they were working. Note that the ability to restore data is only enabled for the

period specified in the setting named SESSION_EXPIRE_TIME_HOURS. For this reason, SESSION_EXPIRE_TIME_HOURS should always be equal to or greater than USER_EXPIRE_TIME_HOURS. If the value of this setting is less than one minute or 0, then the session will not time out

There are further settings that may be used to determine if a user is really inactive, or whether they have closed their browser, navigated to another page or performed some other action that means that the session information held on the server is no longer required. This is principally used to allow the administrator to fine tune the allocation of concurrent user licenses after the USER_EXPIRE_TIME_HOURS and before the SESSION_EXPIRE_TIME_HOURS is reached, and to ensure that users do not retain a license if there is no need. The basic principal is that if the user requires resource to be retained on the server, they will retain their license during this period, but if they do not require resources on the server, their license will be released. Resources are required on the server if the user is in one of these functions:

- Add screen
- Edit screen
- Item History screen
- Related Issue Update screen

This functionality comes at a modest performance cost, in that there needs to be communication at regular intervals between the client browser and the server to determine a user's status. These packets of information may have an affect on performance, therefore this feature may be turned on or off, and the administrator may determine how frequently checks are made.

If you are using named user licenses the recommendation is to turn the feature off using the USER_TIMEOUT_SESSION_REMOVAL setting.

Behavior Setting	Purpose
USER_TIMEOUT_SESSION_REMOVAL	This is used to turn this feature on or off. The value of YES implies that sessions are killed after USER_EXPIRE_TIME_HOURS of inactivity, unless the user has sessions that remain active in the <i>add</i> or <i>edit</i> screen mode. NO implies that these sessions are not killed after this period of inactivity. The user's browser is checked by the server every SESSION_MONITOR_POLL_SECS to see if the ExtraView session is still active and the client updates the server with this information every KEEPALIVE_INTERVAL_SECS seconds.
KEEPALIVE_INTERVAL_SECS	This is the number of seconds between polling operations from the <i>add</i> or <i>edit</i> screen. This timer is used to send a message from the user's browser to the server, to allow the server to keep track of users with open <i>add</i> or <i>edit</i> sessions. If the user closes their browser or navigates away from an <i>add</i> or <i>edit</i> page, then the server will be able to recognize this event
SESSION_MONITOR_POLL_SECS	This is the number of seconds between periodic tests from the server, for session removal due to user expire time activity. The server will test to see if the user still has an open session at this interval. This is only used if USER_TIMEOUT_SESSION_REMOVAL is YES. and if the user's browser has not reported to the server that a session is still active with the KEEPALIVE_INTERVAL_SECS timer.

Disabling User Access

Occasionally, the administrator may wish to lock users out of ExtraView, for maintenance purposes such as creating new screen layouts or business rules or when performing a mass update of many issues. To facilitate this requirement, the feature **Disable and Enable User Access** is available from the **Administration, Operational Tasks** menu.

You must be the ADMIN user, or in the role specified by the ADMIN_OVERRIDE_ROLE behavior setting in order to disable end user access to ExtraView.

End-user Session Management Disconnect Users Return Print Page

This installation is licensed for an unlimited number of users. Currently, there are 3 license(s) in use.

The following users are currently signed on to ExtraView. Check the box against any user you want to disconnect, to release the license back to the common pool. Once you disconnect users, they will need to sign on again before using ExtraView.

Check to disconnect	User ID	User name	User email	Company name	Session Termination Time	IP Address
<input type="checkbox"/>	BSMITH	Bill Smith	bsmith@superior.com	Superior Software Corp	2006-03-20 19:02:05.0	127.0.0.1
<input type="checkbox"/>	BSMITH	Bill Smith	bsmith@superior.com	Superior Software Corp	2006-03-20 18:59:39.0	127.0.0.1
<input type="checkbox"/>	BSMITH	Bill Smith	bsmith@superior.com	Superior Software Corp	2006-03-20 22:19:36.0	127.0.0.1
<input type="checkbox"/>	BSMITH	Bill Smith	bsmith@superior.com	Superior Software Corp	2006-03-20 21:42:10.0	127.0.0.1
<input type="checkbox"/>	GREG	Greg Goldberg	greg@extraview.com	null	2006-03-20 22:19:08.0	127.0.0.1
<input type="checkbox"/>	JOHN	John Customer	john@xxx.com	ABC Software	2006-03-20 22:19:25.0	127.0.0.1
<input type="checkbox"/>	QA	Mary Brown	qa@xxx.com	Superior Software Corp	2006-03-20 22:18:55.0	127.0.0.1

Disconnect Users Return Print Page

Disabling and enabling user access

When entering this feature, the administrator will see a list of all users who are currently signed on, giving them an indication of the level of activity. A message can be defined, that is displayed to the user when they sign on. It is suggested the message include an indication of when service is expected to be restored. When the system is disabled, there is a confirmation message to this effect. Until the time that the administrator re-enables access, end users are prevented from activity, and will see the message defined above when they attempt to sign on. Access will continue to be granted to administrators who are members of the group defined in the behavior setting named ADMIN_OVERRIDE_ROLE. A security key controls access to this feature. It is named CF_ENABLE_DISABLE_USER_ACCESS.

Note: It is not recommended that anyone other than administrators who are part of the ADMIN_OVERRIDE_ROLE be given access to this feature.

Disconnecting Users

1. Click **End-User Session Management** link within the **Administration** ==> **Operational Tasks** menu.
2. Click on the checkbox associated with the user(s) whom you want to remove from active sessions within ExtraView.
3. Click the Disconnect Users button. This action will expire the selected user sessions and open up concurrent license seats for access by other users.

Report Manager

The Report Manager utility allows the ExtraView administrator to maintain shared reports and user's reports. Both shared reports and reports owned by individual users may be accessed, deleted and some report attributes may be updated. Reports may be moved from one user to another. The update operations act on single reports or different filtered groups of reports. The typical functions of the utility are to perform the following tasks:

- Delete all reports in the system that have not been run in a while, say the last year
- Delete all the reports in the system belonging to an individual user, after they have ceased being an ExtraView user

The utility is extremely flexible in allowing the administrator to filter through very large groups of reports, to quickly decide on which reports the mass operation is to be fulfilled. **It is possible to delete many reports with a few keystrokes, so unless you are familiar with the operation of this utility, it is suggested you take a backup of the entire site before beginning.** When first entering the utility, the screen will look somewhat similar to this:

Return Delete Selected Reports Set Mobile Report Attributes Print Page Report Manager ?

Report Manager

Use the table below to manage all user's reports. The filters allow you to set the reports upon which you can act. Use the column titled Mobile to set or unset reports for use on mobile devices, and then click Set Mobile Report Attributes. Use the Select checkboxes and then click the Delete Selected Reports button to remove the reports from the system.

Filter Reports

Select filter type: * None * Date: 11/6/20 4:51 PM

Filter

► Modify security for the selected reports

► Move reports selected in grid to a different user and folder

► Copy reports selected in grid to a different user and folder

+ - Autosize columns


Select	Title	Folder	Description	Type	Report ID	Date Created	Created By	Last Updated	Last Updated By	Last Run Date	Last Run By	Mobile	User ID
	* Search *	* Filter Folder *	* Search *	* Search *	* Search *	* Search *	* Search *	* Search *	* Search *	* Search *	* Search *	0	* Search *
<input type="checkbox"/>	Bill Smith											<input type="checkbox"/>	BSMITH
<input type="checkbox"/>	Shared Reports											<input type="checkbox"/>	PUBLIC
<input type="checkbox"/>	Shared Reports	Test Case Management R										<input type="checkbox"/>	PUBLIC
<input type="checkbox"/>	Shared Reports	General Reports										<input type="checkbox"/>	PUBLIC
<input type="checkbox"/>	Shared Reports	Dashboard Reports										<input type="checkbox"/>	PUBLIC
<input type="checkbox"/>	Shared Reports	Customer Reports										<input type="checkbox"/>	PUBLIC
<input type="checkbox"/>	Shared Reports	Bug Reports										<input type="checkbox"/>	PUBLIC


The filters allow you to select the date range to be viewed, based on either the dates the reports were created, the dates they were last updated, or the dates they were last run. If you do not use the filters, you are able to view all the reports in the system.


The overall functionality of the report grid is:



- **Filters** - Based on a date that you select, you can filter the reports that are displayed within the grid with the following filter types:
 - Last run on or before a date
 - Created on or before a date
 - Last updated on or before a date
 - Last run on or after a date
 - Created on or after a date
 - Last updated on or after a date
- **Modify Security** - Click on the fold to expand it to view the following screenshot:


▼ Modify security for the selected reports

Click button to select and add users 

Select all users in a role * None * 

Click button to select and add user groups 

Role/Group/User	Type	Report Visible 	Report Editor 

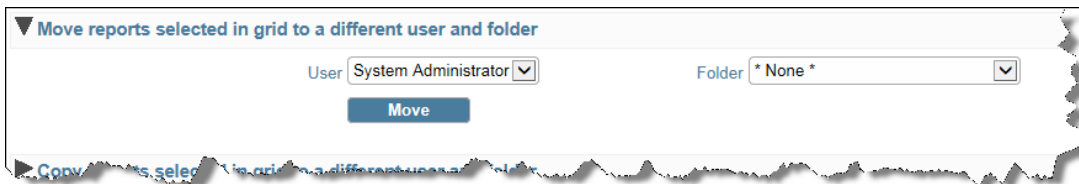
Modify Security 

Once you have selected the reports to modify, you can use the options to first:

- Select users to add security criteria
- Select users within one role
- Select users within a user group

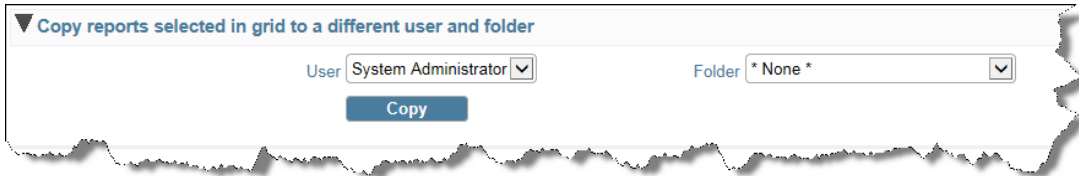
For the selection, you may now modify the report security by clicking on the options to set the report selection's visibility and whether or not the selections may modify the reports via the report editors

- **Move Reports** - Click on the fold to expand it to view the following screenshot:



Once you have selected the reports to move, select the user and their folder into which to move the reports. Then click the **Move** button

- **Copy Reports** - Click on the fold to expand it to view the following screenshot:



Once you have selected the reports to copy, select the user and their folder into which to copy the reports. Then click the **Copy** button

- Click + to view all the reports that are defined by the filters you have set. Note that if you have selected a large number of reports, this might be a time-consuming task to read the database and to render the grid with the report
- Click — to reduce the grid to the level of shared reports and the reports for each user defined within the filters you have set
- **Autosize columns** will set all the columns in the grid to a size where all the contents of all columns will be displayed
- Click on any column title to sort the grid by that column. A second click will reverse the order of the sort
- Drag the edge of column with your mouse to widen or narrow its display
- Click on the + or - within the report tree to expand or contract that segment of the grid, for example to see all the reports belonging to a specific user
- Use the filter boxes within the title section to select a single category within the column. If the box is a simple text input box, your entry is treated as a wildcard and only the reports that match the wildcard will be displayed.

The columns in the grid have the following functions:

Select	This is the checkbox that allows the selection of a report upon which you want to act. Note that you can check the box within the title to select all the filtered reports and you can check at a node within the tree to select all the reports that reside within that node, such as all the reports that belong to a user or the reports that reside within a specific folder
Shared / Private	All <i>Shared</i> reports are grouped together, within the <i>Shared</i> node of the tree. Within the grid, the <i>Shared</i> reports are followed by the reports for each user. If you place your mouse over the folder that contains a user's reports, you will see the key data associated with the user's account, such as their user ID, Company name and whether they are an enabled or disabled user. When you place your mouse over a report, you will see data such as the report ID within the database and whether the report is shared
Folder	This is the folder name, if any, beneath which the report is stored
Type	This is the type of report, such as Column Report, Matrix Report, etc.
Title	The title of the report
Description	The description of the report
Created	The date the report was created. This is one of the filters that may be used when creating the grid
Last updated	The date the report was last update. This is one of the filters that may be used when creating the grid
Last update user	This is the user ID of the person who last update the report
Last run date	The date the report was last run, by any user with permission to the report. This is one of the filters that may be used when creating the grid
Owner	This is the user ID of the person who last update the report. For user's reports this will always be the same person who appears in the Shared / Private column

Once you have made the selection of reports within the grid, the following actions can be taken:

Delete Selected Reports - All the reports which are checked in the **Select** column will be deleted permanently from the database. Note that empty folders which result from deleting all the reports they contained are also deleted.

Report Scheduler

The report scheduler allows end users to set up and maintain a schedule for their reports. There is an internal ExtraView task that monitors these reports and at the appointed time, will prepare the report and attach it to an outgoing email. The report schedule maintains a list of recipients for each report. See [here](#) for details on setting up and managing the task.

Column reports, Summary reports, Matrix reports, Charts and Container reports may be scheduled and delivered via email.

Security Permission Keys

SR_REPORT_SCHEDULE	This is the overall security permission key that allows access to the report scheduler by user role
SR_REPORT_REPOSITORY_ACCESS	Within the report scheduler, access to write report output to the document repository is controlled by this security permission key
SR_SCHEDULE_ALLOW_ROLE_SELECT	This permission key controls the presence of the list of user roles to which a schedule may be sent, or who may access documents written to the document repository by the report scheduler

Administrative Control

As scheduled reports may have a large impact on system performance, there is an administrative control interface over scheduled reports. Scheduled reports are not necessarily run immediately according to their schedule. They are queued and run sequentially. This is why the scheduler interface says "Start no sooner than". As an administrator, you may still want to adjust, or even disable scheduled reports. Imagine the consequences if the scheduler tried to send out 100 separate reports, to 100 separate users all at 9:00 a.m. on a Monday morning, at the same time these users are all trying to sign on to ExtraView.

Setting the schedule for a report

The administrator can manage the schedule for any user's scheduled report, they may deactivate the schedule, or they may delete the schedule. There is an option to send email to the report owner, when their report schedule is removed. There is also an option that allows the scheduled report to be suppressed, if there are zero results on the output.

Field List Values

For convenience, list values may be maintained from several places:

- Within the **Administration, Operational Tasks, Manage List Values** menu. For convenience, the list of items on this screen includes Privacy Groups and User Roles. These lists can be viewed and modified both from this administrative section as well as within the Users section. The metadata field lists that appear on this screen include all fields with a data dictionary display type of List, Popup, Checkbox, Radio Button and Tab.
- Within the **Administration, Site Configuration, Data Dictionary**, where all field display types that support list values have a *List* button to maintain the values
- From within the **Administration, Site Configuration, Design Center**. When you right-click with your mouse over a field which has list values, an option to modify the list values is present
- For user defined list and popup list display types, there is a layout cell attribute which is added via the **Design Center**, titled *ADD NEW*. This allows the end user to add new values to the list, without being an administrator.

Import Field Values Return Print Page User defined field lists
Operating System ?

Add Add a new entry to the list

Show Filters

	Title to display ▲	Owner	Sort sequence	Enabled	Provenance	Do Not Migrate	Created From Import	List ID	Created	Last updated
Edit	AIX		04	Yes		No	No	7	Jan 12, 2004	Jan 12, 2004
Edit	All		01	Yes		No	No	2	Jan 12, 2004	Jan 12, 2004
Edit	Linux		07	Yes		No	No	12	Jan 12, 2004	Jan 12, 2004
Edit	Mac		10	Yes		No	No	17	Jan 12, 2004	Jan 12, 2004
Edit	Solaris		13	Yes		No	No	22	Jan 12, 2004	Jan 12, 2004
Edit	Windows		16	Yes		No	No	27	Jan 12, 2004	Jan 12, 2004

Import Field Values Return Print Page 6 record(s) selected from a total of 6 record(s)

On the above display, note the column titled **List ID**. This value is useful when writing user custom code and when accessing the ExtraView database via the APIs.

Lists values may be dependent upon values in other lists. This is termed *Allowed Values*, and is covered in more depth in the **Allowed Value** page within the **Site Configuration** section of this guide.

Note the field within the list titled **List ID**. This is the internal UDF_LIST_ID of the field value. Knowing this value is useful in user custom programming and accessing the field values via the APIs.

Within all user defined field lists, there is the opportunity to disable a value. Once the value has been disabled, it will not appear in any screen in a selectable manner. If an existing record already has the value set, then the user may leave the value in place or they may select a new, enabled value.

Note that checkbox fields are stored internally as lists that are constrained to just two values, typically Yes and No, On and Off or something similar. You may not disable a value within a checkbox field.

Interest Lists are also maintained for field values within List maintenance. For example, if you want to maintain an interest list for a specific product, or an interest list for Priority 1 issues, then this may be completed through the add and edit functions of each list.

Loading List Values from Files

This feature only works to load values into user defined field lists. It does not work with inbuilt fields such as **STATUS**, **CATEGORY**, **RESOLUTION** and user field lists. This is not a real limitation as these inbuilt field lists tend to be small lists. Each user defined field list has a button **Import Field Values**. When this is pressed, the administrator is able to load a file of values into the field.

Import Field Values Return Print Page User defined field lists
Operating System ?

Add Add a new entry to the list

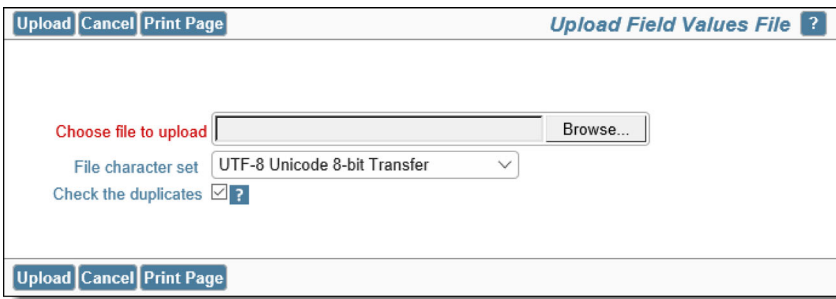
Show Filters

	Title to display ▲	Owner	Sort sequence	Enabled	Provenance	Do Not Migrate	Created From Import	List ID	Created	Last updated
Edit	AIX		04	Yes		No	No	7	Jan 12, 2004	Jan 12, 2004
Edit	All		01	Yes		No	No	2	Jan 12, 2004	Jan 12, 2004
Edit	Linux		07	Yes		No	No	12	Jan 12, 2004	Jan 12, 2004
Edit	Mac		10	Yes		No	No	17	Jan 12, 2004	Jan 12, 2004
Edit	Solaris		13	Yes		No	No	22	Jan 12, 2004	Jan 12, 2004
Edit	Windows		16	Yes		No	No	27	Jan 12, 2004	Jan 12, 2004

Import Field Values Return Print Page 6 record(s) selected from a total of 6 record(s)

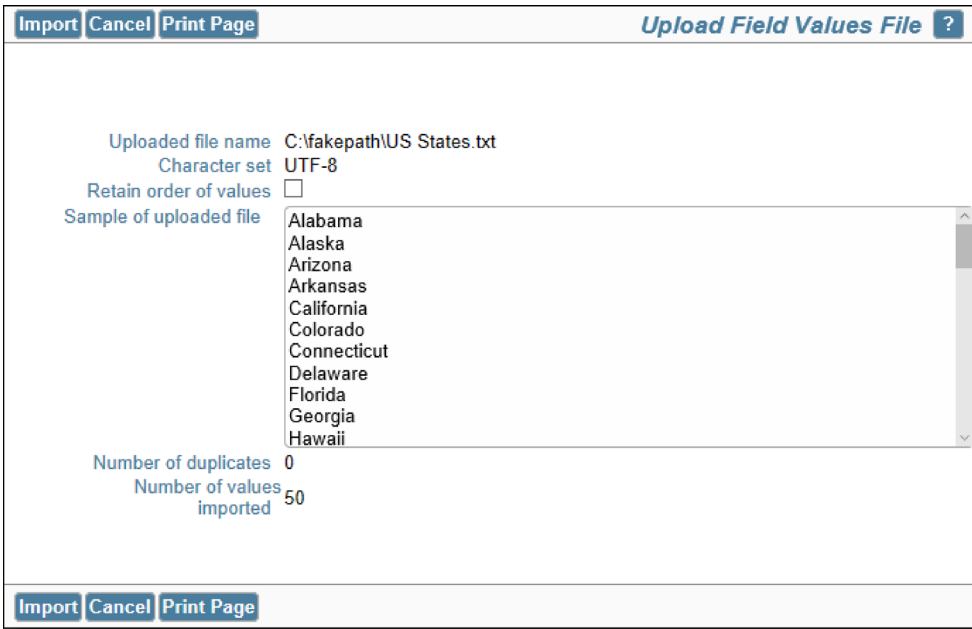
Importing a file of list values

The format of the file to be uploaded is very simple. It is simply a file with a single value per row. The list of values may be ordered and the order retained when it is imported, or it may be unordered, in which case ExtraView will sort the file alphanumerically. When the administrator presses this button, the following dialog appears:



Specifying the file to upload

When the file is uploaded, you will see a sample of the file:



Sample of uploaded file

Note the prompt that allows you to retain the order of the field values in your import file, or allows the list to be sorted alphanumerically.

The import may also handle importing list values that have an associated image. In this case, the import file must have the images to be imported encoded with the Base-64 algorithm. A common use of this feature is to export a field with a set of images from one instance and to load the list values with their images into a different field on the same or on a different ExtraView instance. A partial screen showing the Base-64 encoded values is shown below:



List Entries with Allowed Values

Editing lists that are the child in an allowed value relationship is a little different. As seen in the screenshot below, the list of all the potential parents is displayed, each with a checkbox. Also, if Business Areas and Projects are enabled, you must select the Business Area and Project for which you want to set the allowed values (see the next section).

Click on each of the parent values that this child is allowed to be related to. The example shows an allowed value relationship between two fields, where the field named *Building* is the parent and the field named *Floor Number* is the child.

The screenshot shows a web-based interface for updating a user-defined field list entry. The window title is "Update User defined field lists entry" and the field name is "Floor Number". At the top right, there are buttons for "Update", "Delete", "Cancel", and "Print Page".

The main form contains the following fields and controls:

- Title to display:** A text box containing "Basement" and a "Localize" button.
- Sort sequence:** An empty text box.
- Owner:** A dropdown menu currently set to "* None *".
- Enabled:** A checked checkbox.

Below these fields is a section titled "List of allowed values" with a descriptive paragraph: "This field is a child in a parent-child allowed value relationship. Check all parent values where you want this item to appear in the allowed values list when inserting or updating records".

Under this section are two dropdown menus:

- Select Business Area:** Currently set to "* Select Business Area *".
- Select Project:** Currently set to "* Select Project *".

At the bottom, there is a "Building List" section with three entries, each with a checkbox:

- Building One
- Building Three
- Building Two

At the bottom right of the window, there are buttons for "Update", "Delete", "Cancel", and "Print Page".

Allowed Value relationships are maintained within their child list

Note that this screen allows you to modify the allowed value children for a single parent, on a single screen. This is ideal for making alterations to existing relationships. If you want to add a series of allowed value relationships for different parents, you may find it more convenient to use the administration screen under Allowed Value Types. Both methods will result in the same changes, but sometimes it is more convenient to take a "top-down" rather than "bottom-up" approach.

Business Areas and Allowed Value Relationships

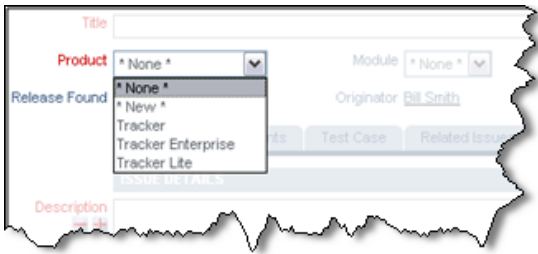
It is important to note that when Business Areas and Projects are enabled, the allowed values that you set are only for the selected Business Area and Project. This is controlled by additional prompts on the maintenance screen as shown above. You must set up the allowed value relationship for each Business Area and Project.

Note: If the Business Area field is the parent field in the allowed value relationship then you should be aware of how the interaction with the fact that allowed values are dependent upon Business Area works. The implication is that you can only define the child in the relationship to either belong, or not belong to the currently selected Business Area. There is no meaning to allowing the child to be selected with other Business Areas. Therefore, you will only see the currently selected Business Area with a checkbox in the list of possible allowed values.

Note: You can set up a set of default values for a relationship. These will be used, unless overridden by a specific set up within any Business Area and Project.

End-User List Management

End users may add new values to lists under certain circumstances, where the administrator has enabled the feature with security permissions, and has turned on the feature on specific layouts. To an end user, the ability to add a new value to a list appears like this:



Adding a new value to a list

When the end user selects the *** New *** entry in the list, a window pops up, asking for the details of the list. The appearance of this popup varies a little, according to whether the list is an inbuilt list field (such as **product_name**), a child list such as **module_id** or **release_found** or **release_fixed**, or is a user-defined field list. The inbuilt fields require the addition of the field's fixed name, plus its title. Dependent child fields require the parent field to be selected, and the relevant fixed name and/or title. User defined fields only require the title to be input. This is an example of a popup for the **product_name** field:

This is an example of adding a User Defined Field list value:

Add Return Print Page

UDF

Title to display ?

Sort sequence ?

Owner ?

* None *
 Bill Smith
 Chris Robinson
 Frank Gallagher
 George Miller
 Jimmy Duncan

Enabled ?

Interest List

Create a global interest list for this value ?

Add user to this interest list ?

* Select a User * ▼

XML Export / Import Parameters

Provenance ?

UDF UTILITY

Do not migrate this field value ? Created by XML import ?

Add Return Print Page

To configure a field to use this feature, take the following steps. Note that only a small number of inbuilt fields may be used in this way, but any user defined field list may be configured.

Field	Security Permission Key
PRODUCT_NAME	CF_PRODUCT
MODULE_ID	CF_MODULE
RELEASE_FOUND, RELEASE_FIXED	CF_PRODUCT_RELEASE
All UDF's with a display type of List, with the exception of multi-valued lists	CF_UDF_LIST

- For the user role or user roles that you want to be able to add new values to a list, give the security permission key in the above table write access
- The * **New** * entry is added to the list by adding a layout cell attribute to the field on the appropriate *add* and/or *edit* layout. The layout cell attribute is FIELD ADD NEW and it applies to ADD PROBLEM and EDIT PROBLEM layouts.
- The feature works with UDF list and popup fields on repeating rows as well as on standard list fields
- The feature works with multi-valued list and popup fields on standard list fields only. It does not work with multi-valued list fields on repeating row fields
- The feature does not work with fields being used on reports with the Quickedit mode
- The feature does not work with other types of list fields such as tab and radio button.

User Groups

User Groups are composed of any number of ExtraView users. These users may be added to a named user group in an arbitrary way. They do not need to be connected in any way such as belonging to the same user role. Once a user group has been formed there are specific actions that can be taken with the user group. At this time, these actions are:

- Reports can be saved so that they are shared among the members of a user group
- Future release of ExtraView will extend this list.

Return Print Page Manage User Groups

Directions
This utility allows you to create and maintain groups of users. Groups of users are arbitrary collections of people that are primarily used for purposes such as sharing reports.

New Create a new user group

	Group Name	Group Title	Owner	Created	Last updated
Edit Del	CTI	CTI	Bill Smith 10/5/11 8:05 AM	Bill Smith 10/5/11 8:05 AM	Bill Smith 10/5/11 8:06 AM
Edit Del	DELTA_PROJECT	Delta Project Group	Bill Smith 10/4/11 3:18 PM	Bill Smith 10/4/11 3:18 PM	Bill Smith 10/4/11 3:18 PM
Edit Del	MGMT	Management Group	Bill Smith 10/4/11 3:18 PM	Bill Smith 10/4/11 3:18 PM	Bill Smith 10/4/11 3:18 PM

Return Print Page 3 record(s) selected from a total of 3 record(s)

Managing User Groups

With the use of the SR_REPORT_GROUP security permission key, there is control over access to user groups. Without *write* access to this permission key, end users are not able to save reports to be shared by a user group, and are not able to see the **Manage User Groups** button on the **Report** screen. The permission key that controls administrative access to the **Manage User Groups** function in the **Operational Tasks** tab of administration is named CF_USER_GROUP.

The **Manage User Groups** function looks similar to both end users and to administrators. However, end users may create and manage user groups and then have control over these user groups, but not user groups created by other end users. The **Manage User Groups** function for administrators allows the complete management of all user groups.

Interest Lists

An interest list is placed upon a value or combination of field values in order to notify one or more users when an issue contains the field or fields with the value or values. For example, a product manager may want an interest list on all issues that touch his **product**. The engineering director may want to see automatically, all the issues that are marked with a **severity level** of *critical*.

Both administrators, and to a more limited extent, users may manipulate interest lists. There is one special interest, which affects entire issues, that is not dependent upon the value of any field within an issue. In this case members of the interest list will receive notification upon all changes to the issue.

Interest lists may be global, or they may refer to a single combination of Business Area and Project. Interest lists are not inherited. Like layouts and security permissions.

Interest lists are enabled on each field from within the field's data dictionary definition.

Interest Lists Return Print Page

Interest lists defined in the Master Area and Master Project are global in nature and affect all issues. If you define an interest list in a specific Business Area and Project, it only affects issues in that Business Area and Project. There is no inheritance with interest lists. To remove a user from an issue-based interest list, go to the user account maintenance screen for the user.

Add Add a new interest list

	Title	Area	Project	Opt Out Allowed	Enabled List	Created	Last updated
Edit List	Customer = Bank of America	Global interest list		Yes	Yes	ExtraView May 26, 2006	Taro Nippon August 16, 2006
Edit List	High Priority issues for the Tracker Product	Global interest list		Yes	Yes	Bill Smith July 2, 2006	Taro Nippon August 16, 2006
Edit List	Product = Tracker	Global interest list		Yes	Yes	ExtraView May 26, 2006	Taro Nippon August 16, 2006
Edit List	Product = Tracker Enterprise	Global interest list		Yes	Yes	ExtraView May 26, 2006	Taro Nippon August 16, 2006
Edit List	Tracker Lite Documentation Issues	Global interest list		Yes	Yes	Bill Smith July 2, 2006	Taro Nippon August 16, 2006
Edit List	New high priority customer issues	Customers	Customer Data	No	Yes	Bill Smith July 2, 2006	Taro Nippon August 16, 2006
Edit List	Newly published knowledge base issues	Knowledge Base	Knowledge Base Data	Yes	Yes	Bill Smith July 2, 2006	Taro Nippon August 16, 2006

7 record(s) selected from a total of 7 record(s) Return Print Page

Interest List Definition

Any interest list for any field can be maintained from this screen. Use the **Edit** button by any entry to modify an existing interest list's details, use the **List** button to modify the users who belong to the interest list, and to create a new interest list, click on the **Add** button by the prompt **Add a new interest list**. The following screen appears when you add a new interest list:

Interest List Add Cancel Print Page

Interest lists that you create in the Master Area and Master Project are global in their effect. Interest lists that you create in a specific area and project only apply to issues within that area and project. You can create each interest list with up to five criteria.

Interest list title

Business Area * Global interest list *

Project * Global interest list *

Users may opt-out from interest list

Enabled

Interest list criteria

Field name * Select *

AND * Select *

AND * Select *

AND * Select *

AND * Select *

Add **Cancel** **Print Page**

Adding a new interest list

If the interest list you create is to be global, create it within the *** Global Interest List ***, in the fields titled Business Area and Project. If you want the interest list to be mandatory for all users, then do not check the box **Users may opt-out from interest list**. If you check this box, users will be able to opt-out of the interest list from their account option screen. You can also disable an interest list, without deleting it from the system with the **Enabled** checkbox.

Note: Only regular users of ExtraView can be added to interest lists. According to the terms of the license agreement, guest and other users who only belong to the behavior setting named LIMITED_USER_ROLE, cannot be added to interest lists.

If you are creating a list value for a field in the list management area and interest lists are enabled for the field, the administrator is allowed to create an interest list for the field at that point, without going to the interest list administration screen. This is purely for convenience.

Also note that if the user has write permission to CF_INTEREST_LIST, then the user will see all the global interest lists and may opt in and opt out of these lists. The user needs write permission to individual business areas and projects to be able to opt in and opt out of any interest lists defined within these.

Personal Administration of Interest Lists

Please see the section on [User Account Maintenance](#) for details on how a user or the administrator can maintain the interest lists for the individual user.

Field-Based Interest Lists

Enabling Interest Lists on Fields

You may enable interest list on fields that have a display type of List, Tab, or Popup. In addition, end users may create an interest list on any issue, provided their role has permission to the security keys PR_ADD_PROBLEM.INTEREST_LIST or PR_RESOLUTION.INTEREST_LIST. Interest list on fields are enabled within the data dictionary.

The screenshot shows the 'Change a Data Dictionary Entry' interface for the field 'ASSIGNED_TO'. The 'Fixed name' is 'ASSIGNED_TO' and the 'Title to display' is 'Assigned To'. The 'Type of field' is 'Inbuilt field' and 'Field belongs to' is 'Issue records'. The 'Display type' is 'User'. The 'Field Properties' tab is active, showing several options: 'Allow selection on reports' (Yes), 'Remember last value' (No), 'Enable interest list' (No), 'Auto-Complete' (Off), 'Filter criteria' (Yes), 'Is sortable' (Yes), and 'Display as URL' (No). A red arrow points to the 'No' radio button for 'Enable interest list'. The 'Default value' is empty, and the 'Help text' is 'The name of the user that this problem is currently assigned to'. The 'Help URL' is 'helpGlossary.html#assignedto'.

Option to Enable Interest Lists

- Check the **Yes** radio button on the Email Interest List option to enable the interest list for this data dictionary entry.
- Click the **Update** button at the top or bottom of the screen.

Utilizing Field-based Interest Lists

Interest lists are enabled on each field from within the field's data dictionary definition. Within the **Email Notification** section of administration, there is a menu entry named **Interest Lists**. This administration function is controlled by the security permission key named CF_INTEREST_LIST.

The screenshot shows the 'ExtraView Administration' interface. At the top, there is a 'LOGO' on the left and user information 'Bill Smith Administrator' and 'Bugs' on the right. Below this is a navigation bar with tabs: Home, Add, Query, Admin, Help, Sign Off, and a search box for 'Reports'. Underneath, there are buttons for 'Use Simple Administration Mode' and 'Print Page'. The main navigation area includes tabs for 'Users', 'Lists', 'Fields & Layouts', 'Display & Reports', 'Workflow', 'Email Notification', 'System Controls', and 'Import/Export'. The 'Email Notification' tab is active, and within it, the 'Interest Lists' option is highlighted with a red arrow. Below this, there are four sub-items: 'Escalation Rules', 'Email Settings', and 'Email Templates', each with a brief description of their function.

Interest List Access

Note that you may grant non-administrative users permission to this permission key. When you do this, they will see a prompt on the Notification section of their Personal Options screen that allows them to administer the interest lists. Note that this gives them a level of administrative privilege, including being able to create and delete interest lists, and to add and remove any user to and from an interest list. When you select this menu entry, a screen similar to the following will appear:

The screenshot shows the 'Interest Lists' administration screen. At the top, there are 'Return' and 'Print Page' buttons. Below this is a descriptive paragraph: 'Interest lists defined in the Master Area and Master Project are global in nature and affect all issues. If you define an interest list in a specific Business Area and Project, it only affects issues in that Business Area and Project. There is no inheritance with interest lists. To remove a user from an issue-based interest list, go to the user account maintenance screen for the user.' Below the text is an 'Add' button with the label 'Add a new interest list'. The main part of the screen is a table with the following columns: Title, Area, Project, Opt Out Allowed, Enabled List, Created, and Last updated. The table contains 8 rows of data. At the bottom, there is a status bar that says '8 record(s) selected from a total of 8 record(s)' and 'Return' and 'Print Page' buttons.

	Title	Area	Project	Opt Out Allowed	Enabled List	Created	Last updated
Edit List	Interest list for the Tracker product	Master Area	Master Project	Yes	Yes	Bill Smith Apr 4, 2006	Bill Smith Apr 4, 2006
Edit List	Interest list for the Tracker Enterprise product	Master Area	Master Project	Yes	Yes	Bill Smith Apr 4, 2006	Bill Smith Jun 7, 2006
Edit List	Interest list for the Tracker Lite product	Master Area	Master Project	Yes	Yes	Bill Smith Apr 4, 2006	Bill Smith Apr 4, 2006
Edit List	Interest list for P 1 issues	Master Area	Master Project	No	Yes	Bill Smith Apr 4, 2006	Bill Smith Apr 4, 2006
Edit List	Interest list for P 2 issues	Master Area	Master Project	Yes	Yes	Bill Smith Apr 4, 2006	Bill Smith Apr 4, 2006
Edit List	Carl's interest list	Master Area	Master Project	Yes	Yes	Bill Smith May 18, 2006	Bill Smith May 18, 2006
Edit List	High Severity Interest List	Bugs	Bugs Defaults	No	Yes	Bill Smith Apr 27, 2006	Bill Smith Apr 27, 2006
Edit List	Newly published Knowledge Base items	Knowledge Base	Knowledge Base Defaults	Yes	Yes	Bill Smith Jun 21, 2006	Bill Smith Jun 22, 2006

Interest List Definition

From this screen you may create new interest lists, modify existing interest lists, or manage the list of users who are subscribed to any interest list. To create a new interest list, click on the **Add** button. The following screen appears:

Interest List Add Cancel Print Page

Interest lists that you create in the Master Area and Master Project are global in their effect. Interest lists that you create in a specific area and project only apply to issues within that area and project. You can create each interest list with up to five criteria.

Interest list title

Business Area

Project

Users may opt-out from interest list

Enabled

Interest list criteria

Field name

AND

AND

AND

AND

Add Cancel Print Page

Adding a new interest list

If the interest list you create is to be global, create it with the Business Area and Project having a value of * **Global interest list** *. If you want the interest list to be mandatory for all users, then do not check the box **Users may opt-out from interest list**. If you check this box, users will be able to opt-out of the interest list from their personal account option screen. You can also disable an interest list, without deleting it from the system with the **Enabled** checkbox. If the field you select for the interest list criteria is a multi-valued list field, then you may only select a single value for the interest list. If you need to select multiple values, you will need to set up multiple interest lists. Interest lists may be built upon field conditions beyond looking for equality with a value. For example, for fields with a display type of LIST, POPUP, and TAB, you may create an interest list condition looking for when a field is **changed to** or **changed from** a specific value. The following screenshot displays how this is achieved.

Interest List Add Cancel Print Page

Interest lists that you create in the Master Area and Master Project are global in their effect. Interest lists that you create in a specific area and project only apply to issues within that area and project. You can create each interest list with up to five criteria.

Interest list title

Business Area

Project

Users may opt-out from interest list

Enabled

Interest list criteria

Field name	<input type="text" value="Category"/>	<input type="text" value="equals"/>	<input type="text" value="* None *"/>
AND	<input type="text" value="* Select *"/>	<input type="text" value="equals"/>	<input type="text" value="* Select *"/>
AND	<input type="text" value="* Select *"/>	<input type="text" value="changed to"/>	<input type="text" value="* Select *"/>
AND	<input type="text" value="* Select *"/>	<input type="text" value="changed from"/>	<input type="text" value="* Select *"/>
AND	<input type="text" value="* Select *"/>	<input type="text" value="* Select *"/>	<input type="text" value="* Select *"/>

Add Cancel Print Page

Setting the operator for an interest list field

After adding an interest list, you manage the users associated with the list using the **List** button by the interest list details. The following screenshot shows the presentation of the interest list members and where they are maintained.

Interest Lists Update Return Print Page

Choose a user from the select list to add to the interest list, then press the Update button. Repeat to add additional users to the interest list, then press Return to finish. You can remove a user from the interest list by using the Delete button by their name.

Choose from the list of users

	User Id	First Name	Last Name	Company
Delete	Jimmy Duncan	Jimmy	Duncan	Superior Software Corp
Delete	Mary Brown	Mary	Brown	Superior Software Corp
Delete	Sally Hunt	Sally	Hunt	Superior Software Corp
Delete	Susan Green	Susan	Green	Superior Software Corp

4 record(s) selected from a total of 4 record(s)

Update Return Print Page

Maintaining the list of users on an interest list

Add new users to the interest list by choosing their name from the select list, then pressing the **Update** button. Delete users from the list by pressing the **Delete** button by their name.

Note: Only regular users of ExtraView can be added to interest lists. According to the terms of the license agreement, guest and other users who only belong to the behavior setting named LIMITED_USER_ROLE, cannot be added to interest lists.

Issue-Based Interest Lists

Creating Interest Lists on Issues

On the *add* screen and from the *edit* screen, there is a checkbox named **Include self on interest list**. When a user checks the box, they add themselves to an interest list for this individual issue. If the user is already subscribed to the interest list then they may uncheck the box to remove themselves from the interest list.

Within a user's personal notification options, they may remove themselves from any issue-based interest list to which they have subscribed, but the only way to add themselves to an issue-based interest list is to update the issue and check the **Include self on interest list** checkbox. The reason for this is that in a large installation, there could be tens of thousands separate issue-based interest lists, and this would be unmanageable on a maintenance screen.

Subscribing and unsubscribing from an issue interest list

Security Permissions & Interest Lists

Due to the potential for change in the valid user roles for any user, and the potential for change in the security permissions of any field, there is no direct connection between the setup of an interest list and the users who may belong to that interest list. For example, it may be that a user belongs to interest list on a field named *any_field*. A specific user may not have permission with their current role to see this field, but they may be on an interest list that contains a reference to *any_field*.

The key point is that although a notification to the user may be generated when the value of *any_field* changes, the user will never see the field or its contents without permission to the security permission key.

Also, remember that there is a behavior setting named EMAIL_NOTIFY_USERS_ALWAYS that can be set to suppress notification to any user, if no field that is visible to them changes upon the update of an issue.

Escalation Rules

Escalation is the process whereby ExtraView will automatically examine a set of issues, based upon time-based criteria and filters that you provide, and send notification warnings based upon any issue exceeding the time-based criteria. For example, you may want to escalate all issues that have remained with a Status value of Open, if the value is not changed within 24 hours.

Escalations in ExtraView are enabled using a **background task**. Escalations will not run unless this task is set up and is running. The parameters of the task include a poll interval which is the number of seconds between each time that ExtraView will run the escalation task to check for issues that should be updated to signify that they have met the rules defined for the escalation to take place. Please see the section on [Managing Tasks](#) for more information on setting up the escalation task.

Escalation rules are used to update issues based on the time spent in a given Status. This update will generate notification email, thereby notifying the issue owners.

Escalation rules may be global, i.e. they are defined in the Global Area and Global Project, or they are defined in a specific business area and project. There is no inheritance of escalation rules through the hierarchy of business areas and projects.

Each escalation can use a different **Business Calendar**. Each calendar can define working and non-working days, working and non-working hours. In this way the escalations you define can calculate times accurately according to your business practices. For example, your team may have an SLA that guarantees the resolution of a problem in 3 business days. A correctly defined calendar will skip weekends and holidays that your company respects.

Initial Setup

Two User Defined Fields are defined to support the use of escalation. These are:

- EV_ESCALATED_LAST, a date field
- EV_ESCALATED_COUNT, a number field.

In the data dictionary, you must set both **Allow selection on reports** and **Filter criteria** to have a value of *Yes* on these fields. In addition, you must have granted permission to read and update these fields for the user role of the ADMIN user. These fields do not need to appear on a layout. In a new ExtraView system, these fields are supplied with read and write permissions for the *admin* user role.

Also, the date mask for the ADMIN user account that is running the escalation task must include a time component; it cannot be a simple day format.

Creating and Maintaining Escalation Rules

The initial maintenance screen shows a summary of all the escalation rules in your installation

	Title	Area	Project	Opt Out Allowed	Sort Seq	Created	Last updated
Edit List	Open Issues on the Tracker product that have not changed in a week	Global Escalation Rule	Global Escalation Rule	No		Bill Smith July 14, 2006	Bill Smith March 8, 2007
Edit List	Escalate Customer P 2 Issues 1 day after creation, if they are still open	Customer Issues	Customer Support Issues Defaults	No		Bill Smith March 23, 2007	Bill Smith March 23, 2007

Maintaining escalation rules

From this screen, you can create new escalation rules, or maintain the list of users attached to each escalation rule. You can also view whether the escalation rules are global or whether they are executed for an individual business area and project.

Also note that if the user has write permission to CF_ESCALATION_RULES, then the user will see all the global escalation rules and may opt in and opt out of these lists. The user needs write permission to individual business areas and projects to be able to opt in and opt out of any escalation rules defined within these.

Maintaining Escalation Rules

When you **Add** or **Edit** an escalation rule, the following screen appears:

Update Cancel Delete Print Page
Escalation Rule ?

Directions

Escalation Rules that you create in the Global Area and its Global Project are applied everywhere. Escalation Rules that you create in a specific area and project only apply to issues within that area and project. You can create each escalation rule with up to five criteria.

Escalation rule title Localize

Business Area

Project

Business Calendar

Enabled

Escalation method Escalate using time in status Escalate using formula based on a date field

Elapsed time hours

Frequency

Sort Sequence

Action

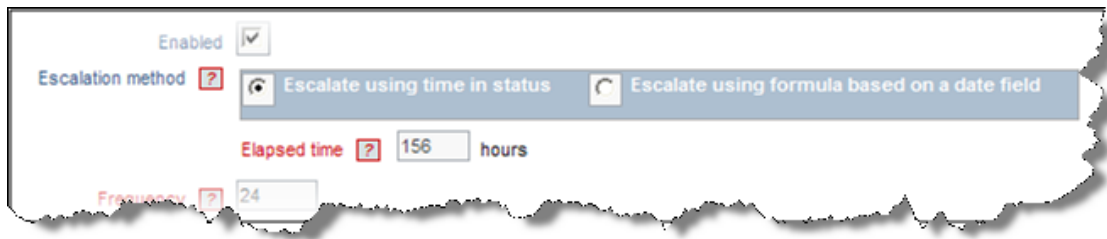
Escalation rule criteria

	Select Field	Operator	Value
+	Status(STATUS)	equals	<input type="text" value="* Any *"/> <input type="text" value="* Ask at runtime *"/> <input type="text" value="* None *"/> <input type="text" value="New"/> <input type="text" value="Not Yet Tested"/>
+	and Product(PRODUCT_NAME)	equals	<input type="text" value="* Any *"/> <input type="text" value="* Ask at runtime *"/> <input type="text" value="* None *"/> <input style="background-color: #0070C0; color: white;" type="text" value="Tracker"/> <input type="text" value="Tracker Enterprise"/>

Update Cancel Delete Print Page

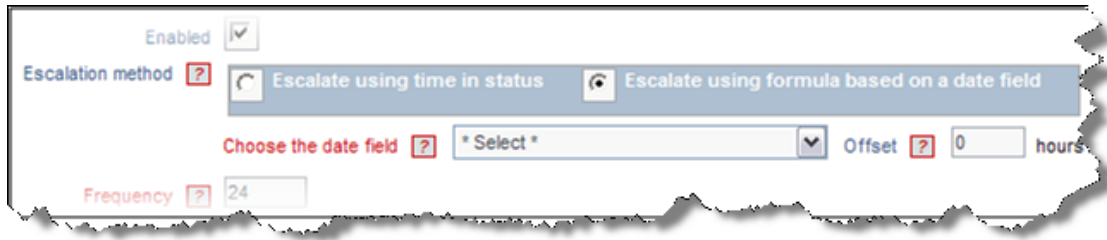
Adding and updating escalation rules

Field	Purpose
Escalation rule title	The title of the escalation rule that is presented to the administrator and to users when opting in or out of a rule
Business Area & Project	If the rule being defined is to be global in its scope, then these should be set to * Global escalation rule * and * Global escalation rule * . A rule will only apply to an individual area and project if you select a specific area and project
Business Calendar	Select the Business Calendar to use in the calculation of the time to escalate the issue. The default calendar provided with ExtraView is 24 hours by 7 days a week by 365 days per year. Create your own calendars to set the workdays and workhours for different escalation rules. Non-workhours and non-workdays will be skipped in the calculation of escalations
Enabled	This allows the rule to be turned off and turned on
Escalation method	Issues may be escalated based upon the amount of time spent in a single status without change of that status, or they may be escalated according to the value of a date or day type field on that is on the edit layout of the issue within it's business area and project Time in status escalations The number of hours an issue has been in a given status before it is escalated. Partial hours are supported using decimal points in the number. Note that there is an interaction with the timer that is used to escalate issues, so an issue is not escalated immediately that the elapsed time is reached, but is escalated on the first occasion following the reaching of the elapsed time that the timer fires. Click on the Escalate using time in status to use this method of escalation.



Setting the elapsed time for an escalation based on status

Formula-based escalations You may escalate an issue based upon the value of a date field contained on the edit layout of the issue, plus or minus an offset. For example, you may set a reminder 1 day before an item is due, or you may set a reminder when an item reaches an expiry date. The escalation will occur at the time the escalation script fires following the rule you create. Click on the **Escalate using formula based on a date field** radio button for this type of escalation.



Basing an escalation on a date field in an issue

The offset may be left blank, in which case the escalation happens at the next time the script fires, following the name of the date field you select. You can set the offset to a positive or negative number of hours as required.

Frequency	After the issue is escalated, this is the amount of time that elapses, before the issue is again escalated. You may enter any number of hours or part of an hour as a decimal portion.
Sort Sequence	Providing a sort sequence for escalation rules has two purposes. First, this will affect the order they are displayed in. Rules with no sort sequence are displayed in alphabetic order. Secondly, and importantly, rules are executed in the order of the sort sequence. Therefore, if you have a number of rules which could conflict with each other, the order becomes significant, and you should provide a high-order sort sequence for your most important rules, ensuring they are executed before less important rules.
Action	This is where you place assignments to fields, to update these fields to the new value(s) you provide within the action. Actions are delimited with semi-colons and follow the same syntax rules as described in the section in this guide named Business Rules. Leave this field blank if you simply want to have the escalation rule notify users without changing the values of fields in the issue. You can notify additional users in the Action field, either by placing their explicit user ID in the field (followed by a semi-colon) or by using the data dictionary name of a field such as ORIGINATOR, ASSIGNED_TO or OWNER. In the second case, the person whose value is in that field is notified upon the triggering of the escalation.
Escalation rule criteria	These are filters that are used to provide the specific set of values, in addition to any date value you select. For example, you may set a filter to only fire the trigger base on the value of the product, or based on the current priority of the issue.

Note: There is only one field named EV_ESCALATED_LAST. This is shared by all escalation rules. The rule that fires first will update this field, perhaps preventing other rules from being triggered. If you want other rules to fire in addition to the first one triggered, set their interval to 0; these rules then fire every time the escalation engine runs. This may not be desirable, mainly for performance reasons, but is a way to solve the problem.

Note: If an issue is escalated according to one rule, it may no longer meet the same criteria to be escalated again, but it may be triggered by another rule using the same status. However, the pre-existing value of EV_ESCALATED_LAST may cause premature firing of the new rule. In this case, write a business rule to clear EV_ESCALATED_LAST when the issue is updated to move outside the scope of the first rule.

Example Escalation Rules

Example 1

Escalate all issues with **PRIORITY**=P 1 and **STATUS**=Open if status has not changed for at least 4 hours. Keep escalating issues every two hours thereafter, as long as the **STATUS** and the **PRIORITY** remain unchanged. At every escalation, add a new **COMMENT** field with the specified text to the qualified issues and send the notification to all members of the escalation rule.

Field	Value
Escalation rule title	Escalate all P1 and Open Issues
Business Area	Global Area
Project	Global Project
Elapsed time	4
Frequency	2
Enabled	Checked
Action	COMMENTS = "This issue is escalated because its priority is P1 and its Status is Open"; COMMENTS &= SYSDATE;
Escalation rule criteria	STATUS = Open PRIORITY=P 1

Example 2

Escalate all Bugs issues where the **SEVERITY** is High, if the **STATUS** has not changed in at least 2 hours. Keep escalating issues every hour as long as the **SEVERITY** and the **STATUS** remain unchanged. At every escalation send notification email to the users who opt-in to the escalation rule.

Field	Value
Escalation rule title	Escalate all issues which have a High severity level for more than 4 hours
Business Area	Bugs
Project	Bugs Data
Elapsed time	2
Frequency	1
Enabled	Checked
Action	COMMENTS = COMMENTS = "This issue is being escalated because its Priority is P 1 and its Status is Open";COMMENTS &= SYSDATE;
Escalation rule criteria	SEVERITY_LEVEL=1;

Example 3

Escalate all Customer **P 2** issues 24 hours after they were due, based upon the value of a date field named **due_date**, if the status of the issue is **Open**. Set the **Priority** to a new value of **P 1**.

Field	Value
Escalation rule title	Escalate Customer P 2 Issues 1 day after creation, if they are still open
Business Area	Customer Issues
Project	Customer Issues Defaults
Date Field	Due Date
Offset	24
Frequency	24
Enabled	Checked
Action	COMMENT = "This customer issue has been escalated to P 1 as the SLA for a P 2 issue mandates the issue must be handled within 24 hours"; PRIORITY = "P 1";
Escalation rule criteria	Status = Open

Business Calendar

Business calendars allow the definition of work days, holidays and non-work days. The calendar is used in computations of elapsed time between two moments, to only count the business time involved.

For example, you might want to escalate issues that have remained in a specific status for more than 3 business days, but omit Saturdays and Sundays. Similarly, you might want to omit hours outside of 9:00 am through 5:00 pm when you calculate the elapsed time.

The Business Calendar feature allows the setup of any number of calendars for different purposes, so if different groups or different parts of your organization work different hours or days, then this can be taken into account. Each calendar is independent and may, for example, have different company holidays.

ExtraView comes with two default calendars, one named 24_BY_7 and one named WEEKDAY. The 24_BY_7 calendar has no holidays, or non-workdays and therefore counts the absolute time between two dates. The WEEKDAY calendar has Saturday and Sunday set as non-work days, and the work hours are set to 9:00 am to 5:00 pm. These default calendars can be updated, or you can create any number of new calendars.

There is a behavior setting named RULES_DEFAULT_CALENDAR. If a business rule does not specify a calendar in a directive, then this calendar will be used for computations involving dates. If this does not have a valid entry, then the 24_BY_7 calendar is used within the rules.

You can use a business calendar by specifying which one to use within escalation rules or within business rules. When you update a calendar, the screen will look similar to this:

Save Save As Return Print Page
Business Calendar

Directions

- 1 - Provide a name and title for the calendar
- 2 - Set the workdays, and workhours if required
- 3 - Click with the mouse left button to alter a day on the calendar to a holiday
- 4 - Click with the mouse right button to override the work hours for a day

Calendar Name WEEKDAY

Calendar Title Monday to Friday, 9 a.m. to 5 p.m. Localize

Time Zone ? (GMT -8:00) America/Los_Angeles

Work Days ? **Work Hours** ?

Sun

Mon 9:00 AM to 5:00 PM

Tue 9:00 AM to 5:00 PM

Wed 9:00 AM to 5:00 PM

Thu 9:00 AM to 5:00 PM

Fri 9:00 AM to 5:00 PM

Sat

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January

Sun	Mon	Tue	Wed	Thu	Fri	Sat
						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30	31					

February

Sun	Mon	Tue	Wed	Thu	Fri	Sat
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28					

March

Sun	Mon	Tue	Wed	Thu	Fri	Sat
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	31		

April

Sun	Mon	Tue	Wed	Thu	Fri	Sat
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30

May

Sun	Mon	Tue	Wed	Thu	Fri	Sat
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	31				

June

Sun	Mon	Tue	Wed	Thu	Fri	Sat
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30		

July

Sun	Mon	Tue	Wed	Thu	Fri	Sat
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30
31						

August

Sun	Mon	Tue	Wed	Thu	Fri	Sat
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	31			

September

Sun	Mon	Tue	Wed	Thu	Fri	Sat
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	

October

Sun	Mon	Tue	Wed	Thu	Fri	Sat
						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30	31					

November

Sun	Mon	Tue	Wed	Thu	Fri	Sat
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30			

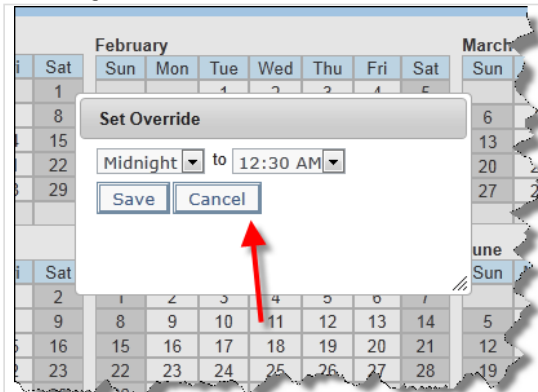
December

Sun	Mon	Tue	Wed	Thu	Fri	Sat
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31

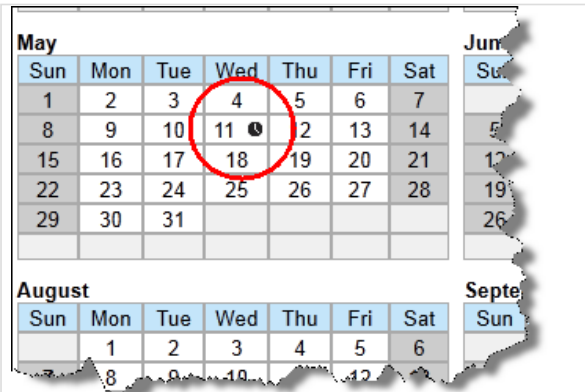
Setting up a calendar

- Calendar names conform to the standard naming convention
- Calendar titles conform to the standard convention of other titles, and may be changed and may be localized

- The Time Zone is typically the time zone of the owner of the calendar
- You use the Work Days checkboxes to nominate the standard work and non-work days through the calendar
- You use the Work Hours select lists to nominate the standard work and non-work work hours for each work day, through the calendar
- Use the arrows on either side of the year to move forward and backwards, in one-year intervals
- The numbers on the calendar with the grey background are the non-work days; numbers with a white background are work days
- To set a work day to a holiday, click once on the date with your mouse. To change the day to a non-work day, click once again. To restore the date back to a work date, click again. At this point in time, there is no difference between holidays and non-work days. In the future, there may be differentiation between holidays and non-work days
- You can override the work hours for any work day on the calendar by right-clicking with the mouse on the day. When you do this, a popup window allows you to set new work hours for that day only. Once you have overridden work hours for any day, a small clock will appear by the date, to show that the day has different work hours than the base work hours for the day. The following screenshots show how to override the time on a work day:



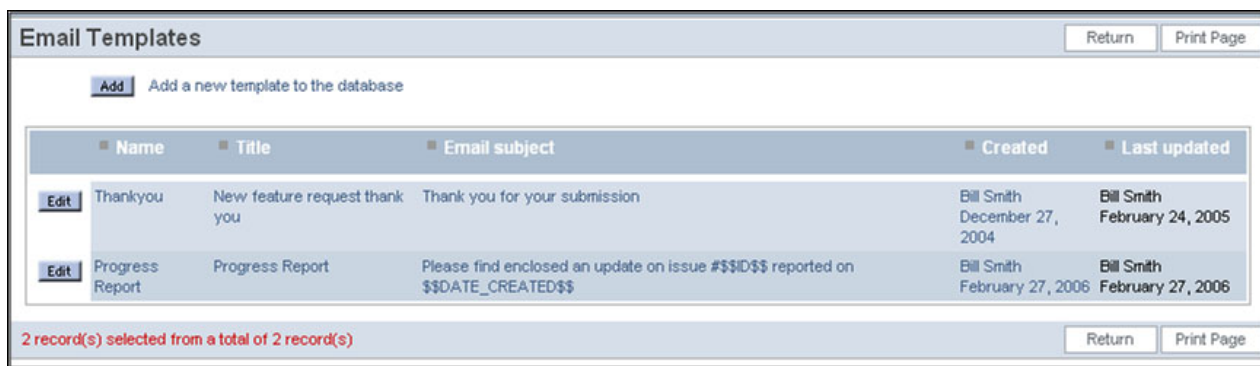
Overriding work hours



Seeing overridden work hours

Custom Email Templates

This feature allows the administrator to create standard email templates for email notification in situations where a standard response is warranted. For example, if your product team had a number of issues entered by the members of a beta test group, and they wanted to be able to send a standard confirmation to a group member whenever there was a resolution, this feature could be employed for this purpose. Another example is that a customer support representative could choose from one of several standard replies to a customer reporting a problem. These replies could be geared to acknowledging receipt of a problem, informing the customer of progress towards resolution of a problem or notifying the customer that a problem has been resolved. Custom email notifications may be sent from the *edit* screen of an issue, using the **Email** button on the menubar, or they may be sent using an automated process via a business rule. From the administration **Operational Tasks** menu, click the **Email Templates** button. The following screen appears:



Email Templates screen

To add a new email template, click the **Add** button. The following screen appears:

Update
Delete
Cancel
Print Page

Email Templates ?

Template Name ?

Template Title ? Localize

Email Subject Line ?

From User ?

Reply-To User ?

Send Email as HTML ?

Delimiter in Outgoing Mail ?

Save Outgoing Emails ?

Save As ?

Embedded Report 1 ?

Embedded Report 2 ?

Embedded Report 3 ?

Enter Email Body ?

Add Email Template screen

- Provide a name for the template
- Provide a title for the template
- Provide the email subject line for the outgoing email. This may include tokens that will be replaced by field values when the email is sent, as described below
- If you want to specify the email as originating from a specific user, select the user's name from the *From User* list. This allows you to select a single user whose primary email address will be used as the *From Address*. Note that you can select the current user, in order to allow the sender to be the person who initiates the email. If this option is not selected, the email address in the EMAIL_FROM_USER_ID behavior setting is used
- If you want to specify the *Reply-To User* of the generated email to be set to the primary email address of a specific user, select their name from the **Reply-To User** list. This allows you to select a single user whose primary email address will be used as the reply-to address. Note that you can select the current user, in order to allow the recipient of a reply to be the person who initiates the outgoing email. If this option is not selected, the email address in the EMAIL_FROM_USER_ID behavior setting is used
- Indicate whether the mail is to be sent as plain text or as HTML using the checkbox **Send Email as HTML**
- If you intend for the recipient of the outgoing email to reply to the email when you generate the email from the *edit* screen of an issue, and for EVMail to process the reply, such that it will update the issue with the recipient's reply, then check the box **Delimiter in Outgoing Mail**. This introduces an invisible delimiter into the email so that EVMail will discard all the mail following this delimiter, leaving only the recipient's reply to the mail being added back into the issue. The text for the delimiter is defined in the behavior setting named EVMAIL_DELIMITER_TEXT.
- The outgoing email can be saved back with the issue from which you originated the template. You enable this behavior by checking the **Save Outgoing Emails** option
- If you are saving the outgoing email, then the default is to save it as an attachment to the issue. However, if the outgoing email is text, then you have the option to save the outgoing email into a field with a display type of *log area*. You can choose from the list, to either save as an attachment, or from the list of available *log area* fields. Make sure the users who use the template have write permission to this field
- You have an option to embed up to three different reports within the body of the outgoing email. Select the reports from the three report lists. You can place the reports at any point within the body of the email. Use **\$\$EMBEDDED_REPORT_1\$\$**, **\$\$EMBEDDED_REPORT_2\$\$**, and **\$\$EMBEDDED_REPORT_3\$\$** for each of the reports respectively. It is highly recommended that you place each report on a new line within the body of the email
- When the outgoing email is attached into the issue from which it was generated, it can be viewed in the normal way that you view all other attachments. Note that the header information used to process the emails is not visible with one exception. The exception is that you will be able to see the names of attachments you might have added to the outgoing email. This allows

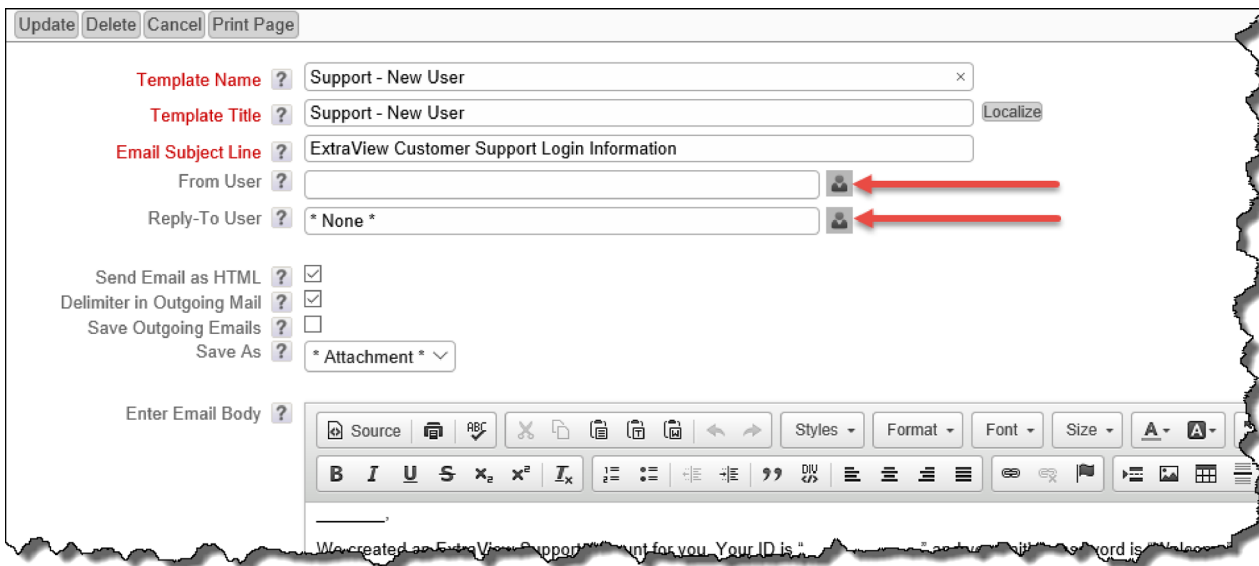
better auditing of the history of email transactions. Just like in email clients, if the user wants to see all the email header information, they can view the source of the downloaded attachment

- Use the text area to compose the email that is to be sent. The text for the email can be plain text, or can be HTML. The appropriate type of text box will be displayed, dependent upon the selection for whether the mail is to be sent as HTML or as plain text.

Within the subject and the body of the mail, you may insert tokens that are replaced when the email is sent. These tokens represent the value associated with the field from the record that is currently displayed when the mail is being sent. For example, if you want to substitute the issue ID in the mail, you would use \$\$ID\$\$\$. To insert the issue status, you would use \$\$STATUS\$\$\$. Valid tokens are data dictionary field names, data dictionary UDF's as well as the following:

\$\$SYSDATE\$\$	The current date, including time
\$\$SYSDAY\$\$	The current date
\$\$SITE_URL\$\$	The URL of the site
\$\$EXT_SITE_URL\$\$	The external site URL. This provides a link within the email which can be used to access ExtraView from the email being generated. The most common purpose for this is to drill down to an issue using the \$\$ID\$\$ or \$\$ALT_ID\$\$ of the issue
\$\$LOG_AREA_FIELD.MOST_RECENT\$\$	This convention allows you to refer to any field with a display type of LOG AREA. When this is set into an email template, only the most recently added entry into the LOG AREA field is entered into the body of the outgoing email. Obviously, substitute LOG_AREA_FIELD with the name of your User Defined LOG AREA field.

It is possible to substitute the **From User** and **Reply-To User** values at runtime, by populating their values from fields on the underlying *edit* screen. The fields used to populate the template must have a display type of either TEXT FIELD or USER and must be single-valued. The template will contain \$\$FIELD_NAME\$\$ in the **From User** and/or **Reply-To User** fields. The \$\$FIELD_NAME\$\$ must exist on the *edit* screen. When the user enters data into the *edit* screen, they may either enter a valid User ID or an explicit email address.



An example email template body:

Dear \$\$CUSTOMER_NAME\$\$,

We are in receipt of your issue, reported on \$\$DATE_CREATED\$\$, is receiving our prompt attention.

Our records show that you reported the issue with the following description:

\$\$DESCRIPTION\$\$

We will contact you as soon as we can provide a solution to your report.

Thanks,

\$\$OWNER\$\$

would produce email output similar to:

Dear Brian Jones,

We are in receipt of your issue, reported on 12/11/2002, is receiving our prompt attention.

Our records show that you reported the issue with the following description:

I cannot access the top-level widget within the cabinet of the power supply, unless the power is turned off and the unit is disconnected from the power. I understood that changes like this could be achieved without powering down the equipment.

Can you please provide a solution?

We will contact you as soon as we can provide a solution to your report.

Thanks,

Tony Smith

You may include image fields and document fields as part of a custom email. When you place an image field name into a custom email (e.g. `$$MY_IMG_FIELD$$`), the image will appear inline within the body of the email. If you place a document field (e.g. `$$MY_DOC_FIELD$$`), then the name of the document file is placed into the email body in place of the token, and the document is added as an attachment to the outgoing email notification.

As well as fields that you can refer to with the tokens surrounded with the `$$` characters, there is a selection of inbuilt variables that you can refer to as tokens. This list is:

- `APP_HOME` - the relative path to the WEB-INF folder on your application server
- `BG_COLOR` - one of the two background colors used to draw tables in ExtraView
- `BG_ALT_COLOR` - one of the two background colors used to draw tables in ExtraView
- `BROWSER_NAME` - the name of the user's browser that generates the email
- `COMPANY_LOGO_IMG_HOME` - the relative path to the location where the CompanyLogo.gif is stored
- `DEFAULT_FONT` - the name of the default font used in the installation
- `EXT_URL` - the absolute path to the ExtraView installation
- `FIXED_WIDTH_FONT` - the name of the fixed width font used in the installation
- `IMG_HOME` - the relative path to the location where the ExtraView images are stored
- `JAVASCRIPT_HOME` - the relative path to the location of the ExtraView JavaScript files
- `LABEL_COLOR` - the color of labels on ExtraView screens
- `STYLESHEETS_HOME` - the relative path to the location where the ExtraView stylesheets are stored
- `WINDOW_BGCOLOR` - the background color of the ExtraView screens

Once you click the **Add** button to save the template, it will appear in the template dropdown box for users when they click the **Email** button from a given issue's Edit screen.

Note: A field named `EMAIL_ADDRESS` is available as a UDF field with a display type of Text. This field may be placed upon layouts. It serves a special purpose. When a user accesses the custom email function from the edit screen, to send an ad-hoc email, or an email created from a pre-defined template, this field will be used to automatically populate the email address to which the mail is to be sent. This simplifies communication to users who, for example, enter an email address when reporting an issue. The value stored in this field automatically gives a return address.

Links to ExtraView Functions

Please view the Application Programming Interface Guide for additional information. You may embed API calls within your email templates to access different ExtraView functions from within your email sent with an email template. Typical syntax within an email template to provide a drilldown link to view an issue and to edit an issue are:

To view an issue:

```
<p>Drilldown Link: <a href="$$SITE_URL$$/evj/ExtraView/link.html?p_action=doEditDisplayEmail&amp;p_option=Display&amp;p_id=$$ID$$&amp;p_from_action=email&amp;p_from_option=email">Click here to view issue number $$ID$$</a></p>
```

To edit an issue:

```
<p>Edit Link: <a href="$$SITE_URL/evj/ExtraView/evSignon?
p_action=doEditDisplay&amp;p_option=Display&amp;p_id=$$ID$$&amp;p_from_action=search&amp;
p_from_option=search">Click here to edit issue number $$ID$$</a></p>
```

Note that the hard-coded URL address has been replaced in the above examples with the setting `SITE_URL`. The value for this is set by ExtraView when the application server starts, or is taken from the behavior setting named `SITE_URL` if this has a value.

Managing Tasks

If ExtraView Corporation is hosting your installation, you do not have direct access to the file system of the server to configure, alter or use this feature without contacting ExtraView support.

This administration section allows the control of tasks that are connected to ExtraView. These tasks control important features, and run in the background of the server. Not all tasks should be configured for all installations. Many tasks handle the interaction between ExtraView and external software, such as your mail server. The information that provides the link between ExtraView and the external software is managed within the properties of each task. The **Add / Edit** buttons on the Task Manager screen provide access to configure the connection between ExtraView and the external software.

Often, the connection information to external software will contain sensitive connection information such as addresses, account information and passwords. It is strongly suggested that you only provide permission for appropriately credentialed users to access the Task Manager utility. ExtraView Corporation strongly endorses the use of strong passwords which contain combinations of letters, numbers and special characters. However, it is not recommended that you include the `=` character within password strings. It has been noted that some ExtraView environments do not handle the `=` character within passwords correctly when validating the setup of a task.. If the ExtraView application server log indicates that the password is **null**, then the most likely reason is the presence of an `=` character.

When you enter the default ExtraView setup, you will see a screen similar to this:

Task name	Title	Node ID	Current Status	Start Option	Poll Interval	Thread and Log Information	Created	Last updated
Edit ADD_UPDATE	Add and Update Background	WS_A(Current Node)	STARTED	START_NOW	30	Priority: 5,Thread State: running, Interval: 30, secs since execution:4 Download Log	System Administrator 04/24/2013	System Administrator 04/24/2013
Edit FULL_TEXT_SYNCHRONIZE	Quickfind Synchronize Task	WS_A(Current Node)	STARTED	START_NOW	60	Priority: 5,Thread State: running, Interval: 60, secs since execution:7 Download Log	Bill Smith 04/09/2012	Bill Smith 07/06/2013
Edit METADATA_EXPORT	Metadata Exporter	WS_A(Current Node)		AUTO-START	30	2,213 hours 28 minutes 20 seconds since last execution (approx.). Download Log	System Administrator 10/06/2011	Bill Smith 04/06/2013
Edit METADATA_IMPORT	Metadata Importer	WS_A(Current Node)		AUTO-START	30	8,016 hours 10 minutes 52 seconds since last execution (approx.). Download Log	System Administrator 10/28/2011	Bill Smith 08/07/2012
Edit SCHEDULED_REPORT_TASK	Report Scheduler Task	WS_A(Current Node)	STARTED	START_NOW	120	Priority: 5,Thread State: running, Interval: 120, secs since execution:67 Download Log	ExtraView 07/12/2011	Bill Smith 07/07/2013
Edit SESSION_MONITOR	Session Monitor Task	WS_A(Current Node)	STARTED	START_NOW	300	Priority: 5,Thread State: running, Interval: 300, secs since execution:64 Download Log	ExtraView 07/12/2011	System Administrator 07/12/2011
Edit TASK_CONTROL_TASK	Task Control Task	WS_A(Current Node)	STARTED	START_NOW	30	Priority: 5,Thread State: running, Interval: 30, secs since execution:7 Download Log	ExtraView 07/12/2011	System Administrator 07/12/2011

7 record(s) selected from a total of 7 record(s)

Managing tasks

Note the **Show non-local nodes** prompt on the screen. If you are running in a clustered system, clicking this will show you all the tasks running on all nodes. The task management utility runs as an interactive administrative utility controlled by the `CF_MANAGE_TASKS` security permission key. This utility displays a list of tasks currently defined. New tasks (adding an existing task object to a node, for example) can be added, and existing tasks may be edited. The task management utility allows the administrator to create/modify and delete background tasks that may run in any node clustered on the ExtraView database. The standard tasks are automatically cloned and started as necessary when a new node joins the application server cluster. This document makes no attempt to describe how to create your own tasks that can be managed by ExtraView. At some future time this interface will be documented and opened for customer use. The tasks managed by ExtraView are detailed in the following sections:

Session Monitor Task

This is an internal task which should not be altered by the administrator. It must be running for ExtraView to function correctly. This task manages the internal ExtraView sessions that are created by users as they perform their work inside ExtraView. For example, sessions are created when users add or update issues or when they run reports. This task is responsible for cleaning up sessions which are left behind when users do not "clean up" after performing a task. This improved memory utilization on the server. For example a user may simply close their browser without updating an issue on the screen, and after some time the session monitor task will recognize that this has happened and will remove the session objects associated with the browser window.

Task Control Task

This is an internal task which should not be altered by the administrator. It is the overall control for the task manager. It is part of the integral working of ExtraView and should not be altered by the administrator. The task control task on any node ID is special, as this task is used to control all other tasks that run under task management. It must be running for ExtraView to function correctly. Therefore, if the task control task is not running on a node, there can be no changes to other task states on that node. There must be a task control task configured on each node where background tasks run and can be modified. There is no reason for the administrator to alter the default properties of this task. Doing so may result in other tasks not executing correctly, or not executing at all.

Metadata Export Task

This is an internal task which should not be altered by the administrator. This task is responsible for ensuring the correct handling of metadata exports performed by an administrator. There is no reason to alter the default properties of this task.

Metadata Import Task

This is an internal task which should not be altered by the administrator. This task is responsible for ensuring the correct handling of metadata exports performed by an administrator. There is no reason to alter the default properties of this task.

Batchmail Task (Outgoing email)

This task is responsible for handing off outgoing email notifications created within ExtraView, to your company's email server. It keeps a log of all activity and removes the email text from the server once it has been successfully sent. If there was a problem sending email to the email server, then the email text is left on the server. In many instances the email will be sent once the problem is resolved.

Quickfind Synchronization Task

This is the task that routinely scans newly entered issue text to be indexed for use by the Quickfind search engine. This task is not required if Quickfind is not turned on within ExtraView.

ExtraView Peer Integration Task

This task is only configured if you require ExtraView to be synchronized with one or more remote ExtraView installations.

Email Escalation Task

This task initiates the escalation mechanism which automatically updates issues and notifies users according to criteria that is defined by the administrator. When installing ExtraView you should add this task to be started automatically by ExtraView. The default poll interval is 2 minutes (120 seconds). This task does not require further configuration. Note that the task runs using the ADMIN user account. When configuring the escalation task, you should also ensure that the date format selected for the ADMIN user account includes a time component. If this is not done, the escalation task will not run correctly.

EVMail Task (Incoming Email)

This task controls the functioning of the EVMail utility that interfaces and imports incoming email to Extraview. This enables the creating of new issues or the updating of existing issues within your ExtraView system, from incoming email to an email address that you use for this purpose. First you create the task, and then you configure the task. To create a new EVMail task on the current node, add the task and select a poll interval of 30 seconds or so, with START_NOW as the start option. This sets the frequency with which EVMail checks for new incoming emails.

Report Scheduler Task

The Report Scheduler Task must be running in order to deliver scheduled reports that users create for email delivery. You should create this task so that it starts at boot time. The default is that this task will execute every two minutes, but this time can be adjusted to

accommodate your specific requirements.

LDAP Background Task

This task should only be configured when you are connecting your installation to an LDAP server. It is optional to run this task. When it is running, it will synchronize the LDAP server data that is required within ExtraView on a periodic basis. This avoids ExtraView reaching out to the LDAP server for user information as it is required, and uses the information previously read into ExtraView. This task should be configured in preference to the *LDAP Synchronize Task*.

LDAP Synchronize Task

This task should only be configured when you are connecting your installation to an LDAP server. It is optional to run this task. When it is running, it will synchronize all the LDAP server data to ExtraView on a periodic basis. It is preferable to use the *LDAP Background Task*.

Template Loader Task

This task only needs to be configured and started if you are pre-caching layouts at the time of starting the system server. This is useful on systems with complex or very large layouts. See the page [here](#) for more details. Note that you should configure the poll time to zero so the task only runs once at system startup, and does not run continually.

Managing Tasks in a Load-balanced Environment

If you have a cluster of application servers supporting your ExtraView environment, there are some important points to be aware. Principally, some tasks should be run on all nodes of the cluster, and some should only be run on a single node of the cluster. We suggest you configure a clustered environment in the following way. First configure the multiple nodes of the application servers.

Next, select a single node and configure the tasks on that node only. We suggest you use the first node in the cluster for this purpose. Some of the tasks may already be configured and started in a new installation.

- Configure and start a `TASK_CONTROL_TASK` task on each node of the system
- Configure and start the `SESSION_MONITOR` task on each node of the system
- One `EVMAIL` task for each mailbox you are monitoring should be configured on a single node. Multiple `EVMAIL` tasks can be configured, each monitoring a different mailbox
- Only one `ESCALATION` task should be configured per installation
- Only one `SCHEDULED_REPORT_TASK` task should be configured per installation
- Configure only one `FULL_TEXT_SYNCHRONIZE` task per installation on a single node. However, the index location must reside on a file system location accessible to all nodes in the cluster
- With the `BATCHMAIL` outgoing email task, there are options: Overall, only a single `BATCHMAIL` task should be polling the email directory folder. If you have multiple separate physical locations for this folder, you need multiple `Batchmail` tasks, one for each location
 - If all nodes are able to write to a common email directory, only configure `BATCHMAIL` on a single node
 - If the nodes are on separate application servers, each node must be able to write to a filesystem location defined by the path in the behavior setting named `EMAIL_DIRECTORY`. You configure all nodes to have the same path configured and a `Batchmail` task must be configured per separate email directory folder

In the case where the load-balancing algorithm does not send any users to the node where your managed tasks are running, the `EVMail` and escalation tasks will not operate. Simply starting the application server does not initialize the ExtraView application, and thus if nobody signs onto your installation, no tasks will start up. This is not simply a load-balancing issue - if your system is rebooted and restarted, and nobody signs on, the application is not initialized and the tasks are not started up. For correct operation, all nodes of the cluster should be started. One way to make sure that your site is initialized when the application server is restarted is to configuring a monitoring tool such as Nagios, and to use the ExtraView `get_heartbeat` API call against each individual node on a scheduled basis - this will ensure that if an application server is restarted for any reason, then the API call will "touch" each node, and start all the copies of ExtraView in the load-balanced installation.

Error Conditions

Tasks are often reliant on programs running external to ExtraView. When an external program fails, the ExtraView task can fail. The task may be able to recover when the external program is restarted. When a task is seen to be in an error state, email is sent to the ExtraView administrator. If ExtraView is able to recover from the error, then another email is sent to inform the administrator of the recovery.

User Custom Tasks

These are used to create tasks for specific purposes within an installation. Knowledge of user custom coding is required to set up and use these tasks. Please contact ExtraView Support if you believe you have a requirement for a customized task.

Task Options

Creating a Task

Each task has the following properties:

- **Task Name** – this specifies the functional operation that the task performs
- **Title** – this is a localizable title that is visible in the utility to identify the task
- **Node ID** –: this is a pull-down list that is populated by the names of the nodes that are started on the cluster. The node ID is specified in the Configuration.properties file as the WEB_SERVER_NAME. The name of each node ID must be unique in the cluster
- **Start Option** – This may be one of the following:
 - **None**: no action to be taken for/by the task
 - **START_ON_BOOT**: start up the task when the application server node is started
 - **START_NOW**: start up the task immediately and also when the node is started
 - **STOP_NOW**: stop the task immediately and discard its thread
 - **AUTO_START**: the task will be started by ExtraView when it is required. For example, the Metadata Export and Metadata Import tasks are only started when they are required
 - **STOPPED**: the task is currently stopped, but if required again, it will be started automatically. For example, the Metadata Export and Metadata Import tasks are stopped when they have completed their functionality, but can be started again if required
- **Poll Interval** – This is the number of seconds between each triggering of the task. Once the task has finished, it stops executing until the poll interval is reached
- **Class Name** – This is the name of the Java class that contains the code for the task to be executed
- **ERROR_NOTIFICATION_WARNING**: The value to this optional property specifies a period of time which is the maximum amount of elapsed time during which the task may be idle before an email warning is sent to administrators. If the task has the START or START_ON_BOOT start option set, then if the amount of specified idle time is exceeded, warning emails are sent to users with the ADMIN role. The syntax to set this option is either of the following two options:
 - ERROR_NOTIFICATION_WARNING = *nn* MINUTES
 - ERROR_NOTIFICATION_WARNING = *nn* MISSED_POLLS
- **ERROR_NOTIFICATION_REMINDER**: The value to this optional property specifies a period of time which is the maximum amount of elapsed time during which the task may be idle before an email reminder is sent to administrators. If the task has the START or START_ON_BOOT start option set, then if the amount of specified idle time is exceeded, reminder emails are sent to users with the ADMIN role. The syntax to set this option is either of the following two options:
 - ERROR_NOTIFICATION_REMINDER = *nn* MINUTES
 - ERROR_NOTIFICATION_REMINDER = *nn* MISSED_POLLS
- ERROR_NOTIFICATION_REMINDER = *nn* MINUTES
- ERROR_NOTIFICATION_REMINDER = *nn* MISSED_POLLS

Modifying a Task

After viewing the list of tasks, the administrator may modify some aspects of any one of the tasks:

1. Title
2. Node Id
3. Start Option
4. Start Option
5. Poll Interval
6. Class name

Generally, this function is used to modify the start option, either to start or to stop a task from executing or to alter the frequency with which the task executes. No matter what the prior value is for start option, when the user updates the task, the specified start option is carried out by the task control task. START_NOW and STOP_NOW have immediate consequences on the target node, as long as the task control task (TASK_CONTROL_TASK) is running.

Deleting a Task

One of the options in the task management utility EDIT screen is to delete a task. Note that this only removes the task from the task management utility and has no effect on the background processing of the task. If it is already running, it continues to run. If the task is stopped or in error it remains in that state.

Tasks in a Multi-Node (Clustered) Environment

Some tasks run on a single node, and some may or must run on all nodes in your network. There are some considerations:

ADD_UPDATE	Add & Update Task	Optional. This may be run on any or all nodes and must be run if you are using ADD, COPY and UPDATE business rules or handling large-sized file imports
BATCHMAIL	Batchmail Task	Optional. Should but should be run on a single node to process outgoing notifications
ESCALATION	Escalation Task	Optional. Should be run on a single node to process issue escalations
EVMail	EVMail Task	Optional. Can be run many times on one or more different nodes to process incoming emails. Each instance of the task can be configured differently
FILE_IMPORT_WORKER	File Import Task	Optional. Used to process file imports
FULL_TEXT_SYNCHRONIZE	Quickfind Task	Optional, but is almost always run on a single node to process inserted and updated text within issues
SCHEDULED_REPORT_TASK	Scheduled Report Task	Optional, but must be run to process the scheduling and delivery of reports
SESSION_MONITOR	Session Monitor Task	This must run once on all nodes, and runs by default
TASK_CONTROL_TASK	Task Control Task	This must run once on all nodes, and runs by default
TEMPLATE_LOADER	Template Loader Task	Optional but if used should be run on all nodes. Used in a small number of sites to pre-load the most commonly used templates, thereby improving performance to users when the application server is first started

On any node, you may monitor the status of tasks running on that node or other nodes within the cluster. You can start and stop tasks from any node and download the application server log from any of these nodes. This is providing that you have permission to that part of the file system with an absolute path.

Configuring EVMail

EVMail is configured as a task. If you are setting up EVMail for the first time, you will need to create the task. Use the button labeled **Add** to add the task from the **Task Manager** screen, or use the **Edit** button to modify the attributes that control the EVMail task. Select the **EVMail Task** task name and observe a screen similar to:

Task Name ? EVMail Task - Processes incoming emails to ExtraView, adding or updating issues

Title ? EVMail Task - Processes incoming emails to

Node ID ? * None *

Start Option ? START_NOW

Poll Interval (seconds) ? 60

Class Name ? com.extraview.util.EVMailTask

Properties File

```
# Extraview EVMail Task Configuration File

# Messages in the configured mailbox will be read and entered into Extraview
# as tickets as if the RUNTIME_USER_ID user had logged in and clicked on the
# ADD button. The layout used corresponds to the RUNTIME_AREA_NAME,
# RUNTIME_PROJECT_NAME and RUNTIME_USER_ROLE for the RUNTIME_USER_ID.

# Note: All normal permissions and security applies - make sure that the
# RUNTIME_USER_ID has permissions to the RUNTIME_AREA_NAME and RUNTIME_PROJECT_NAME
# If EVMail is to update tickets, the RUNTIME_USER_ROLE must not be the LIMITED_USER_ROLE (Guest)

# These parameters identify the user, role, area and project
# that the task "runs" in.
RUNTIME_USER_ID = USER_ID
RUNTIME_AREA_NAME = AREA_NAME
RUNTIME_PROJECT_NAME = PROJECT_NAME
RUNTIME_USER_ROLE = GUEST

# If the EVMail task is in an ERROR state, it will
# send out an email message to all users in the
# ADMIN_OVERRIDE_ROLE (usually ADMIN)
# this parameter controls how often those notifications are sent out
# the default is 15 minutes if you do not specify
# To prevent these notifications from going out, set the value to -1
RUNTIME_ERROR_NOTIFICATION_INTERVAL = 10
RUNTIME_WARN_NOTIFICATION_INTERVAL = 10
```

EVMail configuration screen

When configuring EVMail with Oauth2 connections, there is an appendix to this guide at [OAuth2 Email Mailbox Settings](#) to assist.

Basic Configuration

To configure EVMail, you will need a properly configured mailbox and you will need its username and password. Depending on the MAILBOX_TYPE you will need additional information. This varies with the different MAILBOX_TYPES and is clearly laid out in the example properties that you see when you first enter the task editor screen.

You will need to identify an ExtraView user account, and a user role that EVMail will utilize. These, along with a nominated Business Area and Project, determine the *add* and *edit* screen layouts that will be used by EVMail to create new issues and to update existing issues. When selecting these values, take into account the standard licensing condition of ExtraView, i.e. non-licensed guest role users cannot update issues. Therefore, if you select a guest user for the runtime account, only new issues will be created and you will not be able to update issues.

Note: The MAILBOX_USER value should never be the email address of an end user within the ExtraView system. If you do this, there is a chance for an infinite loop to be set up where incoming emails generate notification to this user which then reply to the same address, thereby generating a new event which repeats itself.

Note: The MAILBOX_USER value should always be set to the same value as the behavior setting named EMAIL_FROM_ADDRESS. This ensures that updates to issues made by users and resubmitted are sent back to the same email address that ExtraView monitors.

You will then need to set up the fields that the EVMail task will populate - there are some field options that map to portions of the incoming email message according to whether you are inserting a new issue or updating an existing issue.

EVMAIL_BODY_UDF and/or EVMAIL_BODY_HTML_UDF	For a new issue being created, use either or both of these fields to store the body of the email message. This allows you to store the body as text, HTML or both. Typically this will be mapped to the DESCRIPTION field or an HTML AREA field
EVMAIL_BODY_UPDATE_UDF and/or EVMAIL_BODY_HTML_UPDATE_UDF	For issue updates, use either or both of these fields to store the body of the email message. This allows you to store the body as text, HTML or both. Typically this will be mapped to the COMMENTS field or an HTML AREA field, so that successive updates will create a new entry in this log area field. Note that the COMMENTS field may use an option in the data dictionary to use it directly with HTML.
EVMAIL_SUBJECT	This ExtraView field will be where the subject of the email message is placed. Typically this will be the SHORT_DESCR field

You can select other fields and set values, allowing you to set list values and user fields when creating new issues. The syntax for these fields is EVMAIL_FIELDNAME, where FIELDNAME is the field name of the field being mapped. For example, these are valid expressions:

EVMAIL_AREA = 10	You must use the AREA_ID for the AREA field
EVMAIL_PROJECT = 19	You must use the PROJECT_ID for the PROJECT field
EVMAIL_STATUS = NEW	You must use the name for inbuilt fields
EVMAIL_ORIGINATOR = BSMITH	You must use the User ID for user fields
EVMAIL_COMPONENT = 12435	You must use the UDF_LIST_ID for user defined list fields
EVMAIL_INSTRUCTIONS = Here are instructions	You can populate text, text area and log area fields with text

Note: Updating existing issues will only result in the update of the EVMAIL_BODY_UPDATE_UDF field.

The values for these fields are database values of built-in fields or the List ID value of the User Defined Fields (i.e. the UDF_LIST_ID value), not the title of the field. You can find the List ID value by viewing the list of values for the field in the administration screen that updates and modifies the values.

Import Field Values Return Print Page User defined field lists - Browser ?

+ Add a new entry to the list

Show Filters

Title to display	Sort sequence	Enabled	Provenance	Do Not Migrate	List ID	Created From Import	Created	Last updated
<input type="checkbox"/> All Browsers		Yes		No	49527	No	4/6/13 6:26 PM * None *	4/6/13 6:26 PM * None *
<input type="checkbox"/> Any Browser		Yes		No	49562	No	4/6/13 6:42 PM * None *	4/6/13 6:42 PM * None *
<input type="checkbox"/> Chrome		Yes		No	49732	No	8/1/13 6:11 PM * None *	8/1/13 6:11 PM * None *
<input type="checkbox"/> Firefox		Yes		No	49492	No	4/6/13 6:24 PM * None *	4/6/13 6:24 PM * None *
<input type="checkbox"/> Internet Explorer 10		Yes		No	49517	No	4/6/13 6:25 PM * None *	4/6/13 6:25 PM * None *
<input type="checkbox"/> Internet Explorer 11		Yes		No	26247	No	2/29/16 11:56 AM * None *	2/29/16 11:56 AM * None *
<input type="checkbox"/> Internet Explorer 7		No		No	49497	No	4/6/13 6:25 PM * None *	2/29/16 11:56 AM * None *
<input type="checkbox"/> Internet Explorer 8		No		No	49507	No	4/6/13 6:25 PM * None *	2/29/16 11:56 AM * None *
<input type="checkbox"/> Internet Explorer 9		No		No	49512	No	4/6/13 6:25 PM * None *	2/29/16 11:56 AM * None *
<input type="checkbox"/> Microsoft Edge		Yes		No	26252	No	2/29/16 11:56 AM * None *	2/29/16 11:56 AM * None *
<input type="checkbox"/> Mobile Client		Yes		No	6342	No	10/28/14 9:36 PM * None *	10/28/14 9:36 PM * None *
<input type="checkbox"/> Safari		Yes		No	49522	No	4/6/13 6:25 PM * None *	4/6/13 6:25 PM * None *

Import Field Values Return Print Page 12 record(s) selected from a total of 12 record(s)

Finding the UDF_LIST_ID List ID value

You can use a similar technique to find the AREA_ID for the AREA field and the PROJECT_ID for the PROJECT field. Go to the administration screen for each of these fields and you will see a column on the screen with the ID for each of the fields.

All fields mapped in the Configure EVMail screen must be on the *add* layout, for the ExtraView user ID, their role, their default Business Area and their Project.

The default behavior of the EVMail task is to take the email address in the **From:** section of the email message, and to search for a matching user in ExtraView who has that same email address in either their primary or secondary email address field in their account. If a user is found, their User ID is used to populate the ORIGINATOR field. If no user is found, the user specified by EVMAIL_ORIGINATOR will be set into the ORIGINATOR field.

Full List of EVMail Settings

EVMAIL_FIELDNAME	See the description above on how to map different fields from EVMail to ExtraView
EVMAIL_ADDL_DELIMS_TEXT	<p>This setting is used in conjunction with the behavior setting named EVMAIL_DELIMITER_TEXT and the EVMail configuration setting EVMAIL_ADDL_DELIMS_HTML. Together they provide additional controls on incoming email to the EVMail feature, to parse the email looking for the new content to include and to inhibit the repeated addition of older content of the emails. This is typically seen when users reply to emails add simply append their new message to the thread of existing messages. It is often desirable to only include the latest mail as an update to the ExtraView issue, and not to repeat existing, older comments. These settings are only used when updating existing issues within the ExtraView database, and not used when new issues are being inserted.</p> <p>The EVMAIL_ADDL_DELIMS_TEXT setting is used when the incoming email has a contentType of text/plain.</p> <p>Any number of delimiters may be specified, delimited within the settings with .</p> <p>Example:</p> <pre>EVMAIL_ADDL_DELIMS_TEXT = delimiter string 1 delimiter string 2 delimiter string 3</pre>

	Three delimiters are specified in the example, and the incoming mail is parsed looking for all occurrences of the three strings
EVMail_ADDL_DELIMS_HTML	<p>See EVMail_ADDL_DELIMS_TEXT above. The principal difference is that the delimiter being parsed within the incoming email has a contentType of text/html. Different email clients generate different delimiters and some experience with examining different email headers is required in order to be able to successfully determine the range of delimiters you expect.</p> <p>Example:</p> <pre>EVMail_ADDL_DELIMS_HTML = <div style="border:none;border-top:solid #B5C4DF 1.0pt;</pre> <p>This delimiter string is often seen within Microsoft Outlook emails.</p>
EVMail_ALLOW_HTML_MSG	<p>Valid values are YES, NO and PARSE. If this is not specified, the default value is PARSE.</p> <p>The behavior of the two properties named EVMail_ALLOW_HTML_MSG and EVMail_ALLOW_HTML_MSG_FAIL_TEMPLATE control how HTML-based incoming emails are handled.</p> <ol style="list-style-type: none"> 1. Accept HTML mail as is, and place it into an HTML area field, trying to preserve the formatting - the assumption is that you are mainly receiving short emails, and you want to attempt to preserve HTML constructions such as tables and links 2. Strip the incoming HTML-formatted mail of HTML tags, and place the contents into a text area or comments field. ExtraView will parse the text, removing as much HTML as possible. This is not a perfect solution, as some tags may not be recognized and any poor HTML may not be rejected. 3. Reject the incoming HTML-only mail and send back to the submitter a rejection notice.
EVMail_ALLOW_HTML_MSG_FAIL_TEMPLATE	This is used only if the EVMail_ALLOW_HTML_MSG parameter is set to is NO. If it does not exist, then SMTP_MSG_FAIL_TEMPLATE is used, if it exists. See the property EVMail_ALLOW_HTML_MSG for more information
EVMail_ATTACH_EML	If this has a value of YES, a copy of the incoming email is attached as an .eml file to the issue that is created. If the value is NO, no .eml file is attached to the issue.
EVMail_BODY_UDF	For a new issue being created, use this field to store the body of the email message as text. Typically this will be mapped to the DESCRIPTION field
EVMail_BODY_HTML_UDF	When you want to retain the HTML within the body of an incoming email, use this in place of, or as a complement to EVMail_BODY_UDF. This field should be an HTML AREA field
EVMail_BODY_HTML_UDF_ATTACHMENT_LINK	Set this option to a value of YES if you want ExtraView to associate any attachments to the incoming email to the field set in EVMail_BODY_HTML_UDF
EVMail_BODY_HTML_UPDATE_UDF_ATTACHMENT_LINK	Set this option to a value of YES if you want ExtraView to associate any attachments to the incoming email to the field set in EVMail_BODY_HTML_UPDATE_UDF
EVMail_BODY_UDF_ATTACHMENT_LINK	Set this option to a value of YES if you want ExtraView to associate any attachments to the incoming email to the field set in EVMail_BODY_UDF
EVMail_BODY_UPDATE_UDF	For issue updates, use this field to store the body of the email message. This allows you to store the body as text. Typically this will be mapped to the COMMENTS field, so that successive updates will create a new entry in this log area field.
EVMail_BODY_UPDATE_UDF_ATTACHMENT_LINK	Set this option to a value of YES if you want ExtraView to associate any attachments to the incoming email to the field set in EVMail_BODY_UPDATE_UDF
EVMail_BODY_HTML_UPDATE_UDF	When you want to retain the HTML within the body of an incoming email that is updating existing issues, use this in place of, or as a complement to EVMail_BODY_UDF. This field should be an HTML AREA field or a LOG AREA field configured to use HTML

EVMail_CC_UDF	<p>This parameter takes the entries in the CC field of an incoming email being processed by EVMail. You may set the value of this parameter to a field with a display type of <i>text</i> or <i>text area</i>.</p> <p>The contents of the EVMail_CC_UDF field are not cumulative, but the issue history will show the successive values from each issue update. The value stored in the field will simply be the CC addresses of the current incoming email message.</p> <p>If the CC list contains the email address set within the MAILBOX_USER property, it is not included within the EVMail_CC_UDF field</p>
EVMail_FROM_UDF	<p>You may set the value of this parameter to a field with a display type of <i>text</i> or <i>text area</i>.</p> <p>If an incoming email is processed by EVMail and ExtraView fails to find a valid user who has an email address or alternate email address that matches the incoming message FROM address, Extraview will place the incoming FROM email address in the EVMail_FROM_UDF parameter. If ExtraView finds a matching user, it will not populate the new field, and will simply set the Originator field to the identified user account.</p> <p>This action works only when creating new issues - the EVMail_FROM_UDF field is not modified when an existing issue is being updated.</p>
EVMail_ID_REGEX	<p>This is a regular expression used to parse the subject line and search for an ExtraView ID value. If an ID is found, EVMail attempts to update a matching issue ID in ExtraView. If no matching ID is found, a new issue is created. If you enter an invalid regular expression, ExtraView will report this information to the application server log.</p>
EVMail_PRIORITY_FIELD	<p>This is an optional property. If this is set to a value that is a User Defined Field with a display type of Checkbox, then the following happens:</p> <ul style="list-style-type: none"> • Incoming email headers are examined to see if there is a high priority flag set • If the flag is set, the User Defined Field checkbox is set to checked <p>Note that during the updating of an issue, the value assigned to this field is reset and set again according to the priority of the incoming mail that is being processed.</p>
EVMail_RECORD_MATCHING_DATE	<p>This property works in conjunction with the property EVMail_RECORD_MATCHING_DATE_RANGE. When processing incoming emails, if more than one matching issue is found, ExtraView looks at the date / timestamp of the incoming email. This property is set with the value of a field with display type of DATE or DAY. For example, you may use the TIMESTAMP or DATE_CREATED fields. DATE_RANGE checking logic is then triggered with the value of the property EVMail_RECORD_MATCHING_DATE_RANGE</p>
EVMail_RECORD_MATCHING_DATE_RANGE	<p>See EVMail_RECORD_MATCHING_DATE</p>
EVMail_SENDER	<p>When set, this option will take the email address of the sender of the incoming email and store it within a field within the issue that is being inserted or updated. The usage is:</p> <p>EVMail_SENDER = SOME_TEXT_FIELD or EVMail_SENDER = SOME_USER_FIELD</p> <p>This allows the user to view the field and determine who provided the last update to the issue via email, as opposed to the user who last updated the issue with the user interface of ExtraView.</p>
EVMail_SUBJECT	<p>This ExtraView field will be where the subject of the email message is placed. Typically this will be the SHORT_DESCR field</p>

EVMail_SUBJECT_LOOKUP	<p>The EVMail_SUBJECT_LOOKUP setting works in addition to the EVMail_ID_REGEX setting by searching existing records for matching subject line. When no ExtraView ID is detected in the subject line and EVMail_SUBJECT_LOOKUP is set to YES, then existing records are searched by the field specified in the EVMail_SUBJECT setting and matched against the incoming email subject line.</p> <p>If a record matches, then that record is updated. Otherwise, when no match is found, then a new record is inserted. Note that subject line prefixes such as Re: and Fwd: are removed from the incoming email subject line for the purposes of performing the search and match. Also, the field specified in the EVMail_SUBJECT setting must be configured in Data Dictionary to have their Filter Criteria attribute set to <i>Yes</i>, so that a query can be executed with that field as a filter.</p> <p>If multiple records match the subject line, then a new record is inserted as opposed to updating multiple existing records.</p>
EVMail_SUPPRESS_HEADER	<p>This configuration option allows the administrator to remove specific lines from the header of the incoming mail, before the mail is inserted into a field within ExtraView. The remaining text is inserted into the destination field defined with EVMail_BODY_UDF. The header lines removed begin with the following strings and they must appear within the incoming mail before the occurrence of the EVMail_DELIMITER_TEXT contained within the email body:</p> <p>From: To: Send: Subject: Date:</p> <p>Only header lines that begin with these strings are removed. There must not be blank lines between the header lines and they must all be followed within the mail body by the EVMail_DELIMITER_TEXT. If the mail does not contain the expected value for EVMail_DELIMITER_TEXT, then this configuration option is ignored. This implies that the header information is not removed when creating a new issue within ExtraView, and is only operable when updating issues.</p> <p>The default value for this property is NO. To enable the property, set a value of YES.</p>
EVMail_TO_UDF	<p>You may set the value of this parameter to a field with a display type of <i>text</i> or <i>text area</i>.</p> <p>EVMail parses the TO header within the incoming email and extracts the email address(es) in this list. If the EVMail address is in the list, it is removed. This may result in an empty list. If the list is not empty, EVMail creates a semi-colon separated list of email address and uses this as the value within the EVMail_TO_UDF field. This processing happens for both emails that create new issues within ExtraView as well as for emails that update issues within ExtraView.</p> <p>The contents of the EVMail_TO_UDF field are not cumulative, but the issue history will show the successive values from each issue update. The value stored in the field will simply be the TO addresses of the current incoming email message.</p> <p>The email address within the property named MAILBOX_USER is not included in the values of the EVMail_TO_UDF property.</p> <p>Great care should be taken in the use of this parameter, as it is possible to generate an endless loop whereby an email generates an email that is processed by EVMail, generating an email notification that is again seen by EVMail and updates the same issue, ad infinitum.</p>

EXCHANGE_URL	When the MAILBOX_TYPE is EXCHANGE, this is the address of the Exchange server to which you are connecting. This is required when you have a MAILBOX_TYPE of EXCHANGE
IGNORE_SUBJECT.xx	<p>The optional IGNORE_SUBJECT setting can be used to specify one or more strings to detect within the subject line of the incoming email, to determine whether to ignore and skip the entire email message from being processed. The string text configured in this setting is case-sensitive and be matched exactly anywhere in the subject line of the incoming email message.</p> <p>Note: For a single text, use simply IGNORE_SUBJECT; for multiple texts, use IGNORE_SUBJECT with a unique postfix for each entry, such as a number.</p> <p>For example to configure multiple entries to be ignored:</p> <pre>IGNORE_SUBJECT.1 = Mail Delivery Failure IGNORE_SUBJECT.2 = Automatic reply: IGNORE_SUBJECT.3 = Free offer</pre>
MAILBOX_PROCESSED_EMAIL_FOLDER	This setting works only when you set the MAILBOX_TYPE to either EXCHANGE or IMAP. Other mailbox types are not supported with this property. When configured with the name of a folder on your local file system, incoming mail that has been processed is copied to a file within this folder as opposed to being deleted after processing. If this is not specified with a valid folder name on your server, the incoming mail is deleted after processing
MAILBOX_TYPE	This property may have one of four values: POP3, EXCHANGE, OWA or IMAP. These correspond to the mail server interface to which you are connecting. OWA is largely deprecated and used to connect to Exchange servers prior to 2007. When using a setting of OWA, you should also set the OWA_DESTINATION, OWA_DOMAIN, OWAFBA_PATH, OWA_ISA and OWA_PATH properties. With the other MAILBOX_TYPE settings, you will typically set the MAILBOX_PASSWORD, MAILBOX_PORT, MAILBOX_SECURE, MAILBOX_SERVER and MAILBOX_USER settings
MAILBOX_PASSWORD	The password associated with the MAILBOX_USER
MAILBOX_PORT	The port number of the mailbox server
MAILBOX_SECURE	This should have a value of NO or YES, depending on the way your mail server is configured
MAILBOX_SERVER	The domain address or IP address of the mail server
MAILBOX_USER	The user ID of the mail server
OWA_DESTINATION	The address of the OWA server
OWA_DOMAIN	The Microsoft Windows domain to which the server belongs
OWA_FBA_PATH	The Microsoft Windows path to owaauth.dll
OWA_ISA	Usually this is set to true
OWA_PATH	This should be Exchange
PARSE_EMAIL PARSE_VALUE_DELIMITER PARSE_FIELD.STATUS PARSE_FIELD.COMMENTS PARSE_FIELD.DUE_DATE	<p>This collection of properties allow parsing of incoming mails to ExtraView.</p> <p>You may configure the parsing of the incoming email message subject line and the body looking for specific tags to specify the field and value to assign to the ExtraView record being created or updated.</p> <p>The PARSE_EMAIL setting must be configured to one of three values:</p> <ul style="list-style-type: none"> • INSERT enables the feature for new records only • UPDATE enables the feature for updates to existing record • BOTH enables both inserts and updates <p>If the setting is commented out or set to any other value, then the feature is not configured correctly and is not used.</p>

The PARSE_FIELD setting specifies the field name to map to the tag expected in the incoming email message, as follows:

```
PARSE_FIELD.<ddname> = <tag>
```

where <ddname> is the field name in Data Dictionary and <tag> is any text pattern that appears in the subject or body of the incoming email.

Note: Do not use the equals character within <tag>.

The value to set the field to must follow the tag in the email message, and must be on the same line as the tag in the email body. For example, to specify value of *John Doe* for the [Reporter] tag:

```
[Reporter] John Doe
```

In the subject line, the value must be enclosed in double-quotes, separate from the rest of the subject line text. For example, to specify value of *High* for the [Severity] tag:

```
Subject: [Severity] "High" - The roof is leaking
```

Multi-line text or multi-list values must be ended with the same tag name within the email body.

For example, to specify multi-line text for the [Comment] tag (i.e. a log area display type field):

```
[Comment] This is a multi-line  
comment that spans  
three lines  
[Comment]
```

When this setting is used, but the field configured with PARSE_FIELD does not exist on the *Add* or *Edit* screen layout, or the EVMail user does not have write access to the field, or the value specified in the email is not valid, the expected behavior for the field is to not be assigned a value by EVMail. A warning message is written to the ExtraView application log.

If you are writing to a multi-valued list field, then values are additive, i.e. the new values are added to existing values in the list.

If you mistakenly utilize the same tag more than once within the email message, only the first occurrence is processed and the others are ignored.

Examples

```
PARSE_FIELD.TEST_CURRENCY = $$Currency Test$$  
PARSE_FIELD.DUE_DATE = [Due by]  
PARSE_FIELD.TEST_DATE2 = [Date test]  
PARSE_FIELD.CUST_RMA_NUM = "number test"  
PARSE_FIELD.TEST_DECIMAL = (Decimal Test)  
PARSE_FIELD.CUST_LIST = /Customer Name/  
PARSE_FIELD.CUST_LIST_MULTI = #Multi-Customers#  
PARSE_FIELD.TEST_POPUP_SINGLE = 'popup'  
PARSE_FIELD.TEST_POPUP_MULTI = __multi-popup__  
PARSE_FIELD.TEST_HTML_AREA = <HTML>  
PARSE_FIELD.TEST_PRINT_TEXT = --PRINT--  
PARSE_FIELD.TEST_RADIO_H = hRadio  
PARSE_FIELD.TEST_RADIO_V = vRadio  
PARSE_FIELD.CUST_SELECT_TABS = {tabs}  
PARSE_FIELD.CUST_ADDRESS = |Address|  
PARSE_FIELD.CUST_EMAIL = @EMAIL@  
PARSE_FIELD.IT_REQUESTOR = *User*  
PARSE_FIELD.TEST_USER_MULTI = ++USERS++
```

The PARSE_VALUE_DELIMITER is an optional property which has a value of {field_title}. This is used in situations where the incoming email only has one or more HTML parts, and there are no plain text parts. In this situation it is not possible to parse the mail looking for a title which follows the property name and ends at the end of line within the email as the title will be embedded within one or more HTML tags and there may

	<p>not be any end of line character. To handle this situation, the title should be embedded within braces {}. EVMail will look for the braces and is then able to extract the title from within the PARSE_FIELD properties. For example:</p> <pre> PARSE_VALUE_DELIMITER={ } PARSE_FIELD.STATUS = {Status} </pre>
SMTP_CC	Other email addresses to copy when sending auto-reply or failure messages back to the sender of the email
SMTP_FAIL_MSG_TEMPLATE	The database name of an Ad Hoc email template to use when sending out failure messages. The template supports the use of the special variable, \$\$BODY\$. If you include \$\$BODY\$ in the template, the body of the original incoming email will be included.
SMTP_FROM	The email address used when sending auto-reply or failure messages back to the sender of the email
SMTP_NAME	The friendly name used when sending auto-reply or failure messages back to the sender of the email
SMTP_REPLY_TEMPLATE	The database name of an Ad Hoc email template to use when sending out auto-reply messages. The template supports the use of two special variables, \$\$ID\$ and \$\$BODY\$. If you include \$\$ID\$ in the template, then the ID of the newly created issue is retrieved and included in the template email. If you include \$\$BODY\$ in the template, the body of the original incoming email will be included.

Configuring RUNTIME_ Parameters

- For updates to occur, choose a RUNTIME_USER_ID that occupies a real license as opposed to a GUEST user license. If you pick a GUEST user as the RUNTIME_USER_ID, then issues will only ever be created, never updated. This user should be a NAMED user, not a CONCURRENT licensed user
- The RUNTIME_USER_ROLE needs to be a role that has access to the fields and layouts for the Business Area and Project of issues that you want to create and/or update. Again, if you select the GUEST role, issues will only ever be created, and never updated
- RUNTIME_AREA_NAME and RUNTIME_PROJECT_NAME - these parameters determine the Business Area and Project of issues created by EVMail.

Sample EVMail configuration

```

RUNTIME_USER_ID = BSMITH
RUNTIME_AREA_NAME = CUST_ISSUES
RUNTIME_PROJECT_NAME = CUST_ISSUES_DATA
RUNTIME_USER_ROLE = SUPPORT

```

```

MAILBOX_TYPE = POP3
MAILBOX_PORT = 110
MAILBOX_SECURE = NO
MAILBOX_SERVER = mail.mycompany.com
MAILBOX_USER = support
MAILBOX_PASSWORD = myPassword

```

```

SMTP_FROM = support@mycompany.com
SMTP_NAME = "The Support Team"
SMTP_CC = leeann@mycompany.com
SMTP_REPLY_TEMPLATE = SUCCESS_EMAIL

```

```

EVMail_ID_REGEX = [ExtraView-(d+)]
EVMail_BODY_UDF = DESCRIPTION
EVMail_BODY_UPDATE_UDF = CUST_DESC
EVMail_SUBJECT = SHORT_DESCR
EVMail_CATEGORY = EMAIL
EVMail_STATUS = NEW
EVMail_ORIGINATOR = DEV

```

Handling Issue Updates from EVMail

When a user sends an email to ExtraView, EVMail examines the incoming email to determine whether this is a reply to an existing issue which should update the existing issue, or whether to generate a new issue within ExtraView. This determination is made by

parsing the subject line of the incoming email. If the EVMail utility is able to parse a valid, existing issue ID out of the subject line, then it is assumed that the mail is being used to update an issue; else it is assumed that the mail is meant to generate a new issue.

One consequence of this is that when a user replies to an email notification which was generated by ExtraView automatically, the original notification will be included in the reply, simply adding to the update with information that already exists. To eliminate this, the value within a behavior setting named EVMail_DELIMITER_TEXT is used. This value is embedded with invisible tags within HTML emails from ExtraView to surround the entire contents of the outgoing email. When EVMail is updating the issue it looks for the value of the behavior setting and removes all text between the tags. Thus, only the new comment made by the user is added to the issue.

When issues are updated via EVMail, the **Last Change User** field is set to the value of the RUNTIME_USER_ID, and not to the person who sent the email.

Note that if EVMail is running with a user who only has a GUEST role, updates to issues are not permitted.

Which Issue is Updated Via EVMail?

The logic to locate which issue to update with a received mail is a multi-step process, as follows.

1. First, the EVMail_ID_REGEX parameter is used to attempt to identify a unique ExtraView issue ID in its subject line
2. Second, the MESSAGE_ID within the message header is examined and used to try and find a matching ExtraView issue

This is accomplished if the configuration parameter EVMail_MESSAGE_ID points to a TEXTAREA field to store the MESSAGE_ID. This field must be present on both the ADD_PROBLEM and EDIT_PROBLEM layouts and must be writable, although you can hide the field.

3. If more than one matching issue is found, ExtraView next looks at the date of the incoming mail. This logic is configured with the definition of the EVMail_RECORD_MATCHING_DATE parameter within the task configuration. The field identified with this parameter must have a display type of DATE or DAY. For example, you can use the inbuilt TIMESTAMP or DATE_CREATED fields
4. DATE_RANGE checking logic is then triggered with the configuration value of EVMail_RECORD_MATCHING_DATE_RANGE.

Supported formats and their meanings are:

- **SYSDATE-2** means between SYSDATE and 2 hours or 2 days earlier.
- **0-2** has the same meaning as **SYSDATE-2**. Zero is interpreted as SYSDATE
- **1-3** has the meaning of between 1 hour earlier than the SYSDATE and 3 hours earlier than the starting point, or a DAY earlier than the SYSDATE and 3 DAYS earlier than the starting point.

Examples:

- Both the DATE field and DATE RANGE field are defined:
 - The one with latest DATE value within the DATE_RANGE is chosen
 - No issue is found if there are no results within the DATE_RANGE.
- The DATE field is defined but the DATE RANGE field is not:
 - The issue with the latest DATE value is chosen
- Both the DATE and DATE RANGE fields are not defined or only the DATE_RANGE field is defined:
 - No issue is selected

1. ExtraView uses SUBJECT line matching if none of the above steps work, and if EVMail_SUBJECT_LOOKUP = YES is defined within the configuration.

EMail and the ExtraView ALT_ID Configuration

If your ExtraView configuration is configured to use ALT_ID as the issue ID, you will have set the behavior setting named ITEM_ID_DISPLAY to a value of ALT_ID. Once this is set, EVMail will use ALT_ID as the issue ID when matching incoming email updates.

EMail and HTML

With the configuration options EVMail_BODY_HTML_UDF, EVMail_BODY_HTML_UPDATE_UDF and log area fields configured to use HTML, incoming emails via EVMail will be treated as HTML, and the contents placed in the corresponding fields. If the source of the incoming email is pure HTML, then the presentation of the data within the fields will look extremely similar to the source data. If the source of the data is an email client such as Microsoft Outlook, there may be differences in the presentation which cannot be reconciled.

The major differences occur for these reasons:

- Microsoft Outlook typically uses Microsoft Word as its internal editor and this does not produce standard HTML. Particularly, there are often formatting tags within the contents that have no equivalent within HTML. Similarly, Outlook often uses Cascading Style Sheet (CSS) classes that cannot be interpreted within an HTML browser
- If the source of the data relies on CSS styles and these are not transmitted with the email, ExtraView has no way of understanding what the style might be

The result is that underlying text within the email will be displayed, but sometimes will not have the correct formatting.

Testing EVMail

EVMail follows all the status change rules and the ALLOW_EDIT_CLOSED behavior setting. These may be based on the user, their role, their current business area and project as configured in your installation.

If you want to bypass all of those constraints for testing purposes, and make sure that tickets are updated regardless of any rules in place, use the ADMIN user account. This account (which should not be used for ordinary purposes) bypasses all status change rules.

It is worth ensuring that your workflow does not put any issue into a status value where EVMail will not be able to update it -- you may get failures, and/or the update will be captured as a new issue within the system as opposed to an update to an existing issue.

Using a Secure Mail Server

This section covers instructions on how to connect ExtraView to a POP3 mail server configured with SSL, i.e. POP3S. It is highly recommended that you configure POP3S rather than POP3. This configuration is only required if you have a self-signed SSL certificate.

The instructions here are for a Microsoft Windows environment, but are similar for other operating systems. The basic steps to configure SSL, are to install the SSL certificate on your mail server into the Java keystore, as a trusted root certificate.

- Use a browser to go to the web management interface for your mail server, or to some other URL provided by your email client, to access your rootca certificate
- You should now see a dialog box warning you about the certificate. Click on the **View Certificate** and install the certificate. You can ignore any warning messages
- Now that the server certificate is installed on your computer, your browser will no longer warn you when you visit the same site again. However your Java runtime JRE does not yet know about this certificate's existence until you add the certificate to its keystore. Usually you will use the Java keytool utility to manage certificates. keytool is a command-line utility with numerous arguments that allows you to create and manage keystores that house digital certificates. For the complete documentation of keytool, visit <http://java.sun.com/j2se/1.3/docs/tooldocs/win32/keytool.html>
- You can list the current certificates contained within the keystore using the keytool -list command. The initial password for the cacerts keystore is *changeit*. For example, you may see the following in a Windows environment:

```
C:\ExtraView\java\jre\bin>keytool -list -keystore ..libsecuritycacerts Enter default keystore password: changeit
```

You will then see the something like this:

```
Keystore type: jks  
Keystore provider: SUN
```

Your keystore contains 11 entries:

```
engweb, Wed Apr 11 16:22:49 EDT 2001, trustedCertEntry?,  
Certificate fingerprint (MD5): 8C:24:DA:52:7A:4A:16:4B:8E:FB:67:44:C9:D2:E4:16 thawtepersonalfreemailca, Fri Feb 12  
15:12:16 EST 1999, trustedCertEntry?,  
Certificate fingerprint (MD5): 1E:74:C3:86:3C:0C:35:C5:3E:C2:7F:EF:3C:AA:3C:D9 thawtepersonalbasicca, Fri Feb 12  
15:11:01 EST 1999, trustedCertEntry?,  
Certificate fingerprint (MD5): E6:0B:D2:C9:CA:2D:88:DB:1A:71:0E:4B:78:EB:02:41 verisignclass3ca, Mon Jun 29 13:05:51  
EDT 1998, trustedCertEntry?,  
Certificate fingerprint (MD5): 78:2A:02:DF:DB:2E:14:D5:A7:5F:0A:DF:B6:8E:9C:5D thawteserverca, Fri Feb 12 15:14:33  
EST 1999, trustedCertEntry?,  
Certificate fingerprint (MD5): C5:70:C4:A2:ED:53:78:0C:C8:10:53:81:64:CB:D0:1D thawtepersonalpremiumca, Fri Feb 12  
15:13:21 EST 1999, trustedCertEntry?,  
Certificate fingerprint (MD5): 3A:B2:DE:22:9A:20:93:49:F9:ED:C8:D2:8A:E7:68:0D verisignclass4ca, Mon Jun 29 13:06:57  
EDT 1998, trustedCertEntry?,  
Certificate fingerprint (MD5): 1B:D1:AD:17:8B:7F:22:13:24:F5:26:E2:5D:4E:B9:10 verisignclass1ca, Mon Jun 29 13:06:17
```

EDT 1998, trustedCertEntry?,
Certificate fingerprint (MD5): 51:86:E8:1F:BC:B1:C3:71:B5:18:10:DB:5F:DC:F6:20 verisignserverca, Mon Jun 29 13:07:34
EDT 1998, trustedCertEntry?,
Certificate fingerprint (MD5): 74:7B:82:03:43:F0:00:9E:6B:B3:EC:47:BF:85:A5:93 thawtpremiumserverca, Fri Feb 12
15:15:26 EST 1999, trustedCertEntry?,
Certificate fingerprint (MD5): 06:9F:69:79:16:66:90:02:1B:8C:8C:A2:C3:07:6F:3A verisignclass2ca, Mon Jun 29 13:06:39
EDT 1998, trustedCertEntry?,
Certificate fingerprint (MD5): EC:40:7D:2B:76:52:67:05:2C:EA:F2:3A:4F:65:F0:D8

- Now you have to add the certificate you previously installed to this keystore. Begin by exporting your CA Root certificate from your browser as a **DER-encoded binary file** and save it as C:\root.cer. Within Internet Explorer, you can view the installed certificates under **Tools --> Internet Options --> Content --> Certificates**. Once you open the certificates, locate the one you just installed under **Trusted Root Certification Authorities**. Select and click on **Export**. You can now save it as a **DER encoded binary** under your C: drive
- Use the keytool -import command to import this file into your cacerts keystore. For example:

```
C:\ExtraView\java\bin\keytool -alias myprivateroot -keystore ..libsecuritycacerts -file c:\root.cer
```

Enter default keystore password: changeit

Owner: CN=Division name, OU=Department, O=Your Company, L=Anytown,

ST=NC, C=US, EmailAddress?=you@company.com
Issuer: CN=Division name, OU=Department, O=Your Company, L=Anytown,
ST=NC, C=US, EmailAddress?=you@company.com
Serial number: 79805d77eefadb147e84f8cc2a22106
Valid from: Wed Sep 19 14:15:10 EDT 2001 until: Mon Sep 19 14:23:20 EDT 2101
Certificate fingerprints: MD5: B6:30:03:DC:6D:73:57:9B:F4:EE:13:16:C7:68:85:09
SHA1: B5:C3:BB:CA:34:DF:54:85:2A:E9:B2:05:E0:F7:84:1E:6E:E3:E7:68

Trust this certificate? [no]: yes

Certificate was added to keystore

- Run keytool -list again to verify that your private root certificate was added:

```
C:\ExtraView\java\bin\keytool -list -keystore ..libsecuritycacerts
```

You will now see a list of all the certificates including the one you just added. This confirms that your private root certificate has been added to the ExtraView Java cacerts keystore as a trusted certificate authority

- Stop and restart your application server to pick up the new certificate.

Configuring EVMail with Microsoft Exchange as a Server

Microsoft Exchange Server 2007 and newer is recommended. Configure these settings to achieve a connection using Exchange Web Services (EWS):

MAILBOX_TYPE	Set this to a value of EXCHANGE to use Microsoft Exchange Server
MAILBOX_USER	Set this to the user name of the connection to Exchange
MAILBOX_PASSWORD	Set this to the password of the user with which you are connecting to Exchange
EXCHANGE_URL	This value should be the URL of the Exchange server

EVMail can connect to the older Microsoft Exchange 2003 Server, via OWA (Outlook Web Access). To select Exchange 2003 mailbox in EVMail use the following configuration settings.

```
MAILBOX_TYPE = OWA
MAILBOX_PORT = 110
MAILBOX_SECURE = YES
MAILBOX_SERVER = owa.exchange.ms
MAILBOX_USER = evmailuser
MAILBOX_PASSWORD = password
```

```
#These parameters are used when MAILBOX_TYPE = OWA
# for connecting to Exchange 2003 using OWA
OWA_PATH = Exchange
```

OWA_DESTINATION = https://owa.exchange.ms/Exchange/evmailuser@yourdomain.com
OWA_ISA = true
OWA_DOMAIN = companydomain
OWA_FBA_PATH = /exchweb/bin/auth/owaaauth.dll

Notes:

1. Do not configure these parameters for Microsoft Exchange Server if you are using a POP3 or POP3S server
2. For OWA the mailbox_port is not used, but it is a required parameter; leave its value as 110
3. MAILBOX_SECURE - set to YES if your OWA url is https, set to NO if your OWA url is http
4. MAILBOX_SERVER - your Exchange Server
5. MAILBOX_USER and MAILBOX_PASSWORD - the username and password of your Exchange 2003 mailbox

Specific settings for OWA Exchange 2003 connections only - we provide sample settings to help you identify the equivalent settings in your Exchange Server.

MAILBOX_SERVER = Name of your MS Exchange Server

OWA_PATH - Exchange path for MS Exchange Outlook Web Access

The URL used to access your Outlook Web Access page is made up of the values for MAILBOX_SERVER and the OWA_PATH, e.g.

http(s)://MAILBOX_SERVER/OWA_PATH/ - should take you to your Outlook Web Access page

OWA_DOMAIN - the Exchange/Windows domain for the MAILBOX_USER account

OWA_FBA_PATH - path to Form based authentication - this can be found if you look at the HTML source of the OWA authentication/login page - search for "destination".

OWA_DESTINATION - on the OWA login page, search for the hidden field "destination" OWA_ISA - needed for use with OWA_DESTINATION

How EVMail Handles Errors

When EVMail encounters a problem, it may be either a "transient" error, i.e. one that might fix itself if the operation is tried again at a later time, or it might be a "permanent" error, i.e. one that needs a change in the EVMail configuration in order to be resolved.

Examples of permanent errors include:

1. Bad username/password for the MAIL_USER or MAIL_PASSWORD parameters
2. Invalid values for RUNTIME_USER_ID, RUNTIME_AREA_NAME, RUNTIME_PROJECT_NAME, RUNTIME_USER_ROLE

An example of a transient error would be the inability to connect to the mail server because of a network error. In a test situation, you can create a transient error by setting MAILBOX_PORT or MAILBOX_SERVER to an invalid value temporarily. When EVMail encounters a permanent error, it does the following:

1. Changes the task status to ERROR
2. Sends an email to all users in the ADMIN role indicating that EVMail is in an ERROR state **Fatal Task Configuration Error**
3. Stops the task so that it no longer runs

Once the task is in an ERROR state, the following must be done to repair the error

1. Edit the task and fix the configuration problem that caused the error, e.g. fix the MAILBOX_PORT if this is in error
2. Change the status of the task from START_NOW to STOP_NOW
3. Save the task
4. Wait until the **Task Management Task** has run, and the EVMail task status has changed to STOPPED
5. Edit the EVMail task and change the status from STOP_NOW to START_NOW
6. Save the task
7. Wait until the **Task Management Task** has run, and the EVMail task status has changed to STARTED

When EVMail is running and encounters a transient error, it will do the following:

1. Generate a system_log warning message indicating that it has encountered a transient error
2. Check the values for the new EVMail configuration parameters RUNTIME_WARN_NOTIFICATION_INTERVAL and RUNTIME_WARN_NOTIFICATION_COUNT
3. Check the system log table and see how many warning messages have been created within the past RUNTIME_WARN_NOTIFICATION_INTERVAL minutes. If there are more than

- RUNTIME_WARN_NOTIFICATION_COUNT of them, it will create a new notification entry in the system log
4. Check the RUNTIME_ERROR_NOTIFICATION_INTERVAL. If this is the first notification entry in the system log for this warning, in the last RUNTIME_ERROR_NOTIFICATION_INTERVAL minutes, send the email out to the ADMIN role users
 5. Note that EVMail will continue to run

Example:

- RUNTIME_ERROR_NOTIFICATION_INTERVAL = 15 minutes
- RUNTIME_WARN_NOTIFICATION_INTERVAL = 3 minutes
- RUNTIME_WARN_NOTIFICATION_COUNT = 3
- EVMail is set to run every minute

At 10:00 a.m. EVMail runs, and encounters a transient error as it cannot connect to the POP3 mailbox. A message is placed in the system_log table similar to the following:

```
<LOG_MESSAGE>EVMail Task had a WARN condition</LOG_MESSAGE>
<TASK_ID>700983</TASK_ID>
<TASK_TITLE>EVMail Task (Incoming email)</TASK_TITLE>
</LOG_MESSAGE>
```

ExtraView checks to see how many messages of this type, for this task_id exist in the system log table in the past 3 minutes - there is 1. 1 is less than 3 so ExtraView does not send any notification to the administrators.

At 10:01 a.m. EVMail runs again, and encounters the same error - a message is placed in the system_log table:

```
<LOG_MESSAGE>EVMail Task had a WARN condition</LOG_MESSAGE>
<TASK_ID>700983</TASK_ID>
<TASK_TITLE>EVMail Task (Incoming email)</TASK_TITLE>
</LOG_MESSAGE>
```

ExtraView checks to see how many messages of this type, for this task_id exist in the system log table in the past 3 minutes - there are 2. 2 is less than 3 so ExtraView does not send any notification to the administrators.

At 10:02 a.m. EVMail runs again, and encounters the same error - a message is placed in the system_log table:

```
<LOG_MESSAGE>EVMail Task had a WARN condition</LOG_MESSAGE>
<TASK_ID>700983</TASK_ID>
<TASK_TITLE>EVMail Task (Incoming email)</TASK_TITLE>
</LOG_MESSAGE>
```

ExtraView checks to see how many messages of this type, for this task_id exist in the system log table in the past 3 minutes - there are now 3. 3 is not greater than 3 so ExtraView does not send any notification to the administrators.

At 10:03 a.m. EVMail runs again, and encounters the same error - a message is placed in the system_log table:

```
<LOG_MESSAGE>EVMail Task had a WARN condition</LOG_MESSAGE>
<TASK_ID>700983</TASK_ID>
<TASK_TITLE>EVMail Task (Incoming email)</TASK_TITLE>
</LOG_MESSAGE>
```

ExtraView checks to see how many messages of this type, for this task_id exist in the system log table in the past 3 minutes - there are now 4. 4 is greater than 3, so we add a new message to the system log table:

```
<LOG_MESSAGE>EVMail Task had a transient error that persisted more than 3 times in 10 minutes.
<TASK_ID>700983</TASK_ID>
<TASK_TITLE>EVMail Task (Incoming email)</TASK_TITLE>
</LOG_MESSAGE>
```

ExtraView checks to see how many messages of this type for this task_id, exist in the system log table in the past 10 minutes - we have 1, so we need to send an email to all ADMIN users.

At 10:04 a.m. EVMail runs, and encounters the same error - a message is placed in the system_log table:

```
<LOG_MESSAGE>EVMail Task had a WARN condition</LOG_MESSAGE>
<TASK_ID>700983</TASK_ID>
<TASK_TITLE>EVMail Task (Incoming email)</TASK_TITLE>
</LOG_MESSAGE>
```

ExtraView checks to see how many messages of this type, for this task_id exist in the system log table in the past 3 minutes - there are now 4. 4 is greater than 3, so a new message is added to the system log table:

```
<LOG_MESSAGE>EVMail Task had a transient error that persisted more than 3 times in 10 minutes.  
<TASK_ID>700983</TASK_ID>  
<TASK_TITLE>EVMail Task (Incoming email)</TASK_TITLE>  
</LOG_MESSAGE>
```

ExtraView checks to see how many messages of this type for this task_id, exist in the system log table in the past 10 minutes - there is 1, so ExtraView will send an email to all ADMIN users. Even if the transient error persists ExtraView only sends out warning emails every 10 minutes. If your EVJ.log shows errors similar to:

```
2012-10-30 13:45:54 [ ERROR] EVMT: EVMail Task (Incoming email) Mailbox Authentication failed - check your  
MAILBOX_USER and MAILBOX_PASSWORD  
2012-10-30 13:45:54 [ ERROR] Exception = javax.mail.AuthenticationFailedException: Command is not valid in this state.  
javax.mail.AuthenticationFailedException: Command is not valid in this state.
```

Check to see if the POP3 account is on an Exchange2010 server. If so, the problem is likely due to the fact that the Exchange POP is expecting encrypted credentials. To resolve your email administrators will need to run the following command in an Exchange shell which allows Exchange POP to use plain text credentials:

```
Set-PopSettings -LoginType PlainTextLogin
```

Then restart the POP3 service and the problem should be resolved.

Multiple EVMail Tasks

It is possible to configure multiple EVMail tasks, each with their own configuration. If you configure this on a single application server, then all the mail connections must either be secure (using POP3S) or not secure (using POP3). If there is a requirement to have mixed secure and non-secure servers, then you should set up a cluster of application servers, and then different servers may be configured to be secure or non-secure.

Technical Note on Incoming Emails with Attachments

There are three possible ways in which attachments to incoming emails can be handled. The first type is handling attachment *parts* or *non-body* parts of the incoming email. In general, anything that is attached to the incoming email should be uploaded to the ExtraView issue as a file attachment. The second type is when the body of the email message is not copied to a field on the ExtraView issue, but is instead uploaded as a file attachment to the ticket. This happens automatically if the body of the message itself is greater than 512kb in size. The third type is when the incoming email message itself is attached to the ExtraView issue. This will occur, through parameter settings, or encountering a message that cannot be processed for some reason.

1. The part disposition is **Part.ATTACHMENT**

Incoming emails processed by EVMail that have their own attachments - those files are always attached to the ticket.

```
contentType.toLowerCase() = image/gif; name="ali's.gif" (the BODY is empty)
```

• The part disposition is **Part.INLINE**

Incoming emails processed by EVMail sometimes have inline attachments. These are often images in the user's signature, inline images within the email body or something similar to "*this email has been checked by Virus Scanner*".

```
contentType.toLowerCase() = image/jpeg; name="businesscard.jpg" (the BODY is empty)
```

These are only attached to the ticket if the EVMail behavior setting named `EVMAIL_INCLUDE_INLINE_ATTACHMENTS` is set to YES and a filename and content type are present. Otherwise, if content type is text, the text is appended to the email body. This setting defaults to YES, to not lose anything, but if your preference is not to have what are often just logos attached to issues, you can change this behavior setting to a value of NO.

1. The part disposition is **null**

If the incoming body of the email message exceeds a size of 512kb, ExtraView will NOT put the message body in the description/comments field, but will attach the email message to the issue and insert a line of text in the issue, indicating "*see attachment <attachment filename> for body of email.*"

```
contentType.toLowerCase() = text/plain; charset=utf-8; format=flowed (this has a BODY)  
contentType.toLowerCase() = text/html; charset=utf-8 (the BODY is empty)
```

2. In all cases, and in addition to any other attachments added to the issue, there is a behavior setting named `EVMAIL_ATTACH_EML`. When this is set to a value of YES, the source text of the incoming email is also attached to the issue, as an .eml type file
3. If EVMail receives a badly formed email message for some reason, and it cannot be processed, it is attached to the issue that is created, as opposed to throwing it away.

Configuring BatchMail

This task controls the sending of email notifications by ExtraView. In previous versions this was a separate process to ExtraView. From version 6.1, the BatchMail task can be started and stopped within ExtraView, and the log can be examined. It is recommended that this task be set to `START_ON_BOOT`, so that it initializes automatically when ExtraView starts.

When configuring BatchMail with Oauth2 connections, there is an appendix to this guide at [OAuth2 Email Mailbox Settings](#) to assist.

The parameters to set up and utilize BatchMail are as follows:

Parameter	Explanation
<code>ALLOW_ENCRYPTION</code>	This flags whether email encryption is to be set or not. The default is NO
<code>BatchMail.properties</code>	This configuration file is used for standalone BatchMail operation. If you are running BatchMail from within this menu, this file is not needed. It is provided for backwards compatibility with previous versions of ExtraView, which did not run BatchMail as a task within ExtraView. See the Installation Guide for details of the settings within this file.
<code>CHECK_CONNECTION_PAUSE</code>	This defines the number of seconds to wait when contacting your mail server, before assuming there is no connection. The default is 30 seconds
<code>ENCRYPTION_DIR</code>	The directory where the encryption program is stored. This may be an absolute pathname or a relative pathname. Relative paths are relative to the WEB-INF directory on the server
<code>ENCRYPTION_SCRIPT</code>	The script to be used to generate the encrypted result (either file or written to standard out). To test this execute the following from the scripts folder: <code>./encrypt.sh</code> where is the placeholder for the recipient. It will be retrieved by the BatchMail program and should match the name on the keyring. is the placeholder for the filename. Its value will be retrieved by the BatchMail program and will be based on the filename generated by ExtraView. For example, this might be: <code>ENCRYPTION_SCRIPT=scripts/encrypt.sh</code>
<code>ENCRYPTED_TO_STANDARD_OUT</code>	If this has a value of "yes" then BatchMail reads the encrypted standard out, otherwise if there is a value of "no" it reads the encrypted file
<code>FORCE_DIRECTORY_RELOAD</code>	This may be YES or NO. It is used principally for NFS mounted directories which are used to store the outgoing emails. Occasionally, the directory entries may be cached and become stale, leading to ExtraView seeing out-of-date information. When this setting is YES, ExtraView forces a re-read of the directory for all operations.
<code>LOG_FILE_MAX_RETAINED</code>	This is the maximum number of "rolled over" log files that are retained on the server before they are deleted. The default is 5
<code>LOG_FILE_MAX_SIZE</code>	This is the maximum size to which the log file is allowed to grow, before it is "rolled over" and a new log file created. The old file is retained on the file system. The default is 20,000 kiloBytes
<code>LOG_FILE_PATH_NAME</code>	This is the path to the BatchMail log file, held within the properties file.
<code>LOG_FILE_PATH_NAME_ABSOLUTE</code>	This is used for standalone installations on Microsoft Windows, or when running in a war file
<code>LOG_LEVEL</code>	The level of logging written to the log file. The standard operational value is 6, and a number up to 12 can be used to produce increasing amounts of debug information in the log, for debugging purposes
<code>MAIL_DIR</code>	This is the absolute or relative path to the mail directory where outgoing emails are stored temporarily, defined in the <code>Configuration.properties</code> file. This must be set. Relative paths are relative to the WEB-INF directory on the server
<code>MAIL_ENABLE_TLS</code>	This parameter enables TLS (Transport Layer Security) to facilitate end-to-end encryption of the connection to the mail server. Set the value of the property to YES to enable.

MAIL_PASSWORD	When the outbound SMTP server requires a username and password to authenticate before sending the email, this parameter provides the password
MAIL_PORT	The MAIL_PORT is typically 25 or 465, depending on whether you are using a secure connection
MAIL_SERVER	The domain name to your mail server. This must be set
MAIL_USER	When the outbound SMTP server requires a username and password to authenticate before sending the email, this parameter provides the username
NOTIFICATION	<p>This setting can be either NOTIFY_NEVER (by itself), or any combination of the following with each setting separated by semicolon(:) :</p> <ul style="list-style-type: none"> • NOTIFY_DELAY • NOTIFY_FAILURE • NOTIFY_SUCCESS <p>For example, the setting might be NOTIFICATION=NOTIFY_SUCCESS;NOTIFY_FAILURE</p>
PAUSE_AFTER_NUM_OF_EMAIL	This setting pauses the EVMail task after sending the number of mails in the value of the setting. This pauses the EVMail task to stop it commanding all the resources on the server for long periods of time, such as might happen with a mass update of many issues sending out thousands of notifications in a very short period of time. An alternative method is to use the PAUSE_BETWEEN_SEND setting, It is recommended that you use only one of the two settings.
PAUSE_BETWEEN_SEND	This is the number of milliseconds to wait between the sending of each mail notifications, to allow the server to process other tasks. Similar to the PAUSE_AFTER_NUM_OF_EMAIL setting, it reduces the load on the server. It is recommended that you use only one of the two settings. The default is 200 milliseconds
POLL_RATE	The number of seconds to pause between checking for emails to be sent. The default is 5 seconds
RECIPIENTS_PER_CONNECTION	Most mail servers have a limit in how many emails they will send with a single connection, typically 100. Within sites that generate a large volume of email, a BatchMail configuration property is available to prevent this causing a problem. The property is named RECIPIENTS_PER_CONNECTION. BatchMail queues the sending of mail to make sure no more than this number of mails are generated at one time.
RETURN_OPTION	This defines the action to take with returned mail. You can elect to either return the full email or just the headers. The value can be either RETURN_FULL or RETURN_HDRS
SECURE_PORT	This is a dedicated port number for this application. The default is 879. The number must always be less than 1024
SEND_TO_ALL_ONCE_ADDR	<p>This is used in conjunction with SEND_TO_ALL_ONCE setting to determine whether recipients of email notifications will see the other addressees who received the email notification.</p> <p>The default for this optional setting is BCC.</p>
SEND_TO_ALL_ONCE	<p>The default for this optional setting is false. It may be set to a value of true, in which case you can set the SEND_TO_ALL_ONCE_ADDR to a value of TO or BCC. If set to TO, the mail addresses of the recipients will appear in the TO header of the outgoing email, as opposed to the BCC.</p> <p>It should be understood that this implies that all recipients will receive the email as if they are in the user role of the sender, as it is a single email that is generated, as opposed to an email being generated for each user, customized to their user role.</p>
SERVER_FAILED_PAUSE	This is the number of seconds to wait after a failed connection before retrying. The default is 60 seconds
SIGNING_SCRIPT	The script to be used to generate the signed result (either file or written to standard out). To test this, execute the following from the scripts folder: ./sign.sh The return value will be retrieved by the BatchMail program and will be based on the filename generated by ExtraView. For example, use this: SIGNING_SCRIPT=scripts/sign.sh
TRANSPORT	Use either <i>smtp</i> or <i>smtps</i> for a secure connection if this is configured on your mail server

XML_LOG_FLAG	The default for this is FALSE. If you set it to true, the log will be created in an XML format
--------------	--

Session Monitor

This is a cleanup task which periodically monitors user sessions and removes expired sessions from the database, thus ensuring that old, expired sessions do not accumulate and cause an unnecessary load on the system. Again, the recommendation is that this is set to `START_ON_BOOT` and that the default properties of the task are not altered by the administrator.

Managing Quickfind

This task automatically indexes newly added text to all issues entered or updated by users in order to speed up keyword searches. Once configured and started, this task will keep the indexes up-to-date as users add or update any text within issues. It also has special properties in better use of wildcards, phrase search, and in the support of Boolean logic within your searches compared to straight SQL searches of your database.

This task defines exactly what text will be indexed, and where the indexes will be stored on the file system of your server. The Quickfind indexing mechanism is based upon the Apache Foundation Lucene technology.

Note that files larger than 16MB in size are not indexed. For full end-user information on the use of Quickfind, see the page titled [Keyword Searching](#).

What is Indexed

The following are indexed as part of Quickfind's operations.

- Inbuilt Fields
 - the `SHORT_DESCR` field
 - If the behavior setting named `QUICKFIND_INDEX_USERS` is YES, the following user fields are indexed:
 - `OWNER`
 - `ASSIGNED_TO`
 - `LAST_UPDATED_BY_USER`
 - `ORIGINATOR`
 - `CONTACT`
 - All `MODULEs`: `ASSIGNED_TO` field
- User Defined Fields (UDFs)
 - User Defined Field `USER` type fields
 - All User Defined Fields with a display type of `TEXTFIELD`
 - All large User Defined Fields with a display type of `TEXTAREA`, `LOGAREA`, `PRINT_TEXT`
 - The User Defined Fields with a display type of `HTMLAREA`, after removing the `HTML` tags
- `DOCUMENT` fields
 - Document description
 - File name
 - Document content according to `MIME` type and content size:
 - Size must be less than 16MB
 - `MIME` type must not be any kind of video, audio, or image
 - The `MIME` type is mapped to an extractor – see `MIME` type extractors below
- `IMAGE` fields
 - Image description
 - File name
- Attachments - These are indexed by default. If you do not want these indexed, uncomment the appropriate line in the properties file so it reads:

```
LUCENE_MAX_ATTACHMENTS=0
```

Note that attachments are only searched when the **Search Attachment** checkbox by the `KEYWORD` field is checked

- Attachment content according to `MIME` type and content size:
 - Size must be less than 16MB
 - `MIME` type must not be any kind of video, audio, or image
 - `MIME` type is mapped to an extractor – see `MIME` type extractors below

- Attachment description is searchable

First-time Setup

If your database contains a significant amount of text, you should follow the process within the Installation Guide, at the page [Quickfind](#) before following this page to configure and start the Quickfind task.

The basic setup and configuration of the Quickfind task is accomplished on the **Admin** ==> **Task Manager** screen.

- First, *Add a new task*, and select the *Quickfind Synchronization Task*
- Select a Node ID on which to run the task. You must not run the task on more than one node within a clustered system. If you do so, you risk corrupting the indexes created with the utility
- Set the Start Option to *STOP_NOW*. More configuration is required before starting the task
- You can set the frequency with which the task runs with the Poll Interval. It is recommended that this is set between 60 and 600 seconds. The default is 300 seconds
- Do not alter the class name of the task
- If you enter an absolute path to the index files in the **Quickfind Index Location**, and the path already exists, the behavior setting named QUICKFIND_INDEX is updated to reflect that path. If the path does not exist when you create the task, the task is still created, but you will encounter an error, and you are taken to the edit mode, where you can correct the path. Suggestions for index names are:
 - **C:\ExtraView\<instance name>\<index name>** on Microsoft Windows platforms, e.g. C:\ExtraView\QuickfindIndex
 - **/usr/local/extraview/<instance name>/<index name>** on Linux and Unix platforms, e.g. /usr/local/ExtraView/QuickfindIndex
 - On an NFS mount, include this fact in the index name by using the convention **nfs:pathname**
- The behavior setting is updated with the index name you supply
- Click **Add** to create the task
- Notice that the **Task Manager** screen now shows the FULL_TEXT_SYNCHRONIZATION Quickfind Synchronize task
- Click on the *Edit* button of the Quickfind Synchronize task. You will now see a screen that looks similar to the following:

The screenshot shows the 'Edit a task' configuration window for the 'FULL_TEXT_SYNCHRONIZE' task. The window has a title bar with 'Edit a task' and a help icon. Below the title bar are buttons for 'Update', 'Reset to Default Values', 'Delete', 'Cancel', and 'Print Page'. The main configuration area includes:

- Task name:** FULL_TEXT_SYNCHRONIZE
- Title:** Quickfind Synchronize Task - Used to build the Quickfind index: (with a 'Localize' button)
- Node ID:** WS_A(Current Node) (dropdown menu)
- Start Option:** STOP_NOW (dropdown menu)
- Poll Interval (seconds):** 300 (text input)
- Class Name:** com.extraview.util.FullTextSynchronizeTask (text input)
- Properties:** A text area containing:


```
### Quickfind settings ***
QUICKFIND_ERROR_NOTIFICATION_INTERVAL = 15
QUICKFIND_WARN_NOTIFICATION_COUNT = 5
QUICKFIND_WARN_NOTIFICATION_INTERVAL = 5

### Quickfind Logging options ***
# This property will use the Extraview application server log file (the default)
USE_SYSTEM_LOG = YES
```
- Enable Quickfind:** Yes (dropdown menu)
- Quickfind Index Location:** quickfind_index (text input)
- Non-indexed file extension list:** (empty text input)
- Allow Quickfind on user defined text fields:** Yes (dropdown menu)
- Quickfind Indexing Information:** A section with a descriptive paragraph and three rows of data:

Category	Latest indexed date	Count	Re-index category
Latest indexed issue date	Jul 1, 2012	4,468 not yet indexed	[Re-index category dropdown]
Latest indexed attachment date	Dec 31, 1969	261 not yet indexed	[Re-index category dropdown]
Latest indexed document date	Dec 31, 1969	9 not yet indexed	[Re-index category dropdown]

At the bottom of the window are buttons for 'Update', 'Reset to Default Values', 'Delete', 'Cancel', and 'Print Page'.

The Quickfind task management utility

- Notice the new configuration options that are now displayed

- Set *Enable Quickfind* to a value of *Yes*
- Enter the path to the location where the index files are to be stored on your file system. If you will use the default path as explained below, you can skip this step. All application servers within a clustered server environment must have read and write access to the index file location. The index location is also the value stored in the behavior setting named QUICKFIND_INDEX_LOCATION. Further, you must make sure you have sufficient disk space to store the indexes as they grow. The amount of disk space is highly dependent on the quantity of text and number of fields being stored
- The prompt **Allow Quickfind on user defined text fields** determines whether the text within all the user defined fields should be indexed. The recommendation is that you set this to *Yes*
- Observe the dates on which files were last indexed, and the count of files still to be indexed
- If this is new site with no issue data, then you may now set the value of the *Start Option* to START_NOW, and **Update**. This will start the Quickfind synchronization task and begin to index issues as they are entered by users
- If the site that has existing data and you have not already done so, run the external utility named FullTextIndexSetup. This is described on the page Quickfind in the Installation Guide at the page [Quickfind](#). The utility creates the Quickfind indexes in one fell swoop, in a fast manner. After completing this indexing operation, you can return to this screen, and set the value of the *Start Option* to START_NOW, and **Update**
- If you need to re-index all or part of the issue data within your database, the bottom section of the screen provides an aid. You can re-index just the issue data, just the attachments or just the data within document field types, or all of these, by entering a date within each category. To re-index the complete database, put a date in each of the fields, earlier than the date at which data was first entered into the site, and then press **Update**. On a large site it can take a considerable amount of time to index the data, but your users may continue accessing the site in the meantime. Obviously, some searches may not return complete results. You can use this screen to see the progress and how many items remain to be indexed
- If the behavior setting QUICKFIND_INDEX_ENUMERATED is set to a value of YES, then an additional prompt that allows the administrator to re-index the list field values will also appear on the screen.

Quickfind Properties

The following properties may be set to aid in the running of Quickfind or the investigation of problems:

Property	Purpose
QUICKFIND_ERROR_NOTIFICATION_INTERVAL	The minimum number of minutes between subsequent error email notifications; this prevents multiple emails to the administrator in the case there is a persistent warning condition
QUICKFIND_WARN_NOTIFICATION_COUNT	The number of warnings in the warning notification interval before a notification email is sent. It is typically acceptable to have a number of warnings before a warning is sent
QUICKFIND_WARN_NOTIFICATION_INTERVAL	The number of minutes in which the warning count specified in QUICKFIND_WARN_NOTIFICATION_COUNT must occur before a notification email is sent
USE_SYSTEM_LOG	If this has a value of YES, then the ExtraView application server log file will be used, as opposed to using the log file specified in either LOG_FILE_PATH_NAME or LOG_FILE_PATH_NAME_ABSOLUTE. If this is set to YES, do not use LOG_FILE_PATH_NAME or LOG_FILE_PATH_NAME_ABSOLUTE
LOG_FILE_PATH_NAME	The relative pathname to the log file. If this is used, set USE_SYSTEM_LOG to a value of NO and do not use LOG_FILE_PATH_NAME_ABSOLUTE
LOG_FILE_PATH_NAME_ABSOLUTE	The absolute pathname to the log file. If this is used, set USE_SYSTEM_LOG to a value of NO and do not use LOG_FILE_PATH_NAME
PSP_LOG	Set this to a value of YES if you need to see the SQL statements generated by the task in the log
XML_LOG_FLAG	Set this to TRUE if you want the log statements to be generated in XML format
DEFAULT_LOG_LEVEL	The default logging level. This is 6
LOG_LEVEL	The log level to use for debugging. In normal operation this should be set to 6
LOG_CHARSET	The character set of the log output. In most cases this should be left as UTF-8
LOG_INCLUDE_THREAD_NAME	This is set to YES to include the threadname of the Quickfind task in the log file
LUCENE_MAX_ATTACHMENTS	This should be set to a value of 0 if you do not want to index attachments

Modifying the Indexing Properties

- Use the **Allow Quickfind on user defined text fields** selector on the maintenance screen to choose whether to index user defined text fields
- Use the behavior setting named QUICKFIND_INDEX_ENUMERATED to determine whether to index the titles on enumerated text fields
- Use the behavior setting named QUICKFIND_INDEX_USERS to determine whether to index user names within the Quickfind indexes

MIME Type Extractors

There are two text extractors:

1. PDF Text Extractor: uses iText PdfReader object to tokenize the PDF strings. Document content will NOT be indexed if it is marked as being “encrypted”
2. Office Text Extractor: uses one of the POI extractors appropriate to the type (Word, Excel, Powerpoint, Outlook, Publisher, or Visio). Note: if Excel text extractor fails, it tries to extract text assuming it is a comma-separated or tab-separated text file with an Excel MIME type
3. Other MIME type documents are indexed as text

Updating Quickfind

The instructions to update Quickfind are found [here](#).

Notes

As stated above, Quickfind utilizes the Apache Lucene software to provide the indexing mechanism. One support issue is that if your Java Virtual Machine, or your application server (Apache Tomcat or similar) crashes for any reason, then the indexes may be left in a locked state on the server.

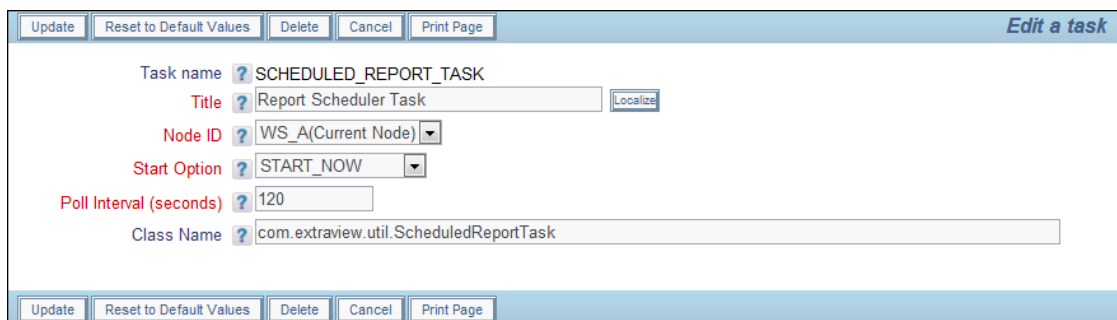
The lock files are kept in the directory specified by the **org.apache.lucene.lockdir** system property if it is set, or by default in the directory specified by the **java.io.tmpdir** system property (on Unix boxes this is usually **/var/tmp** or **/tmp**). If for some reason **java.io.tmpdir** is not set, then the directory path you specified to create your index is used.

Lock files have names that start with *lucene-* followed by an MD5 hash of the index directory path. If you are certain that a lock file is not in use, you can delete it manually.

Report Schedule Task

When ExtraView is first installed this task is not set to start and no reports may be scheduled for delivery at specific times by users. In order to allow reports to be scheduled for email delivery by users, the **Report Schedule** task must be configured. The **BatchMail** task must also be configured as this is used to deliver the mail once the report is generated by the schedule task.

Note that the default polling interval for the task is 120 seconds. If you are unlikely to have users schedule many reports, and it is not critical for recipients to receive these reports on time, consider making this interval longer.



The screenshot shows a configuration window for the 'Report Scheduler Task'. At the top, there are buttons for 'Update', 'Reset to Default Values', 'Delete', 'Cancel', and 'Print Page', along with an 'Edit a task' link. The configuration fields are as follows:

- Task name: SCHEDULED_REPORT_TASK
- Title: Report Scheduler Task (with a 'Localize' button)
- Node ID: WS_A(Current Node) (dropdown menu)
- Start Option: START_NOW (dropdown menu)
- Poll Interval (seconds): 120
- Class Name: com.extraview.util.ScheduledReportTask

At the bottom, there are buttons for 'Update', 'Reset to Default Values', 'Delete', 'Cancel', and 'Print Page'.

Task manager for scheduled reports

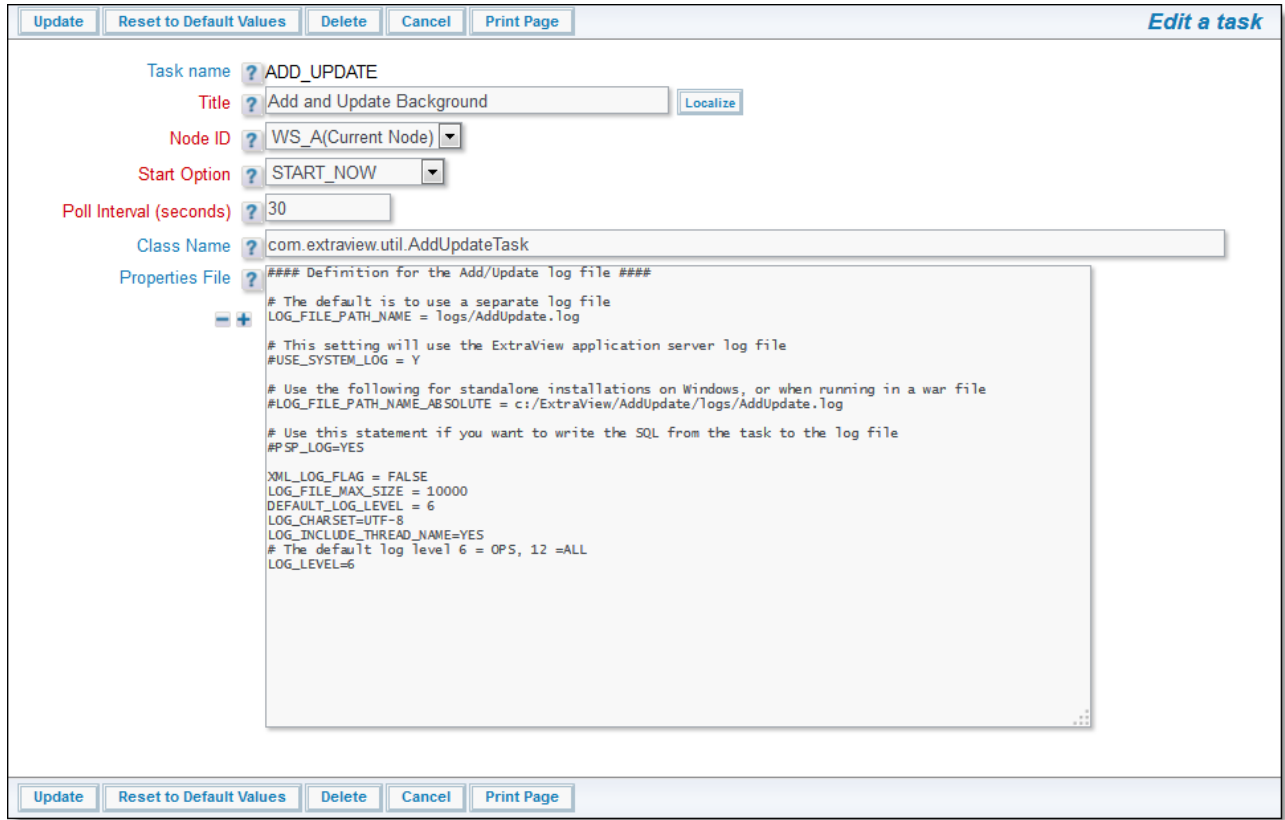
The Report Schedule task should be present in a new installation, but will be in a STOPPED status. Set the START_NOW start option to start the task. It will be started automatically in the future when you restart the application server.

Add / Update Task

The Add / Update task is responsible for the following actions:

- It actions the NOWAIT option with Business Rules. The option works with the ADD, COPY and UPDATE action rules. If this task is not configured, the updates from ADD, COPY and UPDATE rules are queued, but never applied.
- The task handles issue import from the administrative File Import Utility. This allows the import of issues to happen in the background, thereby speeding the utility. Generally, Add / Update tasks that are configured to run on nodes other than the node where the file import originated can participate in the parallelism of inserts and updates, thereby speeding the overall process. However, if there are images, documents or attachments that are part of the imported issue, then the insert/update must be completed by the originating node. There is nothing for the user to do to ensure this, but the parallelism will be affected because those update/inserts are dedicated to a single node.

The task is configured on the following screen:



Task manager for adding / updating tasks

The task should be run on a single node a clustered environment. A suitable poll time is 30 seconds as the task takes little resource on the server. The options within the properties manage the log file options as follows:

Property	Function
LOG_FILE_PATH_NAME	Specifies the path name to the log file, relative to the WEB-INF directory
USE_SYSTEM_LOG	This is an alternative to using a log file solely for the Add / Update log, and will interleave the log messages with the standard ExtraView application server log file
LOG_FILE_PATH_NAME_ABSOLUTE	This is used as an alternative to the previous two options, and is used for stand-alone installation on the Microsoft Windows platform, or when running ExtraView from within a WAR file deployment
PSP_LOG	This option can be used to debug the feature by writing all the SQL statements executed to the log file
XML_LOG_FLAG	Outputs the log file in XML as opposed to text, if the option is set to TRUE
LOG_FILE_MAX_SIZE	The size of the log file in bytes. Once this size is reached, the log file is archived and a new file started
DEFAULT_LOG_LEVEL	This is the default level for log messages. This value should be 6
LOG_CHARSET	The character set for messages sent to the log file. This should be UTF-8

LOG_INCLUDE_THREAD_NAME	Includes or excludes the thread name in the log output
LOG_LEVEL	The level of log messages, from 1 to 12. The default level is 6. Increasing the number increases the number of log messages

Extraview - ExtraView Integration Task

The ExtraView - ExtraView peer daemon synchronizes items and specific metadata between two ExtraView instances, with specific mappings and filters configured in a configuration file.

This configuration file is part of an ExtraView task.

The synchronization supports all field types stored in the database with item data, including file attachments. Item relationships are also synchronized. The daemon synchronizes specific metadata objects such as list values and allowed values combinations. However, metadata such as field definitions, layouts, rules and other metadata is not synchronized – these objects are the domain of the XML export / import feature.

The feature is fully described in the [Extraview - ExtraView Instance Integration](#) section of these guides.

Add the task, then use the above link to configure the integration of two or more ExtraView instances.

LDAP Background Task

This task should only be configured when you are connecting your installation to an LDAP server. It is optional to run this task. When it is running, it will synchronize the LDAP server data that is required within ExtraView, on a periodic basis. This avoids ExtraView reaching out to the LDAP server for user information on each occasion it is required, and uses the information previously read into ExtraView. Simply adding, or editing may often require reading many users' details, and this task makes this operation much more efficient. This task should be configured in preference to the *LDAP Synchronization Task*. You should not configure both tasks.

Without this task being started, ExtraView makes a call to the LDAP server for each and every requirement for any user's information that is required. This ensures that ExtraView always receives up-to-date information. Unless the LDAP server is configured to offer high speed delivery of all responses, this can lead to minor delays in the processing within ExtraView and a resultant slow response to end users.

However, user data within an LDAP server is typically "slow-moving", and changes infrequently. This task will refresh the data for users whose information is stored within ExtraView on a timed basis. There is a possibility that the user's data may have changed in the LDAP server, but as long as the poll interval is kept to a modest time, the chances are that the cached data within ExtraView will be correct.

This task should only be run on a single node within a clustered environment.

LDAP Synchronization Task

This task should only be configured when you are connecting your installation to an LDAP server. It is optional to run this task. When it is running, it will synchronize the all LDAP server data on a periodic basis that is defined in the task configuration. This avoids ExtraView reaching out to the LDAP server for user information as it is required, and uses the information previously read into ExtraView. Unless you require the synchronization of all the data in your LDAP server, you should configure the *LDAP Background Task* as opposed to this task. You should not configure both this task and the *LDAP Background Task*.

Without this task, ExtraView makes a call to the LDAP server for each and every requirement for any user's information that is required. This ensures that ExtraView always receives up-to-date information. Unless the LDAP server is configured to offer high speed delivery of all responses, this can lead to minor delays in the processing within ExtraView and a resultant slow response to end users.

However, user data within an LDAP server is typically "slow-moving", and changes infrequently. This task will refresh the data for users whose information is stored within ExtraView on a timed basis. There is a possibility that the user's data may have changed in the LDAP server, but as long as the poll interval is kept to a modest time, the chances are that the cached data within ExtraView will be correct.

The *LDAP Background Task* is typically more efficient and should normally be used in preference to this task.

This task should only be run on a single node within a clustered environment. The task configuration looks similar to this:

Add Cancel Print Page Add a new task

Task Name ? LDAP Synchronization Task - Synchronize the entire LDAP to ExtraView on a periodic basis

Title ? LDAP Synchronization Task

Node ID ? WS_A(Current Node)

Start Option ? START_NOW

Poll Interval (seconds) ? 3600

Class Name ? com.extraview.util.LDAPSynchronizeTask

Properties File ?

```
# The LDAPSynchronize.log
LOG_FILE_PATH_NAME = logs/LDAPSynchronize.log

# This setting will use the Extraview application server log file
#USE_SYSTEM_LOG = Y

# Used for standalone installations on windows, or when running in a war file
#LOG_FILE_PATH_NAME_ABSOLUTE = c:/ExtraView/MetadataExport/Logs/LDAPSynchronize.log

# Use this statement if you want to write the SQL from the task to the log file
#PSP_LOG=YES

# These define the logging attributes
XML_LOG_FLAG = FALSE
LOG_FILE_MAX_SIZE = 10000
LOG_CHARSET=UTF-8
LOG_INCLUDE_THREAD_NAME=YES

# The default log level 6 = OPS, 8 = DEBUG, 12 =ALL
DEFAULT_LOG_LEVEL = 6
LOG_LEVEL=6

# This sets the time of day when this task will run (HH:MM)
START_TIME_OF_DAY = 15:30

# This sets how often the task will run (minutes)
FREQUENCY_INTERVAL = 60

# This defines the LDAP field name to use for synchronization
LAST_MODIFIED_FIELD_NAME=modifytimestamp
```

The purpose of the properties in the configuration are as follows:

Property	Purpose
DEFAULT_LOG_LEVEL	The default is 6 for normal operations, but you may set this to 8 or 12 for an increasing number of log messages. Only use 8 or 12 when debugging
DISABLED_USER_LDAP_SEARCH_FILTER	This property specifies a search filter that selects users that have been disabled or removed in the LDAP server. This property overrides the behavior setting named LDAP_SEARCH_FILTER
EARLIEST_SYNCHRONIZATION_TIMESTAMP	This setting specifies a timestamp that will be used, instead of the timestamp taken from the database table named TABLE_TIMESTAMP. This table tracks the synchronization tasks' run times. This timestamp is only used if, and only if, the timestamp in the table is earlier than the specified timestamp. The timestamp within the property must be in the format: YMMddHHmmss'Z
ENABLED_USER_LDAP_SEARCH_FILTER	This property specifies a search filter that selects only users that are enabled in the LDAP server. This overrides the behavior setting named LDAP_SEARCH_FILTER
FREQUENCY_INTERVAL	Once the task runs, this is the number of minutes before the task will run again. In the example of the previous property, you could set this to 1440, in order to run the task once each day at 3:00 AM. 1440 is the default value for this property, if it is not set
GT_TIME_ZONE_FORMAT	This defaults to a value of Z. It may have one of the following enumerated values: <ul style="list-style-type: none"> DIFF_HOUR =>g-differential format, using hour only DIFF_HOUR_MINUTE =>g-differential format, using hour and minute Z =>g-time-zone (Zulu) format

GT_FRACTION_DELIMITER	<p>This defaults to a value of DOT. It may have one of these values:</p> <ul style="list-style-type: none"> • DOT • COMMA
GT_FRACTIONAL_DIGITS	<p>This setting is a positive integer that indicates the number of digits in the fractional part of the generalized time. The default value is 3</p>
GENERALIZED_TIME_FORMAT	<p>This setting has a default value of YEAR_MONTH_DAY_HOUR_MIN_FRACTION. The complete set of values that may be set are:</p> <ul style="list-style-type: none"> • YEAR_MONTH_DAY_HOUR • YEAR_MONTH_DAY_HOUR_FRACTION • YEAR_MONTH_DAY_HOUR_MIN • YEAR_MONTH_DAY_HOUR_MIN_FRACTION • YEAR_MONTH_DAY_HOUR_MIN_SEC • YEAR_MONTH_DAY_HOUR_MIN_SEC_FRACTION
LAST_MODIFIED_FIELD_NAME	<p>When synchronizing with the LDAP server, you use this property to identify the field within the LDAP that can be used to ensure you only download data that has changed since the last occasion on which the synchronization task ran. For example, if you have 50,000 names in your LDAP, and only a handful change each day, then you only want to retrieve and synchronize the changed names. Specification of this property generates an LDAP filter similar to:</p> <p><att name> >= <last synchronization run time></p> <p>where <last synchronization run time> is the Generalized Time expression for the date/time (in GMT time zone) of the last synchronization completed by this task</p>
LOG_CHARSET	<p>The character set of the log file. Normally this is UTF-8</p>
LOG_FILE_MAX_SIZE	<p>The maximum size of the log file in kB, before it is archived and a new log file started</p>
LOG_FILE_PATH_NAME	<p>The path and name to the log file for the task. This path name is relative to the WEB-INF folder</p>
LOG_FILE_PATH_NAME_ABSOLUTE	<p>This provides an absolute path name to the log file as an alternative to LOG_FILE_PATH_NAME. This is useful if you are running on Microsoft Windows, or running ExtraView within a WAR file</p>
LOG_INCLUDE_THREAD_NAME	<p>When set to YES, the thread name of the task running on the server is included in the task log</p>
PSP_LOG	<p>This is useful for debugging purposes only and should be commented out, or set to NO. If it is set to YES, then ExtraView logs all the SQL commands generated by the task</p>
RUNTIME_ERROR_NOTIFICATION_INTERVAL	<p>The number of minutes between sending emails when an error is detected and the administrator is notified</p>
RUNTIME_WARN_NOTIFICATION_COUNT	<p>The minimum number of warning occurrences in the notification interval time period before an administrator notification email is sent</p>
RUNTIME_WARN_NOTIFICATION_INTERVAL	<p>The number of minutes during which warnings are counted before a notification email is sent to the administrator</p>
START_TIME_OF_DAY	<p>The time of day to start the task running. This is useful if you want to run the task at a specific time of day, for example at 3:00 AM each day. Use this in conjunction with the FREQUENCY_INTERVAL. This time is entered as GMT</p>
USE_SYSTEM_LOG	<p>If you set this to a value of Y, then the task will use the same log file as the ExtraView application server, and not use the log file defined by LOG_FILE_PATH_NAME</p>
XML_LOG_FLAG	<p>Normally set to FALSE, but if set to TRUE then the log file will be formatted using XML</p>

User Management Task

It is often useful to notify users before their passwords expire. The administrator may set policies to force users to update their passwords. This is achieved within the User Maintenance screens along with the default behavior setting named `PASSWORD_EXPIRE_TIME_DAYS`.

The task named **User Management Task** allows each user to be notified a certain number of days before their password expires, via email.

To configure this feature, follow these steps from the Task Management administrative utility:

1. Navigate to the operational administrative utility named **Email Templates**. Create an email template that is to be used to communicate with users in advance of their password expiring. The template may contain the following tags which will be substituted with the appropriate values when an email warning is sent to a user:
 1. `__TITLE__` is the value taken from the behavior setting named `EXTRAVIEW_TITLE`
 2. `__COMPANY_NAME__` is the value taken from the behavior setting named `COMPANY_NAME`
 3. `__SITE_URL__` is the value taken from the behavior setting named `SITE_URL`
 4. `__USERID__` is the value of the user's USER ID which is about to expire
 5. `__PASSWORD_DAYS_LEFT__` is the value from the task property which is the number of days before the password will expire.
2. Click the **Add a new task** button
3. Select **User Management Task** from the list of Task Names
4. Set the **Node ID** where you want the task to run. You should only create a single instance of the task on a single node. This will work across the entire system
5. Set the poll interval for the task. This has a default of 86,400 seconds, i.e. the task will run once per day
6. Set the warning period before password expiry via the property named `PASSWORD_EXPIRY_WARNING_DAYS`
7. Set the name for the email template that you created in the first step within the property named `PASSWORD_EXPIRY_MSG_TEMPLATE`. This email template defines the contents of the email that is to be sent to the user when they are `PASSWORD_EXPIRY_WARNING_DAYS` before the password expires
8. **Add** the task.

Note that the notifications to the user will continue until the user's password expires, at which point they will cease.

ExtraView System Logs

If ExtraView Corporation is hosting your installation, you do not have direct access to the file system of the server to configure, alter or use this feature without contacting ExtraView support. There are four primary logs used within ExtraView to record information, activities and errors.

- **Sign On Log**. This records all sign on and sign off activities, and any unauthorized access attempts. Please consult the User Administration section of this guide for information on this log and how to use it.
- **System Log**. This records all metadata transactions. Please consult the System Controls section of this guide for information on this log and how to use it.
- **Application Server Log**. This records each entry and departure of each access to the ExtraView servlet. This log maintains a record of who performed what accesses, and how long each access took to perform.
- **BatchMail Log**. This records the flow of email notifications from ExtraView.

Application Server Log

The application server log is not resident within ExtraView. The administrator normally accesses this log from the file system of the server. As an alternative, the administrator may view the log from the System Log feature. Directly accessing the log from the file system allows the log to be viewed with an editor. Viewing the application server log from the System log screen only allows the entire log to be viewed.

The path to the log file is specified within the `Configuration.properties` file for ExtraView. This file is typically, and by default, stored within the ExtraView `WEB-INF` directory. The path is defined within the entry named `LOG_FILE_PATH_NAME`. For example, in an Apache Tomcat installation of ExtraView with a home directory of `/evj`, the path to the log file may be similar to `/evj/tomcat/webapps/golden411/WEB-INF/logs`.

Format of the Application Server Log File

A typical section of the log file in plain text may look like this:

```

2003-07-17 17:45:46 [ info ] ExtraView., 6544, Thread-31, >>>Entering
service, security.LoginDisplay.getMenu, sc, 0, tmem, 126, fmem, 75, , , , uid, SHOYDIC, nid, http://avalon.extr
aview.net/med ON WS_A:
2003-07-17 17:45:46 [ info ] ExtraView., 6544, Thread-31, >>>Leaving
service, security.LoginDisplay.getMenu
, sc, 0, tmem, 126, fmem, 75, cc, 22, time, 20, uid, SHOYDIC, nid, http://avalon.extraview.net/med ON WS_A:
2003-07-17 17:45:46 [ info ] ExtraView., 6544, Thread-21, >>>Entering
service, security.LoginDisplay.getMain, sc, 0, tmem, 126, fmem, 75, , , , uid, SHOYDIC, nid, http://avalon.extr
aview.net/med ON WS_A:
2003-07-17 17:45:46 [ info ] ExtraView., 6544, Thread-21, >>>Leaving
service, security.LoginDisplay.getMain
, sc, 0, tmem, 126, fmem, 75, cc, 22, time, 10, uid, SHOYDIC, nid, http://avalon.extraview.net/med ON WS_A:
2003-07-17 17:45:46 [ info ] ExtraView., 6544, Thread-31, >>>Entering
service, Display.doEditDisplay, sc, 0, tmem, 126, fmem, 75, , , , uid, SHOYDIC, nid, http://avalon.extraview.ne
t/med ON WS_A:
2003-07-17 17:45:46 [ info ] ExtraView., 6547, Thread-29, >>>Leaving service, Display.doEditDisplay
action , sc, 1, tmem, 126, fmem, 72, cc, 24, time, 54, uid, SHOYDIC, nid, http://avalon.extraview.net/med ON
WS_A:
2003-07-17 17:45:47 [ info ] ExtraView., 6547, Thread-15, >>>Entering
service, security.LoginDisplay.getMenu, sc, 1, tmem, 126, fmem, 82, , , , uid, SHOYDIC, nid, http://avalon.extr
aview.net/med ON WS_A:
2003-07-17 17:45:47 [ info ] ExtraView., 6547, Thread-29, >>>Entering
service, security.LoginDisplay.getMain, sc, 2, tmem, 126, fmem, 82, , , , uid, SHOYDIC, nid, http://avalon.extr
aview.net/med ON WS_A:
2003-07-17 17:45:47 [ info ] ExtraView., 6547, Thread-29, >>>Leaving
service, security.LoginDisplay.getMain
, sc, 2, tmem, 126, fmem, 82, cc, 24, time, 10, uid, SHOYDIC, nid, http://avalon.extraview.net/med ON WS_A:
2003-07-17 17:45:47 [ info ] ExtraView., 6547, Thread-15, >>>Leaving
service, security.LoginDisplay.getMenu
, sc, 1, tmem, 126, fmem, 82, cc, 24, time, 27, uid, SHOYDIC, nid, http://avalon.extraview.net/med ON WS_A:
2003-07-17 17:45:47 [ info ] ExtraView., 6547, Thread-15, >>>Entering
service, Display.doEditDisplay, sc, 1, tmem, 126, fmem, 76, , , , uid, SHOYDIC, nid, http://avalon.extraview.ne
t/med ON WS_A:
2003-07-17 17:45:48 [ info ] ExtraView., 6545, Thread-31, >>>Leaving service, Display.doEditDisplay
, sc, 0, tmem, 126, fmem, 74, cc, 25, time, 1842, uid, SHOYDIC, nid, http://avalon.extraview.net/med ON WS_A:
2003-07-17 17:45:48 [ info ] ExtraView., 6548, Thread-15, >>>Leaving service, Display.doEditDisplay
, sc, 1, tmem, 126, fmem, 82, cc, 25, time, 1322, uid, SHOYDIC, nid, http://avalon.extraview.net/med ON WS_A:
2003-07-17 17:45:48 [ info ] ExtraView., 6544, Thread-21, >>>Entering
service, security.LoginDisplay.doMenuLoadDone, sc, 0, tmem, 126, fmem, 81, , , , uid, SHOYDIC, nid, http://aval
on.extraview.net/med ON WS_A:
2003-07-17 17:45:48 [ info ] ExtraView., 6544, Thread-21, >>>Leaving
service, security.LoginDisplay.doMenuLoadDone
, sc, 0, tmem, 126, fmem, 81, cc, 25, time, 10, uid, SHOYDIC, nid, http://avalon.extraview.net/med ON WS_A:
2003-07-17 17:45:49 [ info ] ExtraView., 6547, Thread-29, >>>Entering
service, security.LoginDisplay.doMenuLoadDone, sc, 0, tmem, 126, fmem, 81, , , , uid, SHOYDIC, nid, http://aval
on.extraview.net/med ON WS_A:
2003-07-17 17:45:49 [ info ] ExtraView., 6547, Thread-29, >>>Leaving
service, security.LoginDisplay.doMenuLoadDone
, sc, 0, tmem, 126, fmem, 81, cc, 25, time, 10, uid, SHOYDIC, nid, http://avalon.extraview.net/med ON WS_A:
2003-07-17 17:46:08 [ info ] ExtraView., 6537, Thread-24, >>>Entering
service, search.SearchDisplay.doDisplay, sc, 0, tmem, 126, fmem, 81, , , , uid, SHOYDIC, nid, http://avalon.ext
raview.net/med ON WS_A:
2003-07-17 17:46:08 [ info ] ExtraView., 6537, Thread-24, >>>Leaving
service, search.SearchDisplay.doDisplay
, sc, 0, tmem, 126, fmem, 77, cc, 25, time, 400, uid, SHOYDIC, nid, http://avalon.extraview.net/med ON WS_A:

```

- Each entry begins with a timestamp
- Each “>>> Entering Service” message has a corresponding “>>>Leaving Service” log entry. This allows a trace of each request to ExtraView, from the moment the request is made, to the moment the request has been serviced, and ExtraView has completed its task.
- The “>>> Leaving service” entries show the time taken on the server to execute the request.
- The file is comma delimited. If you wish to analyze the log file, sorting and extracting the information, it is simple to import the log file into a tool such as Microsoft Excel.

The format of the file is: timestamp, log entry type, servlet name, session ID, thread #, Entering / Leaving, class and method entered, service count, service count value, total memory available, total memory available value, [free memory available, free memory available value, cache count, cache count value, time, time value], user ID, user ID value, network ID, network ID value

Parameter	Explanation
timestamp	The date and time of the entry

log entry type	Normal entries will be shown as INFO. You may also see entries such as ERROR and WARNING
Servlet name	Should always be ExtraView
session ID	A unique identifier for the session
thread #	The thread number that this task is using for execution
Entering / Leaving	Shows whether the task is beginning or ending
class and method entered	This is the class path and the method within the class that is being executed
Service count <i>sc</i>	The number of processes waiting for service at the instant this request is received. The lower this number, the higher the performance of the system. For short periods of time, this number may exceed 5, but this indicates that users are waiting upon machine resources to execute their tasks. Setting up multiple application servers that each take some of the load is a good solution if this number is consistently high
total memory available <i>tmem</i>	The total memory allocated to this application server. Usually set by the administrator within the start up script for the application server
free memory available <i>fmem</i>	The amount of unused memory. If this drops to a very low number, out of memory errors may occur. If this happens, allocate more total memory to this application server
cache count <i>cc</i>	The total number of user sessions in cache at the time this request is executed.
time	The time, in milliseconds, that the request took to execute
“morgue” count <i>mc</i>	The number of sessions currently in the “morgue”. ExtraView allocates sessions to each user to perform virtually every task such as add or update issues, or to run reports. The server stores information about these sessions and retains the information for as long as is needed. Given browser windows may be closed unexpectedly by users, or may be left open for an indeterminate amount of time, the session information is held on the server until the user signs off or their session expires. So that the sign off does not take excessive time, the sessions are not killed at that time, but are flagged as being in the “morgue”. The ExtraView background task named <i>session monitor</i> comes along at a later time and permanently removes the sessions in the morgue, thus killing them permanently.
user ID <i>uid</i>	The user ID of the person who made the request
network ID <i>nid</i>	The network ID and node name within an application server cluster that made the request

Errors in the Application Server Log

Errors in the log are generated by ExtraView when it encounters an unexpected event or a programming error. Not all errors are fatal; indeed, it is possible to see an error in the log that has absolutely no consequences to the user of ExtraView who caused the error. However, ExtraView endeavors to minimize all programming errors and exceptions in the log. An exception in the log may look like the following error. This error occurred due to a programming error in a pre-release copy of ExtraView.

```

2003-07-07 12:22:07 [ info ] ExtraView.,5388,Thread-15,>>>Entering
service.admin.LayoutDisplay.doEdit,sc,0,tmem,126,fmem,106,,,,uid,ADMIN,nid,http://avalon.extravie
w.net/med ON WS_A:
2003-07-07 12:22:09 [ ERROR] PSP: Invocation Target is:java.sql.SQLException: ORA-00001: unique
constraint (MED.PK_TITLE_MAP) violated
2003-07-07 12:22:09 [ ERROR] PSP: SQL was: insert into title_map (title_map_key, language,
region, variant, text , date_created, last_date_updated, last_updated_by_user, created_by_user)
values (?, ?, ?, ?, ?, SYSDATE , SYSDATE , ?, ?)
2003-07-07 12:22:09 [ ERROR] PSP: Bind Values are: '6436','ja','JP',' ','null','ADMIN','ADMIN'
2003-07-07 12:22:09 [ ERROR] PSP: SQL State is:23000
2003-07-07 12:22:09 [ ERROR] Exception = java.sql.SQLException: ORA-00001: unique constraint
(MED.PK_TITLE_MAP) violated
java.sql.SQLException: ORA-00001: unique constraint (MED.PK_TITLE_MAP) violated

at oracle.jdbc.dbaccess.DBError.throwSQLException(DBError.java:180)
at oracle.jdbc.ttc7.TTIoer.processError(TTIoer.java:208)
at oracle.jdbc.ttc7.Oall7.receive(Oall7.java:543)
at oracle.jdbc.ttc7.TTC7Protocol.doOall7(TTC7Protocol.java:1451)
at oracle.jdbc.ttc7.TTC7Protocol.parseExecuteFetch(TTC7Protocol.java:862)
at oracle.jdbc.driver.OracleStatement.executeNonQuery(OracleStatement.java:1839)
at oracle.jdbc.driver.OracleStatement.doExecuteOther(OracleStatement.java:1764)
at oracle.jdbc.driver.OracleStatement.doExecuteWithTimeout(OracleStatement.java:2354)
at oracle.jdbc.driver.OraclePreparedStatement.executeUpdate
(OraclePreparedStatement.java:421)
at sun.reflect.GeneratedMethodAccessor13.invoke(Unknown Source)
at sun.reflect.DelegatingMethodAccessorImpl.invoke(DelegatingMethodAccessorImpl.java:25)
at java.lang.reflect.Method.invoke(Method.java:324)
at com.extraview.util.PreparedStatementProxy.invoke(PreparedStatementProxy.java:91)
at oracle.jdbc.driver.$Proxy1.executeUpdate(Unknown Source)
at com.extraview.util.Message.insertOneTitle(Message.java:611)
at com.extraview.util.Message.insertTitle(Message.java:580)
at com.extraview.applogic.layout.LayoutElementAttribute.executeTransaction
(LayoutElementAttribute.java:244)
at com.extraview.applogic.layout.LayoutElement.insertAttributes(LayoutElement.java:495)
at com.extraview.applogic.layout.LayoutElement.executeTransaction(LayoutElement.java:344)
at com.extraview.applogic.layout.Layout.insertElements(Layout.java:1388)
at com.extraview.applogic.layout.Layout.executeTransaction(Layout.java:1131)
at com.extraview.applogic.fltool.LayoutDbMaster.executeSave(LayoutDbMaster.java:390)
at com.extraview.applogic.fltool.LayoutDbMaster.saveLayout(LayoutDbMaster.java:303)
at com.extraview.presentation.fltool.FlexibleLayout.service(FlexibleLayout.java:494)
at com.extraview.presentation.admin.LayoutDisplay.doEdit(LayoutDisplay.java:362)
at sun.reflect.GeneratedMethodAccessor24.invoke(Unknown Source)
at sun.reflect.DelegatingMethodAccessorImpl.invoke(DelegatingMethodAccessorImpl.java:25)
at java.lang.reflect.Method.invoke(Method.java:324)
at ExtraView.service(ExtraView.java:250)
at javax.servlet.http.HttpServlet.service(HttpServlet.java)
at org.apache.tomcat.facade.ServletHandler.doService(Unknown Source)
at org.apache.tomcat.core.Handler.invoke(Unknown Source)
at org.apache.tomcat.core.Handler.service(Unknown Source)
at org.apache.tomcat.facade.ServletHandler.service(Unknown Source)
at org.apache.tomcat.core.ContextManager.internalService(Unknown Source)
at org.apache.tomcat.core.ContextManager.service(Unknown Source)
at org.apache.tomcat.modules.server.Ajp13Interceptor.processConnection(Unknown Source)
at org.apache.tomcat.util.net.TcpWorkerThread.runIt(Unknown Source)
at org.apache.tomcat.util.threads.ThreadPool$ControlRunnable.run(Unknown Source)
at java.lang.Thread.run(Thread.java:536)

2003-07-07 12:22:10 [ info ] ExtraView.,5388,Thread-15,>>>Leaving
service.admin.LayoutDisplay.doEdit
,sc,0,tmem,126,fmem,109,cc,1,time,2630,uid,ADMIN,nid,http://avalon.extraview.net/med ON WS_A:

```

When you encounter an error condition in ExtraView, the ExtraView support team may ask you to examine the application server log, and to send this to them. We can determine from an error entry where it occurred, and typically use this information to debug and correct programming errors.

Debugging ExtraView Problems with the Application Server Log

Operational problems may occur for a variety of reasons, from a programming bug in ExtraView, to a database problem, to a network problem, to a hardware problem. The list of potential problem areas with Internet technology is vast. Your best friend in debugging problems is the application server log, although other logs and monitoring tools may be useful, even essential, in pinning down the source of a problem.

Significant problems can be understood by correctly interpreting the log.

As part of debugging problems you may want to change Configuration.properties values such as DEBUG_LEVEL and PSP_LOG. There is a URL that allows you to make an API call to ExtraView to change the values of the parameters in the CONFIGURATION.PROPERTIES file, without needing to restart the application server. This is of the form:

```
user_id=username
&password=password
&statevar= SET_CONFIG_VALUE
&name=parameter_name
&value=YES
```

An example may be:

```
http://www.myserver.com/evj/ExtraView/ev_api.action?user_id=
bsmith&password=bill&statevar=SET_CONFIG_VALUE&name=PSP_LOG& value=YES
```

BatchMail Log

BatchMail is a separate Java program that is started by ExtraView when it starts, or when your server is booted. This contains the code that processes email notifications when they are output from ExtraView. ExtraView does not send email notifications directly to your SMTP mail server. This is because if the server goes down for any reason, ExtraView may end up waiting (and waiting) for a response.

Instead, ExtraView writes each email notification sent to a temporary directory. The path to the mail directory where the BatchMail program resides is specified within the Configuration.properties file for ExtraView. This file is stored within the ExtraView WEB-INF directory. The path is defined within the within the entry named MAILBOX. For example, in an Apache Tomcat installation of ExtraView with a home directory of /evj, the path to the log file may be similar to /evj/tomcat/webapps/golden411/WEB-INF/BatchMail/logs.

An excerpt from a BatchMail log file follows.

```
2003-07-18 15:47:52 [ _ALERT] mail_send() executed ExtraView Notification [10000]: Unassigned-
Newly reported issue concerning XY module
to--->ed@baumanns.org in 0 seconds
2003-07-18 15:51:18 [ _ALERT] mail_send() executed ExtraView Notification [10001]: Unassigned-
bug created by swengl, assigned to qaengl
to--->ed@baumanns.org in 0 seconds
2003-07-18 15:56:15 [ _ALERT] mail_send() executed ExtraView Notification [10001]: Unassigned-
bug created by swengl, assigned to qaengl
to--->ed@baumanns.org in 0 seconds
2003-07-18 18:06:07 [ _ALERT] mail_send() executed Open[19397]-[P 3]-[Admin Admin] overriding
value for title
to--->leeann@extraview.com in 0 seconds
2003-07-18 18:06:09 [ _ERROR] Error Occured ... javax.mail.SendFailedException: Sending failed;
nested exception is:
javax.mail.SendFailedException: Invalid Addresses;
nested exception is:
javax.mail.SendFailedException: 550 unknown user
2003-07-18 18:06:09 [ _ERROR] Error Occured processing file 19397HtmlQA1058576763923.html for
dpuiia@extraview.com
2003-07-18 18:06:09 [ _ERROR] Renaming
/usr/local/extraview/BatchMail/mailbox/19397HtmlQA1058576763923.html to
:/usr/local/extraview/BatchMail/mailbox/___19397HtmlQA1058576763923.html
2003-07-18 18:07:15 [ _ALERT] mail_send() executed Open[19398]-[P 3]-[Admin Admin] overriding
value for title
to--->lpultz@extraview.com in 0 seconds
2003-07-18 18:07:15 [ _ALERT] mail_send() executed Open[19398]-[P 3]-[Admin Admin] overriding
value for title
to--->robbie@extraview.com in 0 seconds
2003-07-18 18:07:15 [ _ALERT] mail_send() executed Open[19398]-[P 3]-[Admin Admin] overriding
value for title
to--->support@extraview.com in 0 seconds
```

Errors in the BatchMail Log

In the case of an error, the log will show the specific error. In the above case, the error shown is an unknown user. When an error is encountered, the email notification file is renamed and remains on the server. The file is renamed with the characters “__” placed in

front of the original mail.

Site Configuration Menu

The Site Configuration menu contains the majority of functions used to configure and set up your installation.

Design Center

The Design Center is the principal area where all screen forms and built in user reports, along with the formatting and logic behind them, is configured. The screen forms and built-in reports are designed using **layouts**. You may also create and design your own layouts, embedding them within the built-in layouts. In this way you can build reusable layouts that can be embedded within many other layouts.

The design center is where you bring together fields, embedded layouts, along with attributes to build the finished layouts of the *Add Issue*, *Edit Issue*, *Query Filters* and other screen layouts. In addition, built in reports such as the *Quicklist* and the *Detailed Report* also use layouts defined within the Design Center. Layouts can be defined for different user roles within your system, offering a tremendous amount of flexibility. See the section on [Inheritance](#) for additional details. Each layout is built on top of a **Layout Type**. You may create and define fields within the Design Center, or you may use the [Data Dictionary](#) for this purpose.

Layouts work in conjunction with security permissions for each field. Therefore, simply placing a field on a screen does not automatically give all users the ability to read or write to the field. You can alter the permissions to each field within the Design Center, or you may use the [Security Permissions](#) option to define which fields are visible and updateable to each group of users. The security privilege for the field overrides the fact that a field may be placed on a screen or report.

A layout may be embedded within another layout. Indeed, you may specify alternate layouts that appear, dependent upon the value of a specific field. For example, you may have a category field that has the values of Software, Hardware and Documentation. Depending on which value is chosen, an embedded layout can be displayed that contains the fields pertinent to gathering the information needed about each of these categories. These embedded layouts may only be embedded within an *Add* or *Edit Issue* layout.

Fields within each layout may have one or more attributes defined. These [layout cell attributes](#) affect the display of the field or the way in which it is processed. For example, a layout cell attribute may provide the field with an alternate title, just for the one layout, or the attribute may define that the field is only visible if another field is of a specific value. There are two special type of layouts which may only be embedded within other layouts. These allow the definition of **Related Issue Layouts** and **Repeating Row Layouts**.

Inheritance

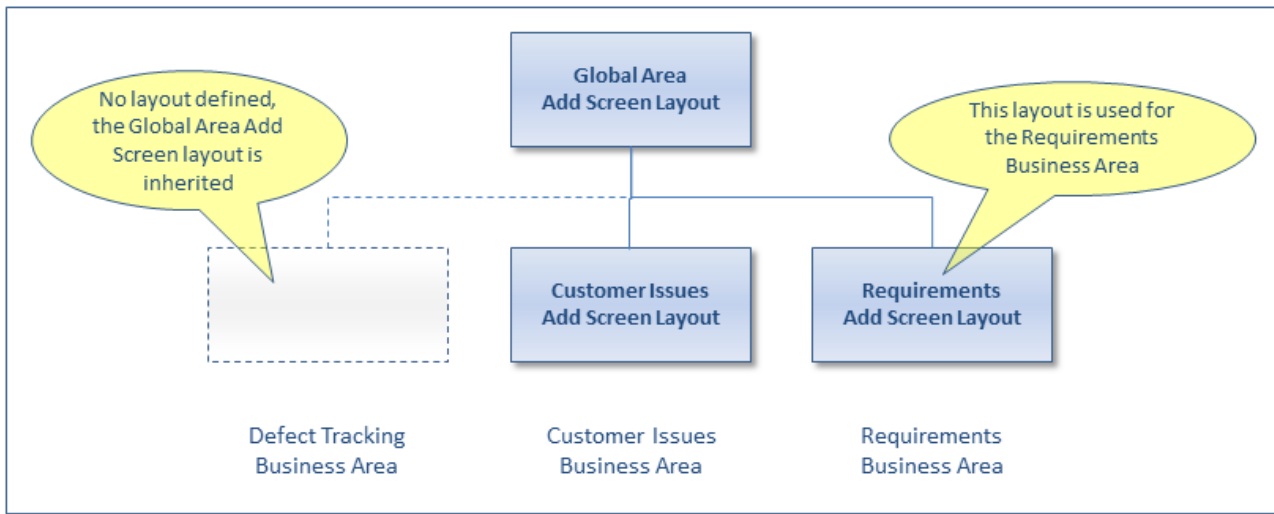
First, please read the Key Concepts section on [Business Areas](#) to understand the terminology used on this page. The principle is that a specific business area or project will use a layout that is defined specifically for it. If none exists, it will *inherit* a layout in a defined manner as follows:

- If a layout exists for the given business area and project, this is used
- If this does not exist, the layout that exists for this business area's master project will be inherited and used
- If this does not exist, the layout that for the global level will be inherited and used. Every inbuilt layout always exists at the global level, and therefore is always available to be inherited if a junior layout does not exist to override its use

Inheritance is an important principle to understand, as it governs how layouts are selected for each purpose throughout ExtraView. Further, if you decide to create a layout for a specific purpose such as the **Add** screen within a newly created business area, this does not imply that you must create layouts for all the other layout types, such as search filters and email layouts. Each layout is inherited independently, giving tremendous flexibility and reducing the amount of setup required.

Inheritance and User Role layouts

Layouts can be defined for each user role you have created within your system. This is described more fully below. However, note that you may combine the definition of layouts for user roles, business areas within these user roles, and projects within these business areas. For example, if you have a business area named *Customer Calls*, which may or may not be broken down into individual projects, you may define different layouts for different user roles such as *Technical Support* and *Managers*.



Inheritance of layouts

Note: You should set a default value in the data dictionary, for both the Business Area and the Project fields if you have their display type set to **Tab** and you intend to place the AREA and PROJECT fields on the *Add* screen layouts. However, the overriding setting is Remember Last Value. When this is set against Business Area and / or Project in the data dictionary, then the tab displayed upon entering the Add Issue screen, will be the one last used, not the default value.

Using rules, security permissions and layout cell attributes, you can make decisions on whether field-level data entered on one tab is either displayed on a second tab or is both displayed on the second tab and the values are stored with the record when it is inserted or updated. Consider an application where you insert and update customer information on a tab named “Customers”. You may have a second tab named “Customer Issues” where you record issues the customers report. The approximate configuration may be something like this:

```
<== onchange ==>
# rules to set the customer fields in the Customer Issues area
if (CUST_LIST={CHANGED}) {
  CUST_CONTACT_NAME = (customerLink).CUST_CONTACT_NAME;
  CUST_PHONE_NUMBER = (customerLink).CUST_PHONE_NUMBER;
  CUST_ADDRESS      = (customerLink).CUST_ADDRESS;
  CUST_EMAIL        = (customerLink).CUST_EMAIL;
  CUST_PHONE_CELL   = (customerLink).CUST_PHONE_CELL;
  CUST_CONTRACT_NUM = (customerLink).CUST_CONTRACT_NUM;
}
##
## Link types - link records from different business areas
##
<== link customerLink ==> AREA='Customers',CUST_LIST=CUST_LIST
```

With the addition of each customer issue, the Customer details are saved in the Customer Issues Business Area as the Customer is selected. To not allow the user to edit the customer details, you should set the permission of each field to read/write and then use a layout cell attribute on each field in the Customer Issue layout to have a READ ONLY IF value. For example, set the CUST_ADDRESS field to be read only if the ID is not null. This will always be true, and therefore the field will display as read-only to the user, but the details will be saved in each record. If you only give read access to the user, the Customer details will not be saved in the record.

How Layouts are Selected

With inheritance, and the ability to define or override an individual layout for any combination of Display Target, User role, Business Area and Project, there is the potential for a large number of layouts in your system. Inheritance strictly controls the method by which an individual layout is either selected or inherited for display by the user.

When there is a choice of layouts, for the current display target the layout is chosen using the following diagram:



The Wildcard Role infers that any role is used to determine the selection for the inheritance.

Optional Layouts

For efficiency, and to minimize the configuration effort, a few layouts are optional and are ignored if they are not present. When this happens, ExtraView may then default to another layout, and use this other layout instead.

Layout	Defaults To	Comments
ADD_CONFIRMATION	ADD_PROBLEM	When an issue is inserted, the behavior is to use the ADD_PROBLEM layout from the inheritance path to display a verification of the issue just entered. For most purposes this works in an obvious way and displays all the fields that the user just entered. Occasionally, you as the administrator may want to display a different set of fields. To accomplish this, create a layout of type ADD_CONFIRMATION in the business area and project of your site, or in the inheritance path. The fields that you place onto this layout will be those that are presented to the user when an issue is saved, as opposed to those on the ADD_PROBLEM layout. If the ADD_CONFIRMATION layout is not present, the ADD_PROBLEM layout is used as the verification screen
POST_EDIT_UPDATE	No Default	<p>If this layout exists in the inheritance path, and the issue being updated is a member of a relationship group, then this layout is rendered to give the user the opportunity to apply the same updates to the related issue. If the layout does not exist, nothing is rendered, and only the current issue is updated</p> <p>This layout is deprecated, and only included in the documentation for fullness. Existing implementations may continue to use this, but new installations should not configure this layout type</p>

Layouts

Layouts are a basic building block in putting together all the screen forms used within ExtraView. Layouts are all defined with a **layout type**. There are many inbuilt layout types, one for each of the basic screen forms, such as the **add**, **edit** and **detailed report**. Once a layout type has been defined, it can be reused in different business areas and projects, each with different fields as content, or they may be inherited.

You may define your own layout types. These are always used as *embedded* layouts within one of the inbuilt layout types. For example, you might create a layout type titled **Customer Details** and embed this within the *Add Issue Screen* of the **Customer** Business Area. The layout types you define may be shared and embedded across many inbuilt layouts, within any Business Area, Project, Role and Display target.

Layouts are inherited at any specific Business Area from the Global Area. A new layout may be defined to override the Global Area layout within any Business Area. Within a Business Area, the default layout resides within the Master Project. Further projects that are created either inherit the layout from the Master Project, or have a specific layout defined, overriding the layout within the Master Project. At any level in the hierarchy you can also define different layouts for different user roles. There is a default stored and used for all roles, but this can be overridden by creating a layout for any individual user role.

Some inbuilt layout types, such as the **Related Issue Display** and the **Repeating Row Layout** can only be embedded within other layout types. You can create your own layout types. These are used by embedding them within an inbuilt layout. Not all layout types can be embedded within all inbuilt layouts though. The documentation provides details.

Much of the way that layout types are used is within the Design Center; please consult this section of the guide for additional information. ExtraView has a number of default system layouts that always will exist within an installation. These are as shown below. However, the administrator can create additional layout types, and create layouts using these that are embedded within the default system layouts. For example, if you have a block of fields that you always want to display in the same order on several *Add Issue* or *Edit Issue* screens, you can build these into an embedded layout, and simply include this layout within the default forms.

Another use for embedded layouts is to create blocks of fields that are conditionally included in a form, dependent upon the value of a specific field. For example, in a defect tracking system, you may want to include a different block of fields to record information, dependent upon whether the user selects a **Category** of *Software*, *Hardware* or *Documentation*. At this time, embedded layouts are not supported within *Search Filter* and *Report* layouts. Screen layouts can be created in a specific hierarchy, allowing many different layouts to be displayed according to your system design.

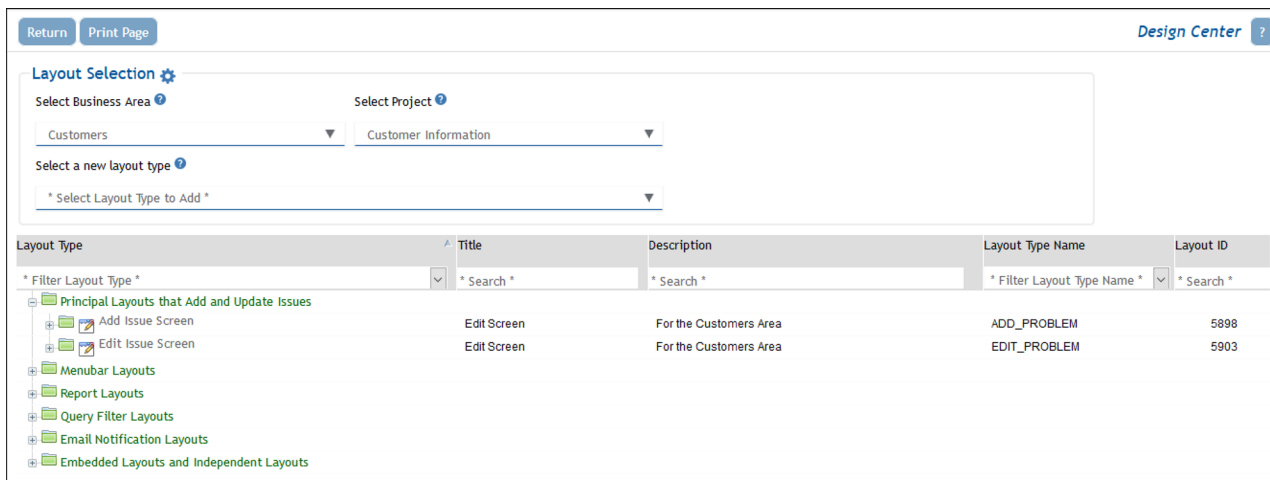
- There is always a default layout for the following screens and reports. These are provided with the default installation of ExtraView and can be altered to suit your needs, although they should never be deleted:
 - Add Issue screen
 - Menubar layout
 - Attachment Section
 - Attachment History
 - Edit Issue screen
 - Brief Email Notification layout
 - Filter layout for knowledgebase on the Home Page
 - Full Email Notification layout
 - Notification Section
 - Relationship Group Email Filter
 - Relationship Group Filter for managing relationship groups
 - Related Issue Display
 - Embedded Repeating Record layout
 - Detailed Report layout
 - History Report layout
 - Quicklist Report layout
 - Full Search filter screen
 - Quick Search filter screen
 - Chart Filter screen
 - Search Aging Report
- Each of these layouts is described within ExtraView with a Layout Type. A different Layout Type exists for each of the standard layouts, but the same Layout Type is used if a layout is created for a different Business Area, Project or User Role
- You can create new Layout Types. For example, if you want a new embedded layout, you can create a specific Layout Type for this, and then reuse this as often as needed, either as part of different Business Areas, Projects, User Roles or as different layouts that are selected dependent on the value of a field
- For each user role in your installation, you can define alternative layouts for each of the above. Once again, if you do not define an alternative, the default layout will be inherited and used
- If your installation uses Areas and Projects, then you can specify a different layout for each of the above, at both the Area and Project level. If you do not do this, then the default layout will be inherited and used.
- If your installation uses Areas and Projects, you may still define alternative layouts for each user role. This allows you to define an alternative layout for each and every user role and each Project and each Area

- Security privileges set for all fields will take precedence over the placement of a field on a layout. Thus, you can use the same layout for many user roles, but control the visibility and use of all fields simply, with security
- It is important to always include the ID field on the *add* and the *edit* layouts. This is because this is the key identifier for any issue you create or identify. However, if you do not want the field to be visible, then you can use a layout cell attribute to hide the field
- Layouts for add, edit and query screens allow the titles for the fields that they contain, to be rendered to the top or to the left of the value field.

Note: The initial installation of ExtraView provides a standard layout for all inbuilt screens and reports. These can be altered for your organization.


Creating & Updating Layouts

Layout types can be created from the administration utility named **Create and Maintain Layout Types** or can be created while editing a layout within the Design Center. Once the layout type exists, you can choose to use it within a combination of Business Area, Project, Role and Display Target, from the prompt **Add a new layout for the entire system**. The following screenshot shows the initial presentation of the Design Center.



Initial Design Center Screen

The initial layout is designed for simple access to the functionality of the Design Center. You choose the Business Area within which you want to work, and can then use the display to navigate to the layout you want to work with, or you can add a new layout type into the current Business Area. The assumption is that you are always going to work within the default Project for the Business Area, and to use the Desktop browser as the display target for the layout you are working with. The default also assumes the layouts you are working with will all use the same user role.

If you want to see the full navigation to all the potential layouts, click on the  icon to the right of the **Layout Selection** title. The screen then offers additional options to navigate to the layout you want to work with:

Return Print Page Design Center ?

Layout Selection

Select Business Area: Customers | Select Project: Customer Information | Select Display Target: Desktop | Select User Role: * Default layout for all user roles *

Select a new layout type: * Select Layout Type to Add *

Layout Type	Title	Description	Layout Type Name	Layout ID
* Filter Layout Type * * Search * * Filter Layout Type Name * * Search *				
Principal Layouts that Add and Update Issues				
Add Issue Screen	Edit Screen	For the Customers Area	ADD_PROBLEM	5898
Edit Issue Screen	Edit Screen	For the Customers Area	EDIT_PROBLEM	5903
Embedded Customer Location Report	Embedded Customer Location	For Edit screen	CUSTOMER_LOCATION_REPORT	6104
Related Issue layout for inclusion as embedded layout	Customer Contact	Related Issue Display	RELATED_ISSUE_DISPLAY	1840
Attachment Section	Attachment Section	Attachment Section	ATTACHMENT_SECTION	2369
Notification Section	Email Notification	Email Notification	NOTIFICATION_SECTION	2363
Menubar Layouts				
Report Layouts				
Report Layout - Detailed Report	Detailed Report	For the Customers Area	SEARCH_DETAILED	5908
Report Layout - Quicklist Report	Report - Quicklist	For the Customers Area	SEARCH_QUICKLIST	5913
Report Layout - History Report from Edit Screen	History report	For the Master area	HISTORY	462
Query Filter Layouts				
Email Notification Layouts				
Embedded Layouts and Independent Layouts				

Complete Design Center Screen Options

Note: The rows in the table with a white background show layouts that are defined explicitly within the current selection of Business Area, Project, Desktop Target and User Role. The layouts with the grey shaded background show inherited layouts.. To see the complete layout details, just hold your mouse over the layout type in the table.

1	Use this icon to change between the initial and complete views of the layouts within the Design Center
2	This select list allows you to navigate to the appropriate Business Area
3	This select list allows you to navigate to the appropriate Project
4	This select list allows you to select the Display Target you want to work with. The choices are Desktop, Tablet and Phone
5	This select list allows you to navigate to the user role you want to work with. The default is that the layout you work with will work across all roles
6	Use this select list to add a layout type into the current combination set with the Business Area, Project, Display Target and User Role. The layout type must already exist
7	The select lists within the table can be used as filters when working with large complex sites that contain many layouts
8	<p>The layouts for the current selection are split into sections as follows:</p> <ul style="list-style-type: none"> • Principal Layouts that Add and Update Issues Virtually all Business Areas will have an <i>Add</i> and a <i>Edit</i> layout that is defined here. It is unusual to see <i>Add</i> and <i>Edit</i> layouts that are inherited from the Global Business Area • Menubar Layouts These layouts define which buttons, if any, are placed on the menubar of the <i>Add</i> and <i>Edit</i> screens • Report Layouts These typically define the Detailed Report, History layout and the Quicklist • Query Filter Layouts These define the search filter layouts • Email Notification Layouts These are the layouts for the full and brief notifications • Embedded Layouts and Independent Layouts This section contains additional layouts such as that used for mass updates and related issue displays that are not embedded within <i>Add</i>, <i>Edit</i>, and report layouts
9	Again, layouts that explicitly exist within the current selection are displayed with a white background
10	Again, layouts that are inherited from elsewhere are displayed with a grey background.

Note: The edit function allows you to delete layouts, whether they were created by yourself as an administrator, or created by ExtraView. **You should not delete an ExtraView created layout.** ExtraView will not function correctly if you do so.

Display Target-Based Layouts

The default is that a layout is defined for use as a Desktop layout and used within a supported browser. You should always define these within your system, as the inheritance will look for a Desktop layout to present to the user if a Tablet or Phone layout does not exist. If the user accesses ExtraView from a Phone, and no Phone layout exists, the Tablet layout will be inherited. If no Tablet layout exists, then the Desktop layout is used. Most users tend to use their phones and their tablets in portrait mode, as opposed to landscape mode. The recommendation is to create phone layouts that have a single column, and tablet layouts that use two columns. Many desktop layouts use four columns.

Role-Based Layouts

Layouts are typically defined first for general use across all the roles within a selection. Field-level permissions can be used to control much of the different behavior needed for different user roles. However, it is sometimes extremely useful to define a completely different layout for a user role. For example, you might have a set of layouts used within your company to add and to update issues, but want to present a much more concise and simpler layouts to your customers so they can add and update issues. You accomplish this by creating role-based layouts.

Editing Operations Within a Layout

- If you are not selecting a layout that will be used as the default across all user roles, select the user role to which the layout will apply from the select list at the top of the screen. Note that you can clone a layout for a different user role by editing an existing layout, altering the user role to which it belongs and saving the layout
- To add a layout where an existing layout of the same type already exists, click the **Edit** button beside the existing layout type example you would like to use. If no layout of an available type currently exists, select the desired layout type from the **Add new layout drop down** select list. You can then perform a ["save as"](#) operation
- When you click the **Edit** button, a screen similar to the following appears:

The screenshot displays the Design Center interface with various components and numbered callouts (1-42) indicating specific features:

- Top Bar:** Buttons for Save Layout (1), Delete Layout (2), Clear Layout (3), Return (4), and Print Page (5). A title bar shows "Title Edit Screen 7" and "Description For the Customers Area 8". A "Localize 9" button and a "+" button (10) are also present.
- Fields & Layouts (11):** A search bar (14, 15) and a list of fields (16, 17). The list includes fields like ABSTRACT, ALT_ID, AREA (18), ASSIGNED_TO, AUTOMATED, BEST_DATA_ADD_BUTTON, BUTTON_COPY_TEST_CASE, CASE_HAS_RESULTS, CATEGORY, CONTACT, CONTACT_LINK_FIELD, CREATED_FROM_BUG_ID, CUSTOMER, CUSTOMER_CONTACT_TITLE, CUSTOMER_SEARCH, CUST_COMMENTS, CUST_CONTACT_NAME, and CUST_CONTACT_LINK_FIELD. Below the list are "Cell Attributes" (32) with options for HEIGHT (4) and SIZE (120, 36), and "Layouts" (19, 20) with a search bar (21, 22).
- Layout Attributes (37):** A section for "Layout ID: 5898" with settings for "Advance by" (None, 39), "Tab order by" (Row, 40), "Title Position" (Top, 41), and "Context Menu" (Yes, 42).
- Main Grid:** A grid of 15 rows and 3 columns. Row 1 is "SHADE_PRE_1". Rows 2-10 contain customer-related fields: ID (Issue #), DATE_CREATED (Date Created), TIMESTAMP (Last Modified), CUST_NAME (Customer Name), CUST_LIST (Customer Name), ORIGINATOR (Originator), CUST_ADDRESS (Customer Address), CUST_PHONE_NUMBER (Phone Number), CUST_CONTRACT_NUM (Contract Number), CUST_CITY (Customer City), CUST_FAX (Fax Number), CUST_CONTRACT_SIGN_DATE (Contract Date), STATE (Customer State), CUST_CONTRACT_RENEWAL_DATE (Renewal Date), CUST_CONT_ACT_REN_DATE (Actual Renewal Date), CUST_ZIP (Customer Zip Code), and EV_COUNTRY_NAME (Country). Row 11 is "DESCRIPTION" (Description), highlighted with a dashed green border. Row 12 is "COMMENTS" (Comments). Row 13 is "SHADE_POST_1". Row 14 is "LAYOUT.ATTACHMENT_SECTION" (Attachment Section). Row 15 is "LAYOUT.NOTIFICATION_SECTION" (Notification Section). The grid has scroll bars (24-27) and row/column headers (28-31).

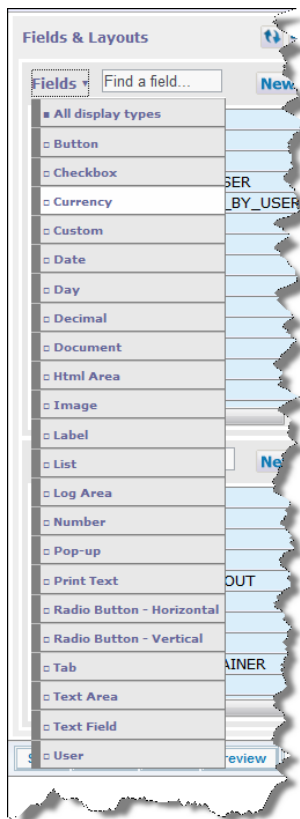
Design Center Screen

- 1. Save Button** - Saves the current layout, leaving the administrator within the layout
- 2. Delete Button** - Deletes the current layout. You must confirm the operation before the layout is deleted
- 3. Clear Button** - Clears the current layout of all fields
- 4. Return Button** - Return to the initial Design Center screen with the list of layouts
- 5. Print Page** - Print the contents of the current window
- The main grid where selected fields are shown in the position where they will be rendered on the layout. Note the scroll bars around the main grid which allow you to reposition the layout. Selected fields are highlighted. Note that a field may span more than one row and / or column
- The **Title** for the layout
- The **Description** of the layout. If the behavior setting named LAYOUT_SCREEN_TITLES has a value of YES, the layout Description of the ADD_PROBLEM and EDIT_PROBLEM layouts are used as the screen title in the top right-hand corner of the rendered screen. This allows different titles to be set for each *add* and *edit* screen in each business area and project. If the value of the setting is NO, then the title of the *add* and *edit* screens are global and taken from the title to the data dictionary entries for the fields ADD_PROBLEM and EDIT_ISSUE_SUMMARY
- 9. Localize button** - this only appears if localization is turned on for the installation, and allows you to localize the Description for the layout
- 10. Layout Options toggle** - when this is clicked, a section similar to this opens:

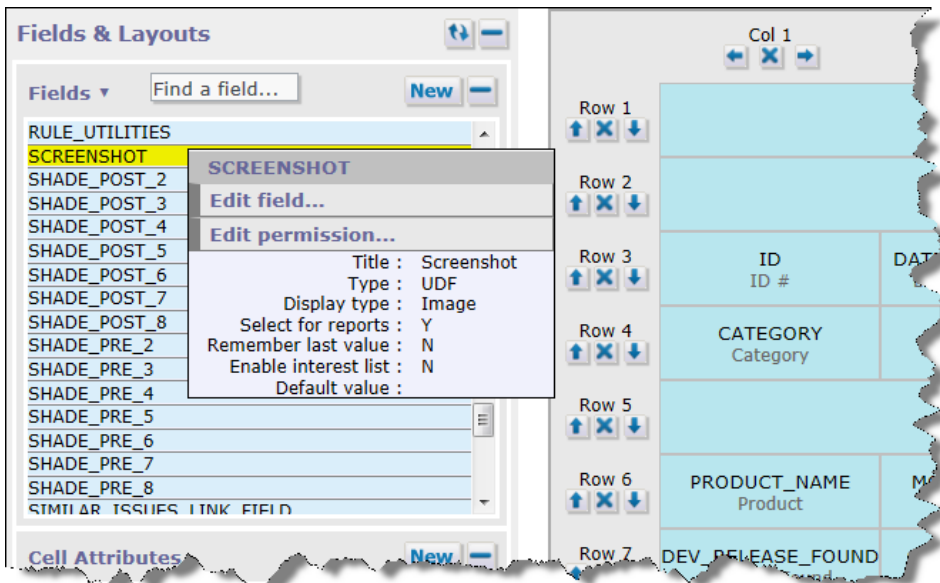


Use the select lists to alter the role, layout type, business area or project where you want to store the layout, as a "save as" operation

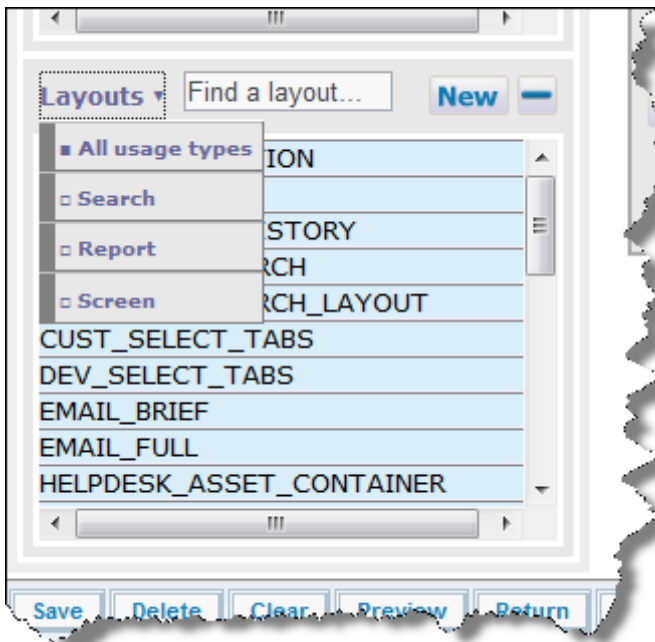
11. **Fields and Layouts** - This section is fixed to the left-hand edge of the screen and provides all the controls to create and place both fields and layouts onto the grid. In addition, you can create and maintain layout cell attributes to control the behavior of the fields, and layout attributes to control the behavior of embedded layouts
12. **Invert field list** button - this button toggles the field list so that field titles are displayed in order, as opposed to displaying their names
13. **Minimize field/layout lists** - this button toggles the field and layout section, reducing its appearance to a single button on the screen
14. **Field filter list** - selecting this will display allow the filtering of the field list to a single field display type



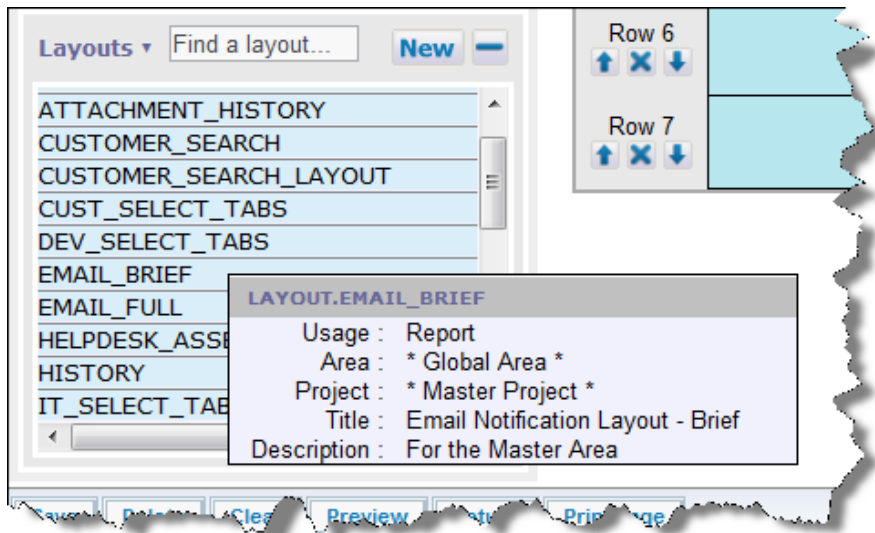
15. **Find a field** - start typing into this field and all fields in the list that match the pattern will be displayed, and all other fields will be dropped from the list
16. **New field** button - this brings up the data dictionary screen to add a new field. When you first click the button, you are asked if you are creating a new Field, Expression, Label or Screen field
17. **Minimize field list** - this button toggles the field list, to reduce its appearance to a single row on the screen
18. **Field list** - this scrollable list shows all the available fields that you can drag and then drop on the main grid. Fields may be dropped on any empty location in the main grid. If you right-click on a field name, you will see details of the field. Note the **Edit** button. When you click this, a window will open showing the field in the data dictionary. You can make any modification you require to the field and its attributes at this point. If the field has a display type of *list*, *popup*, *tab*, or *radio button*, there is also the ability to **Edit field list values**. Clicking this pops up a window where you can modify the list values. An option is also available on this list to modify the permissions of the field. This pops up a window within which you can modify the permissions, role-by-role



19. **Layout section** - this allows you to manage your layouts to embed within the main grid, including creating new ones
20. **Find a layout** - start typing into this field and all layouts in the list that match the pattern will be displayed, and all other layouts will be dropped from the list
21. **New layout type** button - this brings up the layout type screen to add a new layout type
22. **Minimize layout list** - this button toggles the layout list, to reduce its appearance to a single row on the screen
23. **Layout list** - this scrollable list shows all the available layouts that you can drag and then drop on the main grid. Layouts may be dropped on any empty location in the main grid. Use the **Layouts** button to filter the layouts by type



If you right-click on a layout within the list, you will see its details. Note that layouts you have created will have a **Permission** button. When you click this, a window will open allowing you to modify the permissions to the layout. You can make any modification you require to the field and its attributes at this point.

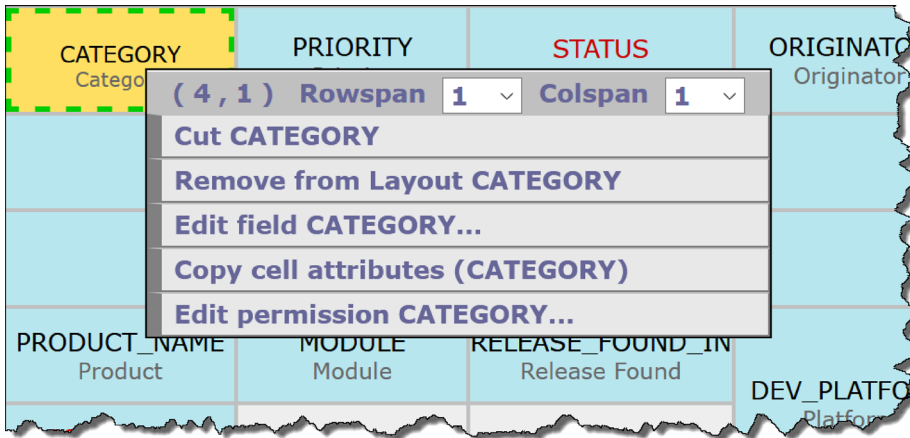


24. **Insert column to left** button - Insert a new column to the left of the button
25. **Modify column attributes** - Add, modify or delete attributes for this entire column
26. **Delete column** button - Delete the entire column
27. **Insert column to right** button - Insert a new column to the right of the button
28. **Insert row above** button - Insert a new row above the button
29. **Modify row attributes** - Add, modify or delete attributes for this entire row
30. **Delete row** button - Delete the row
31. **Insert row below** button - Insert a new row below the button
32. **Cell attributes** area - This is the area where all the layout cell attributes are managed. Click on a cell in the main grid to select it as shown in the screenshot below, and the cell details panel will display all the information about the cell
33. **Cell Permissions** - modify the field permissions for the cell
34. **New layout cell attribute** button - Click this button to add a new layout cell attribute. See the section on [layout cell attributes](#) for information on managing these
35. **Minimize layout cell attributes** button - this button toggles the layout cell attributes information, to reduce its appearance to a single row on the screen
36. The layout cell attributes that are configured for the selected field in the main grid. Note the buttons to delete and modify the layout cell attributes
37. **Layout Attributes** area - this area will display information on any selected embedded layout within the main grid
38. **Minimize Layout Attributes** - this button allows you to open and close the layout attributes section
39. The **Advance By** option is a layout attribute that allows you to set a direction to advance the placement of a field as you place these on the layout, to column or row.
40. **Tab Order By** layout attribute allows you to set the order for tab control by end users entering data into the form. This can be by column or by row. The **Title Position** attribute allows you to place the field labels either to the **TOP** or to the **LEFT** of each field value on the rendered layout
41. The **Title Position** option allows you to place the field titles to the left or to the top of the field values when the layout is rendered. Note that the field titles for Related Issue Display layouts and Repeating Row layouts will always be placed at the top of the field values
42. **Context Menu** - When this is set to Yes, a context menu is placed over each field within the layout. When the user clicks the context button, a popup menu allows them to perform various options on the field, according to their permissions. For example they may look at the history for the field. If they have administrative privileges, they can see details of the field and see details of the layout. This attribute may be overridden at the field level on the layout with an attribute also named **Context Menu**
43. **Confirmation Screen** - this entry only appears when you are editing an ADD_PROBLEM layout. If you set this option to **No** then the ADD_CONFIRMATION layout will not be displayed when the user inserts the issue from the *add* screen.

Field Manipulation on the Main Grid

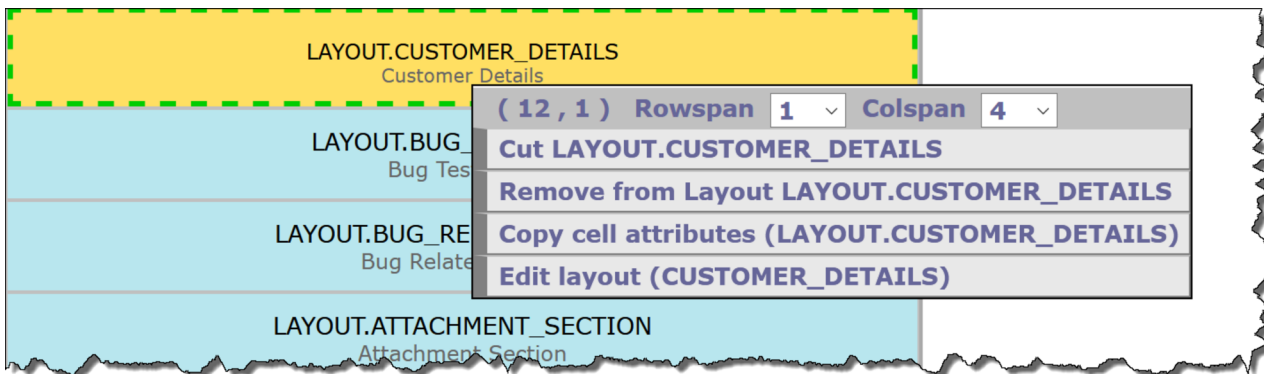
- Selecting a field - click on the background to the cell
- Moving a cell - click on a cell and drag it to a new, empty location on the main grid. Note that any layout cell attributes to the field within the cell will be moved along with the field itself
- Removing a cell from the main grid - click on the background to a cell and drag it back to the field list.
- Layouts - perform similar actions as those above to manipulate layouts
- Extending a cell over multiple columns - click on the right-hand edge of the cell and drag the edge to the right over empty cells. Release the mouse over the rightmost cell to which you want to extend the cell
- Extending a cell over multiple rows - click on the bottom edge of the cell and drag the edge downwards to the bottom row to contain the cell. Release the mouse
- Selecting the text in a field to copy to the clipboard -
 - Click on the cell to highlight the cell

- Either Ctrl-Click or Double-Click on the cell and the text is highlighted
- Ctrl-C to copy the text within the cell to the clipboard
- You may then paste the text anywhere else you require.



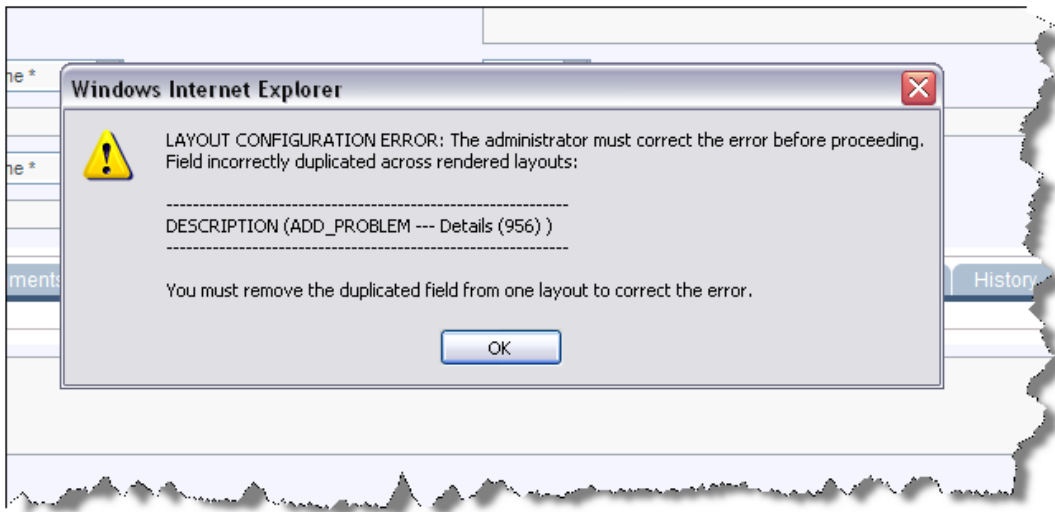
Embedded Layout Manipulation on the Main Grid

If you right-click on an embedded layout within the Design Center you have options to remove the layout, to copy its cell attributes (and then paste these to another layout) and to edit the embedded layout. Choosing to edit the embedded layout will open a new browser tab where you can edit and save changes to the embedded layout before returning to the current layout.



Duplicate Fields on Layouts

It is not permitted to have the same field included on the same layout or different layouts that are grouped together by embedding one layout within another. ExtraView catches a field duplicated within a single layout within the design center, but the design center cannot catch the situation when a field is duplicated by virtue of being contained in an embedded layout. The reason for this is that when you create an embedded layout, it may be included in any one of a number of other layouts, and each of these may or may not have the field duplicated. The error of duplicated fields can therefore only be caught at runtime. When testing your installation, you may see an alert message similar to the following screenshot:



The above example shows that the field named **DESCRIPTION** is duplicated. First it is included on the **ADD_PROBLEM** layout, and then on the embedded **Details** layout. Further, the ID of the **Details** layout is displayed. You must resolve the duplication by removing one of the fields from one of the layouts before your installation will function correctly.

Using the Layout Description as the Title to *Add* and *Edit* Screens

The **Description** field on *Add* and *Edit* layouts has a special property. It may be used as the title to these screens, allowing the administrator to provide different titles for each *Add* and *Edit* screen. For example, you might give the *Add* and *Edit* screens different titles in different Business Areas. The standard behavior is that the title of the data dictionary field for the screen is used as the screen title. If you give a title of **\$\$LAYOUT.TITLE\$\$** to any of the following fields, then the layout description will be used as the title to the screen as it is rendered.

- **ADD_PROBLEM** - The *Add* Issue screen
- **ADD_PROBLEM_SUMMARY** - The *Add* Issue Verification screen
- **EDIT_ISSUE_SUMMARY** - The *Edit* Issue screen

Layout Rendering and Ajax

The layouts are rendered by the user's browser when they navigate to the appropriate function for the layout. There are many occasions when ExtraView uses Ajax calls to the server from the browser to handle the updating and refreshing of information on the layout. For example, the layout cell attributes **Visible If** and **Read-Only If** use Ajax calls to refresh only the part of the screen that is affected with the logic.

The biggest upside of this is vastly improved performance, compared to refreshing the whole screen, but there are a few consequences that should be understood.

- If ExtraView sees that an entire row of cells on your layout is empty, i.e. there are no values with write permission, and there are no values to render with read-only permissions, then the entire row is suppressed and is not rendered. This is most often the desired effect as there is not "empty" space on the screen
- The fields that are suppressed in this way do not exist within the browser's memory (what is known as the DOM). This means that the fields are not available to be processed using JavaScript. You might therefore try to manipulate a field within a hidden row, and find that your logic does not work as expected. The solution is to always have a visible field on the row, even if that field is just a placeholder. Alternatively, use a layout cell attribute of **STYLE**, and place a CSS style on the field of **display:none**. This places the field into the browser's DOM, but it is made invisible with the CSS style.

Built In Layout Types

Layout types are used to name and label each different type of report or layout. These are largely used by ExtraView to describe built in functions such as the Add Issue screen, the search filters. A layout type allows many individual layouts of the same type to be created. For example, an Add Issue screen can be created for each user role, and for each area, and for each project in the entire system. As an administrator, the most likely reason you will have to create additional layout types will be if you want to create new embedded layouts. Embedded layouts may be contained within one or more layouts. A typical use of this feature is to have an embedded layout that is selected according to the value of a field such as **Category**. For example, if **Category = DOCUMENTATION**, then a set of fields on an embedded layout related to documentation issues can be displayed. If **Category = HARDWARE**, then a set of

fields related to hardware issues can be displayed. The following built in layout types exist in a new ExtraView installation. You typically need to create additional new layout types if you want to create layouts that you will embed within other standard layouts.

- ADD_PROBLEM - the add issue layout
- ADD_CONFIRMATION - the confirmation/verification screen displayed after a new issue is added
- ATTACHMENT_HISTORY - the layout for the history of attachments
- ATTACHMENT_SECTION - the layout for file attachment data
- EDIT_PROBLEM - the edit issue layout
- EMAIL_BRIEF - the layout for brief email mode
- EMAIL_FULL - the layout for standard email notifications
- EMBEDDED_REPORT, EMBEDDED_REPORT_1, EMBEDDED_REPORT_2, EMBEDDED_REPORT_3 - Layouts to contain embedded reports
- HISTORY - the layout for history audit trails
- MASS_UPDATE_REPORT - this is a layout used to control the content of mass update screens
- MENUBAR_BUTTON - layouts that contain buttons can be placed on a layout of this type and placed within *add* and *edit* screens. These produce popup style menus
- MENUBAR_LAYOUT_ADD - this layout type defines which buttons are seen on *add* screens
- MENUBAR_LAYOUT_EDIT - this layout type defines which buttons are seen on *edit screens*
- NOTIFICATION_SECTION - this layout contains all the fields related to notification of issues when they are update
- POST_EDIT_UPDATE - the layout that is triggered following the update of an issue with related issues
- RELATED_ISSUE_DISPLAY - the layout for displaying related issues
- RELEASE - the layout for repeating rows
- SEARCH_AGING_REPORT - an internally used layout used to create aging reports
- SEARCH_CHART_REPORT - an internally used layout used to create charts
- SEARCH_DETAILED - the layout for the detailed report
- SEARCH_EMAIL - the layout used as a filter when creating ad hoc email notifications
- SEARCH_EXPANDED - the layout used to created filter screens within reports
- SEARCH_QUICK - the layout used on the Query screen
- SEARCH_QUICKLIST - the layout used to produce Quicklists
- SEARCH_RGFILTER - the layout used as a filter for relationship groups
- SIMPLE_COL_SELECT - an internally used layout for the preparation of column reports
- SUMMARY_REPORT - an internally used layout for the preparation of summary reports

Creating New Layout Types

To create a new layout type, click the administrative tab named Create and Maintain Layout Types. You can also access this screen from within the Design Center, by clicking the **New** button within the **Layouts** Panel

The following screen appears:

Add Add a new layout type to the database

Filter List

Select the column to use as a filter for the list. You may click on a letter to produce a list of the items which begin with this character, or you may enter a search pattern, including wildcards (*). The Export button creates a CSV file of the results currently displayed on the screen.

Select filter column for report

Name

or click on a letter

A | C | D | E | H | I | P | R | S | <all> | <none>

or enter a search expression and click the Go button

Enter search expression

Name	Title	Usage	Created	Last updated
<input type="button" value="Edit"/> ADD_PROBLEM	Add Issue Screen	Screen	1/1/05 12:00 AM ExtraView	1/1/05 12:00 AM ExtraView
<input type="button" value="Edit"/> EDIT_PROBLEM	Edit Issue Screen	Screen	1/1/05 12:00 AM ExtraView	1/1/05 12:00 AM ExtraView
<input type="button" value="Edit"/> SEARCH_QUICKLIST	Report Layout - Quicklist Report	Report	1/1/05 12:00 AM ExtraView	1/1/05 12:00 AM ExtraView
<input type="button" value="Edit"/> SEARCH_DETAILED	Report Layout - Detailed Report	Report	1/1/05 12:00 AM ExtraView	1/1/05 12:00 AM ExtraView
<input type="button" value="Edit"/> HISTORY	Report Layout - History Report from Edit Screen	Report	1/1/05 12:00 AM ExtraView	1/1/05 12:00 AM ExtraView
<input type="button" value="Edit"/> SEARCH_EXPANDED	Search Filter Layout - Full Search	Search	1/1/05 12:00 AM ExtraView	1/1/05 12:00 AM ExtraView
<input type="button" value="Edit"/> SEARCH_QUICK	Search Filter Layout - Quick Search	Search	1/1/05 12:00 AM ExtraView	1/1/05 12:00 AM ExtraView
<input type="button" value="Edit"/> SUMMARY_REPORT	Report Layout - Summary Report	Report	1/1/05 12:00 AM ExtraView	1/1/05 12:00 AM ExtraView
<input type="button" value="Edit"/> RELEASE	Repeating Row Record	Screen	1/1/05 12:00 AM ExtraView	1/1/05 12:00 AM ExtraView
<input type="button" value="Edit"/> SIMPLE_COL_SELECT	Report Layout Template for Column Reports	Report	1/1/05 12:00 AM ExtraView	1/1/05 12:00 AM ExtraView
<input type="button" value="Edit"/> EMAIL_FULL	Report Layout - Full Email Notification Layout	Report	1/1/05 12:00 AM ExtraView	1/1/05 12:00 AM ExtraView
<input type="button" value="Edit"/> EMAIL_BRIEF	Report Layout - Email Brief Notification Layout	Report	1/1/05 12:00 AM ExtraView	1/1/05 12:00 AM ExtraView
<input type="button" value="Edit"/> SEARCH_EMAIL	Search Filter Layout - Email Filter for Ad Hoc Email from Edit screen	Search	1/1/05 12:00 AM ExtraView	1/1/05 12:00 AM ExtraView
<input type="button" value="Edit"/> SEARCH_RGFILTER	Relationship Group Filter	Screen	1/1/05 12:00 AM ExtraView	1/1/05 12:00 AM ExtraView
<input type="button" value="Edit"/> SEARCH_CHART_REPORT	Search Filter Layout - Charts	Search	1/1/05 12:00 AM ExtraView	1/1/05 12:00 AM ExtraView
<input type="button" value="Edit"/> DEV_SELECT_TABS	Select tabs for bugs/tea	Screen	1/1/05 12:00 AM	1/1/05 12:00 AM

Maintaining Layout Types

To add a new layout type, press the Add button and use the following screen:

Add a New Layout Type ?

Create a New Layout Type

Use this screen to create a new layout type. You may use layout types that you create to embed a layout within other layouts. Layout types that you create to embed within *add* and *edit* layouts should have a usage of *Screen*. Note that layout types being used as related issue displays should have a usage of *Report*, even though they are to be included within an *add* or *edit* layout.

Name ?

Title to display

Usage

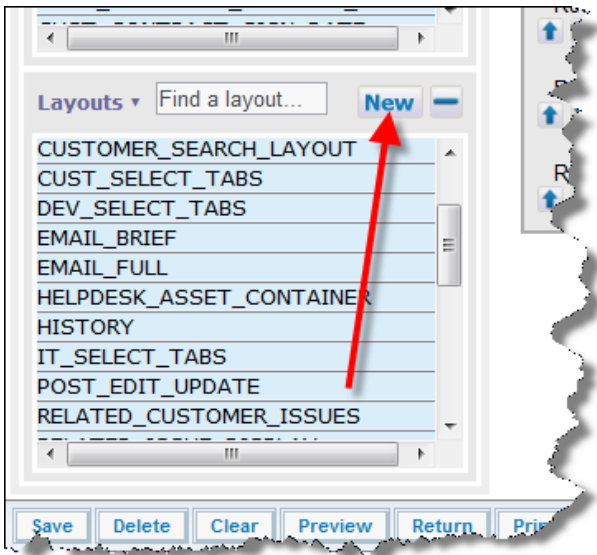
Use This Section When Creating a Repeating Row Layout

Use this section only if you are creating a new repeating row layout. Either select an existing repeating row type or use the radio button to create a new repeating row type. Note that a repeating row layout type where you chose a usage of *Screen* may only be embedded once within an *add* or *edit* layout. If you chose a usage of *Report*, then the repeating row type may only be embedded within a *Detailed Report*, *History* or *Email Notification* layout. Create a separate repeating row type for each repeating row that you require on an *Add* or *Edit* layout.

Select an existing repeating row type Create a new repeating row type

Repeating Row Type * Select a repeating row type * ▼

Maintaining Layout Types



Adding a New Layout Type from the Design Center

Layout types must have a name, a title and a usage. The usages are:

Layout Type	Purpose
EMBEDDED_REPORT	Embedded Report - Creates a layout that contains a report to be embedded within an <i>Add</i> or <i>Edit</i> screen
MENUBAR	Menubar - Layouts that are used to contain the menubar buttons that are displayed at the top and bottom of <i>Add</i> and <i>Edit</i> screens
MENUBAR_BUTTON	Menubar Buttons - used to create layouts that contain buttons embedded within an <i>Add</i> , <i>Edit</i> and <i>Related Issue Display</i> screens. They can be single buttons or a layout containing multiple buttons. These are used to create buttons and dropdown select menus that are placed within these screens
REPORT	Report - Detailed Report, Quicklist and Related Issue Display layouts
SCREEN	Screen - Embedded layouts within <i>Add</i> and <i>Edit</i> screens
SEARCH	Search - Query layouts and search layouts embedded within <i>Add</i> and <i>Edit</i> screens
USER_REPORT	User Report - Used when creating reports that contain user information

When you edit a layout type, you will see a list of all the places where the layout type is used as a layout within your installation, and you can click the **Edit** button by each usage, to take you to the Design Center where that layout is used.

If, and only if, you are creating a new layout type to be used as a repeating row, then complete the bottom section of the form. If you are creating a new repeating row layout type, then you also give this a name and a title. When you press the radio button to **Create a new repeating row type** these fields are shown. You can create a new layout type using an existing repeating row type, in which case you choose the option to **Select an existing repeating row type**. In this case you select the repeating row type from the list.

Note: The edit function allows you to delete layout types, whether they were created by yourself as an administrator, or created by ExtraView. **You should not delete an ExtraView created layout type.** ExtraView will not function correctly if you do so.

Modifying Layout Types

You may modify the title of a layout, and its usage from the Edit screen of layout types.

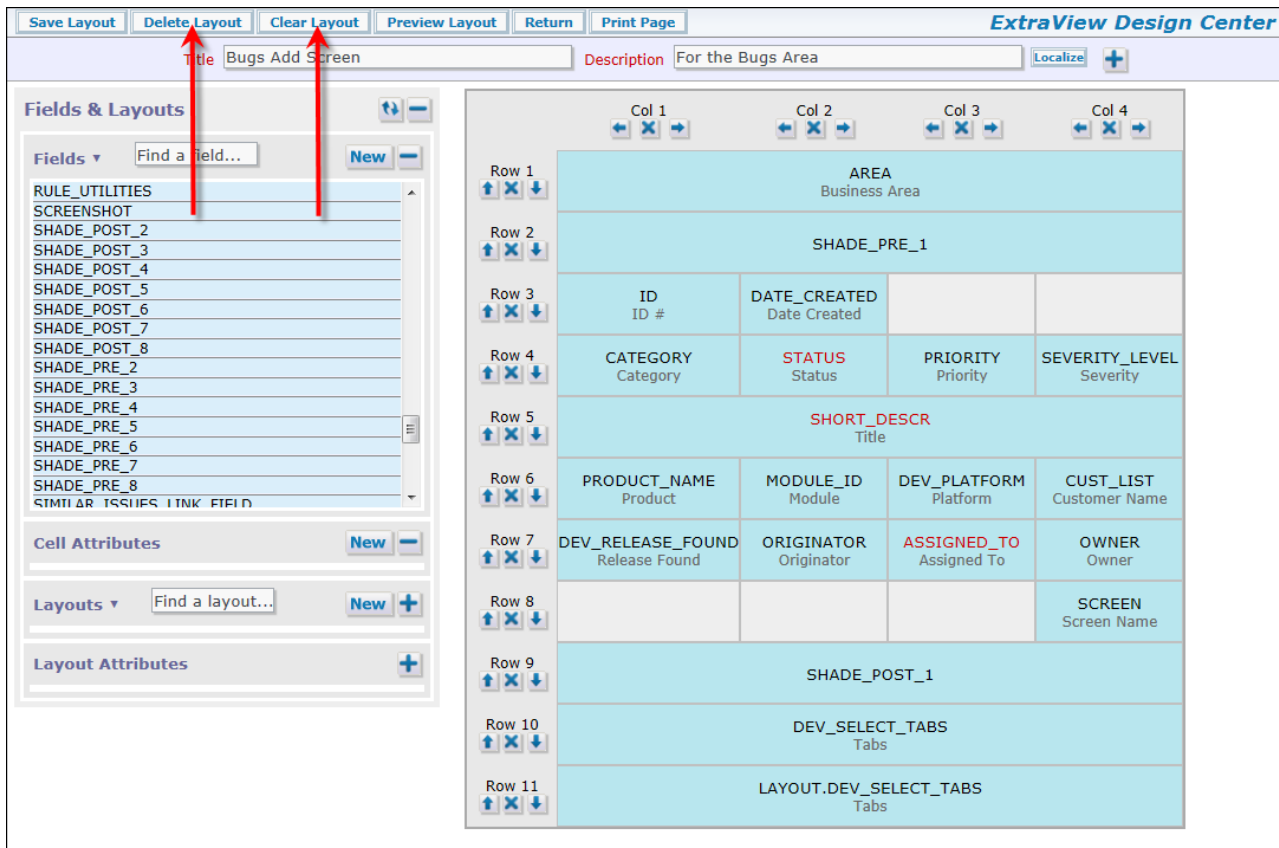
In addition, the edit screen allows you to see all the places where a layout is used, and to use the Design Center to modify these layouts.

Layout ID	Title	Description	Area	Project	User Role	
<input checked="" type="checkbox"/>	432	Email Notification Layout - Full	For the Master Area	* Global Area *	* Master Project *	Default
<input checked="" type="checkbox"/>	570	Notification Layout	For the Bugs Area	Bugs	Bugs Defaults	Default
<input checked="" type="checkbox"/>	2005	Email Notification	For Test Cases	Test Case Management	Test Cases	Default
<input checked="" type="checkbox"/>	2135	Email Notification	For Test Results	Test Case Management	Test Results	Default

Modifying Layout Types

If you click on the Edit button with the utility, you are taken directly to the Design Center where you can modify the layout.

Clearing and Deleting Layouts



Design Center Screen

Clearing Layouts

1. To clear a layout, press the **Clear Layout** button.
2. Follow the directions found on the alert message than will then appear.
3. Press **Save Layout**.

You will be left in the current layout, but all fields are deleted from the layout.

Deleting Layouts

1. Press the **Delete Layout** button.
2. Follow the directions found on the alert message that appears.
3. Press **Save Layout**.

Note that you cannot delete the following layouts from the Global Area:

- ADD_PROBLEM
- ATTACHMENT_HISTORY
- EDIT_PROBLEM
- EMAIL_BRIEF
- EMAIL_FULL
- HISTORY
- SEARCH_CHART_REPORT
- SEARCH_DETAILED
- SEARCH_EMAIL
- SEARCH_EXPANDED
- SEARCH_QUICK
- SEARCH_QUICKLIST

After confirming that it is OK to delete the layout, it is permanently deleted from the database and is unrecoverable.

Performing a "Save As" Operation

It is often useful to be able to duplicate a layout in a different area, project or role, or to simply save one layout type as a different type. For example, after composing an *add* layout, you may want to save it as an *edit* layout. This operation is easily accomplished by just opening up the layout you want to copy, clicking on the button to the right of the layout description then changing the Business Area, Project, Type or User Role.

You may also change the Title and Description. Once you have done this, simply save the layout. Note that if you are changing an *add* or *edit* layout to a report style of layout, any field whose data dictionary entry for the attribute of **Select for Reports** is equal to **No** will be removed, as these are not supported on report layouts. Similarly, any embedded layout whose usage is not set to equal **Report**, will be removed.

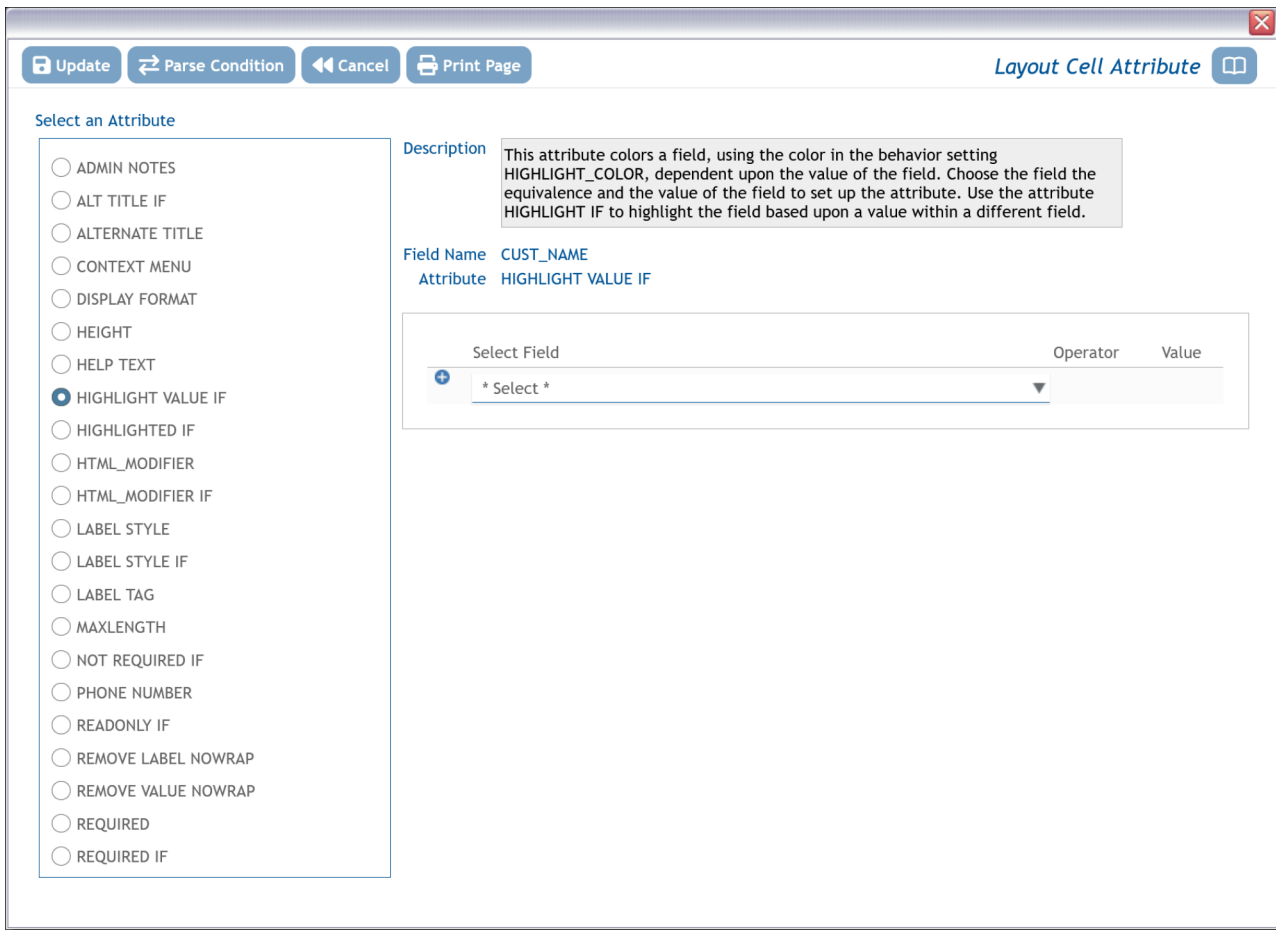
Layout Cell Attributes

Layout cell attributes allow you to modify the appearance or function of a field or an embedded layout within a layout. This includes creating dependencies between fields and controlling related issue displays.

The screenshot displays the 'ExtraView Design Center' interface. At the top, there are buttons for 'Save Layout', 'Delete Layout', 'Clear Layout', 'Preview Layout', 'Return', and 'Print Page'. Below these, the 'Title' is 'Bugs Add Screen' and the 'Description' is 'For the Bugs Area'. The 'Fields & Layouts' panel on the left shows a list of fields, with 'SHADE_POST_2' selected. The 'Cell Attributes' panel below it shows several attributes: 'FIELD REQUIRED' (checked), 'FIELD STYLE' (width:97%), 'FIELD MAXLENGTH' (255), and 'FIELD SIZE' (75). The main grid layout has 11 rows and 4 columns. Row 5, Col 1-4 is highlighted in yellow and labeled 'SHORT_DESCR Title'. Red arrows point from the 'Cell Attributes' panel to this highlighted cell.

Layout cell attributes

Note the section on the screenshot that displays the Cell Attributes. This displays the attributes that have been set for the cell, as well as attributes that were set for the field in the data dictionary as global field attributes. The global attributes are displayed with the darker background. You may either use the global attribute inherited from the field definition, or override the global attribute with a local layout cell attribute. If you add a new attribute, a screen similar to the following is displayed:



Adding a layout cell attribute

As you click on a button beside an attribute, a help tip appears to give guidance on how to use the attribute; also, you see the selections you need to make to configure the attribute. Not all attributes require selections. For example, the VALIDATE HIDDEN attribute does not need any additional configuration.

Note that the field within the list named LAYOUT_TYPE is a special field and does not exist as a field on the layout itself. If selected, it takes either the value ADD_PROBLEM or EDIT_PROBLEM. These refer to the *add* screen and the *edit* screens. You may then create a layout cell attribute such as FIELD REQUIRED IF LAYOUT_TYPE = ADD_PROBLEM or FIELD VISIBLE IF LAYOUT_TYPE = EDIT_PROBLEM.

Note the **Parse Condition** menubar button. This only appears when you select a layout cell attribute that supports multiple filter conditions. Sometimes you might want to create complex filter conditions, with ANDs and ORs as part of the condition. The **Parse Condition** button will display the condition on the screen, complete with all the parentheses in place.

Note that you will only see a subset of the complete number of layout cell attributes for a given field or layout selection, these being the ones that are valid for the field display type or layout type that you have selected in the main grid. If a layout cell attribute does not appear when you are editing the attributes, it is because that attribute is not valid for that field or embedded layout. The attribute types are the different class of modifiers that can be applied to each cell. These are:

Attribute	Purpose
ACT ON FIELD CHANGE	This attribute triggers relationship group actions when the field value upon which this attribute is based, changes. This is used when you set up a search layout to bring back results, on an ADD_PROBLEM or EDIT_PROBLEM layout. This configuration relies on an intermediate field, the RID LINK FIELD NAME. You place this attribute on that field, so that when it receives your selection, it uses the information to update the embedded layout that contains the related issues from the results. See the example here for use of this attribute.
ADD NEW	Adds a * New * value entry to list and popup field types, on ADD_PROBLEM and EDIT_PROBLEM layout types only. It modifies all user defined list fields, the PRODUCT_NAME field, the MODULE_ID field, the RELEASE_FOUND or the RELEASE_FIXED fields so that a value of * New * appears within the list. When this * New * value is selected a modal popup window allows the addition of a new entry into the list. This has the same effect as an administrator using the list manager function to add a new entry to the

	<p>list, but puts the ability in the hands of an end user without their requiring administrative privileges. This feature can be controlled by user roles.</p> <p>If the behavior setting named <code>AUTO_POPULATE_ALLOWED_VALUES</code> is set to YES, the an allowed value relationship is created automatically when the user adds a new value, and the parent value has already been selected on the <i>add</i> or <i>edit</i> screen.</p> <p>There is a single option available when creating this layout cell attribute. There is a checkbox with the title Do not export values added by users when exporting data with the Metadata Export utility, When checked, the new field values entered by users into the field will be flagged to not be exported with the Metadata Export utility. Thus, the new values will not be migrated to other ExtraView instances.</p> <p>See the section titled End-User List Management for more information on setting up this feature.</p>
ADMIN NOTES	This attribute has no functionality, except to allow the administrator to document the field attribute for future reference. Any text may be entered into the value of the attribute and it will be displayed within the Design Center and when editing the attribute.
AGGREGATE EXPRESSION	This layout cell attribute implements a method to compute an aggregate expression on a per-row basis on a Related Issue Display. The actual calculation is performed in a user custom exit, so this attribute must be accompanied with Java code. This layout cell attribute only works when used with expression display type fields placed on a Related Issue Display and has no effect in other locations. See the page Field Aggregate Expressions for more information.
AGGREGATE EXPRESSION TITLE	This layout cell attribute provides a title to the aggregate expression. Please see the page Field Aggregate Expressions for more information.
ALTERNATE TITLE	<p>This will rename the screen title in the Data Dictionary to the value in the Field value, for the field in the Field entry. Note that if this is used in a screen layout, you can include HTML in the alternate title. If HTML is included within the alternate title, then the behavior setting of <code>LABEL_WRAP_POSITION</code> is ignored. This allows total control of the formatting of the label within the layout. However, if you access the field through the API or CLI then the HTML will be passed through to the output. As the text for the alternate field title is placed within double quote marks (“) in the HTML generated when the form is rendered, you should not use these within the alternate field title. You may use single quote marks (‘) however, and these are generally interchangeable.</p> <p>It is a best practice to create a title for all field without any HTML within the data dictionary, and to only use HTML within individual layouts. This makes the fields easier to view under most circumstances, especially report editors and report output.</p> <p>You should restrict the use of HTML <code>
</code> tags within Related Issue Display layouts as they may appear cut off at the bottom of the title. The titles within a Related Issue Display are sized exactly to a single row, so that they may be frozen in position when a long list of related issues is scrolled.</p> <p>Example: Within an organization, you may label issues as <i>Defects</i>, but you may want to label them as <i>Issues</i> for your customers. On the new attribute form, you would set <i>Alternate field name equals Issue</i></p> <p>Example: A field on the form has the particularly long title of “<i>Target Software Release</i>” that wraps in an ugly way on the screen using the system-wide default you have set with the behavior setting, <code>LABEL_WRAP_POSITION</code>. You can control where the line breaks occur by using something similar to “<i>Target
Software
Release</i>”</p> <p>Example: You want to remove the title to a field on a layout. It is not valid to use a blank title. The solution is to use an alternate field title of <code>&nbsp;</code>. This inserts the character set value of a space into the layout.</p>
ALTERNATE TITLE IF	This is similar to ALTERNATE TITLE, but allows the alternate title to be conditionally placed on a field
ATTACH REPORT	This attribute is only available with notification layouts and may have one of three values. When set, the embedded report can be embedded within the email body, attached to the email, or both. The default if this attribute is not set is that the report will be embedded within the body of the email at the point in the layout where the embedded report is placed. See here for more information on embedded reports
ATTACHMENT LINK	This layout cell attribute is applied to TEXTAREA, HTMLAREA and LOGAREA fields on <i>add</i> and <i>edit</i> and embedded layouts. It results in the rendering of a button on the layouts with which the user may upload attachments. These attachments are created in the attachment area of the layout in the normal way, and also retain an association with the field to which the attribute is applied. The name of the attachments added appear alongside the field, with a link which can be used to add the attachment. The use case in which this is

generally applied is on LOGAREA fields when many attachments might be added over the lifespan of updating an issue. The link provides a convenient way to view the attachment(s) added with a specific entry to the LOGAREA field. When the field is rendered on reports, the attachment links are also rendered.

BUTTON ACTION

This attribute is applied as a cell attribute to the **ADD BUTTON** within a related issue display header. The **ADD BUTTON** is configurable to allow a child issue to be added to the current parent issue that is being displayed on an *add* or *edit* layout. The action defines what happens when the user presses the add button.

Update Return Print Page Manage BUTTON ACTION for Field: ADD_TEST_RESULT ?

Target Business Area ? Test Case Management ▼

Target Project ? Test Results ▼

Check Required Fields ?

Push Selected Attachments ?

Presentation ? Modal Popup Window Inline

After Submitting the Child Issue ? Refresh Related Issue Display Update Parent & Refresh Entire Screen

Select field(s) from the parent issue to push down into the child issue, by double-clicking within the left-hand list. Remove fields by dragging them from the right-hand list.

Find a field...	
Abstract(ABSTRACT)	Abstract(ABSTRACT)
Actual Renewal Date(CUST_CONT_ACT_REN_DATE)	Description(DESCRIPTION)
Actual Time (hrs)(TIME_ACTUAL)	Estimated Time (hrs)(TIME_ESTIMATED)
Add users to interest list(NOTIFICATION_INT_LIST_OTHERS)	Module(MODULE)
Assigned To(ASSIGNED_TO)	Pass Criteria / Expected Results(PASS_CRITERIA)
Automated(AUTOMATED)	Procedure(PROCEDURE)
Branch Status(RELEASE_CHILD_STATUS)	Product(PRODUCT_NAME)
Browser(TEST_CASE_BROWSER)	Setup(SETUP)
Bug Date Created(DEV_BUG_DATE_CREATED)	Test Case ID(TEST_CASE_ID)
Bug Date Due(DEV_BUG_DATE_DUE)	Test Plan ID(TEST_PLAN_ID)
CC Email(NOTIFICATION_CC_EMAIL_USERS)	Title(SHORT_DESCR)
Case Status(TEST_CASE_STATUS)	

Use the button to generate the JavaScript that ExtraView uses within the ONCLICK_JS attribute. This is only needed if you want to use this BUTTON ACTION utility to prepare a draft of the JavaScript that will be used in the ONCLICK_JS attribute. You cannot have both a BUTTON ACTION and an ONCLICK_JS attribute on the same field. Simply copy the text below and paste into the ONCLICK_JS attribute, where you may modify the script. Do not save this BUTTON ACTION if you are going to use the ONCLICK_JS script.

Show Generated Script

Update Return Print Page

- **Target Business Area** - This defines the Business Area that will be used for the *add* screen displayed when the button is pressed
- **Target Project** - This defines the Project that will be used for the *add* screen displayed when the button is pressed
- **Check Required Fields** - If you check this option, then all required fields on the parent issue will be checked for their presence before the child window is displayed. This can be extremely useful if you are going to push down field values from the parent to the child issue, and you want to ensure that the child window is always initiated with a value within a field
- **Push Selected Attachments** - When the user clicks the button, any selected attachments will be copied to the child issue being created
- **Presentation** - You may allow the user to create the child issue within a modal popup window, or with an inline operation, where a new row opens up within the related issue display, and the user enters the data for the new child issue within this new row
- **After Submitting the Child Issue** - This option allows you to select the action after the child issue is created. This applies to the modal popup option of the Presentation setting only. You can either have only the related issue display that contains the newly added issue updated, or you can have the parent issue updated and the entire screen updated. The latter is only required when there are some business rules that triggered changes to the parent issue when the child issue was submitted.

Note that if you select **Inline** for the presentation, the related issue display is not refreshed after the inline add operation. The reason for this is that there may be a sort order on the display, and there may be many issues within the related issue display. If the newly added child issue does not appear in the spot where the user added it, some confusion may exist as to whether the child was or was not added

	<ul style="list-style-type: none"> • Push Down Field List - Double click on the fields whose values you want to push down from the parent issue to the child issue. The selected fields are displayed in the right-hand list. Note that you can use the Find a field ... option to search for a field within the list • Show Generate Script - This button is provided for advanced usage. It is possible to configure button actions that are more complex than can be done with the BUTTON ACTION utility. This option allows you to generate the JavaScript that is close to what you require. You can then copy this JavaScript into the ONCLICK_JS attribute, and modify it for your requirement. You should not save the BUTTON ACTION if you are using ONCLICK_JS and vice versa.
COLLAPSE REPEATING ROWS	This attribute should only be used on an embedded repeating row layout with a type of report. Typically this is used when you are rendering fields from different repeating row layouts within the emedded layout, and you want the values to align as far as possible, to the top of the embedded layout. As the values from the different fields are likely to have originated in different records in the database, they would normally be rendered on different rows. This attribute shifts the values to be aligned from the top of the display for the embedded repeating row
DATE TIME CATEGORY	This attribute is used to define date time categories as either COMPONENT or DURATION
DISPLAY FORMAT	<p>This will modify the display of the value of the item according to a user-defined format. The format can include text as well as the values of other fields. There are specific rules for using this attribute successfully:</p> <ul style="list-style-type: none"> • The target field for this attribute must be a field with a display type of <i>text</i> • All the fields names referenced in the format must exist on the layout • The field should be read-only to users • There is no checking of field dependencies. For this reason, the value on the rendered screen could become stale during the edit process, for example if one of the referenced fields changes values. Of course, this is not a problem on a report layout. <p>Example: You can set up a new field on a layout, modifying the <i>ID</i> field for display to be of a specific format such as PROJECT + '.' + <i>ID</i>. The <i>ID</i> will be the standard sequence, but will show a value such as <i>MyProj.12345</i>.</p>
DO NOT CLONE	<p>This setting is primarily used in conjunction with mapping fields within one ExtraView installation to another ExtraView installation, via the peer integration daemon. If an issue that is mapped is subsequently cloned, the mapping identity field should not be propagated to the cloned issue. The reason for this is that it would establish a mapping from one peer issue to two issues (i.e. the original issue and its clone). This is not a fatal error, but the behavior produces an ambiguous result, causing updates to the peer issue for each update to either the original issue or the cloned issue.</p> <p>To handle this behavior, the data dictionary attribute named DO NOT CLONE prevents the cloning of the field value for specific fields. This attribute is set when the field is used as a mapping field in the integration daemon. Setting the DO NOT CLONE data dictionary attribute for a field means that the containing field's value will not be propagated to any clone of an issue - its value will be null in the cloned issue.</p>
DRILLDOWN	You should only add this attribute to a field when it is to contain an issue ID. Adding the attribute will turn on the ability to click on the field value in order to be able to drill down into that issue and open up an <i>edit</i> screen
DRILLDOWN TARGET	<p>This attribute is used in conjunction with the DRILLDOWN TARGET REPORT attribute. Together they define how to handle drilldowns from the embedded report presented on the <i>add</i> or <i>edit</i> screen. The drilldown target defines the name of the layout embedded on the screen which will contain the report that displays the drilldown results. If this is not defined, a new browser tab is targetted for the drilldown results within the standard interface. Within a workspace interface, a new workspace panel is generated to display the drilldown results.</p> <p>The drilldown target layout must be a layout that was created with a usage of Embedded Report - Creates a layout that contains a report to be embedded within an Add or Edit screen. There are four such layouts predefined, but you may create as many of these as you need. The four predefined layouts are:</p> <p>EMBEDDED_REPORT - Embedded Report EMBEDDED_REPORT_1 - Embedded Report (1) EMBEDDED_REPORT_2 - Embedded Report (2) EMBEDDED_REPORT_3 - Embedded Report (3)</p> <p>Note that you should edit any of these embedded layout types and make sure that you save an empty layout of that type. See here for more information on embedded reports</p>

DRILLDOWN TARGET REPORT	This attribute is used in conjunction with the DRILLDOWN TARGET attribute. Once you have the target specified, you use this attribute to nominate the specific report you want to generate. This must be a shared public report. You can use the * Ask at Runtime * filter within the report definition to pick up values from the embedded report and use these while generating the drilldown report. For example, the user might click on a cell in the embedded report which identifies a value for a specific STATUS and PRIORITY. If these two fields are used as runtime filters in the drilldown target report, then the values from the embedded report are used as filters for the drilldown report
EDIT RID PARENT ID	This attribute only applies to EDIT RID LAYOUTS. This layout cell attribute nominates the name of the field to be used to contain the parent ID to which the EDIT RID is connected
EDIT RID SHOW COLUMN HEADERS	This attribute only works with EDIT RID type layouts and renders any field names at column headers at the top of the display, rather than next to or above the individual fields. When you use this attribute, if there are other cell attributes on the field that affect the label (LABEL STYLE, LABEL STYLE IF, ALTERNATE TITLE, LABEL TAG) they will be evaluated first and then the resulting label will be rendered at the top of the display.
EDITOR TOOLBAR	This behavior setting allows the overriding of the behavior setting named EDITOR_TOOLBAR. This is used to provide an alternative toolbar to any HTML Area field as opposed to the one nominated in the behavior setting. It may have a value of BASIC, STANDARD, FULL or CUSTOM
EMBEDDED REPORT NAME	This allows for the selection of a report to embed within an <i>add</i> or <i>edit</i> screen. This attribute is only available on layout types of Embedded Report and only selects shared reports and reports saved for user roles. See here for more information on embedded reports
ENCRYPT	Encrypt the values within the field
EXPRESSION TEXT	This is used to add a calculated expression to a user defined report field.
GEO ADMIN BOUNDARY LEVEL	A geospatial attribute. Administrative boundaries range from large groups of nation states down to small administrative districts and suburbs specified by this value, which takes a value of 2(a single Country), 3(a State or Province) or 4(a County).
GEO GROUP	A geospatial attribute to group LATITUDE, LONGITUDE and MAP_RELIABILITY_LEVEL into a set of geospatial data dictionary fields and used in geospatial reports.
GEO LATITUDE	A geospatial attribute to indicate the latitude field.
GEO LONGITUDE	A geospatial attribute to indicate the longitude field.
GEO RELIABILITY LEVEL	A geospatial attribute to indicate the reliability field.
GRIDEDIT BUTTON	This attribute provides a button with the title Gridedit , on the preheader of the Related Issue Display. When clicked, this button renders all the issues on a Related Issue Display in Quickedit mode within an <i>edit</i> screen. The user is required to click the Update button on any issue before it is saved in the database. If you wish to alter the title on the button, it is controlled with the data dictionary field named GRIDEDIT_BUTTON.
HEIGHT	This applies to text area, log area, print text fields and embedded related issue display layouts. The height is the approximate number of characters high that the field is displayed with when the user first brings up an <i>add</i> or <i>edit</i> layout. Example: To create a text area field where the initial display height is 20 characters, add a HEIGHT attribute with a value of 20. Note that RELATED_ISSUE_DISPLAY layouts are automatically sized in height, according to the number of issues they contain, and the FIELD HEIGHT is the maximum height that a related issue display will occupy, before a vertical scroll bar is added.
HELP TEXT	This applies to <i>add</i> and <i>edit</i> screens and their embedded layouts. When added to a fields, the attribute overrides the help text from the data dictionary, and presents the help text defined within the layout. This allows you to define different help for different screens within your application.
HIDE VALUES	This attribute allows you to hide individual values within a field which contains a list of values. When you select this attribute, you are presented with a list of all the values within the field, and you select the values you want to hide unconditionally. This may be used with great effect on fields such as AREA on an <i>add</i> layout, to constrain a user to only be able to add new issues into specific business areas, and to lock the user out from other business areas. Note that if you configure this attribute, you may not then configure a FIELD_VISIBLE_VALUES attribute on the same field. This attribute is only supported on fields with a display type of List (including multi-value list, but not popup lists), Radio Button and Tab.
HIDDEN VALUES IF	This attribute is similar to HIDE VALUES, except that you can conditionally hide the values in a list, according to a logical expression based on other fields within the form,

HIGHLIGHT VALUE IF	<p>This provides the ability to alter the color styling of a field value, based upon a logical expression defined within the layout cell attribute. This attribute only works with display types of <i>text</i> and <i>text area</i>.</p> <p>Example: To highlight the value of the ID of an issue, if the issue is a customer issue, you might apply a layout cell attribute to the ID field – HIGHLIGHT VALUE IF CUSTOMER IS NOT NULL.</p>
HIGHLIGHTED IF	<p>This provides the ability to alter the color of a field title, depending on the condition specified. The color may be selected by setting the value for the behavior setting HIGHLIGHT_COLOR. You may have more than one FIELD HIGHLIGHTED IF attribute on a field.</p> <p>Example: We want to highlight the title of the ID of an issue, if the issue is a Customer issue. To achieve this, set the element attribute of HIGHLIGHTED IF on the ID field, if the field named Customer is not null.</p>
HOVER VIEW DEFINITION	<p>This attribute is used to define hover text that appears over buttons, when the user holds the mouse steady over the button. The administrator can configure which fields are displayed in the hover popup with this layout cell attribute. When you select the attribute, you will see two field lists. The left-hand field list presents all the available fields. Double click on the fields you wish to add to the hover text and they appear in the right-hand panel. Alternatively, drag the field to the right-hand panel from the left-hand panel. Drag the field out of the right-hand panel into the left-hand panel to remove it from the hover text popup.</p> <p>Typically this is used to bring up the full description, plus any other fields, of an issue for viewing, as a shortcut to the user having to drill down into the issue to see the key information.</p> <p>The definition of the popup is valid on various, but not all buttons. It works on VIEW_BUTTON, EDIT_BUTTON, DELETE_BUTTON, HISTORY_BUTTON and QUICKEDIT_BUTTON, on <i>add</i>, <i>edit</i>, report and related issue display layouts.</p>
HTML MODIFIER	<p>This allows the user to provide values for additional attributes within an HTML tag on an <i>add</i> or <i>edit</i> layout. You may have any number of HTML modifier attributes on a cell. It is likely that you will need a reasonable understanding of HTML tags and attributes to use this layout cell attribute.</p> <p>Example: A <i>DISABLED</i> HTML modifier to the attribute will disable the field. Most browsers would then show this field as “grayed-out”. ExtraView has a special HTML modifier value that provides an enhanced rendering for fields that you want to disable. If you enter the value as evClass=readonly then the disabled function is extended to work with all fields, not just input and list fields. In addition a disabled icon will appear when the user places their mouse cursor over a field with this attribute. The evClass=readonly value must be entered exactly as shown, with no spaces or other characters within the entry.</p> <p>Example: Use the HTML modifier to call a user-defined JavaScript function or to call a pre-defined JavaScript function within ExtraView. The function resides on the server and is automatically included in the HTML that is generated for the layout. The syntax specified within the HTML modifier to call a user-defined JavaScript function will be similar to: <i>onclick='myFunction(param1, param2)'</i>;</p> <p>For a more detailed explanation of custom building JavaScript functions, please see the ExtraView User Custom Programming Guide.</p> <p>If you want to add a style attribute to a layout element, you should use the style (rather than the html modifier attribute) otherwise your cell element may have multiple style attributes, which is invalid HTML syntax. A reference providing a list of all valid CSS styles may be found at http://www.w3schools.com/css/css_reference.asp. Note that this layout cell attribute only works when used within a layout that is rendered as an <i>add</i> or <i>edit</i> screen.</p>
HTML MODIFIER IF	This attribute works in the same fashion as HTML MODIFIER, but allows for a logical condition to be added to its definition as opposed to always taking effect
IS RANK	This defines the field to be a rank field on the layout. Only apply this attribute to numeric fields
LABEL STYLE	This attribute allows you to add a CSS style to the label of field on a layout
LABEL STYLE IF	This attribute works in a similar fashion to LABEL STYLE, but with the added support for logical conditions so that the style can be applied with an expression you define
LABEL TAG	This allows the administrator to add a new attribute to the HTML <TD ... tag that surrounds the label of the cell. This can be used to provide a different style for the label, or to inject any other valid HTML into the cell label tag. It is likely that you will need a reasonable understanding of HTML tags and attributes to use this layout cell attribute.
LAYOUT SEARCH EXPANDED MODE	The attribute may only be added to layouts that have a type of <i>search</i> and are used to provide a search and selection mechanism on <i>add</i> and <i>edit</i> screens. When this attribute is selected for a <i>search</i> layout, all the fields

	on the layout are rendered in expanded mode, allowing the end user to make multiple selections within the fields being used as search filters
LAYOUT SELECTED	<p>This is for indicating which embedded layout to use on a screen depending on a tab or list value. This is one of two mechanisms that allow ExtraView to render alternative layouts, dependent on the value of a tab or list field.</p> <p>Example: You want to embed a different layout, with a different set of fields on an <i>edit</i> screen, dependent on whether the user selects a Category of <i>Software</i> or <i>Hardware</i>.</p> <p>Note: If you are creating layouts which are selected according to a list or tab value, it is highly advisable to set a default value for the list or tab field. If you do not do so, and the field does not have a value, no embedded layout will be selected.</p> <p>The precise steps necessary to implement embedded layouts are documented in a following section, entitled Adding Embedded Layouts.</p>
LIST BGCOLOR	This attribute sets the background color of the non-selected list values when the display format of the field is set to Box or Checkbox within the data dictionary definition of the field. Enter a hexadecimal color or an HTML color name.
LIST BORDER COLOR	This attribute sets the color of the border surrounding list values when the display format of the field is set to Box within the data dictionary definition of the field. Enter a hexadecimal color or an HTML color name.
LIST IMAGE DISPLAY	This attribute allows the display of enumerated list fields which have images associated with them to alternatively display just the image, just the title, or both the image and the title. Valid entries for this attribute are TEXT_ONLY, IMAGE_ONLY and IMAGE_PLUS_TEXT (this is the default)
LIST SELECTED BGCOLOR	This attribute sets the background color of the selected list value(s) when the display format of the field is set to Box or Checkbox within the data dictionary definition of the field. Enter a hexadecimal color or an HTML color name.
LIST TEXT COLOR	This attribute sets the color of the text of the list values when the display format of the field is set to Box or Checkbox within the data dictionary definition of the field. Enter a hexadecimal color or an HTML color name.
LIST TEXT SIZE	This attribute sets the font size of the text of the list values when the display format of the field is set to Box or Checkbox within the data dictionary definition of the field. You should include the measurement type, such as pt, px or em following the size you enter.
LIST WIDTH	This attribute sets the width of the of the field on the screen when the display format of the field is set to Box or Checkbox within the data dictionary definition of the field. You should enter a width as the number of pixels, followed by px. Note that there is a 10px padding around the text of all the labels within the cell containing the value, so the overall width of the cell is 20px greater than the number you enter
MAX FRACTION DIGITS	This attribute only applies within numeric type input fields on ADD_PROBLEM and EDIT_PROBLEM layout types. This provides an integer number that represents the number of digits to display, following a decimal point
MAXLENGTH	<p>This will add a <i>MAXLENGTH=nnn</i> attribute to the HTML display tag for the field, controlling the maximum number of characters that can be typed into the field. The default if no attribute is set is 255 characters. Used in this way, the attribute works when used within a layout that is rendered as an <i>add</i> or <i>edit</i> form. 255 characters is the maximum length of any user defined text field that you create</p> <p>Example: Setting an attribute of MAXLENGTH equal to 25 on a field will restrict the amount of characters that can be entered into a field to 25 characters.</p>
MENUBAR ITEM ACTION	This attribute controls the action triggered when clicking the menu button to which the attribute is applied
MENUBAR ITEM CLASS	This attribute controls the CSS class used when rendering the menu button. If you are defining your own CSS class, the entry for the style can be put in the user_stylesheets/user_stylesheets.css file.
MENUBAR ITEM CLASS IF	This attribute is applied to the selected field on this layout only. The value you provide is the CSS class used when rendering this menu button.
MENUBAR ITEM ICON	This property is used to select the icon that is rendered when viewing this menu button on <i>Add</i> and <i>Edit</i> screens. You must select an Icon Display that uses icons. Use the Browse the Icon Library button on the screen to view and select an appropriate icon from the library.
MENUBAR ITEM ICON DISPLAY	This is used to control the rendering of this menu button on <i>Add</i> and <i>Edit</i> screens - Choose from Text only, Text and Icon or Icon only.
MODAL WINDOW	This layout cell attribute only has an effect if used on an EDIT_BUTTON within a Related Issue Display. When this attribute is set, and the user presses the Edit button on the Related Issue Display, a popup, modal window is used to provide the edit capability for the related issue. If this is not set, then the related issue is

	placed in a separate, new window. This provides control on whether you want to allow users to update a parent issue while editing a child or related issue.														
MOST RECENT	This attribute only affects user defined fields with a display type of LOG AREA. When this is applied to a field on a layout, only the most recent entry within the field is displayed to the user, and all previous entries are suppressed.														
NOT REQUIRED IF	This is the opposite condition to FIELD_REQUIRED_IF and is typically used when there are a significant number of values in a field, but the field only becomes not required on a few values. In this circumstance, it is faster to set up FIELD_NOT_REQUIRED_IF on a small number of values and set the overall required state of the field to Yes. Note that if you use the <i>greater than</i> or <i>less than</i> operators, they only work with numeric comparisons.														
PHONE NUMER	Use this layout cell attribute on text fields to activate the international phone number masking on the field														
READONLY IF	<p>This attribute indicates that the field value is to be displayed on the layout in a read only mode, based upon the value of another field. You may have more than one FIELD READONLY IF attribute on a field. For obvious reasons, this attribute only works when used within a layout that is rendered as an <i>add</i> or <i>edit</i> screen. Note that if you use the <i>greater than</i> or <i>less than</i> operators, they only work with numeric comparisons.</p> <p>Example: We want to display the Customer name within the field named Customer on an <i>edit</i> layout, if the Customer has already been added, but make the field read / write if there is no value so the user can enter the Customer name. To achieve this, add an attribute of FIELD READONLY IF Customer is not null. If you place a FIELD READONLY IF attribute on a layout cell that contains an embedded layout as opposed to a field, then all the fields on the embedded layout will be made read only, according to the conditions set with the logic of the attribute.</p>														
REMOVE ANY	Removes the * Any * entry from list and user fields. This attribute will cause the * Any * entry in a select list not to be rendered when the layout is used as query filter screen. This can be used to ensure that the user always picks a value from a list before performing a search. Note that this is similar behavior to making a field required on a layout.														
REMOVE LABEL NOWRAP	By default, ExtraView does not allow the label of a field to wrap within the user's browser. Instead, there is a behavior setting named LABEL_WRAP_POSITION that allows the administrator to define a specific position where it will wrap. This gives a more consistent result as the user resizes their window on their browser. If you set this attribute, then ExtraView will allow the browser to control the wrapping for the field.														
REMOVE NONE	Remove the * None * entry from list and user fields. This attribute causes the * None * entry in a select list on an <i>add</i> or <i>edit</i> layout to be removed, ensuring that the end user always selects at least one entry. This means that the field will become required, as a value is always selected.														
REMOVE SELECT ALL	This attribute only works with multi-valued list fields. When set, the * Select All * option is removed so it cannot be selected from the list of values.														
REMOVE VALUE NOWRAP	By default, ExtraView does not allow the value of a field to wrap within the user's browser. If you set this attribute, then ExtraView will allow the browser to control the wrapping for the field. This is typically only an issue for read-only text type fields.														
REPORT FONT SIZE	<p>This attribute can be used to modify the size of the font used to generate the embedded report. This is typically used to set a smaller font size than theremainder of the <i>add</i> or <i>edit</i> screen as reports may be voluminous. You can either set a specific font size such as 8pt, 0.8em or 10px or use an HTML attribute name from the following table</p> <table border="1"> <tr> <td>medium</td> <td>Sets the font-size to a medium size</td> </tr> <tr> <td>xx-small</td> <td>Sets the font-size to an xx-small size</td> </tr> <tr> <td>x-small</td> <td>Sets the font-size to an extra small size</td> </tr> <tr> <td>small</td> <td>Sets the font-size to a small size</td> </tr> <tr> <td>large</td> <td>Sets the font-size to a large size</td> </tr> <tr> <td>x-large</td> <td>Sets the font-size to an extra-large size</td> </tr> <tr> <td>xx-large</td> <td>Sets the font-size to an xx-large size</td> </tr> </table>	medium	Sets the font-size to a medium size	xx-small	Sets the font-size to an xx-small size	x-small	Sets the font-size to an extra small size	small	Sets the font-size to a small size	large	Sets the font-size to a large size	x-large	Sets the font-size to an extra-large size	xx-large	Sets the font-size to an xx-large size
medium	Sets the font-size to a medium size														
xx-small	Sets the font-size to an xx-small size														
x-small	Sets the font-size to an extra small size														
small	Sets the font-size to a small size														
large	Sets the font-size to a large size														
x-large	Sets the font-size to an extra-large size														
xx-large	Sets the font-size to an xx-large size														

smaller	Sets the font-size to a smaller size than the parent element
larger	Sets the font-size to a larger size than the parent element

Using a setting from the table, or a value expressed with em has advantages as the font generated is then relative in size to the user's personal text size setting (small, medium or large). See [here](#) for more information on embedded reports

REPORT MAX FRACTION DIGITS This attribute may be set to define how many digits will appear in the rendering of a field with a display type of *Number*, *Decimal* or *Currency*, when the field is displayed as part of a report. It also controls how the value of the field is rounded on reports and when displayed on the *add* or *edit* screen. Note that *Currency* data display types generally have the number of decimal digits defined by the currency type. For example, the US Dollar has two decimal digits.

REPORT OPTIONS This allows for the settings of embedded reports within an *add* or *edit* screen. This attribute is only available on layout types of **Embedded Report** and only selects shared reports and reports saved for user roles and mainly allows for the inclusion or exclusion of buttons such as refresh and drilldown, that interact with the report. See [here](#) for more information

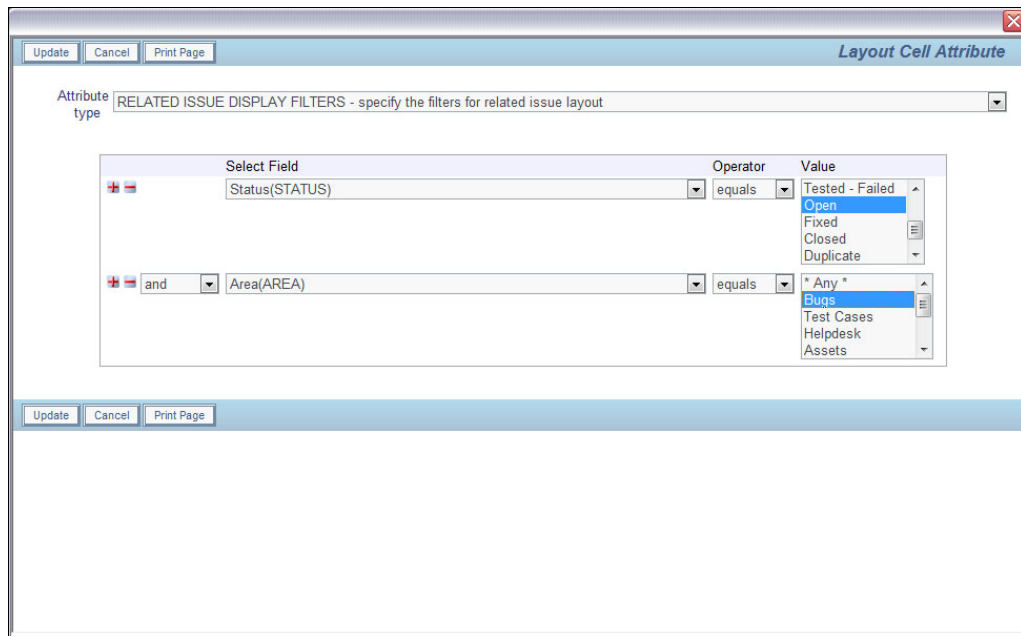
REQUIRED This attribute is used to make a field required unconditionally on an *add* or *edit* layout. Contrast this with the **FIELD REQUIRED IF** attribute which makes a field required conditionally. Note that fields using this attribute are immediately flagged in with a highlighted color on the grid of the layout

REQUIRED IF This is for indicating if a field value is required depending on the value of another field. Note that Field Required If dependencies only work on fields with a display type of *List*. Further, they do not work if the field has been set in the data dictionary to be a multi-valued list, or if the field is a pop-up list. You may have more than one **FIELD REQUIRED IF** attribute on a field. For obvious reasons, this attribute only works when used within a layout that is rendered as an *add* or *edit* form. Note that if you use the *greater than* or *less than* operators, they only work with numeric comparisons.

Example: The field on a form named `CUSTOMER_NAME` may become required if another field named `CUSTOMER_ISSUE` has a value of Yes. To achieve this, add a layout element attribute to the field named `CUSTOMER_NAME`. The value will be *Yes*, the field will be `CUSTOMER_ISSUE` and the equivalence will be *equals*.

RID AUTOLOAD This attribute may only be applied to related issue layouts that are connected to search layouts. If this attribute is set, the search layout will be populated as soon as the *add* or *edit* form that contains it is rendered. Primarily, the contents will use the filters in the setting **RID FILTERS** to populate the search results. This avoids the need for users to click the Search button to see results when the form is first rendered. Avoid using this feature if you expect to see a large number of results returned from the search. Typically, the user will then set additional filters on the search layout to refine the results.

RID FILTERS This attribute may only be used on a cell containing a related issue display. It allows the administrator to set one or more filters on the related issue display. For example, you might want to filter the related issues to only display the *Open* issues, or you may want a much more complex filter. When you select this attribute, you will a dialog similar to the following. Use the query filters to compose the expression required, then update the attribute. Note that you cannot filter on the **KEYWORDS** field:



Note that there are two special values in field lists:

- *** Value from issue *** - This indicated that the filter will use the value that the user sets into the parent field when they are entering data. Consider this to be a dynamic filter. This special value appears for fields with display types of *List*, *User* and *Popup*. If you want to use this feature for other data types, you can enter **\$\$<ddName>\$\$** in the field
- *** Mapped Field Value From Issue *** - This is similar to the previous setting, but allows the mapping of the value from a different field.

RID FILTER RESULTS

This attribute is typically used in conjunction with the RID AUTOLOAD attribute on a related issue layouts that is connected to a search layout. When this is set, the rendering of the search results is modified, to place a search field above the fields on the layouts that contain text information. The user can enter text within the search field and the results within the related issue display will be filtered according to the text entered. There are some limitations on the layout that this is used with:

- The layout may only be formed with a single row of fields
- The Quickedit button is not supported on the layout
- Only text contained within the cells on the display is filtered. Date fields, number fields and the like are treated as text
- The layout does not support inline add
- The layout does not support repeating row fields
- When using a SIZE layout cell attribute in conjunction with this attribute, the sizes are measured in pixels, not characters
- The following layout cell attributes are not supported on the layout when this attribute is configured: AGGREGATE EXPRESSION TITLE, ALTERNATE TITLE, COLLAPSE REPEATING ROWS, GRIDEDIT BUTTON, RID FIX TITLES, RID PAGE SIZE, RID THRESHOLD, RID TRANSPOSE LAYOUT
- If a user clicks on a field column title to resort the report by that field, the entire results set is refreshed.

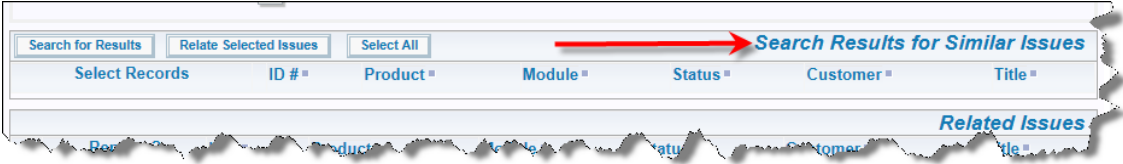

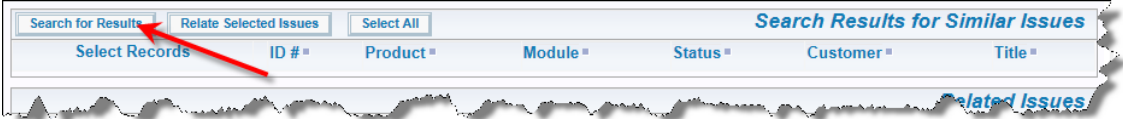
RID FIX TITLES

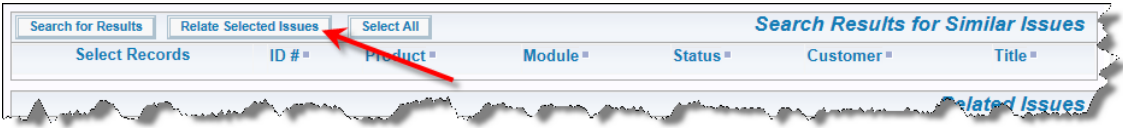
This attribute may only be set on Related Issue Display layouts within *Add*, *Edit* layouts, or sublayouts of these. When this attribute is used in conjunction with the HEIGHT attribute, and a scroll bar appears after issues have been added, the title to the Related Issue Display is fixed as the user scrolls.


It is not recommended that you place SIZE layout cell attributes on the fields contained within the Related Issue Display layout when you use this attribute. The best results are obtained when the browser sizes all the columns and column titles.

RID GROUP REFERENCE FIELD

If you do not use this cell attribute on the cell in a layout containing the LAYOUT.RELATED_ISSUE_DISPLAY (or other related issue layout), then ExtraView assumes that you are linking issues based upon the value in the ID field. If you have altered the behavior setting named ITEM_ID_DISPLAY to point to ALT_ID rather than ID, then issues will be related on the ALT_ID field rather than the ID field. However, you can use this entry to provide a link based upon the value of any other

	field on the layout. This is a very flexible feature, allowing arbitrary groups of issues to be linked, dependent upon any field.
RID LINK FIELD NAME	<p>This attribute is used when linking selected search results on an ADD_PROBLEM or EDIT_PROBLEM layout to a related issue display which will contain the selected records. This field is an intermediate field which will contain the ID's of the selected records. For most purposes, this field can be hidden completely on the layout, using the following two attributes:</p> <ul style="list-style-type: none"> • FIELD STYLE: Visible if ID = -99 • LABEL TAG: style=display:none <p>See the example here for use of this attribute.</p>
RID OMIT AUTO POPULATE	Bypasses the automatic population of related issue ID's for the field
RID ONCLICK_JS	This attribute is used on a related issue display to define JavaScript to execute when the user clicks on the RID PREHEADER ADD BUTTON. This can either be JavaScript itself, or a call to a JavaScript method in the UserJavaScript.js file.
RID PAGE SIZE	This attribute may be applied to a related issue display to override the default value in the RID_PAGING_DEFAULTS behavior setting. This value sets the number of issues displayed on a related issue display, once the count of issues exceeds the RID THRESHOLD value
RID PREHEADER	<p>This defines a title for the header section within a related issue display. Use this attribute on the embedded related issue display within a layout. The title will appear as shown in this screenshot:</p>  <p><i>Creating a title for related issue displays</i></p>
RID PREHEADER ADD BUTTON	<p>Use this attribute to place an "add" button on a related issue display layout. The button must already exist before you can use this on the related issue display. The button is created within the data dictionary with these attributes:</p> <ul style="list-style-type: none"> • Create the field from the Label tab of the data dictionary • Provide a fixed name for the button • Provide a title for the button - this is used to define the text that appears on the button when rendered as part of the related issue display • The display type must be Button • Other field attributes can be defined such as permissions, according to your requirements  <p><i>Add button on a related issue display</i></p>
RID PREHEADER REFRESH BUTTON	<p>See the example here for use of this attribute. This provides a "Refresh" button on a related issue display that contains search results. The user can select new search filters with this button to refresh the results. This attribute does not require a data dictionary field. Simply enter the title for the button that you require as the value to this attribute.</p>  <p><i>Refresh button on a related issue display</i></p>

<p>RID PREHEADER SUBMIT BUTTON</p>	<p>See the examples here and here for use of this attribute. This provides the "Submit" button on a related issue display that contains search results. The user moves the currently selected issue(s) from the related issue display to either fill fields on the current parent issue, or to relate the selected records to the current parent record. This attribute does not require a data dictionary field. Simply enter the title for the button that you require as the value to this attribute.</p>  <p><i>Submit button on a related issue display</i></p>
<p>RID RELATION TYPE</p>	<p>This cell attribute defines how the related records will be displayed within the RELATED_ISSUE_DISPLAY (or other layout where the name begins with RELATED). This has four possible values:</p> <ol style="list-style-type: none"> 1. MEMBERS – This is the default value for this attribute if you do not override it with one of the other three possible values. In this case the RELATED_ISSUE_DISPLAY will show all the members of the group(s), containing the reference issue, i.e. the reference issue’s parent’s, children, and other issues not specifically related to the reference issues in the group(s) 2. CHILDREN – The related issue display will only contain issues that are the children of the reference issue 3. PARENTS – The related issue display will only contain issues that are the parents of the reference issue. Note that in the ExtraView data model it is possible to define more than one parent issue for a specific issue. See the section on Relationship Groups for more information 4. RELATED – In this instance ExtraView will display the parents and the children of the reference issue within the specified group(s), within the RELATED_ISSUE_DISPLAY. The parents and children of these related issues will not be displayed. You may create and use related issue display layouts as long as the name begins with RELATED. 5. SIBLINGS - ExtraView will display all the issues at the same level in the hierarchy. For example, if a parent record has five children, and you create a related issue display with all the children, using a relationship group relation type of SBLING, then you will see the four siblings to the current one. 6. LINKED - This type does not use a relationship type per se, but relies on the Related Issue Display filters to retrieve the associated issues. For example, you might have a filter that selects all the open issues for a particular product, and display these on a related issue display of each issue that you call up.
<p>RID RELATIONSHIP NAME</p>	<p>This attribute may only be used on a cell containing one of the following:</p> <ul style="list-style-type: none"> • the layout named LAYOUT.RELATED_ISSUE_DISPLAY or any other layout where the name begins with RELATED. For example, LAYOUT.RELATED_CUSTOMERS is a valid name for a relationship group name • the field named RELATIONSHIP_GROUP_PARENT, or • the field named RELATIONSHIP_GROUP_CHILD. <p>It will be ignored on other cells. It refers to the name of the relationship group that is to be used for the field. In case a), it defines the relationship group(s) to search for the related issues; in cases b) and c), it defines the relationship group in which the new relation is inserted. In case a), the relationship group name may be the wild-card “*”, which signifies ALL relationship groups. If you do not provide the attribute on a), ExtraView will search ALL relationship groups (as if the value were “*"); for b) and c), ExtraView will substitute the relationship group name stored in the behavior setting named RELATION_GROUP_DEFAULT, on the Workflow Settings screen. In any case, non-wild-card relationship group names must denote an existing relationship group.</p>
<p>RID SEARCH FILTER LAYOUT</p>	<p>This contains the name of the search filter layout that is used to determine the filters for an embedded layout of type <i>Search</i>. This is used as an attribute on the layout that will contain the results of the search, thereby linking the search filters and search results together. This example shows how this attribute is configured</p>
<p>RID SINGLE_SELECT</p>	<p>This attribute is used on a search results layout. It is used to constrain the number of results that are selected by the user to a single one, so that the fields on the selected result are returned directly into fields on the current issue. Business rules transfer the results into the fields on the current issue. The example here shows how this is configured. Note the use of the inbuilt field named RELATIONSHIP_GROUP_CHOOSE_BTN field to provide a radio-button-like function to allow the user to select the result they want to transfer. If this attribute is not set then the RELATIONSHIP_GROUP_CHOOSE_BTN field allows multiple selections, and the use case is likely to be that the entire set of results will be used to create a group of related issues</p>

<p>RID SORT ORDER</p>	<p>In this attribute, you specify the sort order of the records presented on the RELATED_ISSUE_DISPLAY. Specifically, you can set up:</p> <ol style="list-style-type: none"> 1. The field name to order by 2. The rank of this field in sort order (relative to other sort orders in this attribute) 3. The direction (ascending or descending) of the sort order <p>To specify ordering by more than one field, insert multiple Relationship Group Sort Order attributes. To specify where a sort order field appears in the sort priority, use the rank number. For example, two attributes may be:</p> <table border="1" data-bbox="365 394 706 499"> <thead> <tr> <th>Field Name</th> <th>Rank / Direction</th> </tr> </thead> <tbody> <tr> <td>STATUS</td> <td>1/ASC</td> </tr> <tr> <td>PRIORITY</td> <td>2/DESC</td> </tr> </tbody> </table> <p>As usual, the sorting is done on SORT_SEQ within the field's definition, and then the title of the field value.</p> <p>You can also optionally aggregate values while grouping together values within a field, and providing sub-totals or other attributes for each group. Set the Group By field to a value of Y to enable this feature. Now you will generate subtotals as well as a grand total. Clicking on a field title at the top of the related issue display will cause a refresh of the display, change the sort order and the sub-totals</p>	Field Name	Rank / Direction	STATUS	1/ASC	PRIORITY	2/DESC
Field Name	Rank / Direction						
STATUS	1/ASC						
PRIORITY	2/DESC						
<p>RID THRESHOLD</p>	<p>This overrides the setting within the behavior setting named RID_PAGING_DEFAULTS. The number in this setting defines the number of issues that must exist within the related issue display before paging of the issues is performed.</p>						
<p>RID TRANSPOSE LAYOUT</p>	<p>This attribute only works in conjunction with a related issue display. When this is applied to a related issue display, it causes a transposition of the rows and columns on the related issue display.</p>						
<p>ROW VISIBLE IF</p>	<p>This attribute works with EDIT_RID_type layouts only. Set a condition in the attribute to make the issue (row) within the EDIT_RID_ visible.</p>						
<p>SIZE</p>	<p>This has two purposes, depending on the field with which this is used:</p>  <ul style="list-style-type: none"> • Most commonly, this will add a <code>SIZE=nnn</code> attribute to the HTML display tag for the field. The default is 11 characters if no attribute is set. Example: You may want to alter the width of a text box on the screen to be narrow. You would achieve this with an element attribute of <code>SIZE=30</code> or similar • If this attribute is added to the layout named LAYOUT.RELATED_ISSUE_DISPLAY or other layout where the name begins with RELATED, and this is embedded on an <i>add</i> or <i>edit</i> form, then the value represents the width of the embedded related issue display. Again, this is measured in characters. The default width of a RELATED_ISSUE_DISPLAY is 125 characters. Example: The screenshot shows where the SIZE attribute is used on the related issue display • When adding this attribute to a layout RELATED_ISSUE_DISPLAY layout which also has the layout cell attribute of RID_FILTER_RESULTS configured, the measurement is in pixels, not in characters. • Note that as the SIZE attribute generates an HTML tag of the same name, it cannot be used with fields which use dynamic HTML for their generation. This most significantly affects list fields which have an image associated with each value. For these fields, use the layout cell attribute, or a global attribute set in the data dictionary of STYLE with a value of width:nnnpx where nnn is the width in pixels of the field. 						
<p>SPELL CHECK</p>	<p>Use this layout cell attribute to activate the ExtraView inbuilt spell checker for the field.</p>						
<p>STYLE</p>	<p>This sets the style of the value component of a field (not the style of the field label). This attribute is supported within <i>add</i> and <i>edit</i> layouts only. It is supported with the field in both read and write modes.</p> <p>It is recommended that you add a style attribute to a field, rather than use the HTML MODIFIER attribute with a STYLE tag. This prevents the possibility of the field having two style attributes, which is invalid HTML syntax. Only one of these attributes will be recognized in the user's browser. It is helpful if you will have a reasonable understanding of HTML tags, attributes and CSS to use this layout cell attribute.</p> <p>Example: You may want to display a field on a report with a background color of light blue and in bold. To achieve this, add a STYLE cell attribute of:</p> <pre>background-color:#dfff;font-weight:bold</pre>						

STYLE IF	This attribute works similarly to the STYLE attribute, but allows a logical expression to be used to define the style only in specific circumstances that you define
SUPPRESS ALLOWED VALUES	This only applies to fields placed upon a search filter layout, such as the Quick Search, Full Search or Chart filter layouts. When this layout cell attribute is set, and the field is a child in an allowed value relationship, then the child list will not be filtered by its parent, and all possible values will be displayed. For this cell attribute to work, the parent field of the relationship must also be on the layout.
SUPPRESS CLOSE POPUP	When configuring a site, there are occasions when you may want to bypass the "Save your Work" message that appears when navigating away from an <i>add</i> or <i>edit</i> screen. Setting this attribute allows you to do this.
SUPPRESS VALUE	This attribute only works with numeric progress bars. By default, each numeric progress bar also displays a percentage value to indicate progress. There are occasions when the administrator may only wish to display the progress bar without the percentage and setting this layout cell attribute achieves that objective. This option may be set at a global level for the field, in which case it is also recognized on report output, as well as on <i>add</i> and <i>edit</i> screens.
TEXT SEARCH OPERATOR	<p>This attribute only applies to fields placed upon search filter layouts, such as the Quick Search, Full Search or Chart filter layouts. It allows the administrator to define whether a user is required to enter an exact match within a text field when it is used for a query operation, or whether the user's query is automatically set to use a <i>contains</i> operator. For example, consider a field named Diagnosis being placed on a search form. The values stored in issues within the database may contain a significant amount of text, and the word <i>hypertension</i> may appear in a subset of the issues. When the TEXT SEARCH OPERATOR is contains, all the issues that contain the word <i>hypertension</i> will be returned, but when the operator is set to =, only records that exactly match <i>hypertension</i> are returned. However, you might want to obtain an exact match when searching for a value such as the ID or ALT_ID of issues, necessitating the use of the = operator.</p> <p>The default is that the search uses the <i>contains</i> operator.</p>
UPDATE MAIN ISSUE	<p>This attribute is only available on the QUICKEDIT_BUTTON field, when it is placed within a Related Issue Display. This attribute is used when the user is inserting / altering field values on a parent issue and within a Quickedit session on a row within the Related Issue Display and the child issues update the parent issues when changes are submitted. The user may have made independent changes to values on the parent issue before the Quickedit session, and these would be lost when the child update happens, given there is a screen refresh of the parent issue at this time, and the update uses the values stored for the parent within the database, not the current values on the screen.</p> <p>There is an option to Ignore Required Fields with this attribute. This allows the update to the parent issue to ignore any required fields when the child is updated and not all fields on the parent record may have been completed. The UPDATE MAIN ISSUE could not complete if required fields existed and were not filled in, but the expectation is the user will fill in these fields before completing the update to the parent issue.</p> <p>The entire sequence is most often configured when the Related Issue Display layout is configured with inline add capability. The button defined in the data dictionary that is placed on the preheader of the RID initiates the inline add, will use the option within its configuration to Update Parent & Refresh Entire Screen in the After Submitting Child Issue option</p>
USER LIST DISPLAY	This attribute overrides the behavior setting USER_LIST_DISPLAY for fields with a display type of <i>user</i> . Valid values are POPUP and LIST, to display the user field using that format
VALIDATE HIDDEN	<p>Validation between tabs allows required fields on a layout in ExtraView to be validated for existence, even if they are not visibly rendered on the currently visible screen. This most often happens when you have designed screen layouts with part of the total record being displayed with different tabs being selected. The need is to validate the existence of values within fields across the entire record, not just the fields visible under the currently displayed tab. This implies that the user will most probably be making entries under several tabs on a screen, before they submit the record. To set the attribute for the entire layout, go to the layout that embeds the subsidiary (embedded) layouts. Select the field named LAYOUT.embedded_layout_name. Add the Validate Hidden layout cell attribute to this field, and all fields within the layout will be checked.</p> <p>To set the attribute for any individual field(s) within the embedded layout, simply add the attribute to the field within the layout. If you place a VALIDATE_HIDDEN attribute on a layout cell that contains an embedded layout as opposed to a field, then all the fields on the embedded layout will be subject to the VALIDATE_HIDDEN logic.</p> <p>Note: There is an important interaction between Validate Hidden and fields that have a Visible If attribute. If a layout element has a VISIBLE_IF condition, and if the element has the VALIDATE_HIDDEN attribute, a validation between tabs must be performed. ExtraView will automatically perform this check.</p>

	<p>Note: If the Required If attribute is used within the same field as the Validate Hidden attribute, then it must be specified after the Validate Hidden attribute, so that ExtraView processes the attributes in the correct sequence.</p>
VALUE TAG	<p>This allows the administrator to add a new attribute to the HTML <TD ... tag that surrounds the value of the cell. This can be used to provide a different style for the value, or to inject any other valid HTML into the cell value tag. It is likely that you will need a reasonable understanding of HTML tags and attributes to use this layout cell attribute. This tag is supported on <i>add</i>, <i>edit</i>, detailed report and Quicklist layouts.</p>
VISIBLE IF	<p>This is for indicating whether or not a field or embedded layout is seen depending on the value of another element, including itself. You may have more than one VISIBLE IF attribute on a field. If a field controls a hierarchy of VISIBLE IF dependencies, and it becomes invisible, all the fields below it in the dependency tree will also become invisible according to their conditions. Note that VISIBLE IF dependencies only work on fields with a display type of List. Further, they do not work if the field has been set in the data dictionary to be a multi-valued list, or if the field is a pop-up list. The VISIBLE IF attribute is only supported on layouts that are rendered within <i>add</i> or <i>edit</i> forms.</p> <p>Note that if you use the <i>greater than</i> or <i>less than</i> operators, they only work with numeric comparisons. If you place a VISIBLE IF attribute on a layout cell that contains an embedded layout as opposed to a field, then all the fields on the embedded layout will be made visible or not visible, according to the conditions set with the logic of the attribute. This is the simplest method to create several embedded layouts which are to be made visible or invisible according to the selected value in a driver field. Conditional attributes such as FIELD REQUIRED and VISIBLE IF can be applied multiple times to a single field. When you use this functionality, the validation uses 'OR' logic. For example, you may set two VISIBLE IF rules, such as:</p> <ol style="list-style-type: none"> 1. The field named action is visible if Status equals pending 2. The field named action is visible if Status equals fixed <p>With this rule, the action field will be visible if (a) or (b) is true.</p> <p>When you use a VISIBLE IF layout cell attribute within a Related Issue Display layout, or a report layout, the field referred to as the condition for visibility must also be present on the same layout. Further, the VISIBLE_IF layout cell attribute only works on the EDIT_BUTTON, VIEW_BUTTON, DELETE_BUTTON and HISTORY_BUTTON within these layouts.</p>
VISIBLE VALUES	<p>This attribute allows you to display individual values within a field which contains a list of values, hiding all others. When you select this attribute, you are presented with a list of all the values within the field, and you select the values you want to make visible. This may be used with great effect on fields such as AREA on an <i>add</i> layout, to constrain a user to only be able to add new issues into specific business areas, and to lock the user out from other business areas.</p> <p>Note that if you configure this attribute, you may not then configure a FIELD_HIDE_VALUES attribute on the same field. This attribute is only supported on fields with a display type of List (including multi-value list, put not popup lists), Radio Button and Tab.</p>
VISIBLE VALUES IF	<p>This attribute is similar to VISIBLE VALUES, but adds the capability to only display the values based upon a logical expression based on other fields within the form.</p>
UPDATE MAIN ISSUE	<p>This attribute only affects the behavior of an EDIT_BUTTON field when it is placed on a related issue display. It has no function or purpose outside of this and will be ignored as an attribute on all other fields and layouts. The purpose of this attribute is to allow control of updates of the current issue on an <i>edit</i> screen when you edit a related issue by clicking on an EDIT_BUTTON in the related issue display. In such circumstances there may be business rules or other logic that triggers when you update the related issue; this logic may update the current issue. Under normal circumstances this would lead to a concurrency error when the user tries to update the current issue after completing the update to the related issue. In such an event, the desired behavior is often to allow the related issue to update the current issue, and allow the user to then update the current issue, but without a warning or error. To support this, there are three possible values for the layout cell attribute. These are applied in the following order:</p> <ul style="list-style-type: none"> • When the user clicks on the EDIT_BUTTON on the related issue, the edit session for the related issue is set up in the current window, replacing the <i>edit</i> screen of the current issue. To achieve this, set the layout cell attribute to a value of UPDATE_MAIN_ISSUE • When the user clicks on the EDIT_BUTTON on the related issue, the edit session for the related issue is set up in a modal window on top of the <i>edit</i> screen of the current issue. To achieve this, the layout cell attribute named EDIT_ISSUES_IN_MODAL_WINDOW must be set to a value of YES. The layout cell attribute should be set to a value of UPDATE MAIN ISSUE

FIELD AGGREGATE EXPRESSION TITLE	X	X		X						
GRIDEDIT BUTTON									X	
HEIGHT	X	X		X					X	X
HELP TEXT	X	X							X	
HIDE VALUES	X	X								
HIDDEN VALUES IF	X	X								
HIGHLIGHT VALUE IF		X		X					X	
HIGHLIGHTED IF	X	X		X						
HOVER VIEW DEFINITION	X	X		X					X	
HTML MODIFIER	X	X		X					X	X
HTML MODIFIER IF	X	X		X					X	X
LABEL TAG	X	X		X	X	X	X		X	X
LABEL TAG IF	X	X		X	X				X	X
LAYOUT SEARCH EXPANDED MODE	X	X								
MAXIMUM FRACTION DIGITS	X	X							X	X
MAXLENGTH	X	X			X					X
MENUBAR ITEM ACTION								X		
MENUBAR ITEM CLASS								X		
MENUBAR ITEM CLASS IF								X		
MENUBAR ITEM ICON								X		
MENUBAR ITEM ICON DISPLAY								X		
MODAL WINDOW									X	
MOST RECENT			X	X			X			
NOT REQUIRED IF	X	X								
RANK										X
READONLY IF	X	X								
REMOVE ANY					X					
REMOVE LABEL NOWRAP	X	X		X	X				X	X
REMOVE VALUE NOWRAP	X	X		X	X				X	X
REMOVE NONE	X	X			X					X
REMOVE SELECT ALL					X					
REPORT MAXIMUM FRACTION DIGITS				X					X	
REQUIRED	X	X								
REQUIRED IF	X	X								
ROW_VISIBLE_IF			X							
SELECTED	X	X								
SIZE	X	X		X	X				X	X
STYLE	X	X		X	X				X	X
STYLE IF	X	X		X	X				X	X
SUPPRESS CLOSE POPUP	X	X								
SUPPRESS VALUE		X	X	X						X
TRANSPOSE LAYOUT										
USER LIST DISPLAY	X	X			X					X
VALIDATE HIDDEN	X	X								

VALUE TAG	X	X		X					X	X
VISIBLE IF	X	X		X	X				X	
VISIBLE VALUES	X	X								
VISIBLE VALUES IF	X	X								
VIEW ISSUE HOVER LAYOUT				X					X	
UPDATE MAIN ISSUE									X	
RID ACT ON CHANGE	X	X								
RID RELATIONSHIP NAME	X	X								
RID GROUP REFERENCE FIELD	X	X								
RID RELATION TYPE	X	X								
RID SORT ORDER	X	X								
RID FILTERS	X	X								
RID PAGE SIZE	X	X								
RID PREHEADER	X	X								
RID PREHEADER ADD BUTTON	X	X								
RID PREHEADER REFRESH BUTTON	X	X								
RID PREHEADER SUBMIT BUTTON	X	X								
RID LINK FIELD NAME	X	X								
RID SINGLE SELECT	X	X								
RID SEARCH FILTER LAYOUT	X	X								
RID THRESHOLD	X	X								
RID TRANSPOSE LAYOUT	X			X						
OMIT RG AUTO POPULATION	X									

The following attributes may only be defined within the data dictionary:

USED IN USER PROFILE
USED IN USER PROFILE SORT ORDER
BUTTON ACTION
RANK
ONCLICK JS
ENCRYPTED

Add & Edit Layouts

Add and *Edit* layouts are configured in every site within every Business Area. These layouts may be configured identically, or may be significantly different. It is often a strategy to begin your site development for any Business Area by creating your *Add* layout, then changing its type to be an *Edit* layout and saving that. From that point they are separately maintained layouts.

A typical *Add* or *Edit* screen layout is composed of these elements:

Submit Insert & Continue Print ExtraView Add Issue ?

Customer

Customer Name <input type="text"/>	Originator Bill Smith
Street Address <input type="text"/>	Contract Number <input type="text"/>
City <input type="text"/>	Contract Date <input type="text"/>
State * None * <input type="text"/>	Renewal Date <input type="text"/>
Zip Code <input type="text"/>	Actual Renewal Date <input type="text"/>
Country United States of America <input type="text"/>	

[Add a New Contact](#) *Customer Contacts*

Description

Comments

Attachments

Thumbnail	File Description	File Name	File Size
+			

Notifications

Generate Email CC Email

Include self on interest list Add users to interest list

Mailing List Bill Smith ;

Menu
bar
Layout

Add
Layout

Embedded
RID
Layout

Embedded
Attachment
Layout

Embedded
Notification
Layout

The layout looks like this within the Design Center:

	Col 1	Col 2	Col 3
Row 1	SHADE_PRE_1		
Row 2	ID Issue #	DATE_CREATED Date Created	TIMESTAMP Last Modified
Row 3	CUST_NAME Customer Name	CUST_LIST Customer Name	ORIGINATOR Originator
Row 4	CUST_ADDRESS Customer Address	CUST_PHONE_NUMBER Phone Number	CUST_CONTRACT_NUM Contract Number
Row 5	CUST_CITY Customer City	CUST_FAX Fax Number	CUST_CONTRACT_SIGN_DATE Contract Date
Row 6	STATE Customer State		CUST_CONTRACT_RENEWAL_DATE Renewal Date
Row 7	CUST_ZIP Customer Zip Code		CUST_CONT_ACT_REN_DATE Actual Renewal Date
Row 8	EV_COUNTRY_NAME Country		
Row 9	LATITUDE Latitude	LONGITUDE Longitude	MAP_RELIABILITY_LEVEL Map Reliability Level
Row 10	LAYOUT.RELATED_ISSUE_DISPLAY Related Issue Display		
Row 11	DESCRIPTION Description		
Row 12	COMMENTS Comments		
Row 13	SHADE_POST_1		
Row 14	LAYOUT.ATTACHMENT_SECTION Attachment Section		
Row 15	LAYOUT.NOTIFICATION_SECTION Notification Section		

Note that the MENUBAR layout is not embedded within the layout and is defined externally. You can see the embedded layouts as they all start with LAYOUT..

Embedded Layouts

Layouts have a type, and many of these types may be embedded within each other. However, some such as the *Add*, *Edit*, *Quicklist* and *Detailed Report* layouts cannot be embedded in other layouts. Typically, new layout types that you create may be embedded within other layouts. For example, if you have many layouts to create that are slightly different, but a significant number of the fields share the same characteristics, you can define a layout and embed it within many other layouts, thereby sharing the configuration and

minimizing the amount of work to configure your site. As well as embedding a layout within another layout, you can define alternate layouts that are rendered at run-time, according to a value of a field on the main layout. For example, you may want to embed different layouts with fields relevant to the collection of data about hardware and software, according to the user's choice of *Hardware*, *Software* or *Documentation*, in a field on the main layout. When the user selects this field, the screen is refreshed, and the appropriate embedded layout will be generated. There are two methods for doing this. First there is the method to embed layouts using the "Layout Visible If" technique. Second there is the "Selected By Layout" method. It is recommended that you use the first technique. The second technique is provided for backwards compatibility. Some general rules need to be observed with embedding layouts within one another:

- You must not place the same field on a layout, and within any layout that is embedded within it. Doing so would lead to unpredictable results and errors. As embedded layouts can be created independently of layouts, and they are interchangeable, this condition cannot be checked by ExtraView prior to execution of the rendering of the screens. When rendering the screens, if ExtraView detects that a field is used more than once over all the screen (including the embedded layouts), then a warning is generated
- You should not place the same field on different embedded layouts of the same type. Fields on embedded layouts are unique across the layout type being used
- It is recommended that any embedded layout that you place on a layout should span all columns of the layout. An embedded layout should never start in any but the first column of a layout. Other placement may work, but there is no guarantee that the layout will render correctly. This is due to limitations of HTML and how different browsers will render complex HTML. You should always test your embedded layouts in all the target browsers that your organization uses
- All the layouts of a single type must be contained within the same Business Area and Project for which the template for the embedded layout is created. For example, if you create a series of embedded layouts all dependent upon the same field for selection, these embedded layouts must all reside in the same Business Area and Project
- An embedded layout should not contain the parent field of an allowed value relationship, if the child field is contained in the outer layout. Both parent and child fields can be in the same layout or the parent can be in the outermost layout with the child in the embedded layout
- With the exception of Related Issue Display layouts, you cannot embed a layout within a *Quicklist* layout
- You cannot embed a layout within a *Related Issue Display* layout
- As a general rule, you should never embed a layout within itself, causing recursion or a condition which will be an infinite loop. ExtraView cannot detect this condition until runtime, and this can cause significant system and behavior problems requiring the restart of the application server.

Embedded Layout Types

- **Simple embedded layouts** - In this instance a layout type that you create is embedded inline within another layout
- **"Visible If" layouts** - Layout types that you create are all embedded within a layout. Each layout is initially hidden with a VISIBLE IF layout cell attribute. This attribute references a driving field, usually a tab or list field such that each of the embedded layouts is made visible one by one, according to the value of the tab or list field
- **"Readonly If" layouts** - These are embedded layouts that are only visible conditionally. Their dependency is based on the value of a field in the parent layout
- **Repeating row layouts** - These layout types must be embedded within another layout. You cannot embed another layout within a repeating row layout
- **Related issue layouts** - These layout types must be embedded within another layout. You cannot embed another layout within a related issue display layout
- **Embedded Report layouts** - Embedded Report layouts allow you to create an empty layout and then point this layout to a report
- **Embedded Menus** - Embedded Menu layouts allow for the creation of horizontal or vertical menus that contain any number of buttons with actions.

"Visible If" Layouts

As an example, you may want three cells on a layout to be displayed according to the value selected in a list box. You may set this up with embedded layouts, or with the layout cell attribute named VISIBLE IF on each of the three cells. A guide to implementing the most effective method is to consider the following:

- If you have several or many fields to make visible, embedded layouts are processed a little faster, resulting in higher performance for the end user
- Once set up, embedded layouts can be re-used on different layouts such as *add* and *edit* screen layouts.

To set up a "Visible If" layout and embed this within another layout, follow these steps:

- Use the **Create and Maintain Layout Types** administration utility to create a new layout type. The usage of the layout should be *Screen*
- Navigate to the **Design Center**, select the user role, business area and project where you will use the embedded layout, and the use the list with the label *Add a new layout for the entire system* to open up a new layout of the type you created in the previous step

- Place the fields onto this new layout within the Design Center. This will become the embedded layout. Save your layout
- Edit the layout (or layouts) within which you wish to embed the layout. If necessary create space for the layout you are going to embed, by creating a blank row. Typically you will also place the layout beneath its driver field. The driver field is the field that will be used to select and make visible, the embedded layout, dependent upon its value
- From the list of layouts in the Design Center, locate the layout you are going to embed, and drag it to its position on the main layout. Extend its width across the main layout, as required
- Now, add a layout cell attribute to the embedded layout. This will be an attribute of the form **VISIBLE IF**. Select the field and its value which will be used to trigger the visibility of the embedded layout
- If you want to embed further layouts, each triggered off a different value in the driver field, you can create a layout type for each of the values of the driver field, embed the layout within the main layout and then use the **VISIBLE IF** attribute to trigger its visibility based on different values of the driver field.

"Readonly If" Layouts

Somewhat similar to Visible If layouts, these are embedded layouts that are configured to display all of their fields in read-only mode, dependent upon the value of a field in the layout. The field that sets the dependency may not be within the embedded layout. Follow the procedure in the preceding section to configure your **READONLY IF** layout, but use the layout cell attribute named **READONLY IF**.

"Selected By" Layouts

This feature allows the administrator to design a series of layouts, which are generated within a global layout such as the *Add* or *Edit Issue* screen. Each of these layouts is based upon the value of a trigger field. For example, you may want to generate a series of fields within a layout, dependent on the category of issue you are adding. Thus, if you want to render a different embedded layout for each of *Software*, *Hardware* and *Documentation*, which are different values of UDF named **ISSUE_TYPE**, with a title of **Issue Type**, then you will choose the **Issue Type** field. When the user selects the value of Issue Type, the embedded layout is refreshed, displaying the layout that is tied to the value of the trigger field. One usability feature is that if you have a form within a browser window that is longer than the height of the window, and you choose a different value for the trigger field, ExtraView will place the new embedded layout to display at the top of the screen, thereby preventing the situation where the new layout may be hidden beneath the bottom of the window. The sequence of administrative operations required to create selectable embedded layouts is as follows:

1. First, decide on the field that is to be used to trigger the rendering of the different embedded layouts. For example, if you want to render a different embedded layout for each of *Software*, *Hardware* and *Documentation*, which are different values of the **Issue Type** field, then you will choose the **Issue Type** field.
2. From the Administration Site Configuration tab, select **Create and Maintain Layout Types** feature. The following screen appears:

Return Print Page Create and Maintain Layout Types

Add Add a new layout type to the database

Filter List
 Select the column to use as a filter for the list. You may click on a letter to produce a list of the items which begin with this character, or you may enter a search pattern, including wildcards (*). The Export button creates a CSV file of the results currently displayed on the screen.

Select filter column for report

or click on a letter **A | C | D | E | H | I | P | R | S | <all> | <none>**

or enter a search expression and click the **Go** button

Name	Title	Usage	Created	Last updated
<input type="button" value="Edit"/> ADD_PROBLEM	Add Issue Screen	Screen	1/1/05 12:00 AM ExtraView	1/1/05 12:00 AM ExtraView
<input type="button" value="Edit"/> EDIT_PROBLEM	Edit Issue Screen	Screen	1/1/05 12:00 AM ExtraView	1/1/05 12:00 AM ExtraView
<input type="button" value="Edit"/> SEARCH_QUICKLIST	Report Layout - Quicklist Report	Report	1/1/05 12:00 AM ExtraView	1/1/05 12:00 AM ExtraView
<input type="button" value="Edit"/> SEARCH_DETAILED	Report Layout - Detailed Report	Report	1/1/05 12:00 AM ExtraView	1/1/05 12:00 AM ExtraView
<input type="button" value="Edit"/> HISTORY	Report Layout - History Report from Edit Screen	Report	1/1/05 12:00 AM ExtraView	1/1/05 12:00 AM ExtraView
<input type="button" value="Edit"/> SEARCH_EXPANDED	Search Filter Layout - Full Search	Search	1/1/05 12:00 AM ExtraView	1/1/05 12:00 AM ExtraView
<input type="button" value="Edit"/> SEARCH_QUICK	Search Filter Layout - Quick Search	Search	1/1/05 12:00 AM ExtraView	1/1/05 12:00 AM ExtraView
<input type="button" value="Edit"/> SUMMARY_REPORT	Report Layout - Summary Report	Report	1/1/05 12:00 AM ExtraView	1/1/05 12:00 AM ExtraView
<input type="button" value="Edit"/> RELEASE	Repeating Row Record	Screen	1/1/05 12:00 AM ExtraView	1/1/05 12:00 AM ExtraView
<input type="button" value="Edit"/> SIMPLE_COL_SELECT	Report Layout Template for Column Reports	Report	1/1/05 12:00 AM ExtraView	1/1/05 12:00 AM ExtraView
<input type="button" value="Edit"/> EMAIL_FULL	Report Layout - Full Email Notification Layout	Report	1/1/05 12:00 AM ExtraView	1/1/05 12:00 AM ExtraView
<input type="button" value="Edit"/> EMAIL_BRIEF	Report Layout - Email Brief Notification Layout	Report	1/1/05 12:00 AM ExtraView	1/1/05 12:00 AM ExtraView
<input type="button" value="Edit"/> SEARCH_EMAIL	Search Filter Layout - Email Filter for Ad Hoc Email from Edit screen	Search	1/1/05 12:00 AM ExtraView	1/1/05 12:00 AM ExtraView
<input type="button" value="Edit"/> SEARCH_RGFILTER	Relationship Group Filter	Screen	1/1/05 12:00 AM ExtraView	1/1/05 12:00 AM ExtraView
<input type="button" value="Edit"/> SEARCH_CHART_REPORT	Search Filter Layout - Charts	Search	1/1/05 12:00 AM ExtraView	1/1/05 12:00 AM ExtraView
<input type="button" value="Edit"/> DEV_SELECT_TABS	Select tabs for bugs screen	Screen	1/1/05 12:00 AM	1/1/05 12:00 AM

Layout Types

- Press the button to add a new layout type to ExtraView. You must name this layout with the fixed name of the trigger field. In our example, this is **ISSUE_TYPE**. The title should be **Issue Type** and the type must be **Screen**
- Now navigate to the **Design Center**
- Navigate to the Business Area and if appropriate, the Project within which you want to use the embedded layouts
- Next, select the layout type you just created from the **Add a new layout for the entire system** select list. Once again, in our example, this is named **Issue Type**
- Give this new layout a title and a description. This layout is only used as a reference to create the different embedded layouts. You do not need to add any fields to this layout. Simply **Save** this layout. This now serves as a template for each embedded layout you create. Any fields that are contained in this layout will be propagated to the selectable embedded layouts created in the remaining steps of this procedure
- Return** to the initial **Design Center** screen
- If you are adding the embedded layouts to the Add screen, edit the appropriate *add* screen. Place the **Issue Type** field on the main grid of the layout, if it is not already there
- Now place the embedded layout on the main grid, by dragging it from the list of Layouts. In our example, the layout is named **LAYOUT.ISSUE_TYPE**. You should be sure to give the embedded layout a suitable *colspan* within the layout. ExtraView will suggest that it can do this for you at this step, creating an embedded layout that will span the width of the entire layout
- Step 12 will be repeated for each value of the **Issue Type** field (in our example, *Software*, *Hardware* and *Documentation*). We will be creating and saving an embedded layout for each of these values, from the template created in step 7
- Make sure the embedded layout is selected on the main grid and click on the **New** layout cell attribute button. Add a layout cell attribute of **LAYOUT_SELECTED**, for the field named **Issue Type** and then select the appropriate value for each required embedded layout (often there is an embedded layout for every value of **Issue Type**, but that is not necessary). For example, if you want an embedded layout for the *Software* value of **Issue Type**, choose *Software* and Return to the layout
- Save** the layout and **Return**. You should see the new layout in the list of layouts, with the **Select by field** containing the title of **Issue Type**, and the **Select by Value** containing the values that were specified in the *SELECTED* attributes
- You may repeat steps 12 and 13 for other values as your needs change (or you add values to the selector UDF) in the future. From the Design Center you can directly proceed to editing the layout cell attribute of the **LAYOUT.ISSUE_TYPE** field, add the selected value, and then **Save** the layout. The new embedded layout will be automatically created for each new value added to the **LAYOUT_SELECTED** attributes
- You can delete selectable embedded layouts as you would delete any other layout. However, you should not delete the "template" layout created in step 7, or you will not be able to add new selectable embedded layouts of that type.

Positioning Embedded Layouts

Within ExtraView, a design decision was made to always align the columns of an embedded layout with the columns of the layout that embeds it. This provides the most pleasing presentation of fields to a user. However, the limitations of HTML are such that this works precisely when an embedded layout is defined to start in the first column of the layout within which it is created. If the embedded layout has multiple rows (and most do), then the second and subsequent rows will always be rendered from the first column of the second and subsequent row, which may cause a misalignment. To prevent this, set a *rowspan* on the field at the left of the embedded layout, such that it spans one row greater than the number of rows in the embedded layout. To see this effect, see the following two layouts and the differing rendering of the results:

Layout 1

Insert Delete Row 7	COMMENTS Comments		
Insert Delete Row 8	CONTACT Contact	TEST_EMBEDDED_LAYOUT Embedded Layout	
Insert Delete Row 9	OWNER Owner	LAYOUT.TEST_EMBEDDED_LAYOUT	

Layout definition with embedded layout

Note that this layout leads to the wrong rendering of the embedded layout, where the embedded layout titles appear correctly, but the data rows are offset to the leftmost column.

Comments

Contact *None*

Owner *None*

Tab 1 Tab 2 tab 3

Release Found	Release From	Release Assigned To	Release Status
None	*None*	*None*	*None*

Add another Release

Attachments Add Description Path File Name Owner Size Content Type Updated

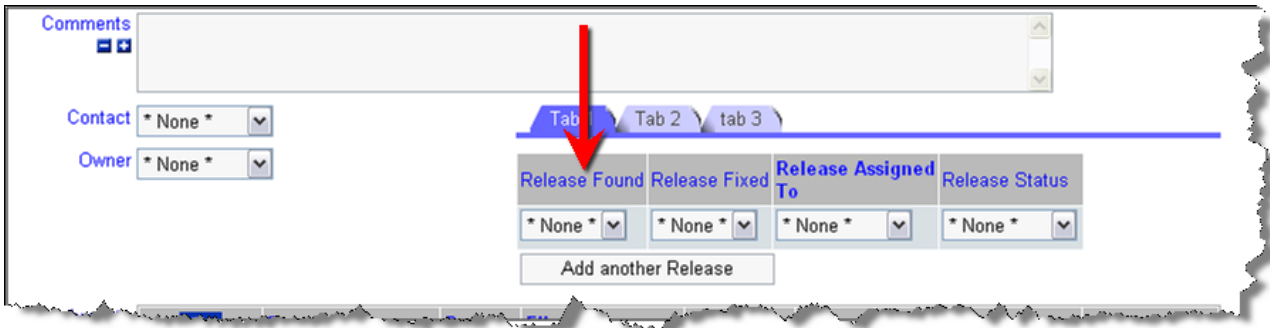
Rendering of layout

Layout 2

Insert Delete Row 7	COMMENTS Comments		
Insert Delete Row 8	CONTACT Contact	TEST_EMBEDDED_LAYOUT Embedded Layout	
Insert Delete Row 9	OWNER Owner	LAYOUT.TEST_EMBEDDED_LAYOUT	
Insert Delete Row 10			

Layout definition with padded field in first column

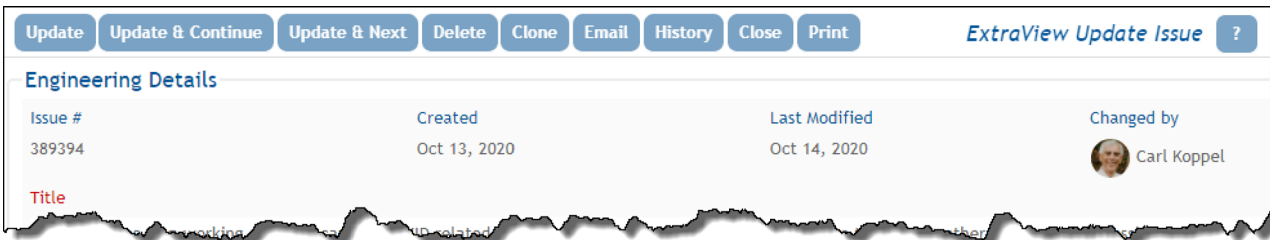
In this layout, not that the OWNER field was set to have a *rowspan* of 2. This corrects the position of the embedded layout rows so they align correctly.



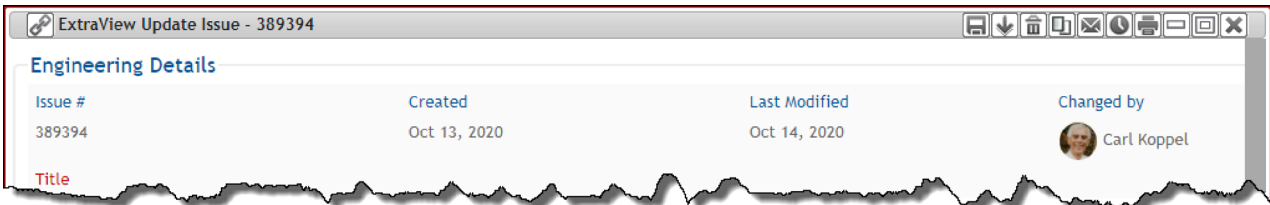
Rendering of layout

Menubar Layouts & Drop-Down Menus

Menubar layouts achieve two purposes. First, they provide the action buttons on the menubar of *add* and *edit* screens. Secondly they allow the creation of a drop-down menu stored within a single cell within an *add* or *edit* screen. Each installation has a default menubar layout for the *add* layout - the `MENUBAR_LAYOUT_ADD` layout, and for the *edit* layout - the `MENUBAR_LAYOUT_EDIT` layout. In the normal way, you can either inherit these layouts for different Business Areas and Projects, or you can create these layouts within any Business Area or Project. You create your own layout for drop-down menus by creating a layout type and then embedding this in the *add* or *edit* layouts.



The above image shows the inbuilt layout for the standard interface. If you move into a workspace, this menubar is rendered like this:



The menubar buttons are placed on a layout, in exactly the same manner as for all other layouts. For the above menubar, the layout looks like the following image. Note that menubar layouts are automatically placed at the top of the *add* and *edit* screens and do not need to be embedded within the *add* and *edit* layouts:



Like all other layouts, button fields may be rearranged, deleted and added to the menubar layouts. Layout cell attributes may also be applied to the buttons. The inbuilt buttons available, and defined in the data dictionary are:

Field Name	Title	Permission Key	Purpose
MENUBAR_ITEM_CLONE	Clone	PR_RESOLUTION.CLONE	Copy all the fields in this item to a new item
MENUBAR_ITEM_CLOSE	Close		Exit and discard any changes made
MENUBAR_ITEM_DELETE	Delete	PR_RESOLUTION.DELETE_BUTTON	Permanently delete this item from the database
MENUBAR_ITEM_EMAIL	Email	PR_RESOLUTION.EMAIL_BUTTON	Create and send an email using the contents of this item

MENUBAR_ITEM_HISTORY	History	PR_RESOLUTION. HISTORY_BUTTON	View the historic audit trail for this item
MENUBAR_ITEM_INSERT_CONT	Insert & Continue	PR_ADD_PROBLEM. SAVE_AND_CONT_BUTTON	Add this item and continue editing
MENUBAR_ITEM_PRINT	Print		Print the current page
MENUBAR_ITEM_SUBMIT	Submit	MENU.ADD_PROBLEM	Add to database
MENUBAR_ITEM_UPDATE	Update	PR_RESOLUTION. EDIT_BUTTON	Update this item and exit from the screen
MENUBAR_ITEM_UPDATE_CONT	Update & Continue	PR_RESOLUTION. SAVE_AND_CONT_BUTTON	Update this item and continue editing. Note that you can add an attribute of PAGE, AJAX or DEFAULT to this data dictionary entry to control page refreshes when this button is clicked
MENUBAR_ITEM_UPDATE_NEXT	Update & Next	PR_RESOLUTION. ALLOW_EDIT_NEXT_PREVIOUS	Update this item and open next one for editing
MENUBAR_ITEM_UPDATE_PREV	Update & Prev	PR_RESOLUTION. ALLOW_EDIT_NEXT_PREVIOUS	Update this item and open previous one for editing

Each menubar button created may have an optional icon that is displayed within the button. These are selected within the data dictionary edit screen for the button. You may elect to display the text only, the text plus icon or the icon only.

Note that most of these buttons also have permission keys, allowing you to turn them on and off on any layout, on a role-based basis.

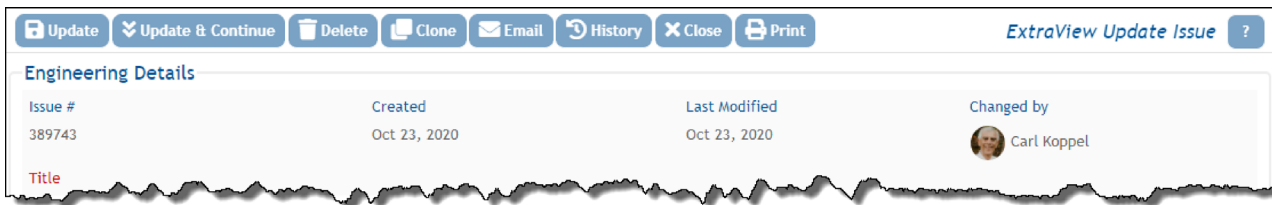
You may not alter the purpose and action of any of the inbuilt buttons, although you can apply any of the available layout cell attributes. However, you may create additional buttons within the data dictionary and place these on their menubar layouts and apply any one of a large number of actions. These are created as fields within the **Buttons** tab of the data dictionary, and are given a display type of **MenuBar Item**.

The screenshot shows the configuration interface for a data dictionary entry. At the top, there are navigation buttons: 'Update', 'Delete', 'Cancel', and 'Print Page'. On the right, there is a link 'Change a Data Dictionary Entry' with a help icon. The main configuration area includes:

- Fixed name:** MENUBAR_ITEM_HISTORY
- Title to display:** History (with a 'Localize' button)
- Display type:** MenuBar Item (dropdown menu)
- Tabs:** FIELD PROPERTIES (selected), GLOBAL ATTRIBUTES, PERMISSIONS, WHERE USED
- Icon:** fab fa-fas fa-history (with a 'Browse the Icon Library' button)
- Icon Display:** Icon and Text (dropdown menu)
- Workspace Image:** SSICON_PATHSS/ws-history.png
- Action:** Action Type (dropdown menu) set to ExtraView History
- Help Text:** View the historic audit trail for this item (with a 'Localize' button)

To choose the icon to display with a menu button, click the **Browse the Icon Library** button, and select from the library of approximately 1,500 available icons.

If you elect to display **Icon and Text**, the original screen becomes this:



Layout Cell Attributes

Many layout cell attributes may be applied to menubar buttons, to style and control their functionality. The most likely that you will use are:

Attribute	Global Use	Purpose
ALT TITLE IF		You can use this attribute to alter the title on the button according to your workflow
MENUBAR ITEM CLASS	Y	This attribute allows you to define your own CSS class to style the button. This is most useful if you want to style many buttons the same, and to define the style once. The CSS class name you use may be defined within the user_stylesheet.css file
STYLE	Y	This allows you to define the CSS styling for the button
STYLE IF		This attribute allows you to alter the styling of the button according to your workflow
VISIBLE IF		This attribute allows you to alter the visibility of the button according to your workflow
WS IMAGE		This attribute allows you to define a workspace image for the button

Menubar Buttons within *Add & Edit* Screens

There is no requirement to place a menubar button on the menubar. You can place any of the buttons at any location within *Add* and *Edit* layouts. However, the buttons should then be removed from the menubar, to avoid the duplication of a menu function.

Menubar Buttons on Related Issue Display Pre-Headers

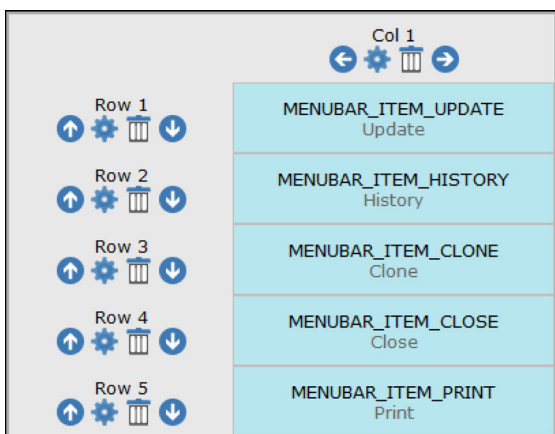
Menubar buttons can be placed on the pre-headers of Related Issue Displays.

Creating Drop-Down Menus

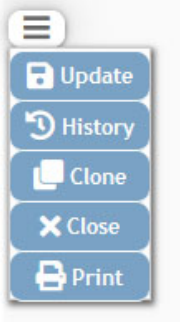
The examples in this section all use CSS styles applied on top of the **Light grey color navigation bar with blue tones and icons user interface theme**. The CSS will vary for other themes. It is suggested that the administrator be familiar with CSS or that they reach out to the ExtraView Customer Support team for assistance.

Drop-down menus appear as a single button on the screen. The buttons within the drop-down menu can be any of the buttons defined with the **Menubar Item** display type. A drop-down menu appears like this, once the button is clicked, and the user can select any of the items in the menu with a single click:

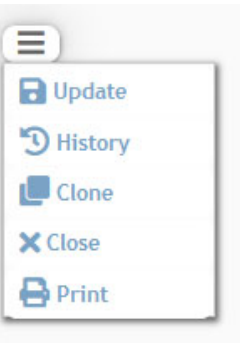
The principles of creating a drop-down menu are to first create a layout, using the administration utility **Create and Maintain Layout Types**. The layout type that you use to create drop-down menus is named **Layout Buttons**. This layout is embedded within an *add* or *edit* layout, or an embedded layout within either of these. In the normal manner, you place the menu item fields within the embedded layout you created with the layout type of **Layout Buttons**. This layout used in the following example is:



This layout creates the following drop-down menu. At this point the rendered layout adopts the same style as buttons on the menubar. This style varies according to the user interface theme, but may look like this:



After applying a layout element attribute of STYLE with a value of **color:#79a2c4 !important; background-color: #fff !important; width:125px; text-align:left** to each button, the drop-down menu may look like this:

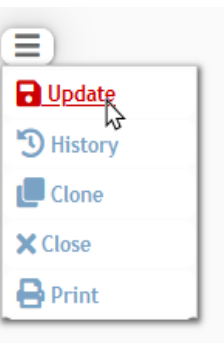


Note the use of the CSS **!important** attribute to override the built-in color and background color.

Given that you have a number of buttons to style identically, and that you may want to go further with mouse hover effects, it can be useful to create a CSS class and enter this into the user_stylesheet file as an alternative to using the STYLE layout cell attribute. To see the underlying CSS that you want to modify / override, look in the stylesheets folder of your installation and then within the folder that corresponds to your existing theme. The CSS class you are modifying / overriding is named menuButton and the corresponding menuButton: hover entry. For example, for each menu item, add a class of MyMenuButtons. Within the user_stylesheet file enter this CSS:

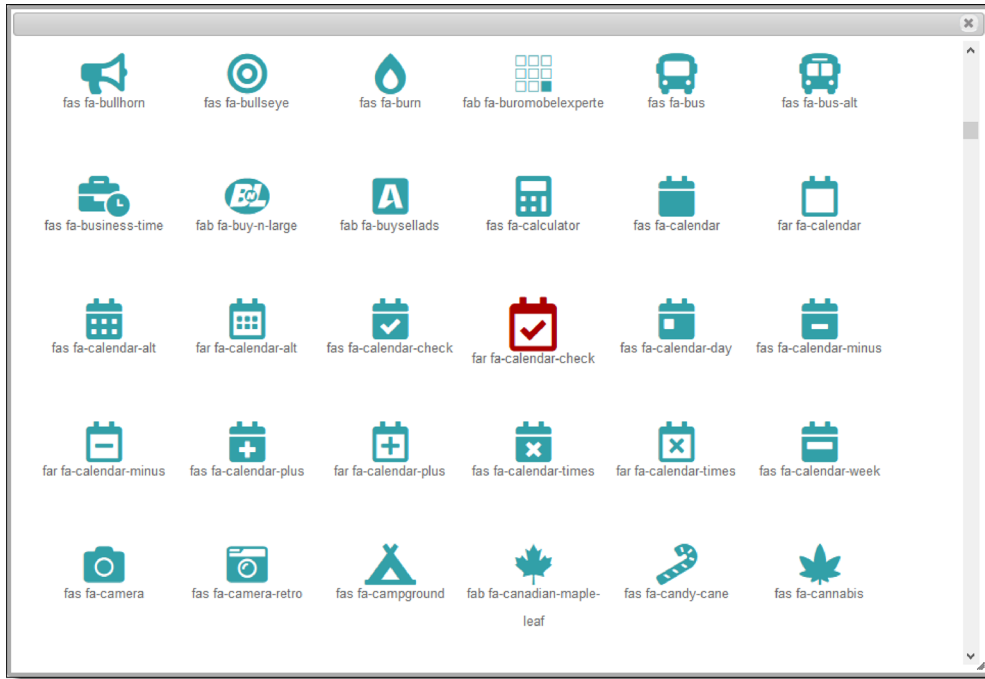
```
.MyMenuButtons {
  color: #79a2c4 !important;
  background-color: #fff !important;
  width: 125px;
  text-align: left;
}
.MyMenuButtons: hover {
  text-decoration: underline;
  color: #cc0000 !important;
  box-shadow: none !important;
}
```

When you add a MENU_ITEM_CLASS with a value of MyMenuButtons to each of the button fields, this renders a menu like the following, with the text turning a red color when the user mouses over the entry.



Creating Your Own Menubar Buttons

As stated above, you use the **Buttons** tab within the data dictionary to create your own menubar buttons. They are given a fixed name, a title and then the display type of **Menubar Item**. If you would like an icon to accompany the display of the button, click the **Browse the Icon Library** button to select from the library of about 1,500 icon images. As described below, you may want to create a different icon for workspaces.



The action for any menubar icon that you create allows you to invoke any of the standard built-in button functions, or to define your own action. The actions you define leads to additional prompts to gather the information needed to complete the action when the button is clicked.

Action	Purpose
Open URL	This action requires the entry of a URL plus any parameters required to complete the action. The URL will target a new browser tab for its output
Run Report	You can select the report to run from any shared report previously saved. You can select the output type and the page size for browser output. Again, the action will target a new browser tab
Custom Action	Custom actions allow you to execute or to call a JavaScript function. This allows for any further processing to take place, either within the JavaScript or by calling the server with the <code>userSubmitChangeAjax</code> function. Any inbuilt JavaScript function may be called. In addition, there are a number of special support JavaScript methods that are useful. See here for details.
ExtraView Clone	The ExtraView Clone function is emulated with this action
ExtraView Close	The ExtraView Close function is emulated with this action
ExtraView Delete	The ExtraView Delete function is emulated with this action
ExtraView Email	The ExtraView ad-hoc Email function is emulated with this action
ExtraView History	The ExtraView History function is emulated with this action
ExtraView Insert & Continue	The ExtraView Insert & Continue function is emulated with this action
ExtraView Print Page	The ExtraView Print function is emulated with this action
ExtraView Refresh	The ExtraView Refresh Button is emulated with this action
ExtraView Related Issue Display	<p>This action is configured differently than other actions in that a button is created that is placed on each row within a Related Issue Display, as opposed to placing buttons on the header of the Related Issue Display. Buttons created with this action call a JavaScript function that can refer to the specific row (issue) within the Related Issue Display and link this row to an action within the parent issue.</p> <p>Example 1 - Displaying the Results of a Search within an <i>Add</i> or <i>Edit</i> Screen</p> <p>We might want the end user to have a button on each row that displays the results of a search within an <i>add</i> or <i>edit</i> screen. When the button on a result row is clicked, the issue on that row is automatically linked to the parent record. This can be a more intuitive interface than defining a single button on the header of the Related Issue Display and having the user check all issues to be linked before clicking another button on the header to relate all the selected issues. This is accomplished by defining a menubar button with a custom action of:</p>

```
window.doRGSubmit('$$LAYOUT_ID$$', 'LINK_FIELD_NAME', '$$ID$$$');
```

- The call to `window.doRGSubmit` uses ExtraView's inbuilt function that relates child issues to the current parent issue
- `$$LAYOUT_ID$$` is a replacement variable which is replaced at runtime with the name of the layout on which the button resides
- `LINK_FIELD_NAME` is the RID LINK FIELD NAME that connects the parent to the child issue
- `$$ID$$` is a replacement variable which is replaced at runtime with the ID of the issue on the row of the Related Issue Display that is clicked.

Example 2 - Execute an Action to Update an Issue on the Current Row of the RID

Another example is to place a button on the Related Issue Display which executes an action to update the issue on the row of the Related Issue Display. For example, you might want an action button that, when pressed, alters the **STATUS** of the issue to *Closed*. Let's say the menubar button is named `MENU_UPDATE_STATUS`. It will have an **Action Type** of **ExtraView Related Issue Display** and a **Custom Action** of:

```
window.doGridEditRIDRefresh('$$LAYOUT_ID$$');
```

The button field is placed on the Related Issue Display layout. The pressing of this button on the row of the RID causes a business rule to trigger, thereby updating the issue. When the user clicks the button, the action replaces `$$LAYOUT_ID$$` with the name of the current layout, and the business rule picks up the change. Your business rule might be:

```
<== preupdate ==>
if (PROJECT = 'Actions' && MENU_UPDATE_STATUS.{changed} {
  STATUS 'Closed';
}
```

Given this update is on a single row of the Related Issue Display, you might want to communicate this action to the parent record via a subsequent rule:

```
<== postupdate ==>
## use the childActions link to let the parent
## know that at least one child exists
if (PROJECT='Actions' && (childActions).ID.{is not null}) {
  {UPDATE: childActions CHILDREN_EXIST = 'YES'}
}
# Define the link for child actions to the parent issue
<== link childActions ==> RG(RG_NAME = RELATED_RESULTS, RG_TYPE = PARENTS)
```

Example 3 - Copying Selected Attachments to Selected Child Issues

This example shows how a button placed on the pre-header of a Related Issue Display can copy selected attachments from the current parent issue to child issues which are selected on each row of the Related Issue Display.

A Data Dictionary entry created as a **User Defined Field** with a display type of Text Field. Let's say this is named `CURRENT_RID_ID`. This field is placed on the main *edit* screen layout and may be hidden.

Now, create a menubar button within the **Labels / Buttons** section of the Data Dictionary. For our example this is named `COPY_ATTACHMENTS`. This field will have an **Action Type** of **ExtraView Related Issue Display** and a **Custom Action** of:

```
window.doRGSubmit('$$LAYOUT_ID$$', 'CURRENT_RID_ID', '$$ID$$$');
```

This button field is placed on the Related Issue Display layout. To trigger the copying of selected attachments on the parent issue, when the button on the Related Issue Display is clicked, create a business rule similar to the following:

```
<== onchange ==>
## use a link named parentToChldAttachment to
## copy selected attachments to a child issue
if (PROJECT='Actions' && (CURRENT_RID_ID.{changed}) {
  {UPDATE: parentToChldAttachment
    SHORT_DESCR = 'Attachments were copied from a parent issue';
    ATTACHMENT.{selected};
  }
}
```

	<pre> } # Define the link that copies attachments to a child issue <== link parentToChldAttachment ==> ID = CURRENT_RID_ID </pre>
ExtraView Submit	The ExtraView Submit function is emulated with this action
ExtraView Update & Prev	The ExtraView Update & Prev function is emulated with this action
ExtraView Update	The ExtraView Update function is emulated with this action
ExtraView Update & Continue	The ExtraView Update & Continue function is emulated with this action
ExtraView Update & Next	The ExtraView Update & Next function is emulated with this action

Menu Buttons and Business Rules

The most common purpose in defining your own menu button is to be able to execute some Business Rules when the user clicks the button. As an example, you may want to set the value of several fields when the user clicks a button they have defined. This is easily achieved as follows:

- Create the button in the data dictionary, or from within a layout in the Design Center. For this example, the button is named MY_BUTTON. You do not need to select an **Action Type**
- Add the field to a layout
- Create a Business Rule within the Area where the layout resides. This will look like:

```

<== onchange ==>
if (MY_BUTTON.{changed}) {
  PRODUCT_NAME = 'Tracker';
  MODULE = 'API';
}

```

- When the user clicks the button, the two fields will have their values set to those in the rule.

Another use case might be that when a user clicks the **Update** button on the menubar, that they want to execute some additional validation before the issue is updated:

- Create the button in the data dictionary. For this example, the button is named MY_BUTTON. You do not need to select an **Action Type**
- Add the field to a layout
- Create a Business Rule within the Area where the layout resides. This will look like:

```

<== preupdate ==>
if (MENUBAR_ITEM_UPDATE.{changed} and PRODUCT_NAME != 'Tracker') {
  {STOP: Ouch! You have selected the wrong product}
}

```

- If the product name is not **Tracker** when the user updates the issue, they will see the error message and the update is cancelled.

Business Rules on button fields only work within `onchange` and `preupdate` directives.

Menu Buttons that Run Reports

Menu buttons that use **Run Report** as an Action Type have some special properties. First and foremost, you can use a filter with *** Ask at Runtime *** to pass into the report filters from field values on the current *add / edit* screen. For example, if you set a filter of **PRIORITY = * Ask at Runtime *** within the report then, when the value of the **PRIORITY** field on the current screen is **P 3** and the user clicks the button, the report to be run will use the value of **P 3**. At the same time, the properties of the button can be used to set the output type of the report. Note that not all output types are valid for all report types.

Menu Buttons with Custom Actions

Custom actions are used to trigger code. This can be custom code in Java or JavaScript. The entry is always to a JavaScript function and this JavaScript function may execute an Ajax call to the server.

- JavaScript can be contained within the data dictionary by entering the code into the **Custom Action** field after selecting the Action Type of **Custom Action**. For example, to simply set an alert when the button is clicked, you might enter something like this:

```

javascript:alert('You clicked the custom button');

```

- To execute a custom JavaScript function within the UserJavaScript.js file, you might enter something like this:

Workspace Considerations

The inbuilt workspace already utilizes icons (without text). These icons are defined in the data dictionary edit screen for each button, at the Workspace Image entry on the screen. A path pointing to \$\$ICON_PATH\$\$ allows ExtraView to select the appropriate built-in icons from the appropriate user interface theme. Icons are not provided for new menubar buttons that you create, but these are easily created. The specifications for large workspace icons is that they should be 23 pixels wide and 20 pixels high. For small workspace icons they should be 18 pixels by 16 pixels. They should have a transparent background and have 2 pixel rounded border with a color of #666666. As a shortcut, you can select one of the icons provided in the base theme you are using, edit this and then save it to a location. The location of your icons should be outside the ExtraView installation, but accessible to the application. You may enter the path to the image in the field **Workspace Image**. Of course, you can also point to an existing image within the base installation with your own menubar button that you can create if you do not want to create an image of your own.

Repeating Row Layouts

The basic principal of the repeating row layout is that it provides a repeating block of fields, where each row in the block can be added by the user at runtime, or added by business rules, to add additional field values on the screen. For example, you may want to have a row of fields that refer to a sub-issue, assigning part of the issue to an individual. You can create as many rows as needed, to assign different parts of the issue to different people. Each of these may have a field named RELEASE_STATUS, which can be used to follow the workflow you create.

Note: All layout types to be used as repeating row layouts within screen forms must be created as a repeating row layout type. All fields placed on repeating row layouts must have been created in the data dictionary with the **Field Belongs To** and must have the attribute of *Repeating Row records*.

You may embed repeating row layouts within an ADD_PROBLEM, EDIT_PROBLEM, DETAILED_REPORT, EMAIL_FULL, or HISTORY layout. You may also embed a repeating row layout within another layout which is itself to be embedded within one of these layouts.

You can also create UDF's that are attached to the repeating records, as opposed to being added to the main issue record. Care should be taken when doing this. For example, it is problematic for users and for reporting to add field display types such as Log Area to each line of a repeating record. Log Area fields are therefore not supported on repeating record layouts. The section on the Data Dictionary describes how to set up UDF's, including UDF's attached to repeating records.

Note: There is also an important limitation in that you may not place the same field on multiple repeating row layouts. ExtraView cannot differentiate between these fields and incorrect data would be stored if you configured a system that had the same field appear within different repeating row layouts. The design center cannot distinguish this when you are building each repeating row layout, so take care to only use repeating row fields within a single repeating row layout.

At the same time as this limitation, note that if you move a field defined as a repeating row field from within one repeating row layout, to a different layout, the data entered by end users does not follow the field. The data is stored with a connection to the repeating row layout as well as a connection to the field. You may move the field, but data previously associated with the field will not be visible. It is a better practice on a system that already contains data, to create a new field for the new layout, and remove the field from the old layout. In this way any historic values accumulated for the field will still be available.

Permission Keys

The following keys exist for both **PR_ADD_PROBLEM** and **PR_RESOLUTION**, having their effect on the *Add* screen and the *Edit* screen respectively.

Key	Purpose
RELEASE	This permission key controls access to all the repeating row layouts that appear within the <i>Add</i> screen and the <i>Edit</i> screens. Giving this key read and write permission for a role enables all the repeating row layouts that appear
ALLOW_ADD_REPEAT_RECORDS	This controls the visibility of the <i>Add Another xxx</i> button on the screen. The <i>xxx</i> text is determined by the title to the data dictionary field named RELEASE

Creating and Using a Repeating Row Layout

- Each repeating row that appears on a screen to an end user must have a layout type defined, and then the defined layout must be completed with fields. Finally, the defined layout is embedded on the layout which appears to the end user
- Define the Layout type
 - First, create the layout type for the repeating row. Click on **Create and Maintain Layout Types** from the Administration menu, under the **Site Configuration** tab
 - Complete the information required for the layout type, including the repeating row section. When creating a new repeating row type, it is usually convenient to choose the same name and title as the main layout type

Creating a Repeating Row Layout

Note that when you create a layout type, a field with the same name is created within the **Label** of the data dictionary. If you need to alter the title of the repeating row display that appears on **Report** usage layouts, update this within the data dictionary

- Place fields onto the layout type
 - You may either create a new repeating row using the layout you just created, or utilize an existing one. Use the **Add a new layout for the entire system** entry within the Design Center to add the new layout type to your current business area, project and role
 - Add fields to the layout, using the layout editor features. An example might be:

Add Release Layout

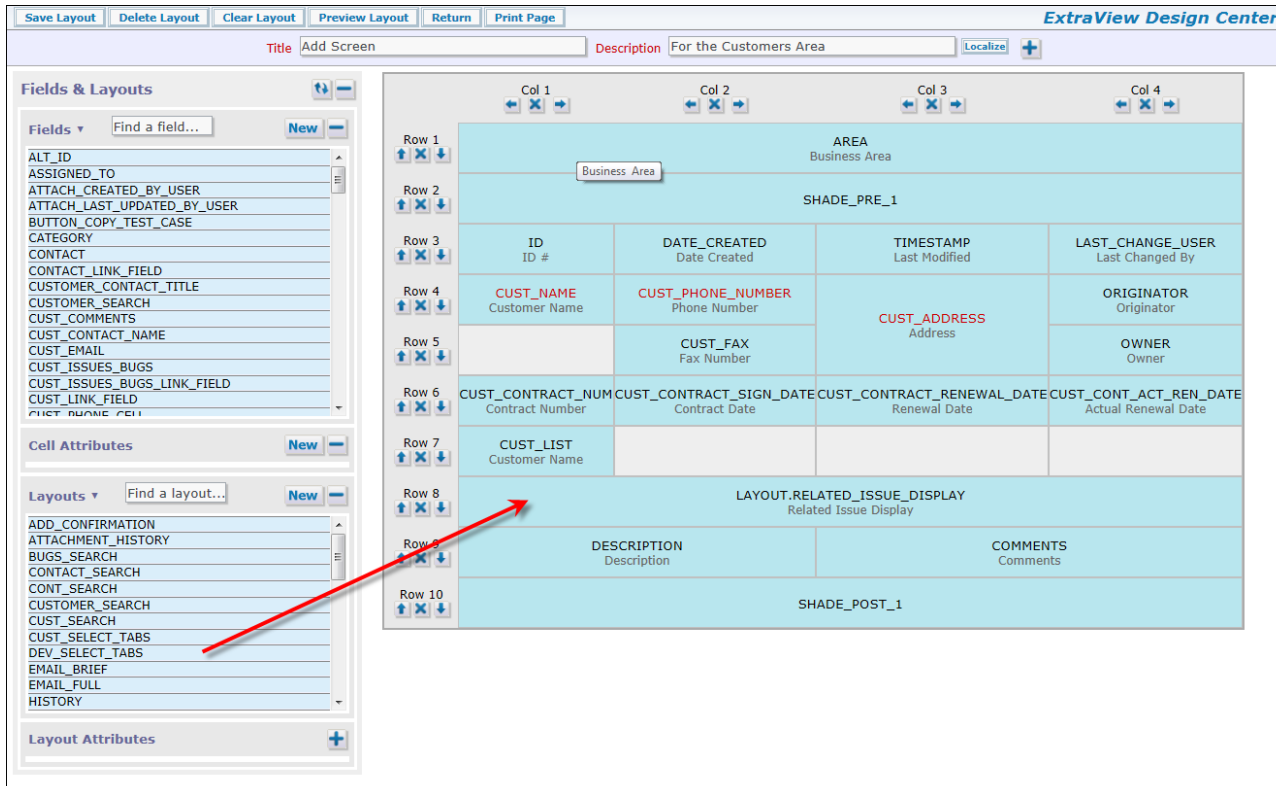
The inbuilt fields that can be added are taken from the following list. Note that these fields may only be placed on a single repeating row layout.

- RELEASE_FOUND
- RELEASE_FIXED
- RELEASE_ASSIGNED_TO
- RELEASE_OWNER
- RELEASE_PRIORITY

- f. RELEASE_SEVERITY_LEVEL
- g. RELEASE_STATUS – note that this field obeys the workflow rules that you set up with the workflow status rules
- h. RELEASE_OWNER
- i. Any UDF that you have created, which is of the repeating record type. Note that a UDF can only be placed on a single repeating row layout, while the above fields can be placed on any number of repeating row layouts.

5. Add the Repeating Record Layout to Appropriate Screens

1. Navigate to the Design Center
2. Select the repeating row layout from the list of layouts by clicking on its name
3. Drag the layout to the place within the layout where you would like to see the fields
4. Save your changes and view your results (the repeating row layout is embedded within a layout).



Design Center screen

The Inbuilt RELEASE Repeating Record

Repeating records such as the inbuilt *Release* layout are not designed to be rendered as individual screens, but designed to be embedded within other layouts. This allows you to create a system that either allows you to have issues that can, for example, have multiple release records within each issue. Different layouts can be designed that can be embedded within both the Add and Edit screens if desired.

You should be aware that you should not create recursion by embedding a layout within itself. Note that if you require a system where you require a single repeating row record (e.g. there is only one release found and one release fixed for each issue) then you should not use a repeating row record.

The inbuilt repeating record named **RELEASE** contains fields with the following names and default screen titles:

RELEASE_FOUND	Version Found
RELEASE_FIXED	Version Fixed
RELEASE_SEVERITY_LEVEL	Severity Level
RELEASE_PRIORITY	Priority
RELEASE_STATUS	Status
RELEASE_OWNER	Owner
RELEASE_ASSIGNED_TO	Assigned To
RELEASE_RESOLUTION	Resolution

Each of these fields is protected with a security permission key, one for the *add* screen and one for the *edit* and *query* screens. These are manipulated in the standard way, as explained in the section named **Grant Security Permissions**.

There is a security permission key that allows you to control the presence or absence of a delete checkbox on the repeating row. This is named PR_RESOLUTION.PROBLEM_RELEASE_DELETE. This key controls the presence of a check box on a repeating row record, that allows the user to delete a complete repeating row. Write access is needed to control the checkbox.

Note: There are two security permission keys, named PR_ADD_PROBLEM.RELEASE and PR_RESOLUTION.RELEASE. These keys control the presence of the entire repeating record, and switch the entire structure on or off for an individual user role. To turn on or off access to the whole repeating record, use the *write* privilege.

Note: There are two security permission keys named PR_ADD_PROBLEM.ALLOW_ADD_REPEAT_RECORDS and PR_RESOLUTION.ALLOW_ADD_REPEAT_RECORDS that control the visibility of the **Add another xxxxxx** button beneath the repeating rows on *add* and *edit* screen layouts. You can remove the button to stop users in some roles being able to add additional repeating rows, but have users in different roles being allowed to add the repeating rows. The **xxxxxx** is the title of the data dictionary field named RELEASE. For example, if you provide a title of **issue** to the field, then the button is named **Add another issue**.

Unique and non-Unique Repeating Rows

Differing purposes may require you to implement repeating row records which either have or do not have a unique key field. There are two parts to configuring this capability. First, in the Workflow behavior setting screen, use the ENFORCE_UNIQUE_RELEASES setting to switch on the capability of enforcing a unique key field. Second, you must place the field named RELEASE_FOUND on the repeating row record. This normally has a display type of LIST, although TAB and POPUP are also supported. You can re-title the field in the data dictionary to any suitable title you require for your installation. Also, note that the RELEASE_FOUND and the RELEASE_FIXED fields are the child fields where the PRODUCT_NAME field is the parent. This means that if you have the RELEASE_FOUND or RELEASE_FIXED fields on a repeating row record, then you must have the parent PRODUCT_NAME field on the add and edit screens that contain the repeating row record.

Repeating Rows & Workflow Status Change Rules

The ExtraView Status Change Rules features work with the inbuilt RELEASE_STATUS field. The RELEASE_STATUS field is treated the same as the inbuilt STATUS field with Status Change Rules. One aspect of this is that you may have configured the STATUS field to use Status Change Rules, but you are not placing the RELEASE_STATUS field on the RELEASE layout described on this page. In this case, ExtraView still needs to be able to handle the * **None** * value for the missing RELEASE_STATUS field. To accommodate this, configure the Status Change Rules to accept a * **None** * value, i.e. it is a legitimate update to allow the status of the issue to be changed to a null value, for the appropriate range of Business Areas, Projects and Roles that are configured.

Repeating Rows & Custom Code

There are occasions when working with repeating rows that it is useful to know which row you are targeting with an event. For example, you may have a popup field that returns a value to a specific field on a repeating row. You will need to know which row to target with the return value. To make this task simpler, there is a JavaScript function available on *add* and *edit* layouts that you can call from an HTML modifier to any cell. This function is named `getRowNumber` and is used in this way:

```
var rowNum = getRowNumber(this, this.form);
```

This function returns the following in `rowNum`:

- 1 if the field is a singleton repeating row
- 0 – nn if the field is in a repeating row with 2 or more rows, where nn indicates which row the field is in.

Field Limitations on Repeating Row Layouts

Repeating row layouts do not support –

- Log Area display type fields
- Multi-value display type fields
- Any data dictionary field that does not have the **Field belongs to** value set to **Repeating Records**
- Any one field cannot be placed on multiple repeating row layouts, whether it is an inbuilt or user defined field. Take care when configuring your layouts as no error can be detected at design time
- HTML Area display type fields are not supported on repeating rows.

A Note on how Repeating Rows are Managed

As far as possible, repeating rows are added and updated on an *add* or *edit* screen using Ajax. This provides the best performance possible. There are some cases where ExtraView cannot use Ajax, and in this case all the repeating rows have to be re-rendered upon a change. This usually occurs if there are field differences between what is rendered on the page and what will be on the newly added record.

For example, suppose you have a FIELD/LAYOUT VISIBLE IF layout cell attribute on a field and the parent field is also on the same repeating row. It is possible that you can make the field invisible on all the rows. When this happens, ExtraView does not display the title for that field and suppress the entire column. If adding a new row makes the invisible column visible, then ExtraView needs to re-draw the entire set of repeating rows.

The following cases show where ExtraView forces a complete rendering of the repeating row layout, as opposed to an Ajax refresh of just a single row:

- The repeating row layout is placed under an embedded layout as the first row in the embedded layout. In this case, there is not a row with the ID of the repeating row in the browser DOM when ExtraView renders the upper-level sublayout. Hence the complete repeating row layout must be rendered.
- The Ajax refresh causes a column to be added or removed from the display. For example, suppose you have a **Visible If** condition on FIELD_A and you have 2 rows on the repeating row layout and FIELD_A is visible on both rows. FIELD_A is on a column by itself within the repeating row layout. Change the Parent value on row 1 to make FIELD_A invisible. The Ajax call takes place and makes the field invisible. Change the Parent value on row 2 to make FIELD_A invisible on row 2. This Ajax call will force the rendering of the entire repeating row. ExtraView does this because the column for FIELD_A will be suppressed if FIELD_A is invisible on all rows.

Relationship Layouts

Relationship groups allow the users of ExtraView to associate individual issues with each other. You may want to create relationships between issues for several reasons, for example, because you want to consider them together when making updates, preparing reports, or because you want to implement a workflow which mandates that you update issues as a group, or because you want a workflow where the parent issue cannot be closed until all the child issues are handled.

Relationship groups are configured with a layout type that is then embedded within an *add, edit, report* layout or another embedded layout. This layout is configured with layout cell attributes to identify the basic characteristics of the related issue display. You might need to provide some business rules to control the interaction of the related issues. For reporting with related issues you will need to define the reporting hierarchy. Examples of relationship groups:

- A project may be composed of many tasks. The project can be stored in an issue, and each of the tasks may be stored in related issues
- A product release may be supported by many individual features. The product release may be stored in an issue while the features may be stored in related issues
- A reported incident may have a number of corrective actions that must be applied. The incident may be stored in a parent issue and the corrective actions may be stored in related issues.

Relationship groups can be built with many different types of behavior. Examples of how to build installations with related issues at their core is described later in this section of this guide. There are several types of inbuilt relationship groups that can be defined:

Relationship Group Type	Purpose
Bi-Level	This is a simple relationship group where a single issue acts as a parent issue to any number of child issues. This has largely been superseded by the One-to-Many type, but its use will be continued for backwards compatibility. If you are designing a new ExtraView application, or adding relationship groups to an existing installation, it is recommended that you do not use the bi-level groups. To continue using this type of relationship group and to ensure that bi-level groups are updated, the behavior setting named RG_UPDATE_BILEVEL_ONLY should be set to a value of YES. To remove the ability to create new relationship groups with the type of bi-level, set the behavior setting named ALLOW_BILEVEL_GROUPS to a value of NO. Bi-level relationship groups will not operate correctly unless this setting has a value of YES.
One-to-Many	This type also has a single parent issue with multiple child issues, but with some differences and enhancements from the bi-level type of group. This type of relationship group should be used in preference to the bi-level group type for all new applications. If you want the capability to update all related issues when performing the update of an issue, you must set the behavior setting named RG_UPDATE_BILEVEL_ONLY to NO.
One-to-Many Cascade	This type is similar to the One-to-Many relationship group type. The difference is that when a user deletes an issue which is the parent of one or more child issues, then the child issues are also deleted, as opposed to leaving orphaned child issues in the database, once the parent is deleted.
Many-to-Many	In the many-to-many relationship group type, an issue can belong to more than one relationship group, and many issues can be connected in many ways. . If you want the capability to update all related issues when performing the update of an issue, you must set the behavior setting named RG_UPDATE_BILEVEL_ONLY to NO.

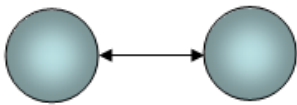
Relationship groups go beyond the grouping of issues using report filters. For example, it is always straightforward to produce a report that groups issues where there is a common searchable field, such as all the issues that affect a specific product or have the same priority. Relationship groups share a number of common characteristics:

- You can relate different items or issues together. Users achieve this through the *add* or *edit* screens. The administrator may also perform this from the **Relationship Group Maintenance** screen
- When you update a member of a related issue group, you can configure behavior that will optionally allow the user to update all the related members of the group. You can create a layout that contains the fields that may be updated in all issues when one member of the group is updated
- Users may remove items from groups via the *add* or *edit* screens. Again, the administrator may also perform this from the **Relationship Group Maintenance** screen
- You may view all the items in the relationship group, from the *add*, the *edit* screen or from reports such as a Quicklist or a Detailed report. From any of these places and with permission, you may drill down and view or edit the issues
- With permission, when you update an issue that is a member of a relationship group you may apply updates to the other members of the group
- When issues are cloned, rules can be used to place these issues in a relationship group.

Relationship Types

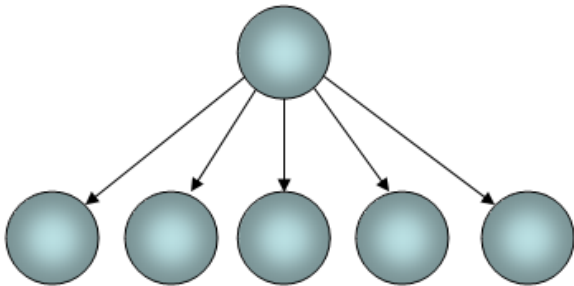
Simple Relationship

The simplest relationship may be that you want to connect two issues together, for example because they exhibit similar symptoms, or because they were reported by the same customer. This can be represented by the following diagram:



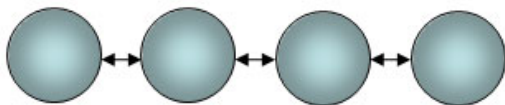
One-to-Many or Parent-Child Relationship

Typically, a parent – child relationship group will be implemented with the One-to-Many group type. The most common use cases are where you want a single issue to control the behavior of the child issues, for example, several customer-reported issues may not be closed until the engineering issue that controls the fix to the problem has been solved and closed. In this case the engineering issue would be the controlling parent issue.



Sibling Relationships

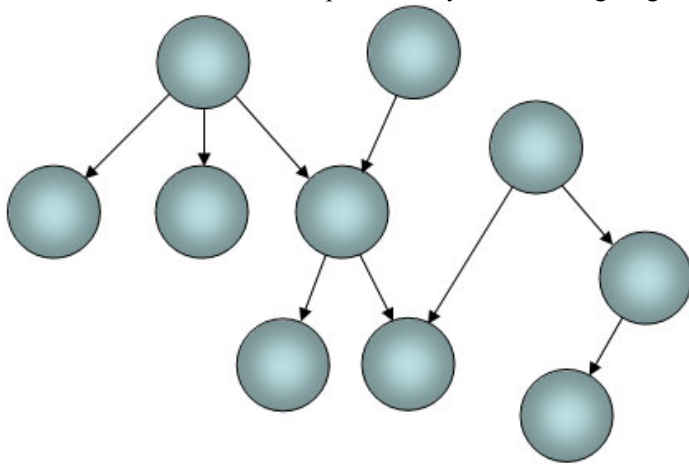
Sibling relationships link issues at the same level in a hierarchy. Typically sibling issues will have a single parent to which they are linked. Each of the siblings may in turn have child issues. A common use case is where you want to perform an action on the parent issue, when all siblings have a common value in a field and you want to reflect this within the parent issue. For example, you might want to automatically set the status of the STATUS field within a parent issue to **Approved** when each of the child issues has a radio button that indicates approval of that child issue. A SIBLINGS relationship allows you to compose a rule that would take action on the parent when all the siblings have the same value indicating that approval is given for that individual sibling.



Complex or Arbitrary Relationships

The Many-to-Many relationship group type allows a very flexible structure of relating issues, where you can connect issues in almost any form, and a single issue can be a member of more than one group. The use case here is to allow a very freeform structure where different groups of issues can be connected together. Features exist to allow you to look up and down the structure, to the parent or parents of an issue, to an issue's children, or even to look beyond the direct relationship and include the related issues to the parents or

children of the issue. This is represented by the following diagram:



Security Keys for Relationship Groups

Key	Purpose
CF_RELATIONSHIP_GROUP_VIEW_PROBLEM_BUTTON	Controls the appearance of the View button on the Related Issues Screen. Only used for BI-LEVEL relationship groups.
PR_ADD_PROBLEM.RELATIONSHIP_GROUP	Controls access to the RELATIONSHIP_GROUP button on the <i>add</i> screen.
PR_RESOLUTION.RELATIONSHIP_GROUP	Controls access to the Related Issues (the button beside ID on the Edit screen) for BI-LEVEL groups, and to see the RELATIONSHIP_GROUP field on the <i>edit</i> screen
PR_RESOLUTION.RELATIONSHIP_GRP_ADMIN	Controls the visibility of the Manage Relationship Group button on the <i>edit</i> screen for BI-LEVEL relationship groups.
CF_RELATIONSHIP_GROUP	Controls the visibility of the Group Issues button on reports (this is next to the Refresh button at the top and bottom of column, summary, Quicklist and Detailed reports

Behavior Settings for Relationship Groups

Key	Purpose
CLONE_RELATION_GROUP	Relationship group name for clone relationships. When an issue is cloned it will automatically be placed into the relationship group named in this setting.
MORE_HISTORY_NUMBER_ROWS	This setting defines the number of rows of related issues to display, before a <i>more ...</i> prompt appears within the history record. This is to prevent the situation where you may have hundreds of related issues, and many updates. In this case, the user would mainly see history of the related issues, as opposed to seeing the history of the issue itself.
RELATION_GROUP_DEFAULT	The name of the relationship group that will be used for any issue being placed into a relationship group. This default can be overridden by using a layout cell attribute on the RELATED_ISSUE_DISPLAY, or by using the field RELATIONSHIP_GROUP on the <i>add</i> or <i>edit</i> layout to offer the user a choice of relationship groups
RELATIONSHIP_GROUP_EMAIL_LIMIT	When you update the status of an issue within a relationship group, each issue will be subject to the standard notification process. When there are more than RELATIONSHIP_GROUP_EMAIL_LIMIT entries in the group, notification is only made to the users in the parent issue, and a comment is inserted on the issue with this information
RELATIONSHIP_GROUP_LIST_UDF	This setting is the name of a user defined field with a display type of list. This UDF is used to maintain a list of the names of relationship group for related issue display. The UDF is maintained by ExtraView as relationship groups are created or deleted. The UDF can also be aliased by other UDF's to provide an unlimited number of fields that can be used to identify the relationship group names to support multiple related issue displays on a single edit screen.
RELATIONSHIP_GROUP_MAX_DISPLAY	Maximum number of issues to display on the relationship group screen. 0 means there is no limit. Note that the administration user defined in

	ADMIN_OVERRIDE_ROLE will always see all the issues, no matter the value of the setting
RELATIONSHIP_LINK_DISPLAY	If the data dictionary entry RELATIONSHIP_GROUP_LINK is placed on the edit screen layout then either a link or list will appear beside the title. The display of the field is controlled by the behavior setting named RELATIONSHIP_LINK_DISPLAY. This can have a value of either SELECT or LINK. The RELATIONSHIP_GROUP_LINK entry should not be placed on the add screen. If the value is LINK then the field will appear on the edit screen as a link specifying the number of issues in the group. If this link is clicked on, the user is redirected to the Related Issues screen. If the value is SELECT, then the field will appear as a select list. The user can then select the issue they want to modify in the list and then press the link button to go to an edit screen for that issue. If there are more entries in the list than the POPUP_LIST_SIZE behavior setting, then an additional entry of * More * will appear in the list. If the user selects this value and clicks on the link button, then they will be redirected to the Related Issues screen for a full list of the grouped issues.
RG_UPDATE_BILEVEL_ONLY	This behavior setting is for backwards compatibility with ExtraView version 4.x. If you set the value to YES, then related issue updates are only triggered when a change to the STATUS field takes place. If this is set to NO then updates to related issues may be triggered on different events and many updates to different fields are possible.
RID_PAGING_DEFAULTS	Related issue displays may be paged. Currently, an entire RID is shown on the <i>add</i> and <i>edit</i> screens. Page size and threshold values determine how many issues are shown simultaneously in the related issue display, with other pages navigable through via Next and Previous buttons at the bottom of the display
SHOW_CLOSED_REL_GROUPS_PERIOD	The list of items on a relationship group will be displayed until all issues have been closed for a minimum number of days specified by this value. Valid values are numbers equal to or greater than 0. 0 means that as soon as all items within a relationship group are of the status specified by STATUS_CLOSED_NAME they will not be displayed on the list of relationship groups.

Data Dictionary Fields for Relationship Groups

Field	Purpose
NO_RELATED_ITEMS_MESSAGE	This is the message that is provided within a related issue display when a search is performed to return related issues, but none exist. The default is There are no search results . This message is a label field within the data dictionary and it may be altered and it may be localized
RELATED_ISSUE_DISPLAY	This label field provides a means of being able to alter the title to the inbuilt relationship issue display. Note that when you create a new relationship issue display type, then a new field is automatically created as a label field in the data dictionary, also allowing you to provide a title to the related issue display you create
RELATIONSHIP_GROUP_CHILD	When this field is placed on a layout, and the user enters an ID into this field, then the issue whose ID is entered becomes a child to the current issue when the current issue is updated. If there is an error, such as a non-existent child ID, an error will be generated and displayed to the user. If the current issue is already a parent of the child issue ID entered, no error is indicated and no change to the relationship occurs. When the user next views the issue, the related issue display will show the new child issue, assuming the relationship group relation type is either MEMBER, CHILD or RELATED
RELATIONSHIP_GROUP_LINK	A general purpose label to provide the title for relationship group links
RELATIONSHIP_GROUP_PARENT	When this field is placed on a layout, and the user enters an ID into this field, then the issue whose ID is entered becomes a parent of the current issue when the current issue is updated. If there is an error, such as a non-existent parent ID, an error will be generated and displayed to the user. If the current issue is already a child of the parent issue ID entered, no error is indicated and no change to the relationship occurs. When the user next views the current issue, the related issue display will show the new parent issue, assuming the relationship group relation type is either MEMBER, PARENT or RELATED
RELATIONSHIP_GROUP_REMOVE_BTN	A field to provide a checkbox that allows issues to be removed from relationship groups. The field is an inbuilt field with special treatment. It is defined in the data dictionary with a type of LABEL and a display type of BUTTON. Although it is placed on related issue display layouts, it will only appear when the layout is

	rendered within an <i>edit</i> screen. It is ignored on add screens, report layouts and on the POST_EDIT_UPDATE layout. There is a security permission key named PR_RESOLUTION.RELATIONSHIP_GROUP_REMOVE_BTN to control the appearance of the Remove? checkboxes on the edit screens. The user may check any number of related issues and the checked issues will be removed from the relationship when the current issue is updated
RELATIONSHIP_GROUP_TITLE	A general purpose label to provide titles for relationship group
RELATIONSHIP_GROUP_TYPE	A general purpose label to provide the titles for relationship group types
RELATIONSHIP_GRP_PARENT_ID	A field that stores the parent ID of a relationship group
RELATIONSHIP_GROUP_ID	A field that contains the internal ID of a relationship group
RELATIONSHIP_GROUP_PARENT	A field that contains the parent of a relationship group
RELATIONSHIP_GROUP_CHILD	A field that contains the child of a relationship group
RELATIONSHIP_GROUP_TXNS	A field that contains the historic transactions of a relationship group. This field is only valid on a layout of type HISTORY.

Related Issue Layouts

Related issues are displayed with layouts that use the naming convention **RELATED_XXXXX**. To create a new related issue layout, you first create a layout type where the name begins with **RELATED_**. Note that the usage of related issue displays must be *Report*. In the normal way for layouts, these may be inherited by any Business Area or Project which will use them. These are used to display the related records within *add*, *edit* and report layouts. The layout contains the fields you want to display when viewing the related issues. There is a single default related issue display layout within a new ExtraView installation, named **RELATED_ISSUE_DISPLAY**. The default fields on this layout are VIEW_BUTTON, QUICKEDIT_BUTTON, EDIT_BUTTON, RELATIONSHIP_GROUP_REMOVE_BTN, ID, STATUS, ASSIGNED_TO and SHORT_DESCR. You may change any of these fields to meet your requirements.

When you configure a related issue display layout to allow the creation of new related issues, you are able to place a button on a header to the display. This button may have any text, and when pressed will open a modal window where you can add the issue you are creating into the relationship with the current issue on the screen. On reports all related issues are displayed, allowing you to print the results clearly.

On *add* and *edit* screens, the related issues are placed within a scroll box whose dimensions are controlled by the layout cell attributes named SIZE and HEIGHT. If you do not provide a layout cell attribute for SIZE, then the default is 125 characters. Within the layout, you can also use a SIZE layout cell attribute on the individual fields to control their width. If you do not use a SIZE attribute on individual fields, then the width of each field floats and the user's browser will decide on the optimal width. The height of the related issue display is calculated automatically, to display all the records in the group unless a HEIGHT layout cell attribute is added to the related issue display, to provide a maximum height.

You can fix the position of the column titles of the related issue display with the layout cell attribute named RID_FIX_TITLES. When you set this attribute it is not recommended that you use the SIZE attribute on fields within the related issue display layout.

Sample Rendering of Related Issue Display Layouts

Some sample layouts rendered on *Add* and *Edit* screens are:

Related Issue Display					
		ID #	Status	Assigned To	Title
View	Edit	10561	Open	Bill Smith	Authorization to provide a new computer for new employee - Arne Markoff
View	Edit	10562	Open	Mary Brown	Authorization to provide a new telephone extension for new employee - Arne Markoff
View	Edit	10563	Open	Jimmy Duncan	Authorization to provide new furniture for new employee - Arne Markoff

Related issues on a report

		Remove?	ID #	Status	Assigned To	Title
View	Edit	<input type="checkbox"/>	10561	Open	Bill Smith	Authorization to provide a new computer for new employee - Arne Markoff
View	Edit	<input type="checkbox"/>	10562	Open	Mary Brown	Authorization to provide a new telephone extension for new employee - Arne Markoff
View	Edit	<input type="checkbox"/>	10563	Open	Jimmy Duncan	Authorization to provide new furniture for new employee - Arne Markoff

Editing related issues on an add or edit screen

The screenshot shows a form titled "Related Issue Layout". At the top left, there is a blue button labeled "Add". Below the form area, there is a blue link labeled "Attachments". The form itself is mostly empty, suggesting it is in an "add" state.

Adding new related issues on an add or edit screen

The screenshot shows a modal window titled "ExtraView Add Issue". The window has a navigation bar at the top with tabs for "Bugs", "Test Cases", "Helpdesk", "Assets", "Customer Issues", "Customers", "Feature Requests", and "Knowledge Base". The "Knowledge Base" tab is selected. The main form area is titled "Knowledge Base Issue" and contains several fields: "Title" (text input), "Product" (dropdown menu set to "Tracker Enterprise"), "Category" (dropdown menu set to "None"), "KB Article Text" (a rich text editor with a toolbar), "Description" (text area with a plus sign to expand), and "Comments" (text area with a plus sign to expand). There are also checkboxes for "Publish Article?" and "Knowledgebase Top Issue". A red arrow points to the "Add" button in the bottom left corner of the modal.

The modal popup to add a related issue

Related Issue Display Layouts

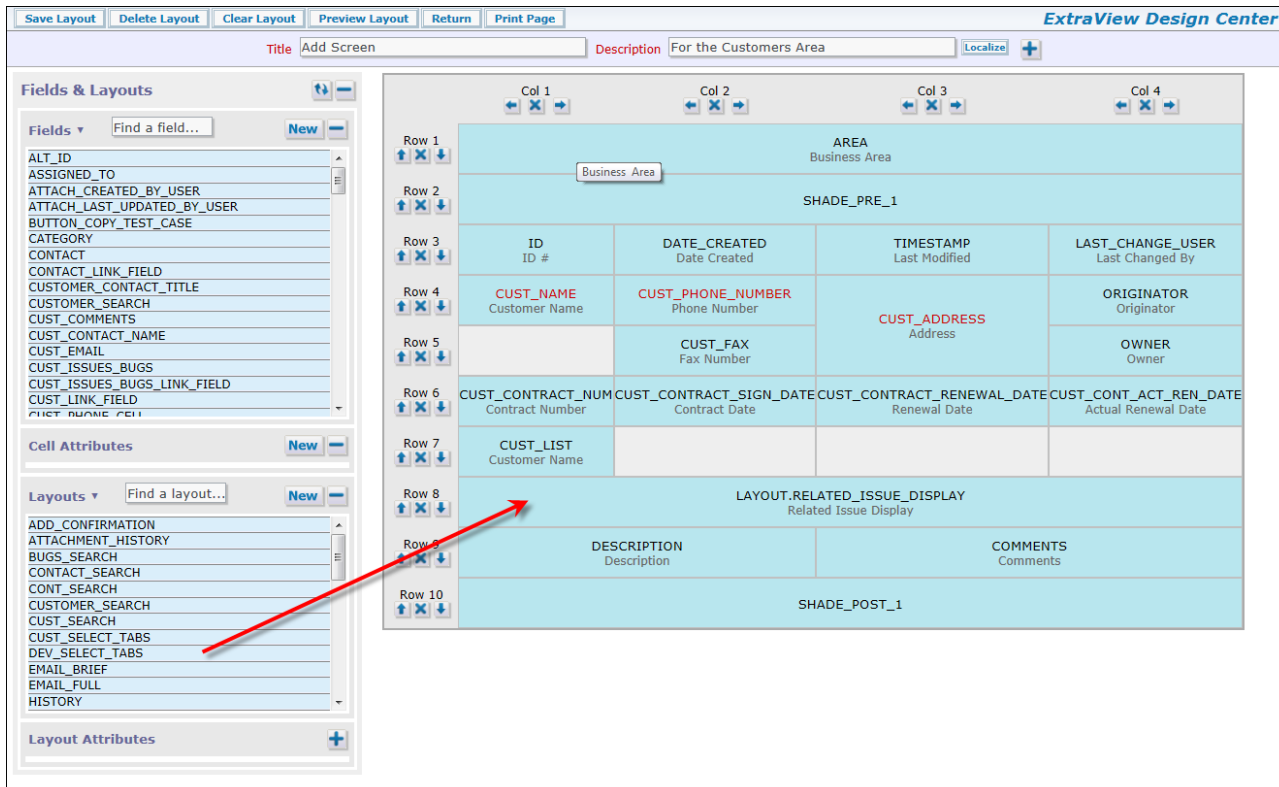
You may create any number of additional related issue display layouts, but you must begin the name of the layouts you create with RELATED_. For example, as well as RELATED_ISSUE_DISPLAY, and as an example, you may create another related issue layout named RELATED_SUPPLIERS. All the layouts to be used as related issue displays must be created with a display type of **Report**, even if they are to be embedded within an *Add* or *Edit* layout. Once you have created the layout type, you then include the layout on the *Add*, *Edit* or Detailed Report layouts.

For the above example, you would include LAYOUT.RELATED_SUPPLIERS on the layout. When you create a related issue layout, a new field is created automatically in the data dictionary, with the same name as your layout. In our example, the field RELATED_SUPPLIERS is created. The field has the usual PR_ADD_PROBLEM and PR_RESOLUTION permission keys, and these control visibility to the the related issue display layout on the *add* and *edit* layouts for the different roles in your installation.

The field RELATIONSHIP_GROUP_REMOVE_BTN is an inbuilt field with special treatment. It is defined in the data dictionary with a type of LABEL and a display type of BUTTON. Although it is placed on RELATED_ISSUE_DISPLAY layouts, it will only appear when the layout is rendered within an *Add* or *Edit* screen. It is ignored on report layouts and on the POST_EDIT_UPDATE layout. There is a security permission key named PR_RESOLUTION.RELATIONSHIP_GROUP_REMOVE_BTN to control the appearance of the **Remove?** checkboxes on the *Add* and *Edit* screens. Its function is to allow the end user to remove a related issue from the relationship group. The user may check any number of related issues and the checked issues will be removed from the relationship when the current issue is updated. Removing an issue from a relationship does not delete the issue.

Embedding Related Issue Display Layouts Within a Layout

As stated above, related issue display layouts are designed to be embedded within *add*, *edit*, report and other layouts which are then embedded within *add*, *edit* and report layouts. This screenshot shows a related issue display layout embedded within an *edit* layout:



Buttons on Related Issue Display Layouts

The following buttons may be placed on Related Issue Displays. Note that within both *Add* and *Edit* screens the PR_RESOLUTION permission keys are used to control the presence of the buttons, as the information within the displays is always read-only.

- Edit Button - EDIT_BUTTON
- Quickedit Button - QUICKEDIT_BUTTON
- View Button - VIEW_BUTTON

Layout Cell Attributes for Related Issue Display Layouts

Over and above the standard layout cell attributes that can be applied to all cells on layouts, the following attributes allow configuration of embedded related issue display layouts.

Cell Attribute	Purpose
BUTTON ACTION	The RID BUTTON ACTION attribute is applied as a cell attribute to the RID PREHEADER ADD BUTTON . The action defines what happens when the user presses the add button. This attribute is applied directly to the field's global attributes, defined within the data dictionary, as opposed to being set as a layout cell attribute on the related issue display layout.

Update Return Print Page
Manage **BUTTON ACTION** for Field: **ADD_TEST_RESULT** ?

Target Business Area ▼ Test Case Management

Target Project ▼ Test Results

Check Required Fields

Push Selected Attachments

Presentation Modal Popup Window Inline

After Submitting the Child Issue Refresh Related Issue Display Update Parent & Refresh Entire Screen

Select field(s) from the parent issue to push down into the child issue, by double-clicking within the left-hand list. Remove fields by dragging them from the right-hand list.

Find a field...	
Abstract(ABSTRACT)	Abstract(ABSTRACT)
Actual Renewal Date(CUST_CONT_ACT_REN_DATE)	Description(DESCRIPTION)
Actual Time (hrs)(TIME_ACTUAL)	Estimated Time (hrs)(TIME_ESTIMATED)
Add users to interest list(NOTIFICATION_INT_LIST_OTHERS)	Module(MODULE)
Assigned To(ASSIGNED_TO)	Pass Criteria / Expected Results(PASS_CRITERIA)
Automated(AUTOMATED)	Procedure(PROCEDURE)
Branch Status(RELEASE_CHILD_STATUS)	Product(PRODUCT_NAME)
Browser(TEST_CASE_BROWSER)	Setup(SETUP)
Bug Date Created(DEV_BUG_DATE_CREATED)	Test Case ID(TEST_CASE_ID)
Bug Date Due(DEV_BUG_DATE_DUE)	Test Plan ID(TEST_PLAN_ID)
CC Email(NOTIFICATION_CC_EMAIL_USERS)	Title(SHORT_DESCR)
Case Status(TEST_CASE_STATUS)	

Use the button to generate the JavaScript that ExtraView uses within the ONCLICK_JS attribute. This is only needed if you want to use this **BUTTON ACTION** utility to prepare a draft of the JavaScript that will be used in the ONCLICK_JS attribute. You cannot have both a **BUTTON ACTION** and an ONCLICK_JS attribute on the same field. Simply copy the text below and paste into the ONCLICK_JS attribute, where you may modify the script. Do not save this **BUTTON ACTION** if you are going to use the ONCLICK_JS script.

[Show Generated Script](#)

Update Return Print Page

- **Target Business Area** - This defines the Business Area that will be used for the *add* screen displayed when the button is pressed
- **Target Project** - This defines the Project that will be used for the *add* screen displayed when the button is pressed
- **Check Required Fields** - If you check this option, then all required fields on the parent issue that will be required by the child issue, are checked that values are filled in, before the child window is displayed. This can be extremely useful if you are going to push down field values from the parent to the child issue, and you want to ensure that the child window is always initiated with a value within a field
- **Push Selected Attachments** - When the button is pressed, attachments already selected will be copied to the new child issue being created
- **Action after Submitting the Child Issue** - This option allows you to select the action after the child issue is created. You can either have only the related issue display that contains the newly added issue updated, or you can have the parent issue updated and the entire screen updated. The latter is only required when there are some business rules that triggered changes to the parent issue when the child issue was submitted
- **Push Down Field List** - Double click on the fields whose values you want to push down from the parent issue to the child issue. The selected fields are displayed in the right-hand list
- **Map a Push Down Field** - There are some occasions when you want to push down a field from the parent issue to a different field on the child issue. This can be accomplished by first selecting the field to push down, as described in the previous step and then right-clicking on the red button on the selected field. This brings up a window where you can type in the name of the child field to which you want to map the parent field value
- **Show Generate Script** - This button is provided for advanced usage. It is possible to configure button actions that are more complex than can be done with the **BUTTON ACTION** utility. This option allows you to generate the JavaScript that is close to what you require. You can then copy this JavaScript into the **RID ONCLICK_JS** attribute, and modify it for your requirement. You should not save the **BUTTON ACTION** if you are using **RID ONCLICK_JS** and vice versa.

Note that you may define more than one **BUTTON_ACTION** on a single related issue display.

DRILLDOWN

This attribute should only be applied to a field that contains the ID of the related issue. You can choose to set the drilldown to either a value of **View** or **Edit** according to the type of drilldown window you wish to open

HEIGHT

This defines the maximum height of the related issue display when it is rendered within an *add* or *edit* layout. The height is input in rows, where each row is estimated to be 20 pixels. If the height required to render the issues is less than this value, then the related issue display is resized to only take the height required. If the height required is more than this value, a vertical scroll bar is placed on the related issue display. The titles to

the fields are always fixed in position, so that when the user scrolls the list of related issues, the titles remain visible.

The setting has no effect on reports where the entire contents of the related issue display will be rendered.

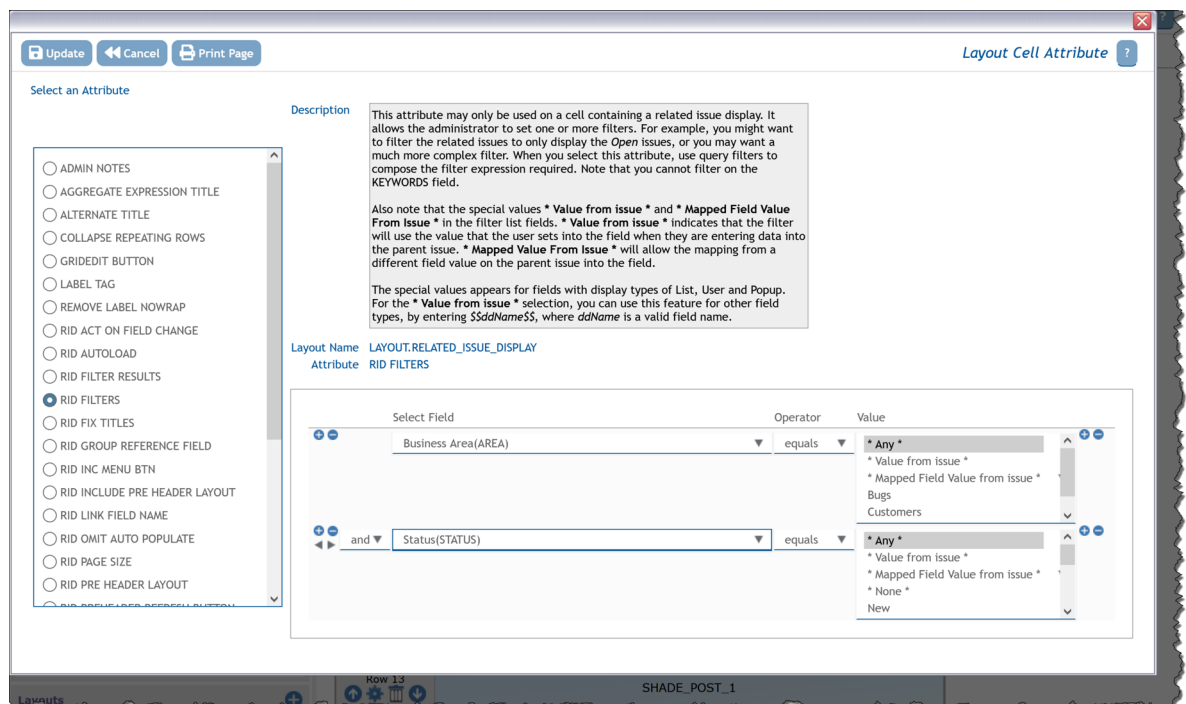
RID ACT ON FIELD CHANGE

This attribute is not applied to a relationship layout, but is applied to the field (the RID LINK FIELD NAME above) that is used to link the result set from a search to a relationship issue display. When this attribute is present on the RID LINK FIELD NAME, along with an HTML modifier to trigger the action, a related issue display is refreshed, creating links from each issue ID within the RID LINK FIELD NAME, and displaying these issues in the related issue display. A full example of the use of this feature is provided in [Example 4](#).

This attribute is triggered only upon an *onchange* event within a screen, and is not triggered when the *add* or *edit* screen is submitted for an update. A consequence of this is that you should not expect this attribute to work within API calls nor within the File Import process which do not respond to screen events.

RID FILTERS

This cell attribute allows the administrator to specify a set of filters to apply to the selection of the related issues to display. This filter is applied to only the related issue records so the user will only see a subset of the related issues. For example, this screenshot shows the administrator about to select values for filters for the **Business Area** and **Status** fields:



Note that beyond the selection of specific values to use for filters, there are several other possibilities:

- *** Any *** - This value is not used. Setting it is the same as not using the filter
- *** Ask at runtime *** - The user will be prompted when the related issue display is being generated, to provide a value for the filter
- *** Value from issue *** - The value to be used within the filter for the Related Issue Display will be taken from the current value for the field of the same name that is displayed to the user on the screen at the time the filters are applied to create the Related Issue Display. This is effective for fields for fields with display types of List, User and Popup. When you select this special value for other field display types, you may enter the name of a field as a value. For example, if your field name to reference is *ddName*, enter *\$\$ddName\$\$*
- *** Mapped Field Value From Issue *** - the value will be taken from a different field when generating the Related Issue Display. When this option is selected, a new field appears allowing you to enter the name of the field to map the value from, in the format *\$\$ddName\$\$*. This only works for fields with enumerated list types of User and List fields
- **\$\$SYSDAY\$\$ or \$\$SYSDATE\$\$** - These may be used within day or date display type fields to filter on the current day or date. It is not too practical to filter on a field being equal to *\$\$SYSDATE\$\$*, as the date includes time to the millisecond, and it's unlikely that issues will match this. Using operators of less than or greater than with date type fields is more useful.

RID FIX TITLES	<p>This attribute may only be set on Related Issue Display layouts within <i>Add</i>, <i>Edit</i> layouts, or sublayouts of these. When this attribute is used in conjunction with the HEIGHT attribute, and a scroll bar appears after issues have been added, the title to the Related Issue Display is fixed as the user scrolls.</p> <p>It is not recommended that you place SIZE layout cell attributes on the fields contained within the Related Issue Display layout when you use this attribute. Likewise, it is not recommended that you use this option if you expect that the user will see text that wraps within the Related Issue Display. The best results are obtained when the browser sizes all the columns and column titles.</p>
RID GROUP REFERENCE FIELD	<p>The default for this attribute is the ID field. This attribute may be set to provide a different field for the relationship to be formed between the issues. The field must exist on both the layouts that are being related</p>
RID LINK FIELD NAME	<p>This attribute is used when you are using a search layout on an <i>add</i> or <i>edit</i> layout to return one or more issues to relate them to the current issue. RID LINK FIELD NAME must be a field with a display type of <i>text field</i> or <i>text area</i> and the field is typically hidden within the <i>add</i> or <i>edit</i> layout and is used to transition the list of issued from the search results into the list of issues to be related. The list is a series of issue ID values, delimited by semi-colons. If the RID SINGLE SELECT attribute in this table is set, then there can only ever be a single issue ID in the list. <i>Text fields</i> are capable of storing 255 characters. The link field stores the ID's of all issues selected within the results, plus an extra character as a separator between each ID. They therefore store approximately 40 - 60 ID's. If you are likely to link more than this number of issues, make sure the RID LINK FIELD NAME has a display type of <i>text area</i>. These are highly scalable for this purpose.</p> <p>Linking a Single Result to Populate Fields within the Current Issue</p> <p>If you are using the RID LINK FIELD NAME to link the search results to a single issue and you then want to take fields within that issue and place their values within the current issue, you are likely to also configure a <i>link</i> and a <i>refresh</i> business rule to retrieve the field values you require from the search result. See Example 3.</p> <p>Linking Multiple Search Results to Populate a Related Issue Display</p> <p>If you are using the RID LINK FIELD NAME to link the search results to multiple issues that you want to relate to the current issue, and place these issues within a related issue display on the current layout, you are likely to also configure RID LINK FIELD NAME with these attributes:</p> <ul style="list-style-type: none"> • RID ACT ON FIELD CHANGE - This attribute indicates that an action will be taken when this field is updated as a result of being linked to search results • RID RELATIONSHIP NAME - This is the name of the relationship group into which the records from the search results are to be placed • RID RELATION TYPE - This is the type of the relationship. Usually this will be CHILDREN, but PARENTS may also be appropriate <p>See Example 4 for details on how to configure this.</p>
RID ONCLICK_JS	<p>RID ONCLICK_JS is the JavaScript that is executed when the RID PREHEADER ADD BUTTON button is clicked. For most purposes, the script that is executed is created by the RID BUTTON ACTION cell attribute and you do not require to use the RID ONCLICK_JS attribute. The RID ONCLICK_JS attribute is provided for advanced configurations where the administrator wants to create JavaScript that goes beyond the capability of the RID BUTTON ACTION attribute. You must not configure both the RID BUTTON ACTION and the RID ONCLICK_JS attributes on the same button, as they will conflict with each other. The JavaScript for RID ONCLICK_JS should be carefully constructed, and there may be differences when wanting to use the JavaScript to initiate a popup to add a new issue when on the <i>add</i> and on the <i>edit</i> screens. If you want to add related issues on both the <i>add</i> and <i>edit</i> screens, you may need to configure a different INCLUDE ADD BUTTON in the data dictionary for each screen, each with the appropriate RID ONCLICK_JS value. It is possible to configure and place multiple buttons to add different types of issues on a single related issue display.</p> <p>Basic Syntax</p> <p>Substitutable values are possible in this string value. To create a modal popup window the basic JavaScript you use will be:</p> <pre>doEditAActions(window.parent.extraview_app_home_url , '__SESSION_ID__', new Array('POPU modal_ADD', 'add_confirm_page=NO' + rgParameters(), 'RELATIONSHIP_GROUP_REFRESH', '__LAYOUT_TYPE_ID__'));</pre>

Note the two substitutable variables `SESSION_ID` and `LAYOUT_TYPE_ID`. They must be surrounded by double underlines. This provides the mechanism for ExtraView to substitute the variable at runtime. You set a value of YES or NO to the `add_confirm_page` parameter, depending on whether you want to display or suppress the verification layout or the **ADD_CONFIRMATION** layout that is typically shown to users after submitting a new issue. If you set NO, then the verification screen is never shown. There is a built-in method that generates the necessary relationship group parameters for the ADD operation. These are needed to force the insertion of the child issue into the correct Relationship Issue Display relationship group using the relation type of the Related Issue Display. This is `rgParameters()` and it is in scope from the button when the button is inserted into the header of the Related Issue Display.

Updating and Refreshing the Underlying Issue

There are use cases where you might want to update and refresh the parent *Add* or *Edit* screen, after you add a child issue. For example, while adding a child issue, Business Rules might execute that update the parent issue. If you want this behavior, there is an **UPDATE_MAIN** parameter. The workflow might be to go from an *Add* or *Edit* screen, add a child record in a modal popup window, submit the child issue within the modal popup (this executes Business Rules that update the parent issue), then close the modal popup and finally redisplay the updated parent issue, you will include the **UPDATE_MAIN** parameter as follows:

```
doEditAEActions(window.parent.extraview_app_home_url , '__SESSION_ID__',
new Array('UPDATE_MAIN','POPUP_MODAL_ADD', 'add_confirm_page=NO
&p_rg_relate_this_to=' + getValueFromParent('p_id') + rgParameters(),
'REFRESH_ID', getValueFromParent('p_id')));
```

Note that you do not require the **RELATIONSHIP_GROUP_REFRESH** and accompanying **LAYOUT_TYPE_ID** parameters, as the **REFRESH_ID** takes care of refreshing the entire parent issue. If this is executed from an *Add* screen, the parent issue is displayed within an *Edit* screen, as the underlying Business Rules submitted the parent issue to the database, thus meaning it is no longer in the add state, but it is now in a state where it can be updated. The `p_rg_relate_this_to` parameter and its value are used on the *Add* screen to identify the parent issue to which you want to relate the child issue you are adding, when you are including the **UPDATE_MAIN** parameter. It has no effect otherwise on *Add* screens, or *Edit* screens and may be omitted in these cases.

Setting Additional Parameters to Push Values from the Parent to the New Issue

Other parameters may be added to the array value immediately following the `POPUP_MODAL_ADD` entry. An example is to set the Business Area and Project of the issue to be added. With `rgParameters()`, the example becomes:

```
doEditAEActions(window.parent.extraview_app_home_url , '__SESSION_ID__',
new Array('POPUP_MODAL_ADD',
'p_area=$$MY_AREA$$&p_project=$$MY_PROJECT$$&add_confirm_page=NO
&p_rg_relate_this_to=' + getValueFromParent('p_id') + rgParameters(),
'RELATIONSHIP_GROUP_REFRESH', '__LAYOUT_TYPE_ID__ '));
```

Note that the values for the `p_area` and the `p_project` parameters must correspond to the `AREA_ID` and `PROJECT_ID` into which you will add the related issue. Another possibility is that you might want to pass the values of one or more fields from the parent issue to the child issue you are creating. To achieve this, you may use either the `pushDownFields('p_fld1;p_fld2;p_fld3;...')` function to pass several fields at once or use the `getValueFromParent()` function to pass individual fields. For example, let's say that you want to pass the `FIRST_NAME` and `LAST_NAME` fields from the parent to the child. The string then becomes either:

```
doEditAEActions(window.parent.extraview_app_home_url , '__SESSION_ID__',
new Array('POPUP_MODAL_ADD', 'p_area=$$MY_AREA$$&p_project=$$MY_PROJECT$$
&p_rg_relate_this_to=' + getValueFromParent('p_id') +
pushDownFields('p_first_name;p_last_name') + '&add_confirm_page=NO' +
rgParameters(), 'RELATIONSHIP_GROUP_REFRESH', '__LAYOUT_TYPE_ID__ '));
```

or using individual parameters:

```
doEditAEActions(window.parent.extraview_app_home_url , '__SESSION_ID__',
new Array('POPUP_MODAL_ADD', 'p_area=$$MY_AREA$$&p_project=$$MY_PROJECT$$
&p_rg_relate_this_to=' + getValueFromParent('p_id') +
'&p_first_name=' + getValueFromParent('p_first_name') +
'&p_last_name=' + getValueFromParent('p_last_name') +
```

```
'&add_confirm_page=NO' + rgParameters(),
'RELATIONSHIP_GROUP_REFRESH', '__LAYOUT_TYPE_ID__' ));
```

Note that if a field name that you pass within the pushDownFields() or the getValueFromParent() function does not exist, it will be ignored when the user presses the button to add the issue, and no error will be generated. This can be used to advantage in configurations where you want to use a single button for multiple purposes on different forms.

In the above examples, note that you may use the actual values for MY_AREA and MY_PROJECT by looking at the administration screens for the AREA and PROJECT fields to find the values. However, this is not recommended as hard-coded actual values may change within a metadata migration but the hard-coded values in these expressions do not change in a metadata migration exercise.

Other assignment examples:

p_area=\$MY_AREA\$	The AREA field is assigned the value of the current Business Area
p_area=HELPDESK	The AREA field is assigned the value of the Business Area with the name of HELPDESK
p_area=\$\$Helpdesk\$	The AREA field is assigned the value of the Business Area with the title of Helpdesk
p_list_field=\$\$'Ben & Jerry'\$	In this example, a list field with the name LIST_FIELD is assigned the value of Ben&Jerry. The single quote marks are used when the value contains special characters such as &, # or spaces

Opening the Modal Popup Window in Edit Mode

There is a feature within ExtraView that allows the user to open up a new issue in Edit mode, as opposed to the Add mode. This configuration assigns an ID and / or an ALT_ID and saves the initial issue within the database before then placing the user within Edit mode on the screen. This can be configured within the modal popup window, by altering the POPUP_MODAL_ADD parameter to POPUP_MODAL_OPEN_IN_EDIT.

Repeating Rows Fields

The function getValueFromParent may be modified to access repeating row field values. Repeating rows are indexed, beginning with zero, therefore to access the first repeating row, the call will look like:

```
getValueFromParent('p_fieldname', 0)
```

To access the third repeating row, the call will look like:

```
getValueFromParent('p_fieldname', 2)
```

Although you may target any repeating row to obtain a value from a field, the value will always be placed in the field on the first row of the child record. The following technique will allow you to get values from successive repeating row fields, and populate these into successive repeating rows within child records:

```
getValueFromParent('p_fieldname', 2); getValueFromParent('p_fieldname', 3)
```

This example gets the field value from the third repeating row and places the result in the first repeating row child record, and then gets the value in the fourth repeating row field and places its value in the second repeating row child record

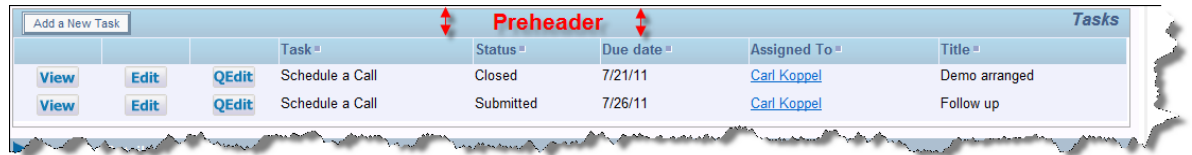
Multiple Add Buttons

Multiple Add buttons on the preheader are supported. Under rare circumstances, you might want to create a specific sort order for these buttons. There is not a place on the user interface to define the sort order of these buttons, but please contact ExtraView Support who will guide you through the process.

RID
PREHEADER

This attribute adds a title to a related issue display header to contain an **Add** or other buttons. No title is added to the related issue display if this attribute is not defined. There is one special property of this field. If you use the value of **TITLE** in the value then the description of the related issue display layout will be used as the title in the pre-header. The reason why you might want to do this is solely if you need to provide a localized equivalent for the title in languages other than the base language of your system. The related issue display title

may be localized, while layout cell attributes (with the exception of the ALTERNATIVE TITLE) may not be localized.



RID
PREHEADER
ADD BUTTON

This attribute adds a button to the pre-header. This button is used to add new issues to a relationship. The button is a field that must already be created in the data dictionary. The button must be created on the *Label* tab within the data dictionary and must have a display type of *Button*. The title to the field will be used as the title to the button when it appears on the pre-header of the related issue display. You may add any number of Add buttons to a single Related Issue Display.

The attributes PREHEADER ADD BUTTON, RID PREHEADER SUBMIT BUTTON and RID PREHEADER REFRESH BUTTON each have the ability to set a Sort Order as part of their definition. The sort order works across all the buttons defined on a single Related Issue Display.

RID
PREHEADER
REFRESH
BUTTON

This attribute is used when you are using a search layout on an *add* or *edit* layout to return one or more issues to relate them to the current issue. This places a button onto the related issue display pre-header bar that allows the user to refresh the list of results from the current set of search filters. The button has a default title of **Get Filtered Results**, but you can optionally provide a value to the attribute which will then appear as the label on the button.

The attributes PREHEADER ADD BUTTON, RID PREHEADER SUBMIT BUTTON and RID PREHEADER REFRESH BUTTON each have the ability to set a Sort Order as part of their definition. The sort order works across all the buttons defined on a single Related Issue Display.

RID
PREHEADER
SUBMIT
BUTTON

This attribute is used when you are using a search layout on an *add* or *edit* layout to return one or more issues to relate them to the current issue. This places a button onto the related issue display pre-header bar that allows the user to submit the list of results from the current set of search filters. The button has a default title of **Fetch Selected Record(s)**, but you can optionally provide a value to the attribute which will then appear as the label on the button.

The attributes PREHEADER ADD BUTTON, RID PREHEADER SUBMIT BUTTON and RID PREHEADER REFRESH BUTTON each have the ability to set a Sort Order as part of their definition. The sort order works across all the buttons defined on a single Related Issue Display.

Multiple Submit Buttons

Multiple Submit buttons on the preheader are supported, typically to allow different types of issue submissions. Under rare circumstances, you might want to create a specific sort order for these buttons. There is not a place on the user interface to define the sort order of these buttons, but please contact ExtraView Support who will guide you through the process.

RID
RELATIONSHIP
NAME

This is the name of the relationship group to which the related issues will be added. The relationship group must be created before you add the name to the cell attribute. If you do not set a value for this attribute, then the value in the behavior setting named RELATION_GROUP_DEFAULT will be used

RID RELATION
TYPE

This should be set to one of the following values:

- **MEMBERS** - This is the default value for this attribute if you do not override it with one of the other values. In this case the related issue display will show all the members of the group(s), containing the reference issue, i.e. the reference issues parents, children, and other issues not directly related to the reference issues in the group(s).
- **CHILDREN** - The related issue display will only contain issues that are the children of the reference issue
- **PARENTS** - The related issue display will only contain issues that are the parents of the reference issue. Note that in the ExtraView data model it is possible to define more than one parent issue for a specific issue. See the section on Relationship Groups for more information.
- **RELATED** - In this instance ExtraView will display the parents and the children of the reference issue within the specified group(s), within the related issue display. The parents and children of these related issues will not be displayed.

	<ul style="list-style-type: none"> • SIBLINGS - ExtraView will display all the issues at the same level in the hierarchy. For example, if a parent record has five children, and you create a related issue display with all the children, using a relationship group relation type of SIBLINGS, then you will see the four siblings to the current one. • GRANDPARENTS - This allows the display of the grand-parents to the current level in the hierarchy • GREATGRANDPARENTS - This allows the display of the parents of the grand-parents in the hierarchy • GREATGREATGRANDPARENTS - This allows the display of the parents of the great-grand-parents in the hierarchy • GRANDCHILDREN - This allows the display of the grand-children to the current level in the hierarchy • GREATGRANDCHILDREN - This allows the display of the children of the grand-children in the hierarchy • GREATGREATGRANDCHILDREN - This allows the display of the children of the great-grand-children in the hierarchy • LINKED - This type does not use a relationship type per se, but relies on the Related Issue Display filters to retrieve the associated issues. For example, you might have a filter that selects all the open issues for a particular product, and display these on a related issue display of each issue that you call up. <p>If you are using the related issue display to add new issues, the value should be CHILDREN or PARENTS. If you choose another relationship type then the issue will be added, but will not be displayed as the relationship is indeterminate</p>
RID SEARCH FILTER LAYOUT	This attribute is used when you are using a search layout on an <i>add</i> or <i>edit</i> layout to return one or more issues to relate them to the current issue. This field holds the name of the search layout that is being embedded on the same layout as the related issue display. Typically you will embed this search layout just above the related issue display layout
RID SEARCH ON NO FILTERS	The layout element attribute RID SEARCH ON NO FILTERS allows an embedded search report to be created even when there are no filters added in the embedded layout. Normally, at least one such filter must be present for the search to occur to prevent the potential return of a huge numbers of issues. By putting this attribute on a Related layout element that references a RID SEARCH FILTER LAYOUT a search may be done even when no filters are set.
RID SINGLE SELECT	This attribute is used when you are using a search layout on an <i>add</i> or <i>edit</i> layout to return one or more issues to relate them to the current issue. The default is that the search will allow you to return all the issues the user selects from the results. If you set this attribute, then the user will only allow a single issue to be selected to return the results into the related issue display
RID SORT ORDER	This attribute determines a sort order, based on a field that is displayed on the related issue display. You can set the value to ASCENDING or DESCENDING
RID TRANSPOSE LAYOUT	The default is that the related issues will be presented on the display by row. If you select this attribute, then the issues will be presented by column
SIZE	This controls the width of the related issue display on <i>add</i> and <i>edit</i> screens. The size is an estimate of the number of characters to be displayed. If you do not provide a layout cell attribute for SIZE, then the default is 125 characters. Beginning with version 10, you can no longer use a SIZE layout cell attribute on the individual fields within the related issue display to control their width. This allows the enabling of a new feature, to freeze the titles of the related issue display. This is very beneficial when you have a significant number of related issues within the display, as the titles always remain visible.
VISIBLE IF	This allows you to make the entire related issue display visible or not visible depending on the value of another field on the layout within which the related issue display is embedded

Refresh Button on a Related Issue Display

There are occasions when it is useful to have a refresh button on the related issue display preheader. This can be accomplished with the following steps:

1. Within the Labels tab of the the data dictionary create a field with a suitable name, e.g. **MY_REFRESH**, with a display type of **Button** and a title of **Refresh**
2. Edit the field you have just created within the data dictionary, and add a Global Attribute of **RID ONCLICK_JS**. This should have a value of:

```
doMyRGRefresh(__LAYOUT_TYPE_ID__);return false;
```

3. Navigate to the layout that contains the related issue display where you want the button
4. Add a new layout cell attribute of **RID_PREHEADER_ADD_BUTTON**, and select the **MY_REFRESH** button to display
5. Save the layout.

Order of Precedence on Related Issue Display Operations

Given that the end user may carry out a combination of operations on several, and sometimes independent, related issue displays with an *add* or *edit* screen, there might be some conflict in these operations, with records that might appear in more than a single related issue display. For example, what happens if you update an issue in one relationship, but remove the same issue in another relationship? The **RELATIONSHIP_GROUP_REMOVE_BTN** is given precedence over other transactions. Transactions are processed in the following order: removes, inserts, deletes (where the deletes are relationship group remove button transactions).

Example Related Issue Configurations

Relationship groups are extremely adaptable and can be configured in many different ways, to meet the needs of many different business problems. Here are some of the most common ways in which you can configure relationship groups:

- **Arbitrary addition of issues to form a relationship** - Add an existing issue ID to the current issue, to relate the issues together, where the issue you are updating becomes a child of the issue ID that you enter. A typical use case is where you might have an issue which has some elements in common with another issue and you want to treat them together. For example, two customers may report the same fundamental issue, and you want to group these together. You require a mechanism to add issues to the common group, and to display the related issue when you are looking at any one of the issues. This forms [Example 1](#)
- **Structured addition of child issues to a parent issues** - Add any number of new issues as children to the current issue. A typical use case might be that you want to add a number of contacts to a customer's definition as you might find in a CRM system. The customer record is the parent issue, and each of the contacts is a child record to the customer record. This forms [Example 2](#)
- **Search for a single issue and populate the current issue with fields from the result** - Create an *add* or *edit* layout which allows the end-user to search for results that are returned, and then insert values from the result into fields within the current issue. A use case may be to have a layout that creates customer complaints, but before entering the specifics of the complaint, the user is able to search for the appropriate customer and return all the details required into the current complaint. This forms [Example 3](#)
- **Search for multiple issues matching specific criteria and choose results as a group to relate to the current issue** - [Example 4](#) shows how you might search a large set of test cases for a subset, and relate this subset to a current record, forming a test plan, where the records added as children form the test cases for the test plan. This is most useful when you want to make all the choices from the results at once and make the connection to the parent issue
- **Search for multiple issues matching specific criteria and individually relate results to the current issue** - This is [Example 5](#). It is a variation on Example 4, allowing the user to click on individual results returned within the result set, and the individual result record is immediately related to the current parent issue. This is most useful when you want to scan the results and make individual choices on which records to connect to the parent issue.

Example 1

This example describes how to set up a relationship group that enables an issue to be related to a parent issue in an ad-hoc way – simply by entering an issue ID into a text field on an *add* or *edit* screen of the child issue. Each issue will then display the related issue in an embedded layout, where you have the option to remove each related issue, or to drill down and edit the related issue.

Here is a screenshot of the *edit* screen of the parent issue after setting up this example:

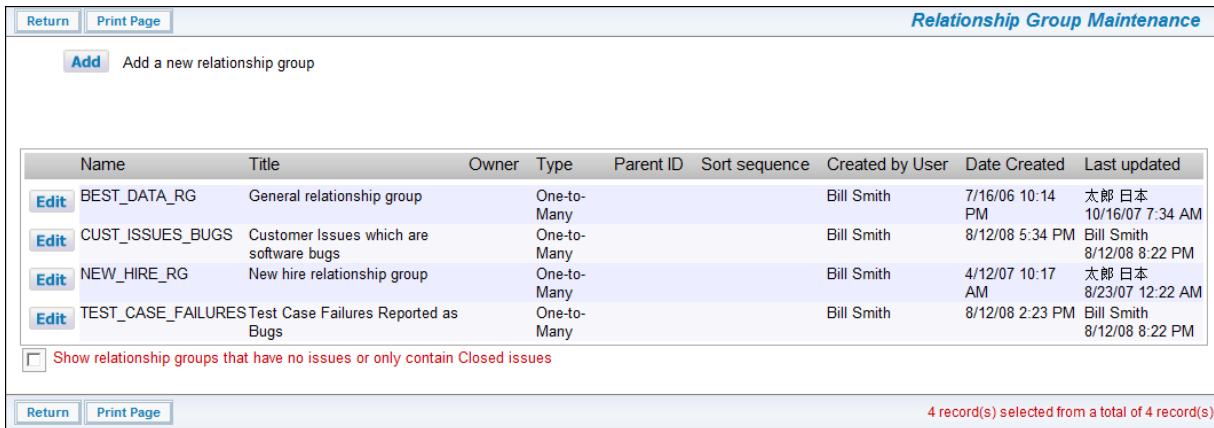


Example related issue display with its connecting parent issue ID

Step 1 – Setting up The Relationship Group

In this example, we will set up a relationship group that named BEST_DATA_RG. This will be a One-to-Many type of relationship group and uses a Parent / Child structure for the related issues.

1. Go to **Administration** ♦ **Site Configuration** ♦ **Relationship Group Maintenance** and ensure the BEST_DATA_RG group exists – you may need to check the box next to **“Show relationship groups that have no issues or only contain Closed issues”**.



The screenshot shows the 'Relationship Group Maintenance' interface. At the top, there are 'Return' and 'Print Page' buttons. Below them is an 'Add' button with the text 'Add a new relationship group'. The main part of the screen is a table with the following columns: Name, Title, Owner, Type, Parent ID, Sort sequence, Created by User, Date Created, and Last updated. There are four rows of data, each with an 'Edit' button to its left. Below the table is a checkbox labeled 'Show relationship groups that have no issues or only contain Closed issues'. At the bottom, there are 'Return' and 'Print Page' buttons again, and a status message: '4 record(s) selected from a total of 4 record(s)'.

Name	Title	Owner	Type	Parent ID	Sort sequence	Created by User	Date Created	Last updated
Edit BEST_DATA_RG	General relationship group		One-to-Many			Bill Smith	7/16/06 10:14 PM	太郎 日本 10/16/07 7:34 AM
Edit CUST_ISSUES_BUGS	Customer Issues which are software bugs		One-to-Many			Bill Smith	8/12/08 5:34 PM	Bill Smith 8/12/08 8:22 PM
Edit NEW_HIRE_RG	New hire relationship group		One-to-Many			Bill Smith	4/12/07 10:17 AM	太郎 日本 8/23/07 12:22 AM
Edit TEST_CASE_FAILURES	Test Case Failures Reported as Bugs		One-to-Many			Bill Smith	8/12/08 2:23 PM	Bill Smith 8/12/08 8:22 PM

Relationship Group Maintenance Screen

2. If the BEST_DATA_RG relationship group is not present, create it by clicking on the **Add** button
3. Set the Fixed name to BEST_DATA_RG and give it a Title of *General Relationship Group*. Select “One-to-Many” from the “Type” drop-down list. Click Add to complete the operation. You may use a different name for the relationship group, but remember this as you will need it later.

Step 2 – Create a Field in the Data Dictionary

Now that the relationship group is defined, we will create a field in the Data Dictionary that will handle any related issue number entered by the user.

Update Delete Cancel Print Page
Change a Data Dictionary Entry

Fixed name MY_PARENT_ID

Title to display ? Parent Issue Localize

Type of field User defined field

Field belongs to Issue records

Display type ? Text Field

Field Properties
Optional Attributes
Permissions
Where Used

Select Area ? * Global Area *

Select ? * Master Project *

Allow selection on reports ? Yes No

Remember last value ? Yes No

Filter criteria ? Yes No

Is sortable ? Yes No

Display as URL ? Yes No

Image for Display as URL ?

URL ? ?p_action=doEditDisplay&p_id=\$\$VALUE\$\$&p_option=Display&p_

Default value ?

Help text ? Entering an existing issue ID in this field will relate the current issue to this issue. Localize

Help URL ?

Update
Delete
Cancel
Print Page

The new field

We also turned on **Display as URL** for the field, and set the **URL** to:

```
?p_action=doEditDisplay&p_id=$$VALUE$$&p_option=Display&p_from_action=search
&p_from_option=search
```

This provides a drilldown button by the field so we can see the parent issue by clicking on the button.

Step 3 – Grant Security Privileges

Next, make sure to set read/write permissions for any role that will be accessing this field.

1. Go to **Administration ♦ Site Configuration ♦ Grant Security Privileges**
2. Select the permission keys PR_RESOLUTION.MY_PARENT_ID
3. Give Read and Write permissions for the user roles that will be using the related issues capability.

Step 4 – Place Field and Related Issue Display layout

Now we need to place these fields on a layout so they are accessible.

Return Design Center

1 Select the specific user role to which the layout belongs. If no layout is specified for a user role, the default layout for all user roles is used.

Select user role

2 Select the Area and Project to which the layout belongs

Select Area

Select Project

3 Below is a list of all the layouts currently defined for the user role you have selected. You may choose a new layout to add to the user role selected above, or you can press the edit button by one of the existing layouts to update that layout.

Add a new layout for the entire system

	Layout ID	Layout type	Layout type name	Title	Description	Select by field	Select by value
Edit	565	Add Issue Screen	ADD_PROBLEM	Bugs Add Screen	For the Bugs Area		
Edit	545	Edit Issue Screen	EDIT_PROBLEM	Bugs Edit Screen	For the Bugs Area		
Edit	1692	Post-Edit layout to update related issues	POST_EDIT_UPDATE	Post edit layout for related bugs	For the bugs area		
Edit	1793	Related Customer Issues	RELATED_CUSTOMER_ISSUES	Related Issue Layout	Customer Issue layout		
Edit	1788	Related Test Cases	RELATED_TEST_CASES	Related Issue Layout	Test Case Failure layout		
Edit	525	Repeating Row Record	RELEASE	Repeating Record	Bug Area Repeating Record		
Edit	555	Report Layout - Detailed Report	SEARCH_DETAILED	Detailed Report	For the Bugs Area		
Edit	530	Report Layout - Email Brief Notification Layout	EMAIL_BRIEF	Defects Brief Email	Default layout for Brief Email		
Edit	570	Report Layout - Full Email Notification Layout	EMAIL_FULL	Full Email Defects	Full Email layout for Bugs		
Edit	575	Report Layout - History Report from Edit Screen	HISTORY	History Report	For the Defects Area		
Edit	535	Report Layout - Quicklist Report	SEARCH_QUICKLIST	Report - Quicklist	For the Bugs Area		

Ensure the Related Issue Display is available

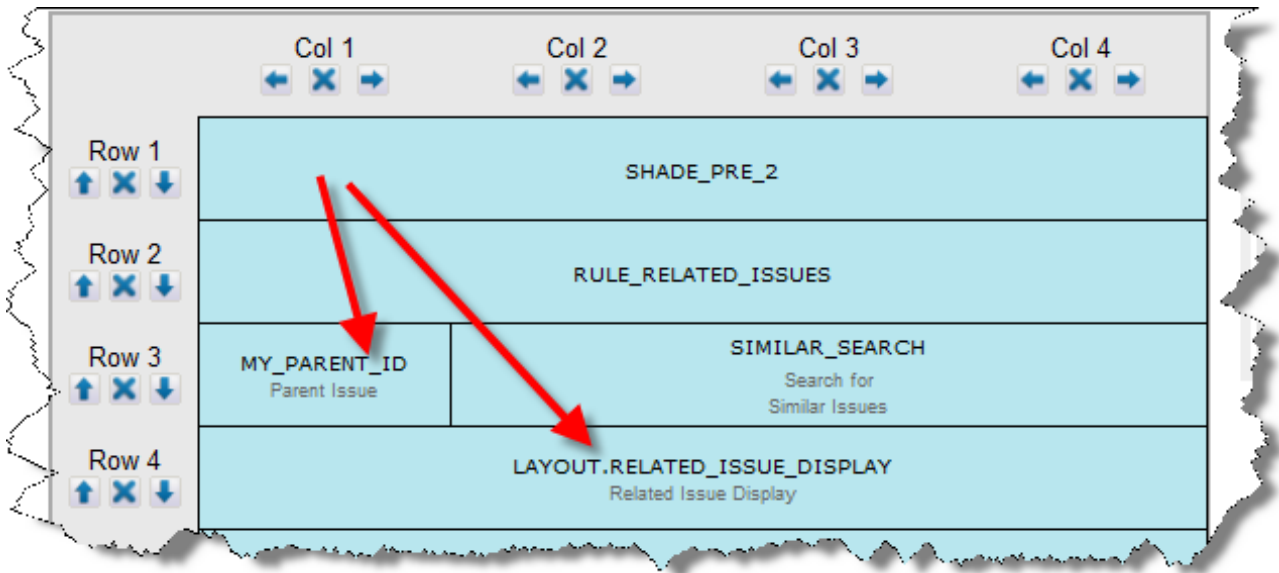
- If the layout does not exist, or you want to override the one that is present in the Global Area, create this layout:
 1. Select **Related Issue Display** from the *** Select Layout Type to Add *** list
 2. Add the desired fields you want displayed in this layout. This is an example of a related issue display layout:

Layout Attributes +

	Col 1	Col 2	Col 3	Col 4	Col 5	Col 6	Col 7
Row 1	VIEW_BUTTON View Button	EDIT_BUTTON Edit Button	RELATIONSHIP_GROUP_REMOVE_BTN Remove?	ID ID #	STATUS Status	ASSIGNED_TO Assigned To	SHORT_DESCR Title

Related Issue Display layout example

- After saving the Related Issue Display layout, edit the *Edit Issue* screen for this business area
- Place the field that you created earlier onto this layout. Also, place the Related Issue Display layout onto the *edit* layout



The fields and related_issue_display on the Edit Issue Layout

- Add the following layout cell attributes to the MY_PARENT_ID field by clicking on the link button next to the field name:

Attribute	Value
RID RELATIONSHIP NAME	BEST_DATA_RG
RID RELATIONSHIP TYPE	Related

- Add the following layout cell attributes to the RELATED_ISSUE_DISPLAY by clicking on the link button next to the field name:

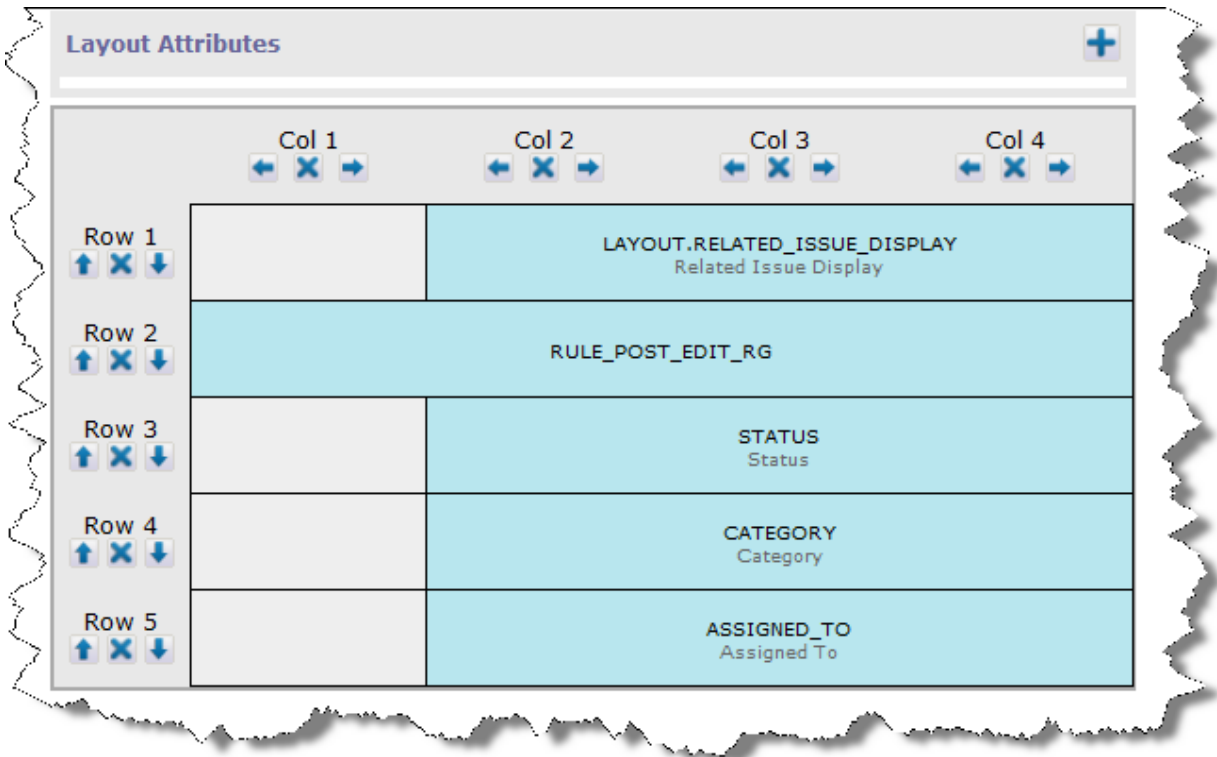
Attribute	Value
RID RELATIONSHIP NAME	BEST_DATA_RG
RID RELATIONSHIP TYPE	Related
VISIBLE IF	ID is not null
HEIGHT	30

- Save the layout.

Step 5 – Updating Related Issues when Updating the Parent Issue

If you want the capability to update all related issues when performing the update of an issue, continue with the following steps. Otherwise, ad hoc related issues are now configured on your site.

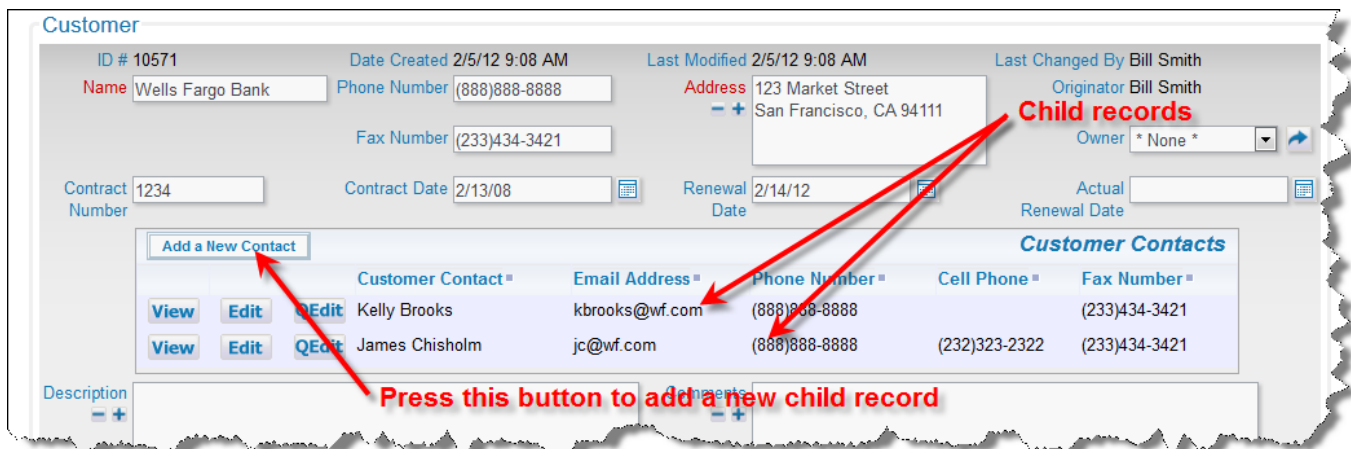
1. Go to **Administration** ♦ **Site Configuration** ♦ **Behavior Settings** and make sure the behavior setting named RG_UPDATE_BILEVEL_ONLY is set to a value of NO
2. Go to **Administration** ♦ **Site Configuration** ♦ **Design Center**. Ensure that you have a layout with a type of POST_EDIT_UPDATE defined. If your installation does not have a layout of this type defined, use the Create and Maintain Layout Types entry on the Fields & Layouts administration menu to define this
3. Add the layout with the POST_EDIT_UPDATE type to your current business area and project, or in a location from which it will be inherited
4. Place the fields on the layout that you want to be available during the update process for related issues. It should look something like the following screenshot.



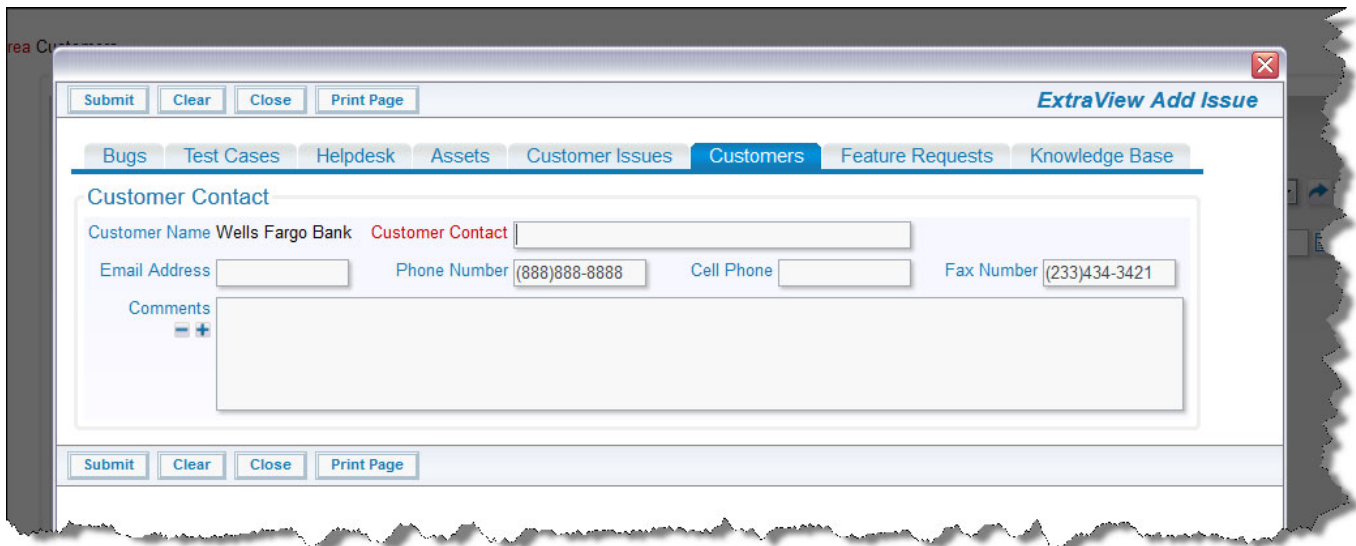
Note that the fields named STATUS, RESOLUTION and ASSIGNED_TO are the fields that will be updated in the related issues. It is essential that you place the embedded layout, LAYOUT.RELATED_ISSUE_DISPLAY on this layout. Also note that the field named RULE_POST_UPDATE_RG is defined as a custom field and has its help text defined as **4 - Check the fields in the list below that you want to update to the same values in the issue being updated.** The new value is shown. Remember that you may need to set the RID RELATIONSHIP NAME, RID GROUP REFERENCE FIELD and the RID RELATION TYPE layout cell attributes for the LAYOUT.RELATED_ISSUE_DISPLAY. When you edit the parent issue, the user will have the option to update the related issues at the same time.

Example 2

A common requirement is to have one issue (the parent issue) create related issues as children. For example, you might have a process that spins off an arbitrary number of actions to employees around your organization, and for each of these employees to complete a task before the parent issue can be closed. You want to have an **Add** button on the parent issue to add the child issues one-by-one. This example shows how a parent customer screen can add any number of contact records to different people as child records. At the same time, some fields from the parent issue are "pushed down" into the child record, to pre-populate the child record with values that are required.



Adding related issues from an Add or Edit screen



The popup Add window where you add the child record

To setup this feature, use the following sequence as a guide:

- This feature presently only works when your installation uses the ID field, as opposed to the ALT_ID field, as the unique identifier for all issues
- Definitions and screens for parent issues to which you want to add the children. For this example let's say this parent issue is in a Business Area titled **Customers** and the data is stored in the Project titled **Customer Information**. The name for the Business Area is **CUSTOMERS** and the Project is named **CUSTOMERS_DATA**
- Definitions and screens for child issues to be added to the parent. For this example let's say the child issues are in the same Business Area titled **Customers** but the data is stored in a separate Project titled **Customer Contact**. The Project is named **CUSTOMERS_CONTACT**
- Have a one-to-many relationship group defined for the link. For our example, we will name this **CUSTOMER_CONTACTS**
- You need a button defined as a field in the data dictionary, which is used to add the child records. This must be created as a field on the **Label** tab and can have any name. Its display type must be **Button**. The title of the field is used as the text for the button on the screen. In our example, the field is named **CONTACT_ADD_BUTTON**. There is an attribute that you can define for this button field, which controls a number of elements:
 - Which Business Area and Project into which you want to add the child record
 - The behavior when you submit the child issue, for example, whether to just refresh the parent window with the information from the new child record, or whether update the parent record with information from the new child record
 - To define a set of fields from the parent record that you want to "push down" to the child record, so the values of these fields can automatically be assigned to fields in the child record

This attribute is the RID BUTTON ACTION attribute and should be configured under the Global Attributes tab within the Data Dictionary. The configured attribute will look like this:

Update Return Print Page

Manage BUTTON ACTION for Field: ADD_TEST_RESULT ?

Target Business Area ? Test Case Management ▼

Target Project ? Test Results ▼

Check Required Fields ?

Push Selected Attachments ?

Presentation ? Modal Popup Window Inline

After Submitting the Child Issue ? Refresh Related Issue Display Update Parent & Refresh Entire Screen

Select field(s) from the parent issue to push down into the child issue, by double-clicking within the left-hand list. Remove fields by dragging them from the right-hand list.

Find a field...	
Abstract(ABSTRACT)	<input checked="" type="checkbox"/> Abstract(ABSTRACT)
Actual Renewal Date(CUST_CONT_ACT_REN_DATE)	<input checked="" type="checkbox"/> Description(DESCRIPTION)
Actual Time (hrs)(TIME_ACTUAL)	<input checked="" type="checkbox"/> Estimated Time (hrs)(TIME_ESTIMATED)
Add users to interest list(NOTIFICATION_INT_LIST_OTHERS)	<input checked="" type="checkbox"/> Module(MODULE)
Assigned To(ASSIGNED_TO)	<input checked="" type="checkbox"/> Pass Criteria / Expected Results(PASS_CRITERIA)
Automated(AUTOMATED)	<input checked="" type="checkbox"/> Procedure(PROCEDURE)
Branch Status(RELEASE_CHILD_STATUS)	<input checked="" type="checkbox"/> Product(PRODUCT_NAME)
Browser(TEST_CASE_BROWSER)	<input checked="" type="checkbox"/> Setup(SETUP)
Bug Date Created(DEV_BUG_DATE_CREATED)	<input checked="" type="checkbox"/> Test Case ID(TEST_CASE_ID)
Bug Date Due(DEV_BUG_DATE_DUE)	<input checked="" type="checkbox"/> Test Plan ID(TEST_PLAN_ID)
CC Email(NOTIFICATION_CC_EMAIL_USERS)	<input checked="" type="checkbox"/> Title(SHORT_DESCR)
Case Status(TEST_CASE_STATUS)	

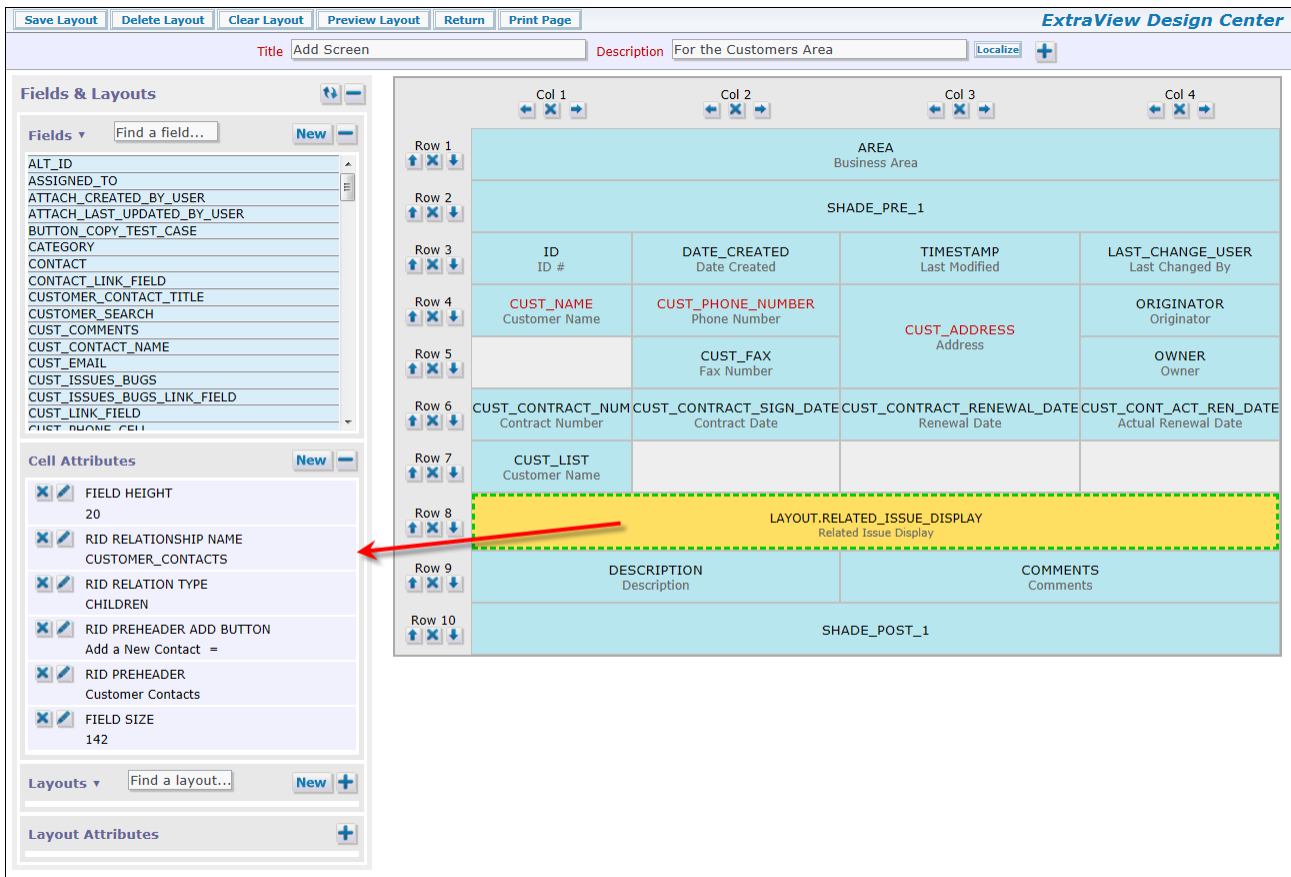
Use the button to generate the JavaScript that ExtraView uses within the ONCLICK_JS attribute. This is only needed if you want to use this BUTTON ACTION utility to prepare a draft of the JavaScript that will be used in the ONCLICK_JS attribute. You cannot have both a BUTTON ACTION and an ONCLICK_JS attribute on the same field. Simply copy the text below and paste into the ONCLICK_JS attribute, where you may modify the script. Do not save this BUTTON ACTION if you are going to use the ONCLICK_JS script.

Show Generated Script

Update Return Print Page

Configuring the Button Action

- Create a layout type to hold the related issues or use the inbuilt related issue display layout named **RELATED_ISSUE_DISPLAY**. If you create your own layout type, the name must start with **RELATED_**, followed by other characters. For example, name the layout type **RELATED_CONTACTS** and make sure that its usage is **Report**. In our example we will just use the inbuilt **RELATED_ISSUE_DISPLAY**
- Add the layout you are using into the **Customers** Business Area and the **Customer Information** project. In our example, this is the **RELATED_ISSUE_DISPLAY**. Onto this layout, add the fields from the child issue that you want to display on the related issue display on the parent issue. This might look like this:



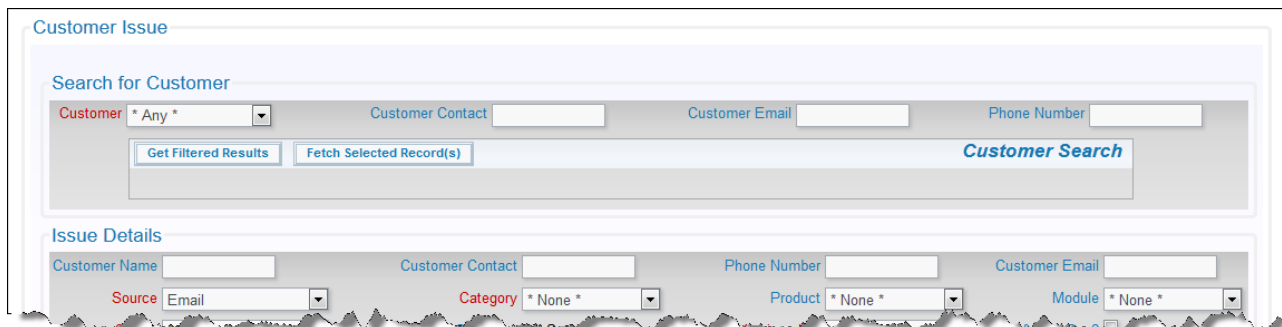
The Related Issue Display

The layout cell attributes that you see are used as follows:

- o **FIELD HEIGHT** - This provides a maximum height before the child issues will be displayed with a scroll bar. This is approximately the number of rows of data
- o **RID RELATIONSHIP NAME** - This should be **CUSTOMER_CONTACTS** for our example
- o **RID RELATION TYPE** - This should be **CHILDREN** for our example
- o **RID PREHEADER ADD BUTTON** - The name of the button you created in the data dictionary
- o **RID PREHEADER** - The title you want to place at the top of the related issue display, to the right of the *add* button
- o **FIELD SIZE** - The width of the related issue display, approximately in characters
- Test the configuration by adding the essential fields to the parent record, then clicking the *add* button and adding a child record.
- [Add new comment](#)

Example 3

It is often useful to search for related issues in order to identify information that you want to copy into the current issue. For example, you might have a business area that contains all your customers, and another business area where you want to create issues that any customer might report. This feature allows you to enter some key identifying information about a customer, such as their name, email address or telephone number, bring back all matching records, and then select the specific customer that you want to associate the customer issue with.



Initial customer search

Customer Issue

Search for Customer

Customer * Any * Customer Contact Valerie Smith Customer Email Phone Number

Get Filtered Results Fetch Selected Record(s)

Select	ID #	Customer Name	Customer Contact	Phone Number	Customer Email
<input type="checkbox"/>	10298	Bank of America	Valerie Smith	(232)333-4456	vsmith@bofa.com
<input type="checkbox"/>	10299		Valerie Smith	(232)333-4456	vsmith@bofa.com
<input type="checkbox"/>	10300		Valerie Smith	(232)333-4456	vsmith@bofa.com
<input type="checkbox"/>	10461		Valerie Smith	(232)333-4456	vsmith@bofa.com
<input type="checkbox"/>	10467		Valerie Smith	(232)333-4456	vsmith@bofa.com

Issue Details

Customer Name Customer Contact Phone Number Customer Email

Entering the search criteria and seeing the results

Customer Issue

Search for Customer

Customer * Any * Customer Contact Valerie Smith Customer Email Phone Number

Get Filtered Results Fetch Selected Record(s)

Select	ID #	Customer Name	Customer Contact	Phone Number	Customer Email
<input checked="" type="checkbox"/>	10298	Bank of America	Valerie Smith	(232)333-4456	vsmith@bofa.com
<input type="checkbox"/>	10299		Valerie Smith	(232)333-4456	vsmith@bofa.com
<input type="checkbox"/>	10300		Valerie Smith	(232)333-4456	vsmith@bofa.com
<input type="checkbox"/>	10461		Valerie Smith	(232)333-4456	vsmith@bofa.com
<input type="checkbox"/>	10467		Valerie Smith	(232)333-4456	vsmith@bofa.com

Issue Details

Customer Name Bank of America Customer Contact Valerie Smith Phone Number (232)333-4456 Customer Email vsmith@bofa.com

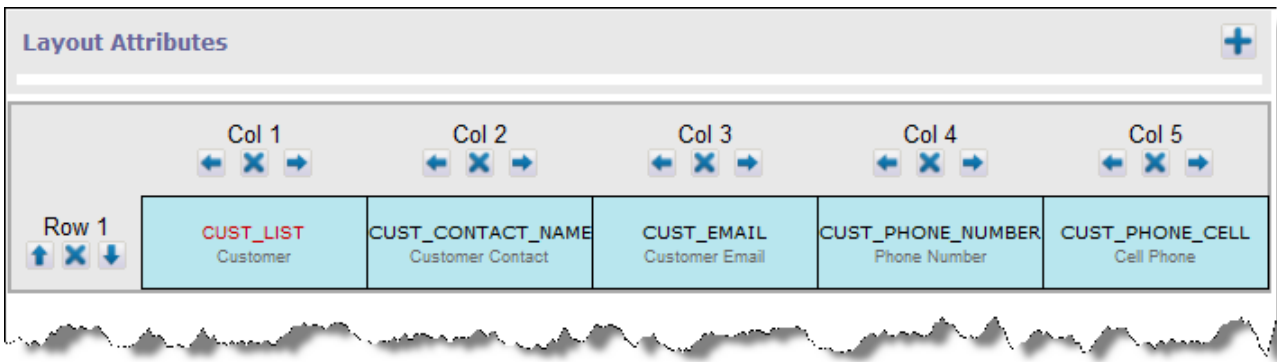
Selecting the result and populating the issue

When you look at the above screenshot, you will see that you have a search capability, a search results area, and the underlying *add* screen into which you want the selected record to appear. The basic configuration is this:

- Start by creating the *add* or *edit* screen in the normal way
- Create a search layout to be used as the available filters for the search
- Create a related issue display to hold the results of the search
- Assembling the search layout and related issue display layout on the *add* or *edit* screen
- Associate the fields on the underlying *add* or *edit* screen with the fields to be populated from the search results

The Search Layout

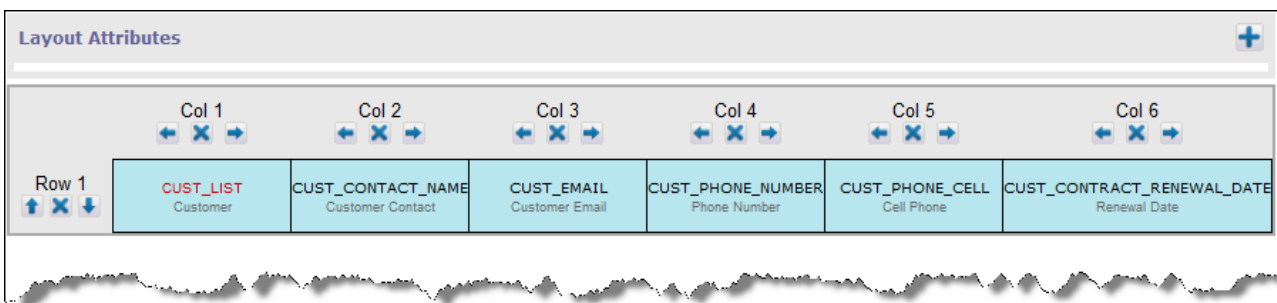
First, create a new layout type. This may have any name and any title, but it must have a usage type of **Search**. This is used to contain the search filters that will be displayed to the user. For our example, we will use the name **CUSTOMER_SEARCH**. Next, add the new layout to the area and project where it is needed, creating a new layout. Onto this layout, you will place the fields to be used as filters. No special layout cell attributes are required, but you may use whatever attributes help you provide an aesthetically pleasing display. Save this layout.



The search layout

The Related Issue Display Layout

This is used to contain the results of the search. Note that the fields displayed do not need to match the fields within the search layout, although it is common to see several fields in common. Create a new layout type to contain the related issue display. By convention, begin the name of the new layout type with **RELATED_** and followed by remaining characters that provide a unique name for the layout. The usage type of this layout must be **Report**. For our example, we name this layout type **RELATED_CUSTOMER_ISSUES**. Now, add the new layout to the area and project where it is needed, creating a new layout. In the first column of the layout, place the inbuilt field with the name **RELATIONSHIP_GROUP_CHOOSE_BTN**. This is used as the selector for the record(s) whose results you want to place into the *add* or *edit* screen. It is recommended that you only place the **VIEW_BUTTON** as any other button on this layout. You should not place other buttons such as **EDIT_BUTTON** or **QUICKEDIT_BUTTON** on this layout. Place the remaining fields that you want to display on the related issue display on the layout, and save the layout.



The related issue display layout

Configuring the *Add* or *Edit* Screen to Use the Search and Related Issue Display Layouts

A link field is required to pass the results from the selection made on the Related Issue Display layout, so begin by creating this field, with a display type of text. Give this field read / write permissions for the roles that will be adding customers. This field must be placed on the *add* or *edit* screen, but it need not be visible. For example, you might provide this field with two layout cell attributes to hide it. Set a **FIELD STYLE** of **display:none** and a **FIELD LABEL TAG** of **display:none** as layout cell attributes, thus ensuring the field can never be seen on the screen by any user. Note that you cannot use the **FIELD/LAYOUT VISIBLE IF** layout cell attribute. This is because this attribute only places the field into the HTML form when it becomes visible. We need the field on the form even when it is invisible to be used as the link field. In our example, we use the name **CUST_LINK_FIELD**.

Place your search layout on the *add* or *edit* screen. This layout does not require any layout cell attributes, but you might decide to hide it using **FIELD/LAYOUT VISIBLE IF**, once you have made your selection from the results of the search.

Place your related issue display layout on the *add* or *edit* screen. This is the place where you configure several layout cell attributes that link that bind all the elements together:

- **RID RELATION TYPE** - You must set this to a value of **Linked**
- **RID SEARCH FILTER LAYOUT** - This identifies the Search Layout you created above. Simply select its name from the list of values
- **RID PREHEADER** - This attribute provides an area above the related issue display that contains the function buttons, as well as providing a title to the related issue display. The value you provide with this attribute becomes the title. Unless you define a **RID PREHEADER** attribute, the **RID PREHEADER REFRESH BUTTON** and the **RID PREHEADER SUBMIT BUTTON** will not appear, as the **RID PREHEADER** is used as a container for these buttons
- **RID PREHEADER REFRESH BUTTON** - This places a button onto the related issue display pre-header bar that allows the user to get the search results from the current set of filters, and to refresh the results if the user changes the filters. The button has a

default title of **Search**, but you can optionally provide a value to the attribute which will then appear as the label on the button. You must define a RID PREHEADER for this button to be visible

- RID PREHEADER SUBMIT BUTTON - This places a button onto the related issue display pre-header bar that allows the user to update ID's for the selected values within the display into the FIELD NAME. The button has a default title of **Connect**, but you can optionally provide a value to the attribute which will then appear as the label on the button You must define a RID PREHEADER for this button to be visible
- RID LINK FIELD NAME - This is the name of the link field that receives the ID's of the selected issues from the related issue display. Simply select the field name from the list presented to you when you add the attribute
- RID SINGLE SELECT - Select this attribute if you want to restrict the user to only make a single selection from the list of search results. You will typically select this if you want the destination of the search result selection to be fields within the current *add* or *edit* screen. If it is your intent to allow the user to add an arbitrary number of related issues, then do not add this attribute, thereby allowing multiple search results to be selected.

The search layout

Developing Business Rules to Associate the Issue with the Results

The business rules work by getting the values of the ID's within the CUST_LINK_FIELD and linking the current issue to the selected values. There are three basic premises; you are retrieving a single result into fields in the current issue, you are retrieving multiple results into repeating row records or you are retrieving multiple results into related issues.

Placing Results Within Fields in the Current Issue

In this case the CUST_LINK_FIELD will contain a single value which is the ID of the record we will associate with the current issue. This is done with business rules similar to the following:

```
<== link customerSearchLink ==> AREA='Customers', ID=CUST_LINK_FIELD

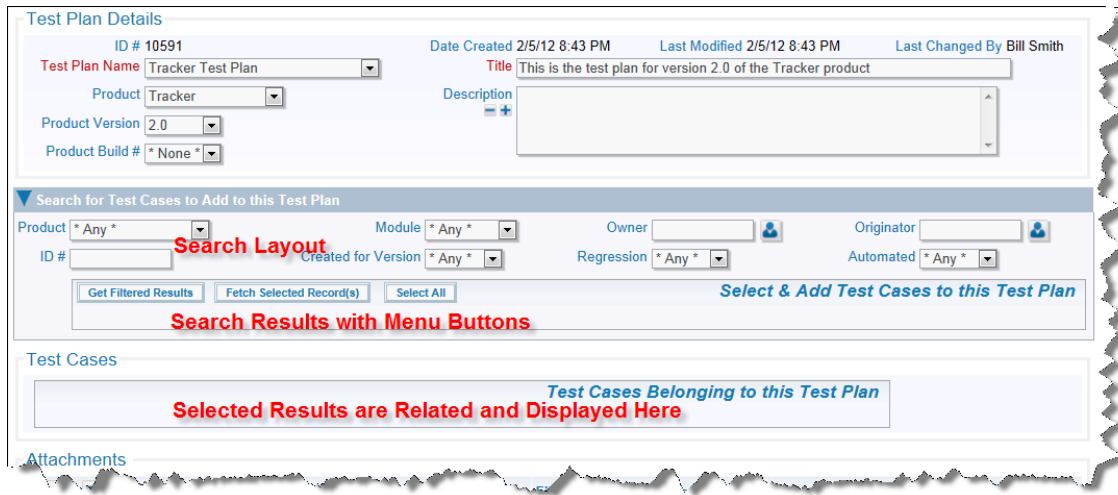
<== refresh ==>
if (CUST_LINK_FIELD.{changed}) {
  CUST_NAME      = (customerSearchLink).CUST_NAME;
  CUST_CONTACT_NAME = (customerSearchLink).CUST_CONTACT_NAME;
  CUST_PHONE_NUMBER = (customerSearchLink).CUST_PHONE_NUMBER;
  CUST_EMAIL     = (customerSearchLink).CUST_EMAIL;
}
```

The link directive establishes a link based on the ID of the issue we want to retrieve being equal to the value contained in the CUST_LINK_FIELD field we created.

The commands within the refresh directive establish the assignments to be made when the CUST_LINK_FIELD is populated from the search results.

Example 4

It is often useful to search for issues in order to make a selection from the result set, and relate this selection to the current record. The selection may be a subset of the result set. For example, you might have a business area that contains a library of test cases, and you want to create any number of test plans from this library. Each test plan might have a different subset of records chosen from the library.



Initial presentation of screen

In the above screen, you will observe a search layout; this is used to provide a filtered set of search results within a related issue display. Note the buttons in the header of the related issue display.

Test Plan Details

ID # 10591 Date Created 2/5/12 8:43 PM Last Modified 2/5/12 8:43 PM Last Changed By Bill Smith

Test Plan Name Tracker Test Plan Title This is the test plan for version 2.0 of the Tracker product

Product Tracker Description

Product Version 2.0

Product Build # *None*

Search for Test Cases to Add to this Test Plan

Product Tracker Module *Any* Owner Originator

ID # Created for Version *Any* Regression *Any* Automated *Any*

Get Filtered Results Fetch Selected Record(s) Select All **Select & Add Test Cases to this Test Plan**

Select	ID #	Product	Module	Owner	Originator	Title
<input type="checkbox"/>	10376	Tracker		Bill Smith	Bill Smith	Check user can log into CLI via telnet
<input checked="" type="checkbox"/>	10377	Tracker		Chris Robinson	Bill Smith	Check how many commands are in the stack
<input type="checkbox"/>	10445	Tracker		Mary Dickens	Bill Smith	Check the database connection works correctly
<input checked="" type="checkbox"/>	10534	Tracker	CLI	Chris Robinson	Bill Smith	Test #1 for the CLI
<input checked="" type="checkbox"/>	10540	Tracker	GUI	Bill Smith	Bill Smith	This is a test case for the length of the screen
<input type="checkbox"/>	10567	Tracker	Database	Bill Smith	Bill Smith	Check tracker GUI
<input type="checkbox"/>	10585	Tracker	Database	limmy	Bill Smith	Test case within a test plan

Test Cases

[Test Cases Belonging to this Test Plan](#)

Entering the search criteria and seeing the results

Once you have selected filters, use the **Get Filtered Results** button to display the results in the related issue display. With your mouse, you can click on any of the results to select that record. There is also a button to **Check All** the results at one time.

Test Plan Details

ID # 10591 Date Created 2/5/12 8:43 PM Last Modified 2/5/12 8:43 PM Last Changed By Bill Smith

Test Plan Name Tracker Test Plan Title This is the test plan for version 2.0 of the Tracker product

Product Tracker Description

Product Version 2.0

Product Build # *None*

Search for Test Cases to Add to this Test Plan

Product Tracker Module *Any* Owner Originator

ID # Created for Version *Any* Regression *Any* Automated *Any*

Get Filtered Results Fetch Selected Record(s) Select All **Select & Add Test Cases to this Test Plan**

Test Cases

[Test Cases Belonging to this Test Plan](#)

Remove?	ID #	Product	Module	Est. Time (hrs)	Title
<input type="checkbox"/>	10377	Tracker		3	Check how many commands are in the stack
<input type="checkbox"/>	10534	Tracker	CLI	3	Test #1 for the CLI
<input type="checkbox"/>	10540	Tracker	GUI	3	This is a test case for the length of the screen
Total					9

The selected results now related to the parent issue

Use the **Fetch Selected Record(s)** to move all the selected records into the final result set where they will be stored with the parent issue. You may repeat the search and selection process to add additional child records to the parent record. The basic configuration involves setting up 3 embedded layouts, one for the search, one for the search results and one for the selected records. A text or text area field is used to connect the selected value from the search results to the selected records:

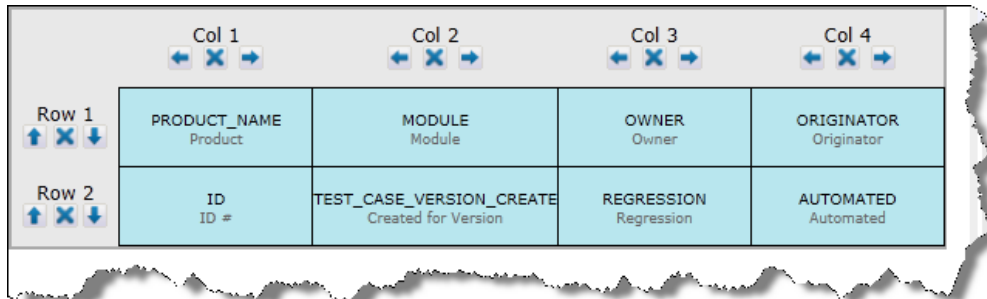
- Start by creating an *add* or *edit* screen(s) in the normal way
- Create a relationship group to define and hold the relationship
- Create a search layout to be used as the available filters for the search
- Create a related issue display to hold the results of the search. Make sure the name of this layout begins with **RELATED_**
- Create a related issue display to hold the final selected records as children to the parent issue. Make sure the name of this layout begins with **RELATED_**
- Assemble the search layout and related issue display layout on the *add* or *edit* screen
- Create and place a link field on the *add* or *edit* screen to act as a transition of the record ID's from the search results to the final related issue display

The Relationship Group

This is created within the Administration utility, **Relationship Group Maintenance**. This should be of the type **One-to-Many**. In our example, we named this **TEST_CASES_TEST_PLANS** and gave it a title of **Test Cases / Test Plans**.

The Search Layout

A prerequisite to making the search layout operate is to configure the [Quickfind](#) feature. Once this has been done, create a new layout type. This may have any name and any title, but it must have a usage type of **Search**. This is used to contain the search filters that will be displayed to the user. For our example, we will use the name **TEST_CASE_SEARCH**. Next, add the new layout to the area and project where it is needed, creating a new layout. Onto this layout, you will place the fields to be used as filters. No special layout cell attributes are required, but you may use whatever attributes help you provide an aesthetically pleasing display. Save this layout.



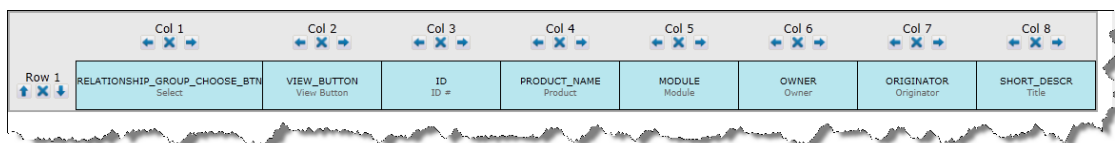
	Col 1	Col 2	Col 3	Col 4
Row 1	PRODUCT_NAME Product	MODULE Module	OWNER Owner	ORIGINATOR Originator
Row 2	ID ID #	TEST_CASE_VERSION_CREATE Created for Version	REGRESSION Regression	AUTOMATED Automated

The search layout

The Related Issue Display Layout Containing the Search Results

This is used to contain the results of the search. Note that the fields displayed do not need to match the fields within the search layout, although it is common to see several fields in common. Create a new layout type to contain the related issue display. By convention, begin the name of the new layout type with **RELATED_** and followed by remaining characters that provide a unique name for the layout. The usage type of this layout must be **Report**. For our example, we name this layout type **RELATED_TEST_CASE_RESULTS**. Now, add the new layout to the area and project where it is needed, creating a new layout. In the first column of the layout, place the inbuilt field with the name **RELATIONSHIP_GROUP_CHOOSE_BTN**. This is used as the selector for the record(s) whose results you want to place into the *add* or *edit* screen. Note that if this field is not placed on the layout, then the **Connect** button in the pre header is not displayed.

It is recommended that you only place the **VIEW_BUTTON** as any other button on this layout. You should not place other buttons such as **EDIT_BUTTON** or **QUICKEDIT_BUTTON** on this layout as this layout only displays search results. Place the remaining fields that you want to display on the related issue display on the layout, and save the layout.

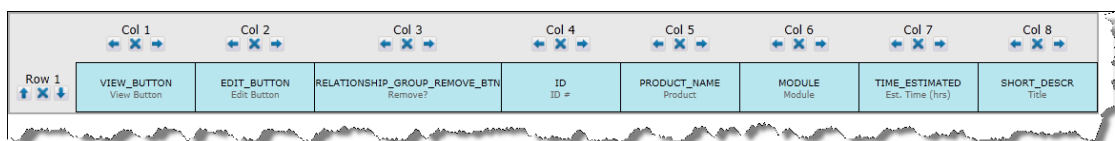


	Col 1	Col 2	Col 3	Col 4	Col 5	Col 6	Col 7	Col 8
Row 1	RELATIONSHIP_GROUP_CHOOSE_BTN Select	VIEW_BUTTON View Button	ID ID #	PRODUCT_NAME Product	MODULE Module	OWNER Owner	ORIGINATOR Originator	SHORT_DESCR Title

The related issue display layout with the results

The Related Issue Display Holding the Selected Records

This layout is typically similar to the previous one you created, in terms of the fields you display, but you will likely want to see different buttons. Most typical is to include a **VIEW_BUTTON**, and an **EDIT_BUTTON**. A **QUICKEDIT_BUTTON** is often useful.



	Col 1	Col 2	Col 3	Col 4	Col 5	Col 6	Col 7	Col 8
Row 1	VIEW_BUTTON View Button	EDIT_BUTTON Edit Button	RELATIONSHIP_GROUP_REMOVE_BTN Remove?	ID ID #	PRODUCT_NAME Product	MODULE Module	TIME_ESTIMATED Est. Time (hrs)	SHORT_DESCR Title

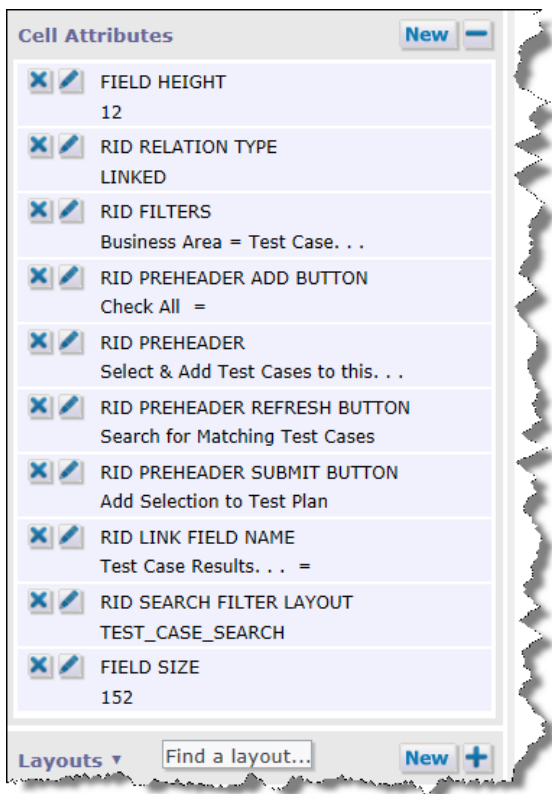
The related issue display layout that displays the selected records

Configuring the Add or Edit Screen to Use the Search and Related Issue Display Layouts

A link field is required to pass the results from the selection made on the Related Issue Display layout with these characteristics:

- Create the link field, with a display type of *text area*. In our example, we use the name **TEST_CASE_RESULTS_LINK_FIELD**. Give this field read / write permissions for the roles that will be adding the test cases

- This field must be placed on the *add* or *edit* layout you are configuring, but it need not be visible - normally you will want to hide this. The following layout cell attributes are recommended:
 - STYLE - set to **style=display:none** to hide the field. Note that you cannot use the VISIBLE IF layout cell attribute. This is because this attribute only places the field into the HTML form when it becomes visible. ExtraView needs the field on the form even when it is invisible to be used as the link field
 - LABEL TAG - set to **style=display:none**
 - RID ACT ON FIELD CHANGE - This ensures that the link field updates the final layout with the selected issues by triggering a refresh of the related issue display with the selected results
 - RID RELATIONSHIP NAME - This is the relationship that you created in the earlier step. In our example, this is **TEST_CASES_TEST_PLANS** with the title of **Test Cases / Test Plans**
 - RID RELATIONSHIP TYPE - Set this to a value of **Children**
 - RID OMIT AUTO POPULATE - This ensures that when you delete an item from the relationship that any value in the original link field is not used, thereby re-populating the child issue back into the relationship.
 - Place your TEST_CASE_SEARCH layout on the *add* or *edit* screen layout. This layout does not require any layout cell attributes, but you might decide to hide it using FIELD/LAYOUT VISIBLE IF, once you have made your selection from the results of the search. Place your RELATED_TEST_CASE_RESULTS related issue display layout for the search results on the *add* or *edit* screen layout. This is the place where you configure several layout cell attributes that link that bind all the elements together:



Cell attributes on the results layout

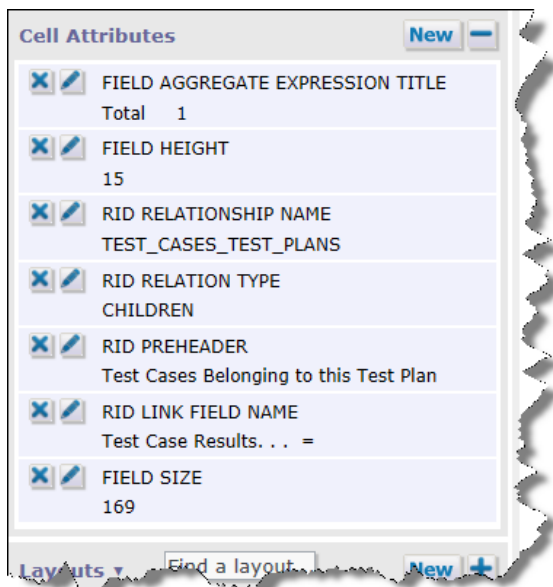
- HEIGHT - The approximate number of rows to display on the results layout, before displaying a vertical scroll bar. This is optional. If you do not provide this, all the results will be displayed
- RID RELATION TYPE - You must set this to a value of **Linked**
- RID FILTERS - This is optional. You may provide filters here which will be used in addition to filters the end user enters on the *add* or *edit* screen. In our example, we always want the results to be obtained from the **Test Cases** project within the **Test Cases** business area, so we create these filters within the layout
- RID PREHEADER ADD BUTTON - This button is usually used to provide a "Submit" capability on a related issue display. This functionality is not required on search results, so we use this button to provide an alternative function, to *Check All* and *Uncheck All* records in the search result. This field is available in the Data Dictionary on the **Labels** tab. It has a name of **SELECT_ALL_BTN**, and a title of **Check All** in the English locale. It also has a **Global Attribute** of ONCLICK_JS with a value of toggleRIDSelectButtons(). This provides the JavaScript that allows all the records to be selected or deselected. You must define a RID PREHEADER for this button to be visible
- RID PREHEADER - This attribute provides an area above the related issue display that contains the function buttons, as well as providing a title to the related issue display. The value you provide with this attribute becomes the title. Unless you define a RID PREHEADER attribute, the RID PREHEADER ADD BUTTON, the RID PREHEADER REFRESH BUTTON and the RID PREHEADER SUBMIT BUTTON will not appear, as the RID PREHEADER is used as a container for these buttons

- RID PREHEADER REFRESH BUTTON - This places a button onto the related issue display pre-header bar that allows the user to get the results from the current set of filters, and to refresh the results if the user changes the filters. The button has a default title of **Get Filtered Results**, but you can optionally provide a value to the attribute which will then appear as the label on the button. You must define a RID PREHEADER for this button to be visible
- RID PREHEADER SUBMIT BUTTON - This places a button onto the related issue display pre-header bar that allows the user to update ID's for the selected values within the display into the FIELD NAME. The button has a default title of **Fetch Selected Record(s)**, but you can optionally provide a value to the attribute which will then appear as the label on the button. You must define a RID PREHEADER for this button to be visible
- RID LINK FIELD NAME - This is the name of the link field that receives the ID's of the selected issues from the related issue display. Simply select the field name from the list presented to you when you add the attribute
- RID SEARCH FILTER LAYOUT - This identifies the Search Layout you created above. Simply select its name from the list of values
- SIZE - This is an optional attribute with the width, in characters, of the display of the related issue display layout
- Use the RID AUTOLOAD layout cell attribute, if you want the search results to be populated with results using the RID FILTERS, when the screen is first rendered.

The Related Issue Display with the Related Records from the Results

Here, you place layout cell attributes on the layout named **LAYOUT.RELATED_TEST_CASE_RESULTS**. This layout displays the records you selected within the search results. The attributes this layout needs are:

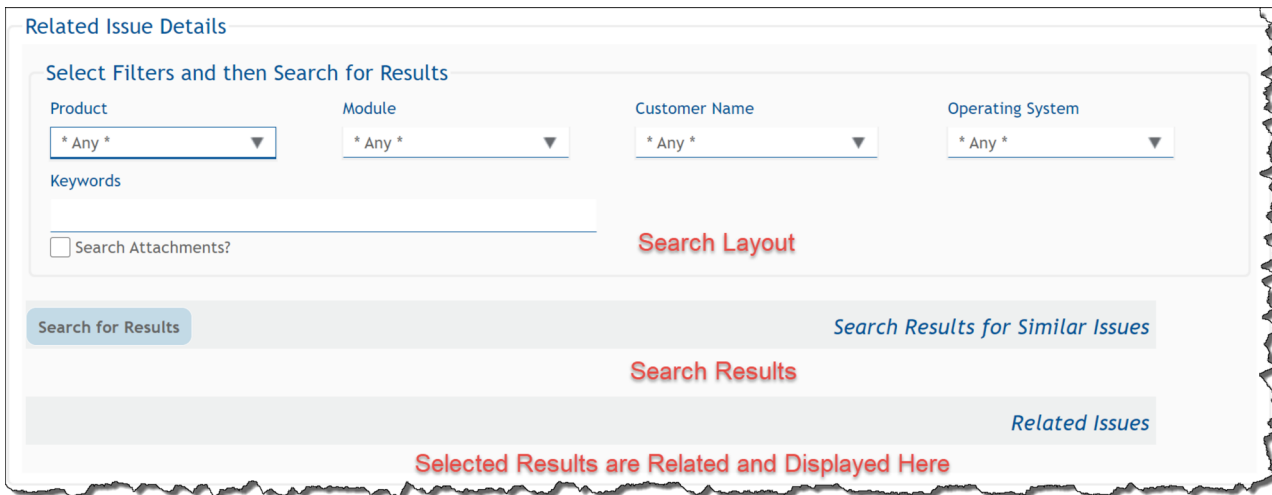
- AGGREGATE EXPRESSION - This is an optional attribute that, in our example, is used to provide a total of the hours on the related issue display
- HEIGHT - This is an optional attribute. It provides an approximate row count that is displayed, before a vertical scroll bar is introduced onto the related issue display
- RID RELATIONSHIP NAME - This is the relationship that is being updated. This was created in an earlier step. In our example, this is **TEST_CASES_TEST_PLANS** with the title of **Test Cases / Test Plans**
- RID RELATIONSHIP TYPE - This attribute defines the type of relationship. This should be **Children**
- RID LINK FIELD NAME - This is the name of the link field that receives the ID's of the selected issues from the related issue display. Simply select the field name from the list presented to you when you add the attribute
- SIZE - This optional attribute provides a width, in characters, of the related issue display.



Cell attributes on the child record layout

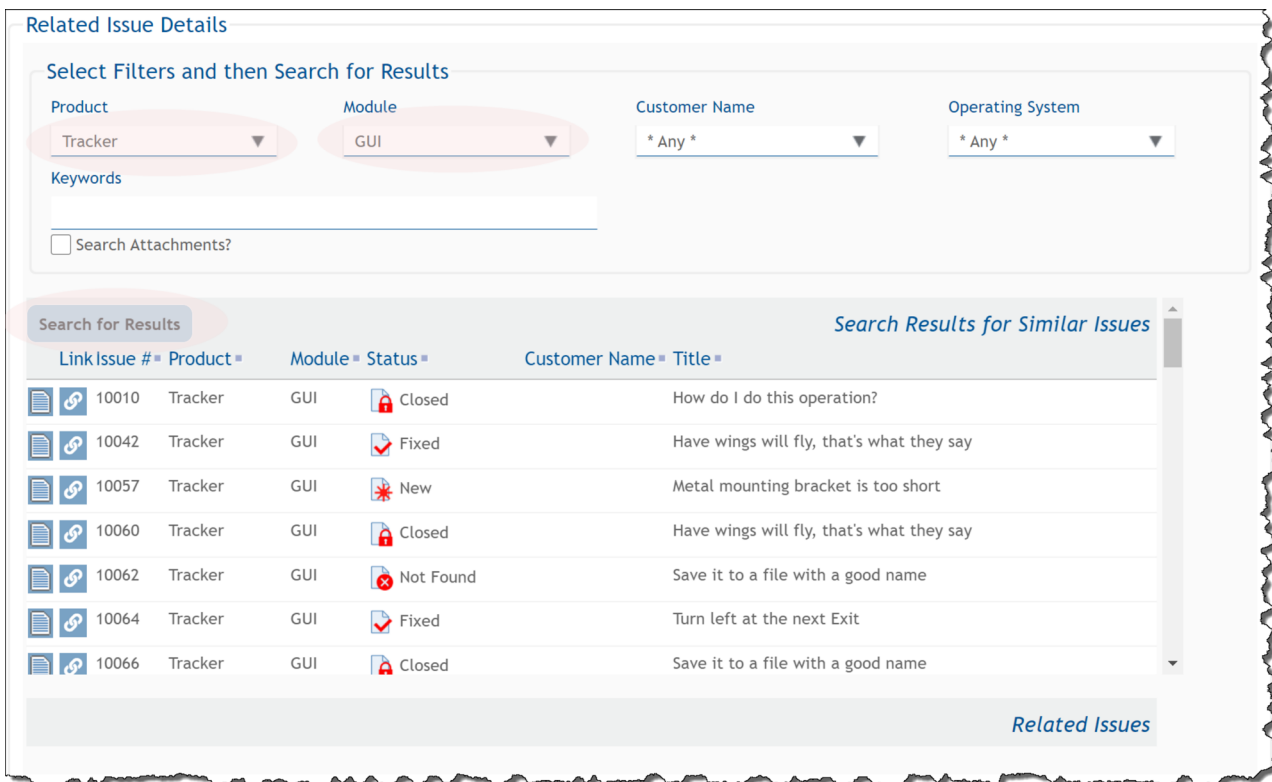
Example 5

It is often useful to search for issues in order to make individual selections from the result set, and relate individual issues to the parent record. For example, you might have a business area that contains many bugs, and you want to arbitrarily relate some of these bugs to the parent issue as they are similar to the parent issue by scanning up and down the results and individually choosing the results to relate.



Initial presentation of screen

In the above screen, you will observe a search layout; this is used to provide a filtered set of search results within a related issue display. Note the **Search for Results** button in the header of the related issue display with the title **Search Results for Similar Issues**.



Entering the search criteria and seeing the results

Once you have selected filters, use the **Search for Results** button to display the results in the related issue display. With your mouse, you can click on the **Link** button against any one or more than one result to relate these records to the parent issue. Note that the title of the **Search for Results** and the icon used for the **Link** button are customizable.

Related Issue Details

Select Filters and then Search for Results

Product: Tracker | Module: GUI | Customer Name: * Any * | Operating System: * Any *

Keywords: _____

Search Attachments?

Search for Results Search Results for Similar Issues

Link Issue #	Product	Module	Status	Customer Name	Title
10010	Tracker	GUI	Closed		How do I do this operation?
10042	Tracker	GUI	Fixed		Have wings will fly, that's what they say
10057	Tracker	GUI	New		Metal mounting bracket is too short
10060	Tracker	GUI	Closed		Have wings will fly, that's what they say
10062	Tracker	GUI	Not Found		Save it to a file with a good name
10064	Tracker	GUI	Fixed		Turn left at the next Exit
10066	Tracker	GUI	Closed		Save it to a file with a good name

Related Issues

Remove?	Issue #	Product	Module	Status	Customer Name	Title
<input type="checkbox"/>	10042	Tracker	GUI	Fixed		Have wings will fly, that's what they say
<input type="checkbox"/>	10062	Tracker	GUI	Not Found		Save it to a file with a good name

The selected results now related to the parent issue

Use the **Link** to move any selected record into the final result set where they will be stored with the parent issue. You may repeat the connection process with the **Link** button to add additional child records to the parent record. The basic configuration involves setting up 3 embedded layouts, one for the search, one for the search results and one for the selected records. A text or text area field is used to connect the selected value from the search results to the selected records:

1. Start by creating an *add* or *edit* screen(s) in the usual way
2. Create a relationship group to define and hold the relationship
3. Create a search layout to be used as the available filters for the search
4. Create a related issue display to hold the final selected records as children to the parent issue. Make sure the name of this layout begins with **RELATED_**
5. Create and place a hidden link field on the *add* or *edit* screen to act as a transition of the record ID's from the search results to the final related issue display
6. Create a menubar button field in the Data Dictionary to act as the link button to relate selected issues to the parent
7. Create a related issue display to hold the results of the search. Make sure the name of this layout begins with **RELATED_**
8. Assemble the search layout and related issue display layout on the *add* or *edit* screen
9. Quickfind should be configured within your installation.

The Relationship Group

This is created within the Administration utility, **Relationship Group Maintenance**. This should be of the type **One-to-Many**. In our example, we named this **SIMILAR_ISSUES** and gave it a title of **Similar Issues**.

The Search Layout

A prerequisite to making the search layout operate is to configure the [Quickfind](#) feature. Once this has been done, create a new layout type. This may have any name and any title, but it must have a usage type of **Search**. This is used to contain the search filters that will be displayed to the user. For our example, we will use the name **SIMILAR_ISSUE_SEARCH**. Next, add the new layout to the area and project where it is needed, creating a new layout. Onto this layout, you will place the fields to be used as filters. No special layout cell attributes are required, but you may use whatever attributes help you provide an aesthetically pleasing display. Save this layout.

	Col 1	Col 2	Col 3	Col 4
Row 1	PRODUCT_NAME Product	MODULE Module	CUST_LIST Customer Name	OS Operating System
Row 2	KEYWORD Keywords			

The search layout

The Hidden Link Field

This should be created within the Data Dictionary as a field with a display type of Text. The field will not be visible to users, and is used internally to pass the ID of the selected issue between the layouts on the screen. In this example, we name the field TEST_CASE_RESULTS_LINK_FIELD.

The Menubar Button

This is created within the Data Dictionary under the **Labels / Buttons** tab. In our example, we have named this RELATE_MY_ISSUE.

- The **Display Type** must be *Menubar Button*
- For the most pleasing aesthetic result, choose an icon from the library and set the **Icon Display** to *Icon only*
- The **Action Type** should be *ExtraView Related Issue Display*. This results in a select area for a **Custom Action** to open
- The **Custom Action** should be entered as

```
window.doRGSubmit('$$LAYOUT_ID$$', 'SIMILAR_ISSUES_LINK_FIELD', '$$ID$$');
```

If you are using a different field name for SIMILAR_ISSUES_LINK_FIELD, then substitute this name

- Provide a **Help Tip** for the button.

Update Delete Cancel Print Page Change a Data Dictionary Entry ?

Fixed name RELATE_MY_ISSUE

Title to display Localize

Display type

FIELD PROPERTIES GLOBAL ATTRIBUTES PERMISSIONS WHERE USED

Icon Browse the Icon Library

Icon Display

Workspace Image

Action
 Action Type
 Custom Action

```
window.doRGSubmit('${SLAYOUT_IDSS}', 'SIMILAR_ISSUES_LINK_FIELD', '${IDSS}');
```

Help Text Localize

The Related Issue Display Layout Containing the Search Results

This is used to contain the results of the search. Note that the fields displayed do not need to match the fields within the search layout, although it is usual to see several fields in common. Create a new layout type to contain the related issue display. By convention, begin the name of the new layout type with **RELATED_** and followed by remaining characters that provide a unique name for the layout. The usage type of this layout must be **Report**. For our example, we name this layout type **RELATED_SIMILAR_SEARCH_RESULTS**. Now, add the new layout to the area and project where it is needed, creating a new embedded layout within the Business Area and Project for the *add* or *edit* screen. Place all the fields on the layout, including the menubar button, named **RELATE_MY_ISSUE** in this example. This button is used as the link button to select the record you want to place into the *add* or *edit* screen. It is recommended that you only place the **VIEW_BUTTON** as another button on this layout. You should not place other buttons such as **EDIT_BUTTON** or **QUICKEDIT_BUTTON** on this layout as this layout is only displaying search results.

	Col 1	Col 2	Col 3	Col 4	Col 5	Col 6	Col 7	Col 8
Row 1	VIEW_BUTTON View Button	RELATE_MY_ISSUE Link	ID Issue #	PRODUCT_NAME Product	MODULE Module	STATUS Status	CUST_LIST Customer Name	SHORT_DESCR Title

The related issue display layout with the results

The Related Issue Display Holding the Selected Records

This layout is typically similar to the Related Issue Display that contains the search results, in terms of the fields you display, but you will likely want to see different buttons. In this example, the layout is named **RELATED_SIMILAR_ISSUES**. Most typical you include a **VIEW_BUTTON** and an **EDIT_BUTTON**. A **QUICKEDIT_BUTTON** is often useful.

	Col 1	Col 2	Col 3	Col 4	Col 5	Col 6	Col 7	Col 8
Row 1	VIEW_BUTTON View Button	EDIT_BUTTON Edit Button	RELATIONSHIP_GROUP_REMOVE_BTN Remove?	ID ID #	PRODUCT_NAME Product	MODULE Module	TIME_ESTIMATED Est. Time (hrs)	SHORT_DESCR Title

The related issue display layout that displays the selected records

Configuring the Add or Edit Screen to Use the Search and Related Issue Display Layouts

This section describes how you pull together all the above configuration to produce the complete configuration.

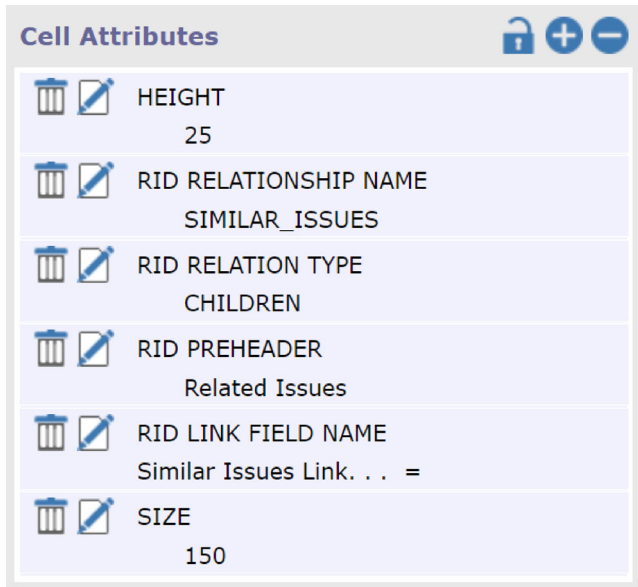
- The link field you created earlier is required to pass the results from the selection made on the Related Issue Display layout. Place the field you created, TEST_CASE_RESULTS_LINK_FIELD on the *add* or *edit* layout you are configuring. As stated earlier, this field should not be visible and should be given the following attributes
 - STYLE - set to **style=display:none** to hide the field. Note that you cannot use the VISIBLE IF layout cell attribute. This is because this attribute only places the field into the HTML form when it becomes visible. ExtraView needs the field on the form even when it is invisible to be used as the link field
 - LABEL TAG - set to **style=display:none**
 - RID RELATIONSHIP NAME - for this example, this is **SIMILAR ISSUES**
 - RID RELATIONSHIP TYPE - for this example, this is **CHILDREN**
 - RID ACT ON FIELD CHANGE - set this attribute to trigger updates to the results when the search results alter
- Configure the following layout cell attributes on the search result layout, in this case the RELATED_SIMILAR_SEARCH_RESULTS layout. Many of these attributes are optional and can have different values to make the end result cosmetically pleasing!
 - HEIGHT - This is an optional attribute. It provides an approximate row count that is displayed, before a vertical scroll bar is introduced onto the related issue display
 - RID RELATIONSHIP TYPE - This attribute defines the type of relationship. Most often this is **Children**, but in this example, we set **Linked**. This allows all the related issues to be peers in the relationship, as opposed to there being a parent / child relationship
 - RID FILTERS - This applies filters to the search results, in addition to those that have been set within the Search layout
 - RID PREHEADER - Provides the title to the search results layout
 - RID PREHEADER REFRESH BUTTON - This places a button on the search results layout which retrieves the results and allows for the results to be refreshed. This attribute also configures the text to be placed on the button
 - RID LINK FIELD NAME - This is the name of the hidden link field that receives the ID's of the selected issues from the related issue display. Select the field named TEST_CASE_RESULTS_LINK_FIELD from the list presented to you when you add the attribute
 - SIZE - This optional attribute provides a width, in characters, of the related issue display.



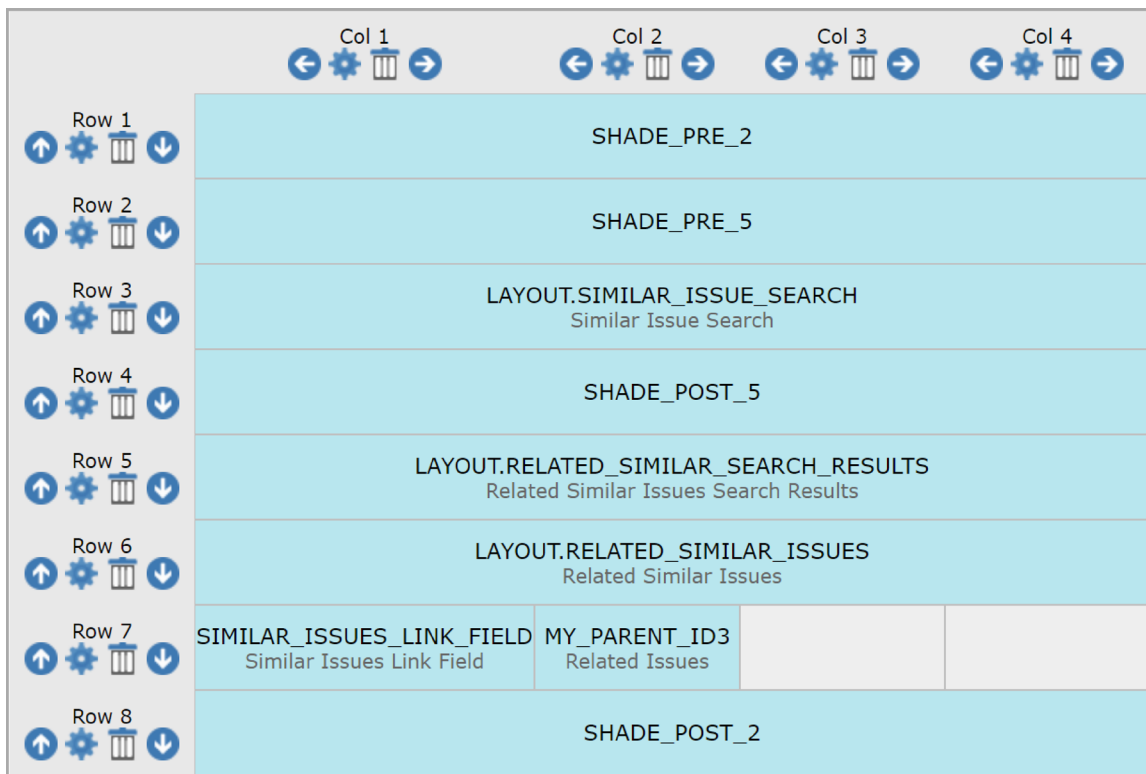
Cell attributes on the child record layout

- Lastly, configure the layout cell attributes on the related issue display containing the related issues, in our example RELATED_SIMILAR_ISSUES. As the user selects each issue from the search results layout, they will be moved to this layout and will form part of the record that is being saved or updated. Again, many of these attributes are optional, and you may configure additional attributes from those available:
 - HEIGHT - The approximate number of rows to display on the results layout, before displaying a vertical scroll bar. This is optional. If you do not provide this, all the results will be displayed

- RID RELATIONSHIP NAME - This is the relationship that is being updated. This was created in an earlier step. In our example, this is **SIMILAR_ISSUES** with a title of **Similar Issues**
- RID RELATIONSHIP TYPE - Set this to a value of **Children**
- RID PREHEADER - This attribute provides an area above the related issue display that contains the function buttons, as well as providing a title to the related issue display. The value you provide with this attribute becomes the title. Unless you define a RID PREHEADER attribute, the RID PREHEADER ADD BUTTON, the RID PREHEADER REFRESH BUTTON and the RID PREHEADER SUBMIT BUTTON will not appear, as the RID PREHEADER is used as a container for these buttons
- RID LINK FIELD NAME - This is the name of the link field - **TEST_CASE_RESULTS_LINK_FIELD** - that receives the ID's of the selected issues from the related issue display. Simply select the field name from the list presented to you when you add the attribute



- The example layout we have just created looks like this:



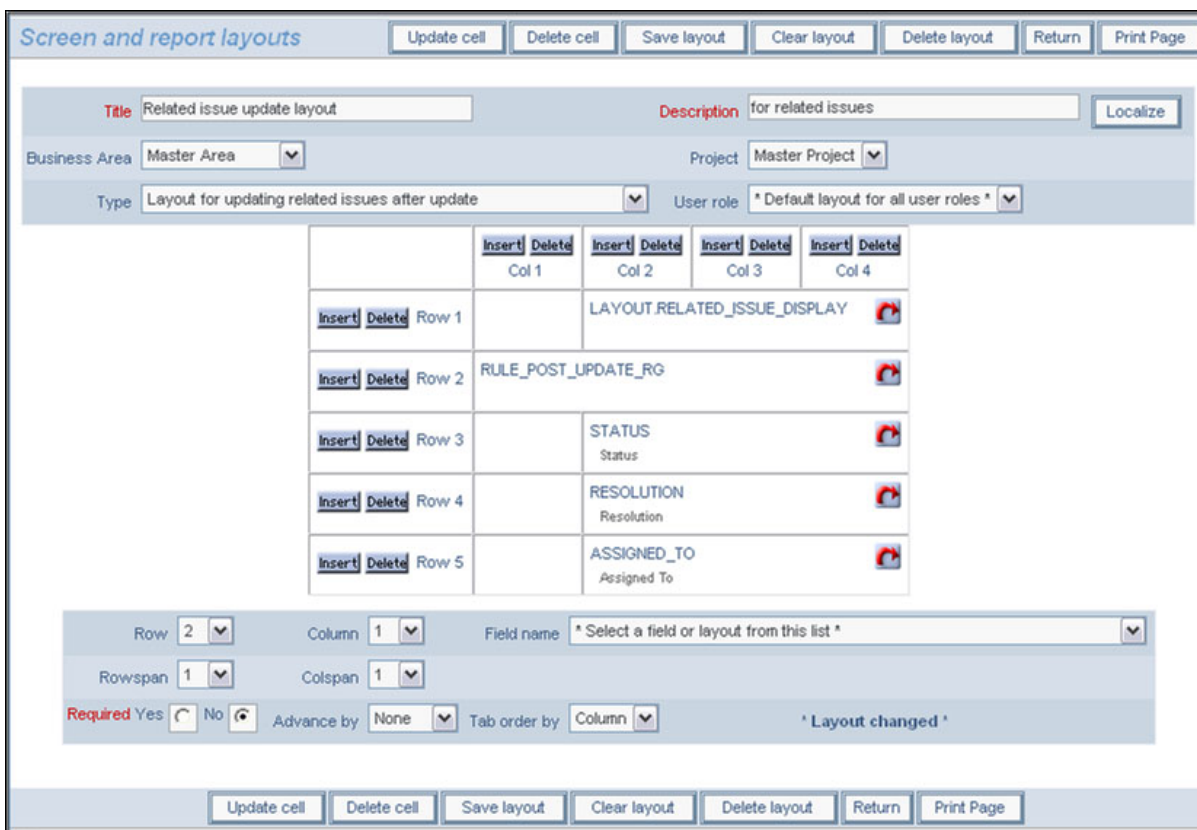
Note the placement of other elements such as the shaded regions.

Updating Related Issues as a Group

The feature on this page is being deprecated from version 9.0 onwards. The functionality will continue to work, but should not be configured on new sites. In due course, support for the feature will be removed entirely. The functionality has been superseded with the ability to handle related issues upon issue updates within Business Rules.

This feature allows you to apply updates to all issues related to the current issue, after you complete the updates to the current issue. The updates can be applied to a set of fields you place on a layout. You may optionally add a comment to each of the related issues as part of the updates. The setup for this involves a number of steps.

1. If you are using BI-LEVEL relationship groups, set the RG_UPDATE_BILEVEL_ONLY behavior setting to YES. For all other types of relationship groups, set the value of this behavior setting to NO
2. Ensure that you have a layout with a type of POST_EDIT_UPDATE defined. If your installation does not have a layout of this type defined, use the **Create and Maintain Layout Types** entry on the **Fields & Layouts** administration menu to define this
3. Add a layout with the POST_EDIT_UPDATE type to your system, either in the business area and project you require, or in a location from which it will be inherited
4. Place the fields on the layout that you want to be available during the update process for related issues. It should look something like the following screenshot. Note that the fields named STATUS, RESOLUTION and ASSIGNED_TO are the fields that will be updated in the related issues. It is mandatory that you place the embedded layout, LAYOUT.RELATED_ISSUE_DISPLAY on this layout. Also note that the field named RULE_POST_UPDATE_RG is defined as a custom field and has its help text defined as 4 - **Check the fields in the list below that you want to update to the same values in the issue being updated. The new value is shown.** Remember that you may need to set the RID RELATIONSHIP NAME, RID GROUP REFERENCE FIELD and the RID RELATIONSHIP TYPE layout cell attributes for the LAYOUT.RELATED_ISSUE_DISPLAY.



Layout to update related issues

5. When the user updates an issue that is a member of a relationship group, based on the above layout, the following screen appears:

Update Related Issues Update Issues Cancel Print Page

The item you are updating has related issues. You may update all the related items or just the item you are updating. You can add a single comment to all the items, and optionally select any fields below that you want to update in the related items. Before you update, you can set the scope of the notification.

1 - Update Options

Update this item only (Press the 'Update Issues' button after selecting this option)

Update all related items

← Overall Options

2 - Check the box to add the following Comments to all related items when you update

← Adding Comments

3 - View the related items and check the additional fields you want to update in these items

Related Issues		ID #	Status	Assigned To	Title
View	Edit	10466	New	Bill Smith	When the user presses the Go button he waits 2 seconds before
View	Edit	10467	Open	Bill Smith	A hold time of 30 seconds was noticed when the status was set

4 - Check the fields in the list below that you want to update to the same values in the issue being updated. The new value is shown.

Status Fixed

Resolution Implemented

Assigned To Jimmy Duncan

POST_EDIT_UPDATE layout

5 - Notification options

Notify users on the current issue only

Notify users on all the issues in the relationship group

Notify users on the parent issue only

← Notification Options

Update Issues Cancel Print Page

Rendered layout when updating related issues

The user will first choose whether to update just the single issue or all the related issues. A comment may optionally be added at this time that will be applied to all the related issue updates. The user will see all the related issues and can check or uncheck the fields to update in the related issues. Lastly, notification options may be set, to notify only the users on the current issue or the users on all the related issues or notify only the users on the parent issue.

Mass Updates and Audit Trails

Related Issues and Mass Updates

When a user performs a mass update and some of the records are part of relationship groups, no attempt is made to update the related issues to any single item. The reason for this is that there could well be thousands of issues in the mass update, and each one of them may in some way be related to other issues, causing ExtraView to ask the questions for each issue as to whether the related issues should be updated.

Related Issues and Audit Trails

You may add an embedded layout prepared to display related issues to a History Layout. As explained in the previous section about preparing layouts for Related Issues, these layout types always begin with the character string RELATED_. This produces a related issue display at the point in time on the history record when the issue was updated, not at the current time. When you configure this layout on the History Layout, remember that you may also need to set the relationship group name and the relationship group type.

There is a special field named RELATIONSHIP_GROUP_TXNS. This may be added to the History layout to see all the relationship group operations that occurred prior to and including the listed transaction time. Note that the audit trail for related issues cannot be displayed if ABBREVIATED_HISTORY is set to NO as the abbreviated history does not use any layout for its display.

Related Issues and Report Output Types

When a report contains a related issue display, it is treated as follows for the various report output types. The reason for this is that some output types are deliberately formatted to make it easy to use the data as input to other processes or programs. Having a variable number of items of data from the related issues within these reports will make these operations impossible.

Report Output Type	Constraint
Browser	No constraints, all fields are displayed
Microsoft Excel	Fields from the related issue display are suppressed
Microsoft Word	Similar to other data presented on Microsoft Word reports, buttons such as the View and Edit buttons are suppressed, but all alphanumeric information is displayed.
Text	Fields from the related issue display are suppressed

Calculations on Related Issue Layouts

Field Aggregate Expressions (FAE's) permit calculations to be performed on a per-row basis on Related Issue Displays. The FAE's are added to fields within a Related Issue Display as layout cell attributes with a type of FIELD AGGREGATE EXPRESSION. There are also custom user exits for retrieval of data, accumulation of results, and the display of results. The display of the accumulated results is generated at the end of each group or collection of rows in a Related Issue Display, as an additional row with a user-defined title. The title is added as a layout cell attribute of type FIELD AGGREGATE EXPRESSION TITLE.

Creating and Using a FIELD AGGREGATE EXPRESSION

The following are the steps for creating and using a FAE:

Example

1. Create your Related Issue Display layout and save this in the usual way
2. Edit the Related Issue Display layout and select a column to which you want to apply an aggregate function. Click on the link button to add a new layout cell attribute
3. Choose the **FIELD AGGREGATE EXPRESSION - generate an aggregate value for this row** entry. Select the appropriate Value for your function from the list - *Count, Sum, Minimum, Maximum* or *Average*. The *Use User Custom Code* value is only valid if you have user custom code in place that will populate the results of the Field Aggregate Expression. See later on this page for details
4. The **Field value** should be set to a number - this will be tied to the FIELD AGGREGATE EXPRESSION TITLE on the Related Issue Display, as well as to the order in which multiple FIELD AGGREGATE EXPRESSION rows should be displayed. It is recommended you start with 1 for the first entry, and increment from there. The number you set must match the number you set in step 7
5. Save your changes to the Related Issue Display layout
6. Navigate to a parent issue that contains the Related Issue Display and verify the correctness of the results of the aggregate expression you created. It will not have any title or grouping at this moment, but you should see the results of the aggregation
7. To create a title on the Related Issue Display, navigate to the *add* or *edit* layout that embeds the Related Issue Display. On the cell that contains the Related Issue Display, you create an attribute of type FIELD AGGREGATE EXPRESSION TITLE where the **Value** is the Title of the row to be displayed, and the **Field value** should be a number (start with 1). If you have more than one FIELD AGGREGATE EXPRESSION defined on the Related Issue Display, this number is the order in which they will appear. The **Field value** should map to the **Field value** you selected in step 4
8. You can also optionally aggregate values while grouping together values within a field, and providing sub-totals or other attributes for each group. On the *add* or *edit* layout that contains the Related Issue Display, add a layout cell attribute to the Related Issue Display within the layout, of the type RID SORT ORDER. Select the field in the related issue display that you wish to group by, and select **Group by** equal to *Yes*. Now you will generate subtotals as well as a grand total. Clicking on a field title at the top of the related issue display will cause a refresh of the display, change the sort order and the sub-totals
9. Again navigate to your parent issue that contains the Related Issue Display and verify that you now see the title and the optional grouping.
10. In this example, we want to add totals to a Related Issue Display as shown in this screen shot:

Remove?	Source Id	Category	Customer	Customer Project	Date	Hours	Details
<input type="checkbox"/>	10227	Billable	BroadSoft	Initial Implementation	May 18, 2011	2	implemented Business Rules
Total hours						2	
<input type="checkbox"/>		General/Admin			May 20, 2011	5	general IT tasks
Total hours						5	
<input type="checkbox"/>	10228	Billable	Hubspan	Initial Implementation	May 26, 2011	0.5	conference call regarding workflow diagram
<input type="checkbox"/>	10228	Nonbillable	Hubspan	Initial Implementation	May 26, 2011	1	answered question about where to download software
<input type="checkbox"/>	10159	Billable	Mach	Lotus Notes integration	May 26, 2011	0.75	conference call to gather requirements
Total hours						2.25	
Total hours						9.25	

Totalling a field on a Related Issue Display

The key steps are as follows:

1. On the Related Issue Display, add the following Layout Cell Attributes to the field that you want to total (*HOURS_INCURRED* in the example). Add a **FIELD AGGREGATE EXPRESSION** with a Value of **Sum** and a **Field value** of **1**. Save the changes
2. On the *edit* layout that contains the Related Issue Display, add two additional Layout Cell Attributes. These are in addition to other attributes that most probably exist to provide the RID RELATIONSHIP NAME and other factors for the layout.
 - RID SORT ORDER - This provides the initial sort order for the display
 - FIELD AGGREGATE EXPRESSION TITLE - This provides the title for the expression. Note that this should be the same value as set in the FIELD AGGREGATE EXPRESSION. The screen for the Layout Cell Attributes will be something similar to the following. Note that only the RID SORT ORDER and the FAE_TITLE pertain to the calculations. The other entries have their own purpose and function.

Type	Value	Field name	Field value
<input type="button" value="Edit"/>	RG_SORT_ORDER	ASCENDING	Date (timesheet data)
<input type="button" value="Edit"/>	FAE_TITLE	Total hours	1
<input type="button" value="Edit"/>	RG_NAME	TIMESHEET_TIME_DATA	
<input type="button" value="Edit"/>	RG_RELATION	CHILDREN	
<input type="button" value="Edit"/>	RID_INC_ADD_BTN	Add time record	
<input type="button" value="Edit"/>	RID_INC_PREHEADER		
<input type="button" value="Edit"/>	SIZE	175	

Layout Cell Attributes for the FAE

This gives the result shown in the screen shot above. Note the initial sort order. Also note that if you click on another field title within the Related Issue Display, there is a re-sort, and the totals for the field are automatically recalculated. This is shown below, where the display is now sorted on the *Category* field.

Add time record									
Remove?		Source Id	Category	Customer	Customer Project	Date	Hours	Details	
<input type="checkbox"/>	QEdit	Edit	10227	Billable	BroadSoft	Initial Implementation	May 18, 2011	2	implemented Business Rules
<input type="checkbox"/>	QEdit	Edit	10228	Billable	Hubspan	Initial Implementation	May 26, 2011	0.5	conference call regarding workflow diagram
<input type="checkbox"/>	QEdit	Edit	10159	Billable	Mach	Lotus Notes integration	May 26, 2011	0.75	conference call to gather requirements
Total hours								3.25	
<input type="checkbox"/>	QEdit	Edit		General/Admin			May 20, 2011	5	general IT tasks
Total hours								5	
<input type="checkbox"/>	QEdit	Edit	10228	Nonbillable	Hubspan	Initial Implementation	May 26, 2011	1	answered question about where to download software
Total hours								1	
Total hours								9.25	

Resorting the display

Implementation Notes

- Expressions will only work with Related Issue Displays that contain 1,000 rows or less, if you implement grouping with aggregate functions
- The *Count* function works on all field types
- The *Sum*, *Average*, *Minimum* and *Maximum* functions work only on numeric display type fields - Number, Decimal and Currency
- The User Custom function requires custom code before it will achieve anything
- You can only group by one column in the related issue display RID SORT ORDER layout cell attribute
- You will get incorrect results if you group on a multi-valued field, or on a repeating record field, for calculations such as Average

Utilizing the User Custom Code Exits

This is an advanced topic and it is assumed the administrator is thoroughly familiar with programming within the User Custom Code environment of ExtraView. Please contact ExtraView Support for additional details on how to implement this feature.

Setting up field aggregate expressions is similar to the above, but there are a few additional steps.

The key step is that the aggregate expression performed in user custom code must be linked to a field on the Related Issue Display. This is achieved by creating a user defined field within the data dictionary, of type **Expression**. This may have any valid display type and will correspond with the returned value from the custom code. This provides your environment with a field name, a display title, security permissions and other attributes. You may have more than one custom aggregate function, with each being linked to a separate user defined **Expression** field.

To implement, you provide Java code for the 3 user custom exits for data selection, accumulated value computation and accumulated value display, and compile the code into the user custom class used in the installation.

The presence of FIELD AGGREGATE EXPRESSION layout cell attribute in the Related Issue Display layout directs the reporting logic to invoke three FAE-specific custom exits: data selection, value computation, and value display. In addition, the FAE-specific rows are added to the end of the report rows i.e. on the right for transposed Related Issue Displays and on the bottom for non-transposed Related Issue Displays.

Each FAE is associated with a specific field in the Related Issue Display, as part of the attributes on the Related Issue Display layout: this defines the row on a transposed Related Issue Display, or the column on a non-transposed Related Issue Display of the FAE result display at the end of the report. There may be more than one FAE associated with a field, resulting in additional columns on transposed Related Issue Displays or rows on non-transposed Related Issue Displays.

The three FAE user custom exits are as follows:

1. ucFAESelect: called during generation of SQL for the report to permit insertion of SQL into the detail report query for later consumption by the FAE value aggregation. **Signature:**

```
public String ucFAESelect (
    SesameSession session,
    Connection conn,
    String faeName,
    String ddName,
    DetailReportElement re,
```

```

HashMap distinctTables,
String[] locParts,
EVHierarchyLevel eh1,
HashMap dataAlias,
String itemTableAlias,
String itemIdKey

```

) throws Exception

- ucFAEAggregate: called for each row in the Related Issue Display to permit aggregation of the values in the report – this could include summation, averaging, or special operations as required. **Signature:**

```

public void ucFAEAggregate (
    SesameSession session,
    Connection conn,
    String faeName,
    String ddName,
    HashMap row,
    ResultSet resultSet

```

) throws Exception

- ucFAEDisplay: called once at the end of the report for each FAE in the Related Issue Display, to allow custom generation of display values for the FAE. **Signature:**

```

public String ucFAEDisplay (
    SesameSession session,
    Connection conn,
    String faeName,
    String ddName

```

) throws Exception

Mass Update Report Layouts

There is a special report layout type named `MASS_UPDATE_REPORT`. This layout controls the fields that are visible to users who have permission to use the Mass Update utility. This layout does not exist by default within an ExtraView installation, but if one or more of these layouts are created with a layout type of this name, they will display the fields you place on the layout(s), as opposed to the fields which appear as these defaults:

- `VIEW_BUTTON` - View Button
- `ID` - The issue ID
- `SHORT_DESCR` - The title to the issue
- The specific fields chosen by the user to update
- `AREA` - The Business Area
- `PROJECT` - The Project

If you have not already created a `MASS_UPDATE_REPORT` layout type, begin by creating this layout type using the admin utility named **Create and Maintain Layout Types**. It should have a type of *Report*. Then, add a layout using this type, into the specific business area and/or project where you want users to see different fields on the mass update screen. You use the *Design Center* for this purpose. If you add the layout into the Global Area / Master Project, then the layout is used system-wide.

It is recommended that you place the `ID` field as the field in the first column of your `MASS_UPDATE_REPORT` layout. This will then appear along with the `VIEW_BUTTON` at the left. Following this will be the field(s) on your layout.

At the right-hand of your layout, the fields that you are updating will appear. If you do not place the `ID` field on your layout, it will still appear, but to the right-hand of the layout, along with the `VIEW_BUTTON`. Following this will be the fields that you are updating.

Search Layouts Within Add & Edit Layouts

There are two use cases in searching for records within an *add* or *edit* screen. Typically you are searching for records that exist within another Business Area:

1. Search for a single record and copy all, or a subset of its field values into the current record
2. Search for one or more records and copy field values from a number of records into new related issues.

The basic principal is that you embed a search layout into an *add* or *edit* screen layout. The results from the search are returned into a second embedded layout. The user can then select one or more results from this layout, and copy the required results into their destination. There are two examples of this feature:

- [This page](#) gives assistance on how to configure this feature so that you can return a single search result into field values within the current issue

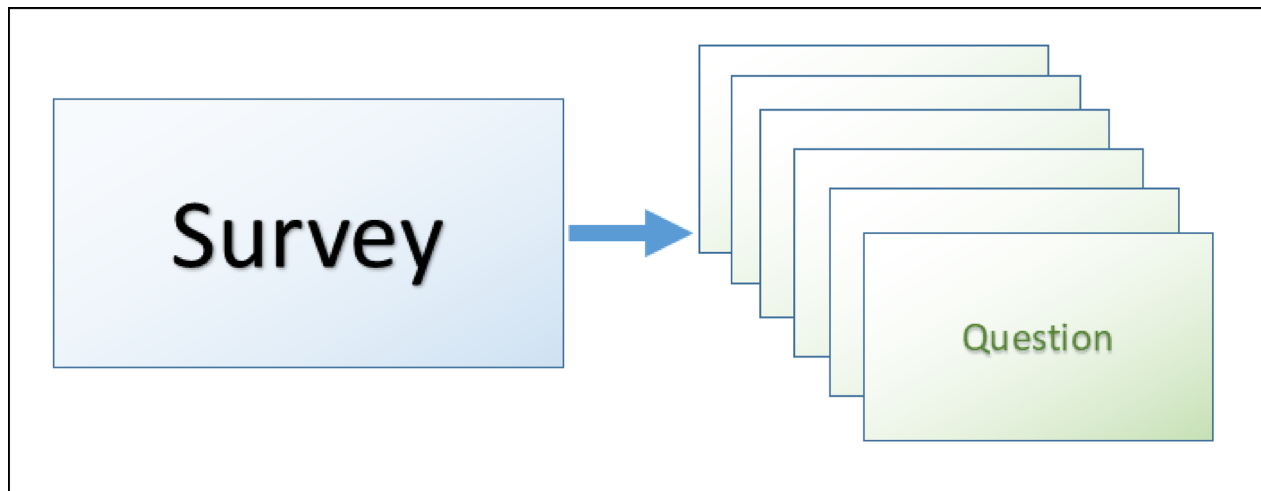
- [This page](#) gives assistance on how to configure this feature so that you can set up the results from one or more search results as related issues to the current issue.

Survey / Questionnaire Layouts

A common use of ExtraView implementations is to use its functionality to perform surveys; creating screen forms, capturing data and reporting. Surveys have a number of characteristics in common. Typically there are a significant number of questions posed to the user, data is captured in a variety of forms, such as Yes/No, selecting values from a list, entering comments, etc.

There may be hundreds of questions posed in a survey and it would be tedious to create fields for each question and each response. Individual fields have another drawback in that reporting and summarizing the results can be difficult.

Survey layouts provide an elegant answer to this.



Each Survey is the parent issue within a parent-child relationship. Each Question is the child.

The Questions are typically small layouts with a field for the question and one or more fields for the response. The fields can be configured with attributes such as Visible If, Required If, etc., providing a huge amount of flexibility in designing your survey, such as making a question's visibility dependent upon the response to another question.

The advantages of this approach are that configuration only requires a small number of fields, and that reporting, including the calculation of metrics on the results are much simpler to configure and display.

The parent Survey is composed of *add* and *edit* layouts with their standard characteristics. The Questions are included within an embedded layout within the parent Survey layout. The embedded layouts are similar to related issue layouts, but with special characteristics. The following layout cell attributes may be configured on the survey layout within the *add* and *edit* layouts to control the presentation and behavior of the questions.

- RID RELATIONSHIP NAME
- --RID GROUP REFERENCE FIELD
- RID SORT ORDER
- RID RELATION TYPE
- RID FILTERS
- RID LINK FIELD NAME
- RID ACT ON FIELD CHANGE

The Questions are not configured in exactly the same way as other related issue types. The layout type must be created with a name that starts with the characters **EDIT_RID_**. For example a valid layout type name may be **EDIT_RID_QUESTION**.

Example

This example shows how a survey with questions is created. As with most ExtraView configurations there is latitude on many of the steps shown below. The survey gathers responses on the quality of service provided following a service call. The names and titles in the example may all be altered to suit your implementation.

1	Create a new Layout Type	Using the Create and Maintain Layout Types utility, create a layout type with the name EDIT_RID_QUESTIONS , the title of Questions Layout and a usage of Screen . The name must begin with
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		the characters EDIT_RID_
2	Create a new Business Area	Within the Data Dictionary, create a Business Area which will hold all the Survey data. Name this Business Area as Survey
3	Manage Projects	Choose the Survey Business Area. Retitle the SURVEY_DATA Project as Survey Data . Add a second Project to the Area named SURVEY_QUESTIONS and titled Survey Questions
4	Manage Navigation Bar	Assuming you are using a navigation bar configured for your installation, add entries for Add a Survey and Add a Question
5	Create the Questions layout	Within the Design Center, create an embedded layout for the Questions Layout within the Surveys Business Area and Survey Questions Project. Create other layouts that you may also want for the Business Area and Project, such as Detailed Report. This layout will be embedded within the Surveys <i>add</i> and <i>edit</i> screens
6	Create the Surveys layout	

Field Properties within Layouts

Not every field can be added successfully to every layout, and there are limitations regarding the placement of many fields on repeating record layouts. The following table gives an indication of all inbuilt fields and their restrictions in use. Note that User Defined Fields are capable of being placed on all layouts, subject to the field belonging to the correct type of *issue records* or *repeating row records* for the layout, and as long as the data dictionary entry for the field is defined correctly. Note that there are limitations with layout cell attributes between fields of different types. You may not have a layout cell attribute where a field of type *issue record* is dependent upon a field of type *repeating row*. The renderer, in this case, would not know which repeating row to use for its logic check.

Data dictionary field name- DATABASE field types	Notes
ALT_ID	Any layout except repeating record layouts
AREA	All <i>Add</i> and <i>Edit</i> layouts belong to a specific Business Area. If the AREA field is placed on the layout, then the field and its values will be presented in the normal way. If the AREA field is not placed on the layout, then ExtraView processes the layout as if the value of the Business Area is set to the same value to which the layout belongs. This helps the usability for many applications where there is more than one Business Area, but you want to restrict the user to only working within a single Business Area at a point in time, for example, when you have a popup window to enter a child issue which will be placed within a specific Business Area. If you want to restrict the user to only being able to address a subset of the available Business Areas within an installation, you may use the FIELD_HIDE_VALUES and the FIELD_VISIBLE_VALUES to restrict the displayed values.
ASSIGNED_TO	Any layout except repeating record layouts
ATTACHMENT_ID	Internal use only
ATTACH_CONTENT_TYPE	Will be placed automatically on the layout as part of the attachment record. Controlled by security permissions
ATTACH_CREATED_BY_USER	Will be placed automatically on the layout as part of the attachment record. Controlled by security permissions
ATTACH_DATE_CREATED	Will be placed automatically on the layout as part of the attachment record. Controlled by security permissions
ATTACH_FILE_DESC	Will be placed automatically on the layout as part of the attachment record. Controlled by security permissions
ATTACH_FILE_NAME	Will be placed automatically on the layout as part of the attachment record. Controlled by security permissions
ATTACH_FILE_SIZE	Will be placed automatically on the layout as part of the attachment record. Controlled by security permissions
ATTACH_PATH	Will be placed automatically on the layout as part of the attachment record. Controlled by security permissions
ATTACH_THUMBNAIL	Will be placed automatically on the layout as part of the attachment record. Controlled by security permissions
AVAILABLE_FOR_DOWNLOAD	Not available for any layout
CATEGORY	Any layout except repeating record layouts
CONTACT	Any layout except repeating record layouts

DATE_CLOSED	Read-only on the <i>edit</i> screen only
DATE_CLOSED_SINCE	Reporting filters only
DATE_CODE_FREEZE	Not available for any layout
DATE_CREATED	Read-only on <i>add</i> and <i>edit</i> screens. Not to be used on repeating records
DATE_CREATED_DAY	Not used on <i>add</i> screens, <i>edit</i> screens or repeating records. Only used for reporting purposes
DATE_CREATED_MONTH	Not used on <i>add</i> screens, <i>edit</i> screens or repeating records. Only used for reporting purposes
DATE_CREATED_SINCE	Not used on <i>add</i> screens, <i>edit</i> screens or repeating records. Only used for reporting purposes
DATE_CREATED_TRUNC	Not used on <i>add</i> screens, <i>edit</i> screens or repeating records. Only used for reporting purposes
DATE_CREATED_WEEK	Not used on <i>add</i> screens, <i>edit</i> screens or repeating records. Only used for reporting purposes
DATE_CREATED_YEAR	Not used on <i>add</i> screens, <i>edit</i> screens or repeating records. Only used for reporting purposes
DATE_FIRST_CUSTOMER_SHIP	Not available for any layout
DATE_LAST_STATUS_CHANGE	Read-only on <i>edit</i> screen. Not used on <i>add</i> screen. Not to be used on repeating records
DATE_LAST_STATUS_CHANGE_SINCE	Reporting filters only
DATE_RELEASE_TO_QA	Not available for any layout
DAYS_IN_STATUS	Reports only
DAYS_OPEN	Reports only
HIST_RANGE_END	May only be used as a filter on a search layout
HIST_RANGE_START	May not be used on any layout. Only used in the CLI
ID	Read-only on <i>add</i> and <i>edit</i> screens. Not to be used on repeating records
ITEM_ID	Should not be used on any layout
LAST_CHANGE_USER	Read-only on <i>edit</i> screen. Not used on <i>add</i> screen. Not to be used on repeating records
LAYOUT	Not available for any layout
LAYOUT_TYPE	Not available for any layout
MODULE_ASSIGNED	This field is deprecated and should not be used
MODULE_DATE_CREATED	This field is deprecated and should not be used
MODULE_ID	Not to be used on repeating records
MODULE_NAME	Should not be used on layouts
MODULE_PRODUCT	This field is deprecated and should not be used
MODULE_STATUS	This field is deprecated and should not be used
MODULE_TIMESTAMP	This field is deprecated and should not be used
MODULE_TITLE	Should not be used on layouts
MODULE_TYPE	This field is deprecated and should not be used
MODULE_VERSION	This field is deprecated and should not be used
MONTHS_IN_STATUS	Reports only
MONTHS_OPEN	Reports only
ORIGINATOR	Any layout except repeating record layouts
OWNER	Any layout except repeating record layouts
PRIORITY	Any layout except repeating record layouts
PRIVACY	Any layout except repeating record layouts
PROBLEM_RELEASE_ID	Should not be used on any layout
PRODUCT_LINE	Any layout except repeating record layouts
PRODUCT_NAME	Any layout except repeating record layouts
PRODUCT_NAME_HIST	Should not be used on any layout
PROJECT	All <i>Add</i> and <i>Edit</i> layouts belong to a specific Project within a Business Area. If the PROJECT field is placed on the layout, then the field and its values will be presented in the normal way. If the PROJECT field is not placed on the layout, then ExtraView processes the layout as if the value of the Business Area is set to the same value to which the layout belongs. This helps the usability for many applications where there

	is more than one Project within a Business Area, but you want to restrict the user to only working within a single Project at a point in time. If you want to restrict the user to only being able to address a subset of the available Projects within a Business Areas, you may use the FIELD HIDE VALUES and the FIELD VISIBLE VALUES to restrict the displayed values.
RELATIONSHIP_GROUP_ID	Should not be used on any layout
RELATIONSHIP_GROUP_OWNER	Should not be used on any layout
RELATIONSHIP_GROUP_TITLE	Should not be used on any layout
RELATIONSHIP_GROUP_TXNS	This field is only valid on a layout of type HISTORY.
RELATIONSHIP_GROUP_TYPE	Should not be used on any layout
RELATIONSHIP_GRP_PARENT_ID	Should not be used on any layout
RELEASE	Should not be used on any layout. The LAYOUT.RELEASE field may be embedded on the <i>add</i> and <i>edit</i> screens to support repeating records
RELEASE_ASSIGNED_TO	Repeating records and reports only
RELEASE_DATE_CREATED	Repeating records and reports only
RELEASE_DIRECTORY	Should not be used on any layout
RELEASE_FIXED	Repeating records and reports only
RELEASE_FOUND	Repeating records and reports only
RELEASE_FOUND_HIST	Should not be used on any layout
RELEASE_OWNER	Repeating records and reports only
RELEASE_PRIORITY	Repeating records and reports only
RELEASE_PRODUCT	Repeating records and reports only
RELEASE_RESOLUTION	Repeating records and reports only
RELEASE_SEVERITY	Repeating records and reports only
RELEASE_STATUS	Repeating records and reports only
RELEASE_TIMESTAMP	Read only on repeating records and reports
RELEASE_TYPE	Deprecated – do not use
REL_GRP_DATE_CREATED	Should not be used on any layout
REL_GRP_TIMESTAMP	Should not be used on any layout
RESOLUTION	Any layout except repeating record layouts
SEVERITY_LEVEL	Any layout except repeating record layouts
SHORT_DESCR	Any layout except repeating record layouts
START_DATE	Reports only. Note that the data dictionary setting “ Filter criteria ” must be set to Yes for this field to work
START_UPDATE	Reports only. Note that the data dictionary setting , “ Filter criteria ” must be set to Yes for this field to work
STATUS	Any layout except repeating record layouts
STATUS_HIST	Should not be used on any layout
STOP_DATE	Reports only. Note that the data dictionary setting “ Filter criteria ” must be set to Yes for this field to work
STOP_UPDATE	Reports only. Note that the data dictionary setting “ Filter criteria ” must be set to Yes for this field to work
TIMESTAMP	Read-only on <i>add</i> and <i>edit</i> screens. Not to be used on repeating records
TIMESTAMP_DAY	Not used on <i>add</i> screens, <i>edit</i> screens or repeating records. Only used for reporting purposes
TIMESTAMP_MONTH	Not used on <i>add</i> screens, <i>edit</i> screens or repeating records. Only used for reporting purposes
TIMESTAMP_SINCE	Not used on <i>add</i> screens, <i>edit</i> screens or repeating records. Only used for reporting purposes
TIMESTAMP_TRUNC	Not used on <i>add</i> screens, <i>edit</i> screens or repeating records. Only used for reporting purposes
TIMESTAMP_WEEK	Not used on <i>add</i> screens, <i>edit</i> screens or repeating records. Only used for reporting purposes
TIMESTAMP_YEAR	Not used on <i>add</i> screens, <i>edit</i> screens or repeating records. Only used for reporting purposes
WEEKS_IN_STATUS	Reports only

WEEKS_OPEN	Reports only
------------	--------------

Data dictionary field name- LABEL field types	Notes
CC_EMAIL	Should not be used on any layout. This field is automatically added to the <i>add</i> and <i>edit</i> layouts with the notification fields
DELETE_BUTTON	Reports only
EDIT_BUTTON	Reports only. Note that this field is automatically added to any custom report
EMAIL	Should not be used on any layout
FILTER_CHILD_VALUES	Should not be used on any layout
GENERATE_EMAIL	Should not be used on any layout. This field is automatically added to the <i>add</i> and <i>edit</i> layouts with the notification fields
HISTORY_BUTTON	Reports only
KEYWORD	Report filters only
PROBLEM	Should not be used on any layout
RELATIONSHIP_GROUP_LINK	Should not be used on any layout
REPORT	Should not be used on any layout
REPORT_BY	Should not be used on any layout
REPORT_NAME	Should not be used on any layout
REPORT_OUTPUT	Should not be used on any layout
REPORT_TYPE	Should not be used on any layout
SORT	Should not be used on any layout
VIEW_BUTTON	Reports only. Note that this field is automatically added to any custom report

Data dictionary field name- SCREEN field types	Notes
ADD_PROBLEM	Should not be used on any layout
ADD_PROBLEM_SUMMARY	Should not be used on any layout
ADMINISTRATION	Should not be used on any layout
ATTACHMENT	This is the field that places attachment records on <i>add</i> and <i>edit</i> screens. It can also be placed on detailed reports and Quicklists, but not on report filter layouts. Security permissions should be set for the individual fields such as ATTACH_FILE_NAME and ATTACH_FILE_SIZE to control their visibility
BATCH_COMMANDS	Should not be used on any layout
COMPANY_NAME	Should not be used on any layout
CUSTOM_EMAIL	Should not be used on any layout
HOME_PAGE	Should not be used on any layout
PAGE_SIZE	Should not be used on any layout
PROBLEM_RELEASE_DELETE	Should not be used on any layout
PROBLEM_SUMMARY_EDIT	Should not be used on any layout
QUICK_LIST	Should not be used on any layout
RELATIONSHIP_GROUP	Should not be used on any layout
SEARCH_REPORT	Should not be used on any layout
SECURITY_GROUP	Should not be used on any layout
SECURITY_KEYS	Should not be used on any layout
SECURITY_PERMISSION	Should not be used on any layout
SIGN_ON	Should not be used on any layout
STATUS_CHANGE	Should not be used on any layout
SYSTEM_LOG_TYPE	Should not be used on any layout
UDF	Should not be used on any layout
USER_ACCOUNTS	Should not be used on any layout

Data dictionary field name- SESSION and SPECIAL field types	Notes
USER	Should not be used on any layout
SYSDATE	Should not be used on any layout

Adding Shaded Regions to Layouts

Layouts with a plain background can look bland. You can improve the look of *add* and *edit* layouts by using shaded regions. Shaded regions allow you to set a background color or a background image to a contiguous group of rows within a layout. The shaded region can also be given a legend. To set up a shaded region on an *add* and *edit* layout, use the following procedure:

- Create two fields in the data dictionary.
 - The first field is used to mark the beginning of the shaded region on the layout. The field must use a naming convention, beginning with the characters `SHADE_PRE_`. For example, `SHADE_PRE_1` is a valid name for the field. The title should be a single space character and the display type should be **Custom**. Give the field read-only permission for each role that will use the shaded region
 - The second field is used to mark the end of the shaded region on the layout. The field must use a naming convention, beginning with the characters `SHADE_POST_`. For example, `SHADE_POST_1` is a valid name for the field. The title should be a single space character and the display type should be **Custom**. Give the field read-only permission for each role that will use the shaded region
- Place the `SHADE_PRE_` and the `SHADE_POST_` fields on the layout, giving each a colspan that extends the entire width of the layout. Obviously, the `SHADE_PRE_` field is placed at the beginning of the region and the `SHADE_POST_` field is placed at the end of the region
- To provide a legend for the shaded region, add an `FIELD HTML MODIFIER` layout cell attribute to the `SHADE_PRE_` field. This attribute should be of the form **LEGEND:Title to the Region**
- If you require to add a legend in a language other than English, add an attribute in the form **LEGEND_ALT:Title to the Region**. If the user's locale is not English, this legend will be used rather than the title defined in `LEGEND`. However, if a language other than English is used within the `LEGEND` attribute, and no `LEGEND_ALT` attribute is defined, then this is used as the title to shaded regions. Unlike most of ExtraView's localization capability, this does not provide the flexibility to add any number of localized language legends to the legend, and is limited to a single language beyond the default language
- To provide a background color to the shaded region, add a `FIELD HTML MODIFIER` layout cell attribute to the `SHADE_PRE_` field. This attribute should be of the form **BGCOLOR:#nnnnnn** where **#nnnnnn** is a valid hexadecimal color
- To provide a background image or other CSS style for the shaded region, add an `FIELD HTML MODIFIER` layout cell attribute to the `SHADE_PRE_` field. This attribute should be of the form **STYLE:'background-image:url(../locales/en_US/images/images_light_blue/TableBg.png)'**
- To add a CSS style to the legend, add a `FIELD HTML MODIFIER` layout cell attribute to the `SHADE_PRE_` field. This attribute should be of the form **CSSCLASS:classname**. There are two inbuilt CSS styles named *legendSmall* and *legendLarge* that can be used for the **classname**.
- This will have the following effect on a layout. Note the legend **Customer Details** and the light yellow background around the fields:

ExtraView Add Issue Submit Clear Print Page

Bugs Test Cases Helpdesk Assets Customer Issues Customers Feature Requests Knowledge Base

Customer Details

Name Contact Phone Number Cell Phone

Owner Customer Email Address

Fax Number

Contract Number Contract Date Renewal Date Act. Renewal Date

Description

Comments

Attachments

File Description	File Name	File Size

Notification

Generate Email CC Email

Include self on interest list Add users to interest list

Include Customer users in notification Mailing List Mary Brown ; Bill Smith ; Chris Robinson ;

Submit Clear Print Page

Shading a region on a layout

- You may style the border of the shaded region with the FIELD HTML MODIFIER layout cell attribute of the form **BORDER_STYLE:style**. For example **BORDER_STYLE:border:2px solid #cc0000** will add a thin red border around the shaded region
- You may nest SHADE_PRE_ and SHADE_POST_ fields to create multiple shaded regions within each other on a form. Here is an example:

Multiple shaded regions on a layout

Layout Cell Attribute Summary of HTML MODIFIERS

LEGEND: <i>title</i>	This HTML MODIFIER provides the title to the shaded region
LEGEND_ALT: <i>title</i>	This is an alternative title which is used if the user's locale is not English. This allows for a non-English title to be set for the layout
CSSCLASS: <i>classname</i>	This is a CSS class name that is applied to LEGEND and LEGEND_ALT. The recommended value is legendLarge
BGCOLOR: <i>color</i>	BGCOLOR is added as an HTML MODIFIER to provide the background shading color for the region. The <i>color</i> may be an HTML color name or a hex value such as #123456
STYLE: <i>style</i>	This HTML MODIFIER is used as an alternative to BGCOLOR. You should not use both attributes. The STYLE attribute adds a CSS style to the background of the shaded region. Any valid CSS may be entered
BORDER_STYLE: <i>style</i>	This HTML MODIFIER is used to alter the default style of the border of the shaded region. The default style is a light grey 3 pixel border. For example, you might want to highlight the border around an area of the screen with a thin red line. A value of BORDER_STYLE:2px solid #cc0000 will achieve this effect.

Combining Shaded Regions with Folds / Pages and HTML Pre / Post Fields

There are limitation on how shaded regions may be nested within Accordion Folds, Paging and HTML Pre / Post fields. If the shaded region SHADE_PRE and SHADE_POST fields are on the main *add* or *edit* layouts, **and** they are **outside** the scope of Accordion Folds, Paging and HTML Pre / Post fields they are always rendered. If the SHADE_PRE and SHADE_POST fields are **within** the scope of the other fields, they will not render. You can overcome this limitation in one of two ways:

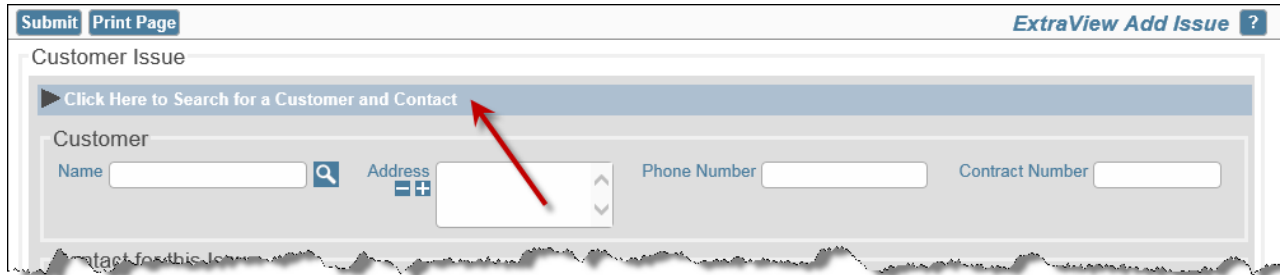
1. For Paging layouts, use the BGCOLOR and BORDER_COLOR HTML MODIFIER layout cell attributes within the PAGE_PRE_xxx layout to achieve the shading you desire
2. Use sub-layouts, with the SHADE_PRE and SHADE_POST fields, plus the fields the enclose within the sub-layout.

Adding Accordion Folds to Layouts

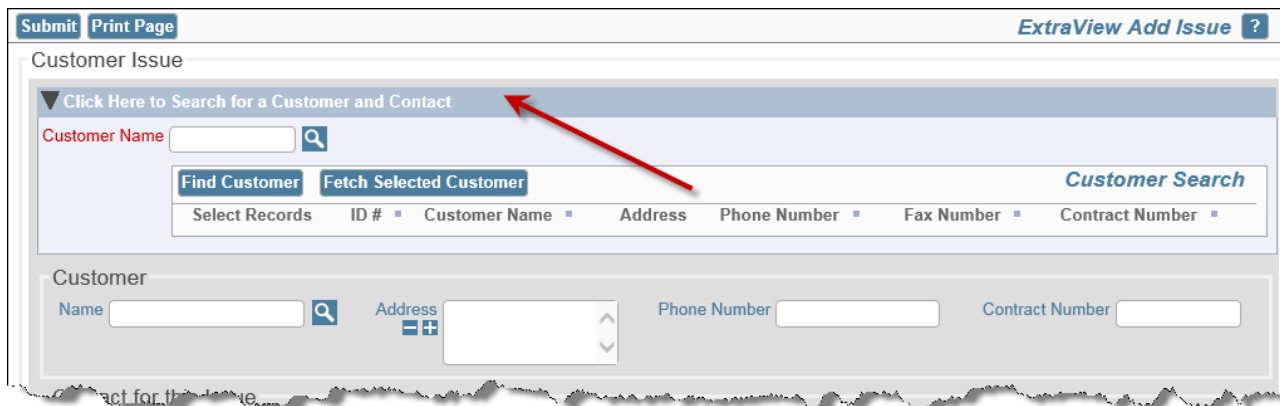
Accordion Folds on *Add & Edit* Layouts

Accordion folds may be added to your *Add* and *Edit* layouts to provide a flexible user interface, where sections will open and close at the click of a button. The accordion folds may be decorated with titles and themed to your own choice. You may also choose whether they render on the initial layout in a closed or an open state. You can include any number of accordion folds within a layout. Compare the use of accordion folds with [paged layouts](#). Accordion folds allow multiple sections within a form to be open and closed at will by the end user, whereas paged layouts have multiple sections, only one of which may be visible at any one time. Note that when accordion folds are placed on layouts, they have no effect on the requiredness of fields they contain. A required field is required, whether the accordion fold is expanded or collapsed.

The following screenshots show a traditional rendering of accordion folds. For alternative presentations see the section towards the end of this page.



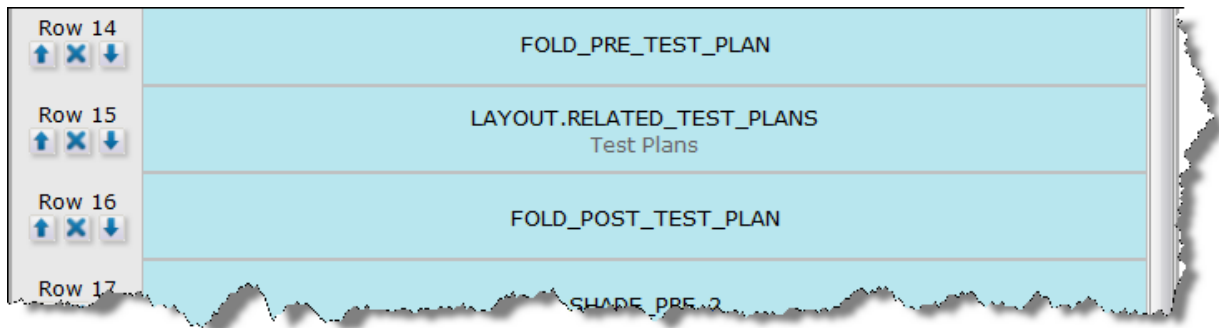
Closed Accordion Fold



Open Accordion Fold

To set up an accordion fold on an *Add* or *Edit* layout, use the following procedure:

- Create two fields in the data dictionary.
 - The first field is used to mark the beginning of the accordion fold on the layout. The field must use a naming convention, beginning with the characters `FOLD_PRE_`. For example, `FOLD_PRE_1` is a valid name for the field. The title should be a single space character and the display type should be **Custom**. To provide a legend for the accordion fold, use the Help Text field. Providing the legend for the fold works best if defined in this manner, if you intend to use the same fold in several places throughout the installation. You may alternatively define the title within a layout cell attribute on a layout that uses the fold. This provides the flexibility of being able to reuse the same `FOLD_PRE_` and `FOLD_POST_` fields on many layouts, defining the title for each within the layout, and not in the data dictionary. If no HTML modifier with the syntax **LEGEND:fold title** is defined, the title in the data dictionary is used. Give the field read-only permission for each role that will use the shaded region
 - The second field is used to mark the end of the shaded region on the layout. The field must use a naming convention, beginning with the characters `FOLD_POST_`. For example, `FOLD_POST_1` is a valid name for the field. The title should be a single space character and the display type should be **Custom**. Give the field read-only permission for each role that will use the shaded region
- Place the `FOLD_PRE_` and the `FOLD_POST_` fields on the layout, giving each a colspan that extends the entire width of the layout. Obviously, the `FOLD_PRE_` field is placed at the beginning of the region and the `FOLD_POST_` field is placed at the end of the region
- If you place the fields to be rendered within a fold in an embedded layout, between the `FOLD_PRE_` field and the `FOLD_POST_` field, and you have the HTML modifier `COLLAPSE`, the fields within the accordion fold are not rendered when the layout is first displayed, but only when the user opens the fold. This is shown here within the design center:



- The advantage here is that if you have many fields within many embedded layouts it may take a considerable amount of time to render the screen to the end user. Using this technique will save the rendering time when the *add* or *edit* screen is first displayed, but will incur a small amount of time for the end user as they open each fold. The overall performance to the end user seems much improved by breaking down the initial delay into several much smaller delays.

Fold Configuration Options

The following layout cell attributes may be applied as HTML MODIFIERS to the FOLD_PRE_ field, to provide styling and positioning of the fold as it is rendered on *add* or *edit* screens.

BGCOLOR: <i>color</i>	Provides a background color to the accordion fold. To implement, add an HTML MODIFIER layout cell attribute to the FOLD_PRE_ field. This attribute should be of the form BGCOLOR:#nnnnnn where #nnnnnn is a valid hexadecimal color or HTML color name
BORDER_COLOR: <i>color</i>	To provide a border color to the accordion fold, add an HTML MODIFIER layout cell attribute to the FOLD_PRE_ field. This attribute should be of the form BORDER_COLOR:#nnnnnn where #nnnnnn is a valid hexadecimal color or HTML color name
COLLAPSE	By default, the accordion fold will be expanded when rendered on the layout, unless you include an HTML MODIFIER with a value of COLLAPSE, which will collapse the relevant accordion fold upon rendering and upon screen refreshes. Ajax and JavaScript refreshes will not affect the collapsed or expanded state of the accordion fold. Note that rules may be used to control the open or closed state of the fold
FOLD_DISPLAY: <i>value</i>	This sets the fold's display type. The value must be one of TRADITIONAL, SIMPLE, THIN_LINE or BORDER. If no attribute is defined the default value of TRADITIONAL is used, unless the FOLD_DISPLAY has been set at the PROJECT level of the AREA that contains the layout
FOLD_USER_IMG_PATH: <i>path</i>	By default the standard dn-arrow.png and rt-arrow.png images from the appropriate image folder set in the IMG_HOME behavior setting are used on the accordion fold, depending upon whether the fold is collapsed or expanded. If you wish to use your own images, create a new folder called user_images in the images directory and place your images within this, named in the same manner. Then, include an HTML MODIFIER with a value of FOLD_USER_IMG_PATH, and the files in that folder will be used instead of the defaults
HDR_BGCOLOR: <i>color</i>	To color the background to the text on the accordion fold, add an HTML MODIFIER layout cell attribute to the FOLD_PRE_ field. This attribute should be of the form HDR_BGCOLOR:#nnnnnn where #nnnnnn is a valid hexadecimal color. This setting is not supported with the THIN_LINE alternative presentation of accordion folds. Simply use the BGCOLOR layout cell attribute
HDR_TXT_COLOR: <i>color</i>	To color the text provided as the title to the accordion fold, add an HTML MODIFIER layout cell attribute to the FOLD_PRE_ field. This attribute should be of the form HDR_TXT_COLOR:#nnnnnn where #nnnnnn is a valid hexadecimal color
HIGHLIGHT_COLOR: <i>color</i>	Modifies the color of the text on the fold when the user's mouse is placed over the fold. This attribute should be of the form HIGHLIGHT_COLOR:#nnnnnn where #nnnnnn is a valid hexadecimal color.
HIGHLIGHT_BGCOLOR: <i>color</i>	Modifies the background color of the fold when the user's mouse is placed over the fold. This attribute should be of the form HIGHLIGHT_BGCOLOR:#nnnnnn where #nnnnnn is a valid hexadecimal color.
LEGEND: <i>title</i>	An HTML MODIFIER of the form LEGEND:This is my fold will place the text on the header to the fold. The text will be visible when the fold is both closed and open. Clicking on the text or the surrounding area is what causes the fold to open and close
NO_INDENT	By default, the accordion fold will be indented to line up with the column of the first field on the layout, as opposed to the column of the first field's label. If you include an HTML MODIFIER with a value of NO_INDENT, the accordion fold will not be indented

SIZE:*nn*

Note, this is the standard layout cell attribute of the type SIZE, and not an HTML MODIFIER. By default, the width of the accordion fold is determined by the rendering of the relevant layout, but you may manually set its width with the SIZE layout cell attribute. The is an integer value which will be converted to a pixel width for the Fold Section. Note that by overriding the default width handling, the Administrator is responsible to ensure that the fields within the accordion fold fit within the rendered section. This factor is also affected by a user's personal **Text size** setting, so be sure to check the look of your layouts with the **small**, **medium** and **large** text sizes

Controlling Fold States with Business Rules

As stated above, the initial state of the contents of an accordion fold is that all the contents are visible, unless you have placed a layout cell attribute of the type HTML MODIFIER and a value of **COLLAPSE** on the **FOLD_PRE_xxxx** field. It is often useful to set the initial state of the contents programmatically to open or closed, based upon one or more values within the issue you are adding or updating. This is accomplished with four components:

- The entire contents of the fold must be placed within an embedded layout placed on the *add* or *edit* layout
- The **FOLD_PRE_xxxx** and **FOLD_POST_xxxx** fields must be placed on the *add* or *edit* layout surrounding the embedded layout.

Rules may also be used to open and close folds, depending on conditions you set. For example, when a user opens one fold, you may close other open folds. In this way you might configure a screen so that only a single fold is open at any one point in time. See the page on [Rules & Accordion Folds](#) for details.

Accordion Folds & Required Fields

When you first generate an *add* or *edit* screen that contains accordion folds in the closed state, the fields within the fold are not rendered to the browser immediately, but are only rendered when the user opens the fold. This is for performance reasons - consider that you might have dozens of folds containing hundreds of fields on a large, complex layout. In this instance the initial rendering is optimized to only send the folds themselves and not their content to the browser. Upon opening an individual fold, an Ajax call to the server gets the data for just that fold, typically fetching a modest number of fields in a short time. However, some closed folds may contain required fields and the user might never open these folds. Even if these fields are not in the initial load of the screen form, ExtraView will check for any required fields within these folds when the user submits the issue and ensure they are entered by the user.

Accordion Folds & Paged Layouts

It is not recommended to nest Accordion Fold fields within Paged layouts, or vice versa. This does not provide a very usable user interface, and you might encounter some unexpected behavior.

Accordion Folds on Detailed Report & History Layouts

Accordion folds may be added to Detailed report and History layouts. They differ in their configuration from folds implemented on *add* and *edit* layouts. There are several reasons for this:

1. When the user creates a Detailed report, it might contain different issues from different Business Areas, each with different saved layouts
2. On both Detailed reports and History output, you do not want to open the same fold in each issue / section of the output when you click on a fold within a single issue / section

Further, for technical reason, the folds must be inserted as the reports are being rendered to the browser, long after the layouts are processed. At this time, there is no access to layout cell attributes to provide the same configuration options as the folds on *add* and *edit* layouts. Folds on Detailed reports and History layouts are configured as follows:

- Create two fields in the data dictionary.
 - The first field is used to mark the beginning of the accordion fold on the layout. The field must use a naming convention, beginning with the characters **REPORT_FOLD_PRE_**. For example, **REPORT_FOLD_PRE_1** is a valid name for the field. The title should contain the text you wish to see on the fold, and the display type should be **Custom**. You must set **Select for Reports** and provide permission to read the field
 - The second field is used to mark the end of the shaded region on the layout. The field must use a naming convention, beginning with the characters **REPORT_FOLD_POST_**. For example, **REPORT_FOLD_POST_1** is a valid name for the field. The title should be a single space character and the display type should be **Custom**. You must set **Select for Reports** and give the field read-only permission for each role that will use the shaded region
- Place the **REPORT_FOLD_PRE_** and the **REPORT_FOLD_POST_** fields on the Detailed report layout, giving each a colspan that extends the entire width of the layout. Obviously, the **REPORT_FOLD_PRE_** field is placed at the beginning of the region and the **REPORT_FOLD_POST_** field is placed at the end of the region
- The folds are always initialized in the open state

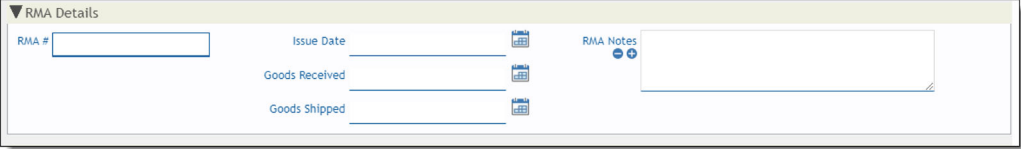
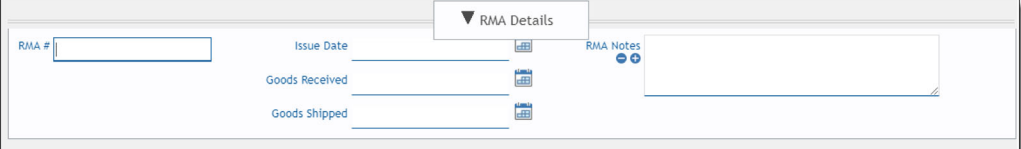
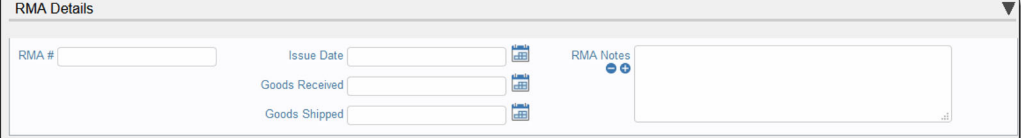
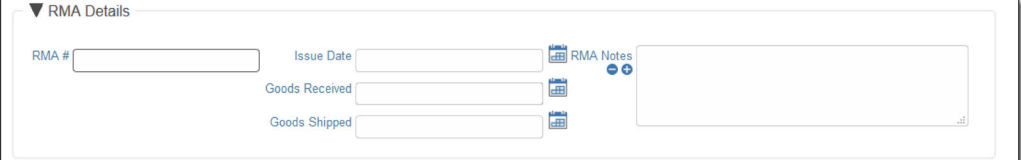
- No layout cell attributes are used on the layouts for these fields and will be ignored if set.
- Business rules cannot be used to control the folds

Alternative Presentations of Accordion Folds

Accordion folds may be set globally throughout the site, set for the entire scope of any combination of Area and Project with the normal inheritance rules being obeyed., or set with a layout cell attribute on any fold within a layout on an *add* or *edit* screen.

The global setting is controlled by the behavior setting named FOLD_DISPLAY. To set a different presentation for folds on Business Areas and Projects, go to the list management utility for the PROJECT field and set the style of folds within that screen.

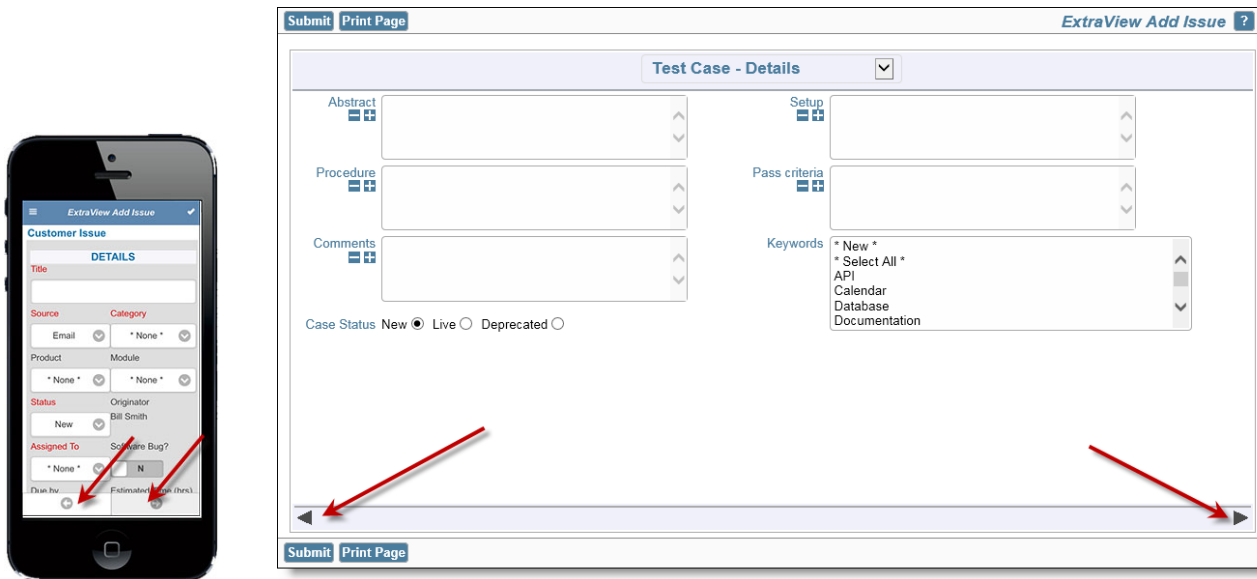
To set an alternative presentation for an individual fold on an *add* or *edit* screen use a layout cell attribute of type HTML MODIFIER, and a value of FOLD_DISPLAY:<type> where <type> is one of TRADITIONAL, THIN_LINE, SIMPLE or BORDER

FOLD_DISPLAY value	Appearance
TRADITIONAL	
THIN_LINE	
SIMPLE	
BORDER	

- [Add new comment](#)

Adding Paged Layouts

Paged layouts are ideal when you have a very large number of fields on a layout and wish to separate them into logical groups which the user can page forward and back through, using forward and backwards buttons. Compare this to the use by users, of [accordion folds](#) that open and close individual sections of the screen. Paged layouts are also ideal to use on mobile device layouts where there is only room on a device to display a handful of fields at a time, before the user has to scroll up and down.



Page layouts on mobile and desktop clients

Paged layouts have several important criteria associated with their use:

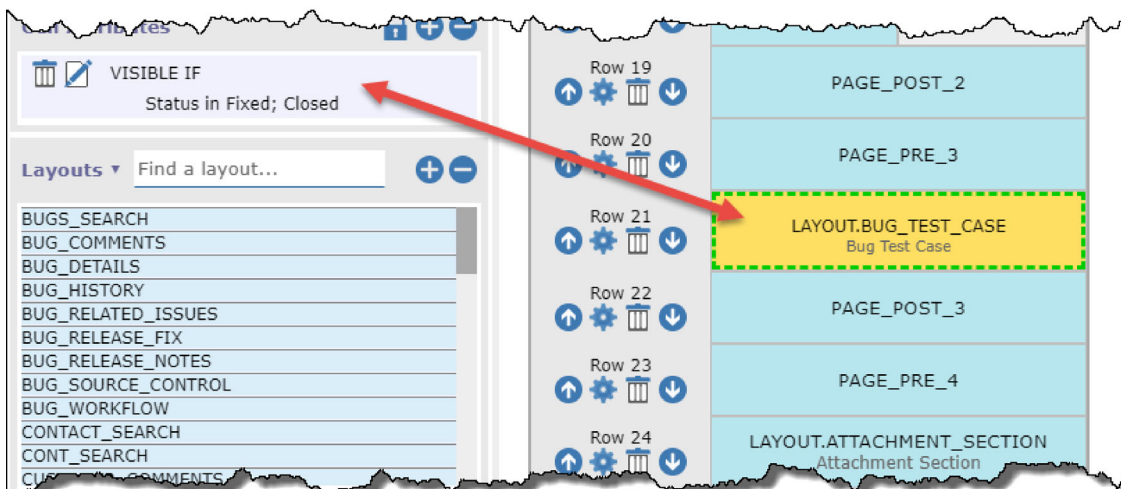
- Only one page within a sequence may be visible at any one time. This is termed the **active page**.
- Each page is defined with two fields, one beginning with the characters PAGE_PRE_ and one beginning with the characters PAGE_POST_. For example, fields defining a page might be named PAGE_PRE_ORDER_INFO and PAGE_POST_ORDER_INFO. An obvious point is that each *add* or *edit* layout that contains pages, should have at least two pages defined. The two fields surround all the fields or embedded layouts that compose each page
- Each page within the sequence may optionally have a title. This is defined within the field's data dictionary entry within the Help Text. If no title is defined, pages will be titled **Page 1**, **Page 2**, etc. The title is displayed at the top of the page within the layout
- The PAGE_PRE_ and the PAGE_POST_ fields must extend the complete width of the layout that uses them
- Each page may contain any number of fields or may contain an embedded layout. Note that you might have some fields before or after the last page you have defined. If you configure the layout in this way, then the fields before the first PAGE_PRE_ and after the last PAGE_POST_ fields will always be visible to the end user
- A complete page, within a sequence of pages, may have a *visible if* layout cell attribute associated with it, allowing the page to be skipped upon data entry, dependent on the values controlling the *visible if* attribute chosen by the end user
- The order of the pages defined within the *add* or *edit* layout is significant. The order defines the sequence with which the pages will be presented to the end user
- When an *add* or *edit* screen is first opened by an end user, the first visible page is opened. All other pages will be closed. A visible page is one where at least a single field is visible - fields are subject to the usual constraints such as security permissions
- Care should be taken when using allowed value type relationships, to ensure the parent field is set on the same page, or a prior page to the child field. It would be difficult for the end user to navigate back up the pages to enter a child value in a field
- If the current page which a user is viewing becomes invisible, due to workflow constraints, the first, visible previous page becomes the active page and is made visible
- Care should also be taken with required fields within pages. These fields will still be required when the user submits the issue, even if they are not on the current active page
- Nested pages are not supported. This implies that each PAGE_PRE_ field must be followed by its corresponding PAGE_POST_ field, before another PAGE_PRE_ field is encountered
- You cannot create pages within "Selected By" layouts. This is not a supported configuration
- You cannot create pages nested within accordion folds. This is not a supported configuration
- You cannot create pages nested within shaded regions. This is not a supported configuration
- You can style the pages with the use of layout cell attributes on the PAGE_PRE_ field within the layout. The potential layout cell attributes are implemented as HTML Modifier attributes, that begin with the following characters and end with the appropriate value:

BGCOLOR:color	The background color of the header and footer rows. The default color is the value of the behavior setting named BG_ALT_COLOR. Any valid HTML color name or hex value in the form #123456 may be used
BORDER_COLOR:color	The color of the border around the paged layout. The default value is #A3A9B0
COLOR:color	The color of the text of the title in the header of the page. The default color is the value of the behavior setting named LABEL_COLOR
HIGHLIGHT_BGCOLOR:color	The background color of the text of the title in the header of the page, when the user places their mouse over the page title. The default color is #666666

HIGHLIGHT_COLOR: <i>color</i>	The color of the text of the title in the header of the page, when the user places their mouse over the page title. The default color is the value of the behavior setting named TAB_FONT_ON_COLOR
PAGE_BACK_IMG: <i>image-name</i>	The default image is named <i>left-arrow.png</i> and is a standard image within the <i>images</i> folder that your installation is using - the path in the IMG_HOME directory specifies where the image is stored. You may place any image in the value to the layout cell attribute, but you should use the full path to the image, wherever it is stored.
PAGE_FWD_IMG: <i>image-name</i>	The default image is named <i>rt-arrow.png</i> and is a standard image within the <i>images</i> folder that your installation is using - the path in the IMG_HOME directory specifies where the image is stored. You may place any image in the value to the layout cell attribute, but you should use the full path to the image, wherever it is stored.
PAGE_HEIGHT: <i>nn</i>	<p>Layouts within ExtraView are typically auto-sized. This attribute will size the page height to the number of pixels in the value of the attribute. The greatest use of this attribute is to use the same value on each PAGE_PRE_ field you define in the layout, thereby ensuring all pages are rendered at exactly the same height, giving a pleasing effect for the end user.</p> <p>If the value you provide is less than the height required by the fields within the page, the page will render to the height required by the fields.</p> <p>Tip: Apply the layout cell attribute to the tallest page within your layout first, to make sure you have a suitable value. Then apply the same value to all the other pages in the layout.</p>
PAGE_WIDTH: <i>nn</i>	<p>Layouts within ExtraView are typically auto-sized. This attribute will size the page width to the number of pixels in the value of the attribute. The greatest use of this attribute is to use the same value on each PAGE_PRE_ field you define in the layout, thereby ensuring all pages are rendered at exactly the same width, giving a pleasing effect for the end user.</p> <p>If the value you provide is less than the width required by the fields within the page, the page will render to the width required by the fields.</p> <p>Tip: Apply the layout cell attribute to the widest page within your layout first, to make sure you have a suitable value. Then apply the same value to all the other pages in the layout.</p>

Configuring Individual Pages with "VISIBLE IF"

It is possible to configure individual pages to be conditionally visible, based on the value of a field within your layout. To accomplish this all the fields that are to be hidden should be placed within an embedded layout, and this layout should be placed between the PAGE_PRE_xxx and the PAGE_POST_xxx fields on the layout. Then you may apply a VISIBLE IF layout cell attribute to this layout as shown below.



Paged Layouts & Accordion Folds

It is not recommended to nest Accordion Fold fields within Paged layouts, or vice versa. This does not provide a very usable user interface, and you might encounter some unexpected behavior.

Adding Ruler Areas to Layouts

Ruler areas or ruler fields are used to generate headings within the *add* and *edit* screens. Ruler fields provide spacing and provide an opportunity to place text as assistance to the user.

The screenshot shows the 'ExtraView Add Issue' interface. At the top, there are navigation tabs: Bugs, Test Cases, Helpdesk, Assets, Customer Issues, Customers, Feature Requests, and Knowledge Base. Below these are buttons for Submit, Clear, Remove from Interest List, and Print Page. The main form is divided into three sections, each with a ruler area indicated by a red arrow:

- ISSUE INFORMATION:** Contains fields for Category, Status (New), Priority, Severity, Title, Product, Module, Platform, Customer, Release Found, Originator (Bill Smith), Assigned To, and Owner.
- ISSUE DETAILS:** Contains a large text area for Description and a Spell Check button.
- ATTACHMENTS & NOTIFICATION:** Contains an Attachments table with columns for File Description, File Name, and File Size, and a Notification section with checkboxes for Generate Email, Include Customer users in notification, and a Mailing List button.

At the bottom, there are buttons for Submit, Clear, Remove from Interest List, and Print Page.

Ruler fields on the add screen

Data dictionary field	Purpose
Name	This defines the name of the field. For example, a field named RULE_WORKFLOW is valid. You may define any number of ruler fields, as long as the name for each one begins with the characters RULE_.
Display Type	Must be Custom
Title	Typically this is a space character
Help Text	This is the text to place upon the ruler on the <i>add</i> or <i>edit</i> screen.

The standard distribution of ExtraView that ships with the user custom class named CustomCodeBase.java contains this functionality.

AJAX Techniques

With traditional web-based applications, it was often necessary to refresh entire screens to repopulate individual fields according to various triggering of business rules, such as populating a child list with values based upon a change in its parent value. ExtraView has maintained a rich set of features in addition to the management of parent-child relationships, such as **visible if** and **required if**. As powerful as many of these features were, they required ExtraView to execute the feature by returning the values from the browser to the server where the logic was used to send a complete page of information back to the browser. This is known as a “screen refresh” and whilst it is capable of executing complex logic, the process takes time, from a half-second to four or more seconds, depending on a variety of factors. These factors include the speed of the network and the speed of the hardware as well as the size and complexity of the ExtraView layouts that are being processed.

Using a technology known as Ajax, most screen refreshes are eliminated and the processing time is typically an order of magnitude less than the time for an entire screen refresh. The key places where ExtraView takes advantage of Ajax while processing issues on *add* and *edit* layouts are:

- To process layout cell attributes such as FIELD VISIBLE IF and FIELD REQUIRED IF. This includes the use of visible if to control entire embedded layouts
- To process layouts controlled by a tab or list field using the LAYOUT SELECTED mechanism
- To execute business rules that result in changes to values within fields on forms based upon field selections or data input

AJAX Limitations

The screen layout renderer in ExtraView always removes rows of fields where there is no visible content. This avoids unsightly gaps in the screen for your users. If you have a row that is entirely suppressed, and there are one or more fields on that row which are invisible due to a visible if cell attribute, then the row is not generated at all when the field or fields do not meet the criteria to become visible.

In this circumstance where the entire row is not rendered, there is insufficient information in the layout to use Ajax to populate the field when it becomes visible. As a result, ExtraView will revert to a full screen refresh. Thus the functionality is correct, but Ajax is not and cannot be used to make the field visible. If keeping the speed of the Ajax refresh is important to your application, consider altering your layout to include a field which will be visible at all times on the row of your layout so that something is always visible. This could even be a label field with a blank value. Although there is no obvious effect from this, it is actually visible.

Detailed Report Layout Selection

Detailed reports are generated on a different basis, in that each individual issue on a detailed report will use the detailed report layout associated with the issue's business area and project. The user's current role is also used in the selection. Inheritance is still used, but the net effect is that different issues may use different layouts, and will use the layout most associated with the issue.

Embedded Reports

You may embed a variety of reports within your *add*, *edit*, and *notification* layouts. The report types that may be embedded are:

- Column reports
- Treegrid reports
- Summary reports
- Matrix reports
- Charts (not available to embed within *notification* layouts at this time)
- Geospatial reports (not interactive heat maps)

Only shared reports or reports shared with user groups may be embedded. Note that embedded reports are not supported on phone or tablet layouts, as there is typically less screen space to display reports alongside the user's workflow data.

An important feature of embedded reports is that they can be linked real-time to the issue data being added or edited. This is enabled by using the * **Ask at Runtime** * filter within the report definition. When the embedded report is displayed, it looks for the value of the field displayed within the current issue on the layout when it is rendered, and uses this as the value for the * **Ask at Runtime** * field. If and when the user alters this value within the rendered *add* or *edit* screen, the report is automatically regenerated to reflect the new value.

Any number of reports may be embedded within an *add* or *edit* screen, although care should be taken not to embed complex reports that might take a significant amount of time to render, as this may detract from the user's experience.

The size and appearance of the embedded reports are controlled by layout cell attributes which are placed at the layout level (not the embedded layout). This is explained below in the Configuration section. The complete range of layout cell attributes that can be used is as follows:

Attribute	Purpose
ADMIN NOTES	This is a placeholder for information purposes only. This can be used by the administrator to document the use of the field / layout
ALTERNATE TITLE	The report title is the default that will be displayed on the rendered embedded report, but this can be overridden with this attribute
DRILLDOWN TARGET	This attribute is used in conjunction with the DRILLDOWN TARGET REPORT attribute. Together they define how to handle drilldowns from the embedded report presented on the <i>add</i> or <i>edit</i> screen. The drilldown target defines the name of the layout embedded on the screen which will contain the report that displays the drilldown results. If this is not defined, a new browser tab is targeted for the drilldown results within the standard interface. Within a workspace interface, a new workspace panel is generated to display the drilldown results.

The drilldown target layout must be a layout that was created with a usage of **Embedded Report - Creates a layout that contains a report to be embedded within an Add or Edit screen**. There are four such layouts predefined, but you may create as many of these as you need. The four predefined layouts are:

EMBEDDED_REPORT - Embedded Report
 EMBEDDED_REPORT_1 - Embedded Report (1)
 EMBEDDED_REPORT_2 - Embedded Report (2)
 EMBEDDED_REPORT_3 - Embedded Report (3)

Note that you should edit any of these embedded layout types and make sure that you save an empty layout of that type.

DRILLDOWN
TARGET
REPORT

This attribute is used in conjunction with the DRILLDOWN TARGET attribute. Once you have the target specified, you use this attribute to nominate the specific report you want to generate. This must be a shared public report. You can use the *** Ask at Runtime *** filter within the report definition to pick up values from the embedded report and use these while generating the drilldown report. For example, the user might click on a cell in the embedded report which identifies a value for a specific STATUS and PRIORITY. If these two fields are used as runtime filters in the drilldown target report, then the values from the embedded report are used as filters for the drilldown report.

EMBEDDED
REPORT NAME

This is the most important attribute as this allows for the selection of the report to be embedded. Only shared reports and reports saved for user roles can be selected. A report must be selected with this attribute for an embedded report to be displayed

HEIGHT

The height in pixels of the report, before a vertical scroll bar is displayed

REPORT FONT
SIZE

This attribute can be used to modify the size of the font used to generate the embedded report. This is typically used to set a smaller font size than theremainder of the *add* or *edit* screen as reports may be voluminous. You can either set a specific font size such as 8pt, 0.8em or 10px or use an HTML attribute name from the following table

medium	Sets the font-size to a medium size
xx-small	Sets the font-size to an xx-small size
x-small	Sets the font-size to an extra small size
small	Sets the font-size to a small size
large	Sets the font-size to a large size
x-large	Sets the font-size to an extra-large size
xx-large	Sets the font-size to an xx-large size
smaller	Sets the font-size to a smaller size than the parent element
larger	Sets the font-size to a larger size than the parent element

Using a setting from the table, or a value expressed with em has advantages as the font generated is then relative in size to the user's personal text size setting (small, medium or large).

REPORT
OPTIONS

These provide control of the following:

- The ability to display or suppress the Title of the embedded report as rendered on the *add* or *edit* screen
- The placement of a Refresh button on the heading of the embedded report
- The placement of a Drilldown button on the heading of the embedded report

- The placement of an Add button on the heading of the embedded report
- The placement of a Filter button on the heading of the embedded report. Note that if you set this option, you should make sure the SIZE and HEIGHT are of sufficient size to accommodate the filter popup
- The placement of a Mass Update button on the heading of the embedded report
- The placement of a Report Filter button which slides out upon a mouseover action. This displays the current report filters in a small popup
- The placement of Expand and Collapse All buttons on the report output. Note this only works with Summary, Matrix and Treegrid report types
- The placement of an input box to set Additional Keyword Filters
- An entry for the Page Size. This will override the value stored within the saved report

The screenshot shows a configuration window titled "Layout Cell Attribute" with a close button (X) in the top right corner. At the top, there are three buttons: "Update", "Cancel", and "Print Page". Below these is the attribute name "REPORT OPTIONS" and a description: "Set the options for the embedded report menu with this attribute. The only option set on by default is to provide the report with a title. Note that if you place a Filter Button on the report, you should ensure the SIZE and HEIGHT layout cell attributes are of sufficient size to display the popup for the filters." Underneath, the "Layout Name" is "LAYOUT.CUSTOMER_LOCATION_REPORT". A list of options follows, each with an unchecked checkbox and a help icon (i): Report Title, Refresh Button, Drilldown Button, Add Issue Button, Filter Button, Mass Update Button, Report Filter Display, Expand/Collapse All, and Additional Keyword Filter. At the bottom, there is a "Page Size" field with a help icon.

SIZE	The width in pixels of the report, before a horizontal scroll bar is displayed
VISIBLE IF	This allows for the typical conditions to conditionally display the entire report according to the logical expression you define

Configuration

1. Note that there are four embedded report layouts named Embedded Report, Embedded Report (1), Embedded Report (2), and Embedded Report (3) pre-created in the database. If you need to create a new layout type for embedded report. provide a fixed name and a title for the layout and choose the **Embedded Report** usage for the new layout type and then **Add** the new layout type

Add Cancel Print Page Add a New Layout Type ?

Create a New Layout Type

Use this screen to create a new layout type. You may use layout types that you create to embed a layout within other layouts. Layout types that you create to embed within *add* and *edit* layouts should have a usage of *Screen*. Note that layout types being used as related issue displays should have a usage of *Report*, even though they are to be included within an *add* or *edit* layout.

Name
 Title to display
 Usage

Use This Section
 Use this section of button to create a Detailed Report on an Add or Edit

- Embedded Report - Creates a layout that contains a report to be embedded within an Add or Edit screen
- Menubar - Layouts that are used to contain the menubar buttons that are within Add and Edit screens
- Menubar Buttons - used to create a layout that contains buttons embedded within an Add or Edit screen
- Report - Detailed Report, Quicklist and Related Issue Display layouts
- Screen - Embedded layouts within Add and Edit screens
- Search - Query layouts and search layouts embedded within Add and Edit screens
- User Report - Used when creating reports that contain user information

Repeating Row Type

2. Navigate to the **Layout Selection** screen within the Design Center and add the layout type you just created into the Business Area / Project and User Role where the report is to be displayed. Again, this feature is only supported on Desktop targets

Return Print Page Design Center ?

Layout Selection

Select Area Select Project Select Display Target Select User Role

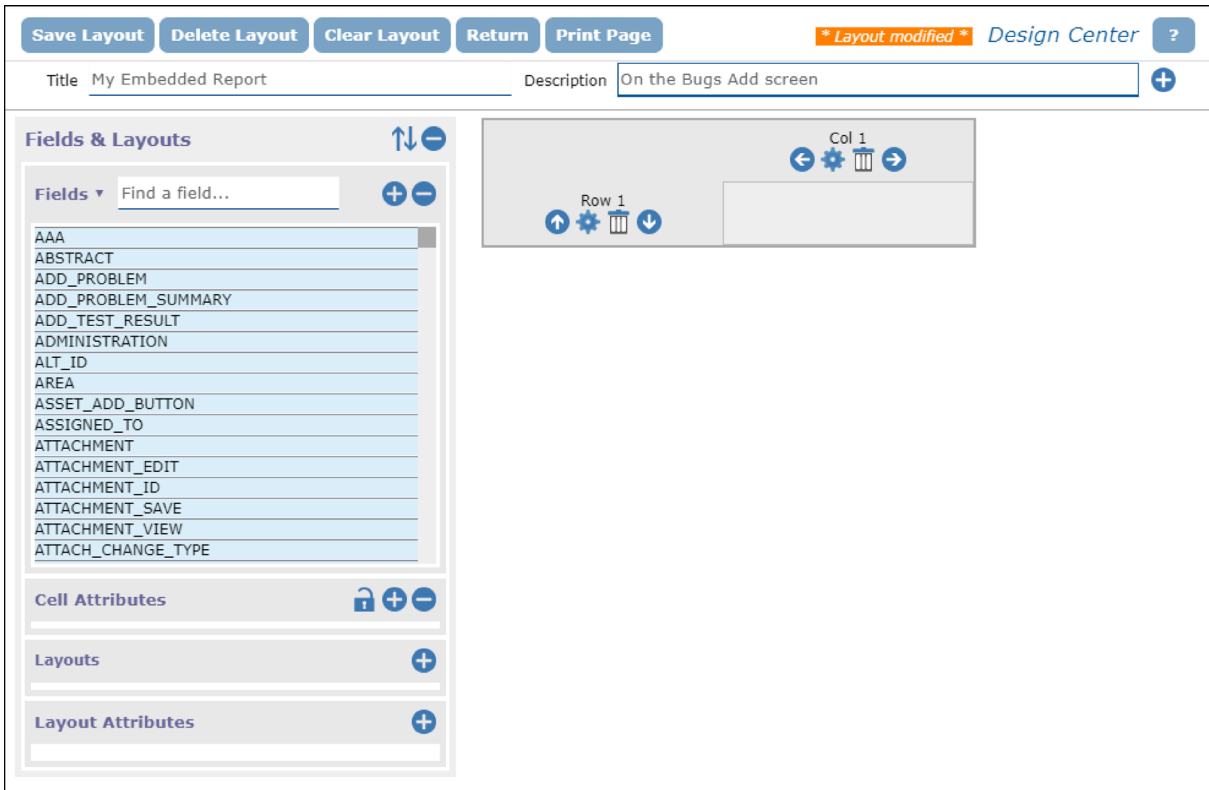
Select a new layout type

- Customer Contact Search
- Customer Details
- Customer RMA
- Customer Related Issues
- Customer Search
- Customer Selection Tabs
- Embedded Report**
- Filter layout for knowledge base on Home Page
- Helpdesk Computer Assets Layout
- Helpdesk Employee Layout
- Helpdesk Facilities
- Helpdesk Network Layout
- Helpdesk Other Issues Layout
- Helpdesk Telecom Layout
- Mass Update Layout
- My Embedded Report
- Notification Section
- Questions Layout
- Related Assets
- Related Bugs within Customer Issues

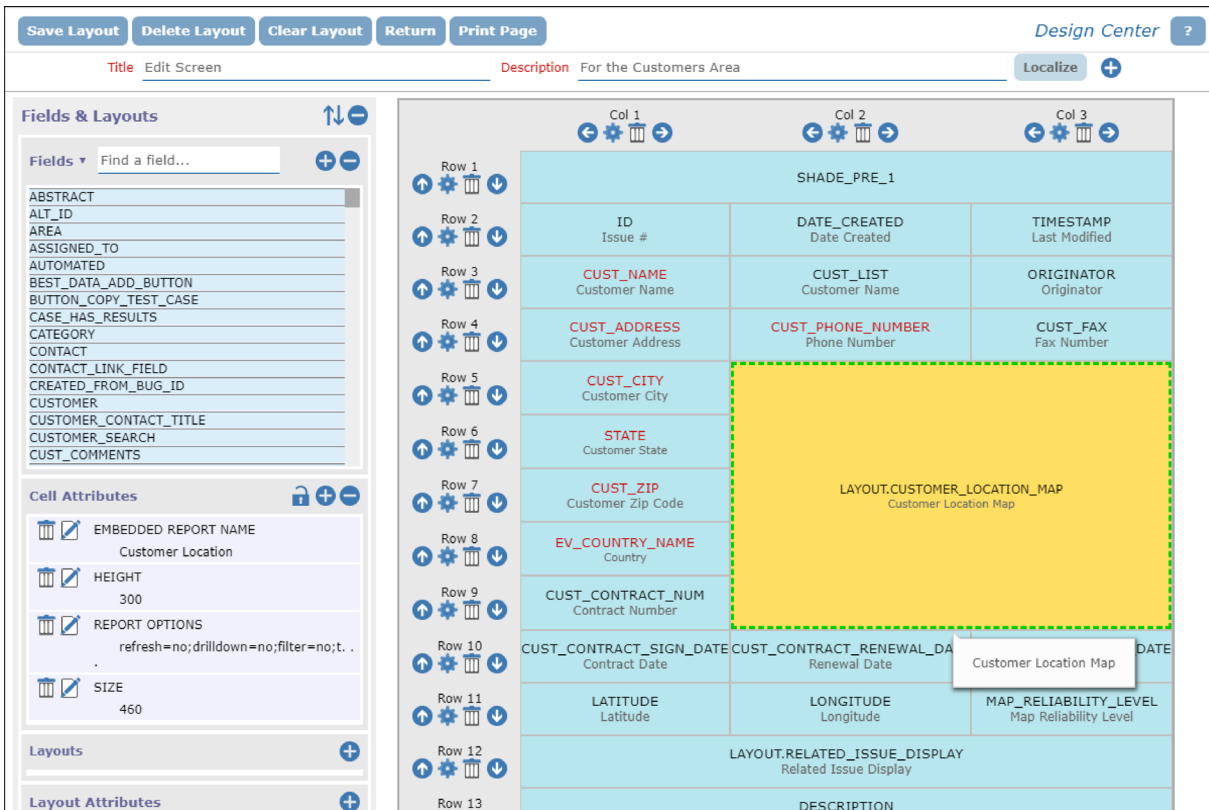
Description	Layout Type Name
* Search *	* Filter Layout Type
For the Customers Area	ADD_PROBLEM
For the Customers Area	EDIT_PROBLEM

ExtraView

3. This layout must be empty. It is a placeholder only. Create and save a layout like this



4. We will now place a report on the *Edit* screen of the Customer Business Area. Select the embedded report layout you created from the Layouts section of the Design Center.



Note that in this case we have suppressed all the REPORT OPTIONS and provided a SIZE and HEIGHT

5. The report we selected, titled **Customer Location** looks like this in the report editor

Run Save Save & Continue Save As Schedule Delete Clear All Cancel Print Page **ExtraView Geospatial Report** ?

Geospatial Report Options

Report Title Localize ?

Description Localize


Output to Browser Map Type Display on Mobile Add to My Favorites List Output Report Definitions

* Select Reporting Hierarchy *

Map Settings

Map width (pixels)

Map height (pixels)

Heat Map Color 

Query Filters

Standard
 Condensed Filters
 Advanced
 Expanded Filters

* Saved Filter List * Use Allowed Values in Filters ? Filter Multi-Valued Field Values ?

?

Select Field	Operator	Value
<input type="button" value="+"/> <input type="text" value="Customer Name(CUST_NAME)"/>	<input type="text" value="equals"/>	<input type="text" value="SSRUNTIMES"/>

Additional Runtime Options

- Note the use of the runtime filter for the report
- When an end user edits a Customer issue, the geospatial information associated with the customer is used to render a map showing the customer's location

Update Update & Continue Delete Clone History Close Print Page **ExtraView Update Issue** ?

Customer

Issue # 10998	Date Created 8/24/20 5:08 PM	Last Modified 8/24/20 5:08 PM
Customer Name ExtraView Corporation		Originator Bill Smith
Street Address 100 Enterprise Way	Phone Number (831) 461-7100	Fax Number (831) 461-7104
City Scotts Valley		
State California		
Zip Code 95066		
Country United States of America		
Contract Number 123456		
Contract Date 8/24/20	Renewal Date 8/19/21	Actual Renewal Date

[Add a New Contact](#)

	Customer Contact	Phone Number	Cell Phone	Customer Email
	John Smith	(831) 461-7100	(831) 555-5555	
	Bill Brown	(831) 461-7100	(831) 111-1111	
	Mary Black	(831) 461-7100	(883) 888-8888	

Protecting Embedded Reports

As explained above, embedded reports must be shared or made public to the users who will view these on *add* and *edit* screens. However, it is typically important that these reports not be modified or accidentally deleted by users other than the site administrator(s). Accidental modification of these reports may break a sites workflow.

To avoid this, use the Report Editor Privileges described [here](#) to restrict the ability to modify the report to the administrator(s) who manage the site's workflow.

Multiple Embedded Reports on an Add or Edit Layout

You may embed multiple embedded reports on a single *add* or *edit* layout. These reports may be uconnected or can be connected together such that drilldowns from on report may generate the results for a second embedded report within the same *add* or *edit* layout and not generate the results of the drilldown in a separate browser tab.

For example, you may have a summary or matrix report generate the drilldown results into a separate embedded layout within the same screen. To configure this, follow these steps as a guide:

- Create the first report. This will typically be a summary or matrix report although other report types are supported. The report editor will specify any fields to be used as runtime filters for the results. This report will be saved as a shared public report
- Create the second report. This will typically be a column report to display the drilldown results from the first report. You will use the selected fields from the first report as runtime filters for this second report. For example, if your first report is a matrix report that displays Priority versus Status, then you would set the Priority and the Status fields as runtime filters in the second report. This report will be saved as a shared public report
- Within the Design Center, add embedded report layouts for each of the reports. Remember to save an empty layout for each of these reports

- For the first report, add these layout cell attributes as a minimum:
 - EMBEDDED REPORT NAME
 - DRILLDOWN TARGET
 - DRILLDOWN TARGET REPORT
- For the second report, no layout cell attributes are required, although you may want to add a SIZE, HEIGHT and REPORT OPTIONS to make the layout look correct and similarly styled to the first report.

This will lead to two embedded reports, where, after a drilldown, you will see something like this on your rendered layout:

Bug Details

Title

Category: * None * Priority: * None * Status: New Originator: Bill Smith

Status ▲	P 1	P 2	P 3	P 4	Total
New	5	10	11	13	39
Open	2	8	4	6	20
Fixed	11	18	2		25
Closed	4	6			19
Duplicate		3			5
Not Found	1	2			5
Total	23	47	17	73	160

Issue #	Product	Status	Priority	Title
10762	Tracker	Open	P 2	Here is the title
10627	Tracker Enterprise	Open	P 2	The sample file has an error
10545	Tracker	Open	P 2	Additional field on screen after finishing the order form dsoposdf
10514	Tracker Enterprise	Open	P 2	This is a Coca-Cola issue reported by the customer when they were performing research
10269	Tracker	Open	P 2	New entry point to be created
10241	Tracker	Open	P 2	Urgent requirement to solve an issue where the server reboots
10205	Tracker Enterprise	Open	P 2	When the user presses the Go button on the Confirm screen, the software takes 2 seconds to respond before you see the next page
10088	Tracker Enterprise	Open	P 2	Turn left at the next Exit

Count: 8 records

Displaying 1 to 8 rows of 8 rows

Product: * None * Module: * None * Release Found: * None * Platform: +

* None *
* Select All *
Android

Importing Issues within Add and Edit Screens

[Click for end user documentation](#)

It can be useful as part of a workflow to configure the ability for an end user to directly import a file containing issues directly from an *add* or *edit* screen. This page discusses how to configure this feature.

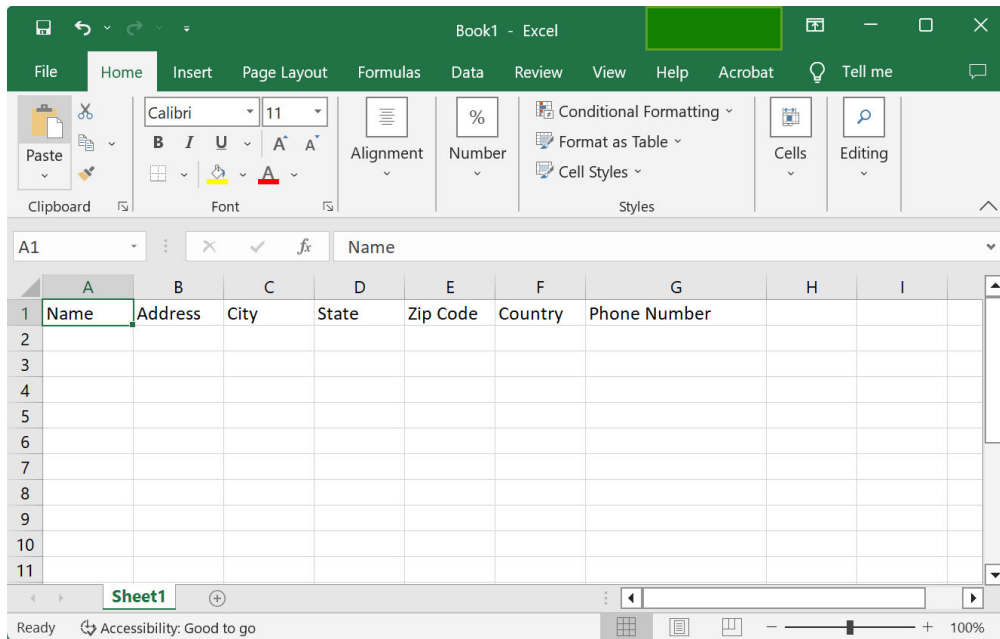
As an end user feature there are some deliberate limitations, compared to the administrative function to import issues. These limitations make it much simpler for the user:

- The upload uses a predefined import template
- All the field mappings are therefore done for the end user
- There is no need to provide the end user with administrative access.

The process to configure this feature is as follows:

Step 1 - Create an empty import file with the field titles the end user will import

This is useful for two reasons. First, the file can be provided to end users as an empty container into which the issues they want to create can be entered. Secondly, this provides the basis for providing field mappings, especially if the titles you want the end user to use do not match the titles within the ExtraView database. As an example, we want to create a list of customers and their information:



Save this file with a type of CSV. For our example, a name of customer-list.csv is used.

Step 2 - Create the import template with the Administration utility

This is created as a standard template within the **File Import - Issue Data** administration utility. See [here](#) for details. Note:

- The Business Area and Project should be the same as the one used as the user will use to add the issues as part of their workflow
- The mode should be **Insert**
- Choose the file you created in the last step to upload
- Click the **Create Template & Upload File** button
- After mapping the field titles in your import file to the ExtraView fields you will see a screen similar to:

Save Mappings / Upload New File
Validate import file
Perform import
Delete template
Return
Print Page
File Import - Issue data

Business Area Customers
Project Customer Information
Title customer-list Localize

File Uploads +
customer-list.csv

File character set UTF-8 Unicode 8-bit Transfer

Sample of uploaded file
 Name,Address,City,State,Zip Code,Country,Phone Number

Tab-separated fields
Generate Email

Field Mappings For each import file field, choose an ExtraView field to map your data into. ExtraView will map the values within a field, if the same value exists in both the import file and ExtraView. To provide alternative mappings, click on the Map button. Choose "None" if you do not want to map a field in the import file. Click on the Refresh mappings button to see the results of your mapping.

Import file field	ExtraView field
[1] Name	Customer Name(CUST_NAME)
[2] Address	Customer Address(CUST_ADDRESS)
[3] City	Customer City(CUST_CITY)
[4] State	Customer State(STATE)
[5] Zip Code	Customer Zip Code(CUST_ZIP)
[6] Country	Country(EV_COUNTRY_NAME)
[7] Phone Number	Phone Number(CUST_PHONE_NUMBER)

Mapping Results This displays the results of mapping your data and how it will appear in ExtraView. The top field name in the table is the field in your import file, the bottom field is the ExtraView field. Click on any header, if you want to map list values from your input file, to different values in ExtraView. Press the Refresh button after changing any mapping.

Field values will be inserted into ExtraView	Field values will not be inserted into ExtraView
Country	Phone Number
Country(EV_COUNTRY_NAME)	Phone Number(CUST_PHONE_NUMBER)

- Click the **Save Mappings** button

For more information on configuring file import templates, click [here](#).

Step 3 - Use a Predefined Button, or Define a New Button within the Data Dictionary

This button will appear to the end user to activate the import process.

A button name UPLOAD_FILE_BTN is provided within the Data Dictionary and can be used. If needed, you can alter the title **Import Issues** and any other attribute of the field, or you can use the remainder of the instructions in this section to define a new button field.

If you want to create a field from scratch:

- Navigate to the **Labels / Buttons** tab of the **Data Dictionary** within **Administration**
- Add a new Menubar Button. For our example, we will name this as **IMPORT_CUSTOMER_BTN** and it will have a title of **Import Customer List**
- Edit the button you just created and add an **Action Type** of **ExtraView File Upload**
- Select the file upload template you created in Step 2 from the list provided
- Provide **Help Text**, These are the instructions that will appear to the end user of the import. This is a rich text field
- Click the **Update** button
- Your screen will be similar to this:

Update Delete Cancel Print Page

Change a Data Dictionary Entry

Fixed name **IMPORT_CUSTOMER_BTN**

Title to display Localize

Display type

FIELD PROPERTIES

GLOBAL ATTRIBUTES

PERMISSIONS

WHERE USED

Icon Browse the Icon Library

Icon Display

Workspace Image

Action

Action Type

File upload Template

Help Text

Localize

Update Delete Cancel Print Page

Step 4 - Place the Button on an *add* or *edit* Screen Layout

Navigate to the layout where the layout is to be placed, and add the button field you created to the layout.

One optional feature here is that you can embed a report, typically showing the results of the import so that the end user can see the results of their import directly on the report.

- If you want to embed a report with the results, create the report first. Typically the report will use the **Business Area, Project** and the **Date Created** as filters, although any report can be used
- Place the button field on the layout
- If embedding a report, use the **Layout Cell Attributes** to select the report to be embedded, along with any other report attributes you wish to set
- Add the layout cell attribute named **Drilldown Target** to the menubar button you created and select the embedded report for the Drilldown Target, This causes the action to refresh the results of the embedded report once the file import has completed.

Step 5 - Using the Import Functionality

As an end user function, [click here for end user documentation](#).

Quicklist Report Layout Selection

A Quicklist may contain individual issues that belong to many different business areas and projects. Only one layout is selected for the entire report. This is selected from the user's current business area, project and role, unless one of the following conditions exists:

- If a filter selecting a single business area (AREA) is chosen, ExtraView will select the layout associated with PROJECT 0 of this area. Inheritance is used if no layout has been defined at this level
- If a filter selecting a single business area and a single project is chosen, then ExtraView will select the layout associated with this specific area and project. Inheritance is used if no layout has been defined at this level
- If zero or more than one business area is chosen, and/or the project selected conflicts with the business area, the layout associated with the user's current business area and project is selected

Attachment Layouts

[Click for end user documentation](#)

Security Permission Keys

Field/Security permission key	Purpose										
ATTACHMENT	This key controls the overall ability to create attachments. Write permission to this key is needed by the user role, for attachments to be able to be created or maintained. If there is no read permission, the attachment layout is not visible. This field is the only field that should be placed on reports where you want to display attachments, such as the detailed report. The remaining fields for the attachment will be placed onto the report by ExtraView, according to whether the field has read permission. When you have read permission to attachments on reports, a View attachment button is automatically placed on the report, allowing you to view the contents of all attachments to an issue directly.										
ATTACHMENT_ADD	This controls the Add button for attachments. Write access is needed to control this.										
ATTACHMENT_DELETE	This is to enable and disable the delete attachment button. A Delete button is also placed at the top of the attachment layout, if attachments exist and the ATTACH_SELECT button is placed on the layout and the user role has permission to this field. This allows you to select multiple attachments and delete them with a single action.										
ATTACHMENT_EDIT	Controls whether a user role may edit the attachment description of a previously uploaded attachment. Write permission is needed for this										
ATTACHMENT_HIST	Controls the presence of a History button on the edit screen within the attachment. This button presents a window with a layout defined in the layout editor and named ATTACHMENT_HISTORY, which presents the historic records showing the updates and accesses to attachments. Normally, this layout is defined in the global area, and inherited by all business areas and projects.										
ATTACHMENT_VIEW	Controls whether a user role may view a previously uploaded attachment. Read or write permission is needed for this										
ATTACHMENT_SAVE	This button invokes the browser's ability to download and save an attachment, as opposed to viewing the attachment with the ATTACHMENT_VIEW button. Note that this button behaves differently within different browsers: <table border="1" data-bbox="506 1199 1503 1612"> <tbody> <tr> <td>Google Chrome</td> <td>Downloads the attachment into the user's default download directory</td> </tr> <tr> <td>Mozilla FireFox</td> <td>Displays a Save As dialog box from which the user can select the destination into which the attachment may be saved</td> </tr> <tr> <td>Microsoft Internet Explorer 11 running under Microsoft Windows 10</td> <td>Displays a Save As dialog box from which the user can select the destination into which the attachment may be saved</td> </tr> <tr> <td>Microsoft Internet Explorer 11 running under Microsoft Windows 7</td> <td>This is not supported by the browser</td> </tr> <tr> <td>Microsoft Edge</td> <td>Downloads the attachment into the user's default download directory</td> </tr> </tbody> </table>	Google Chrome	Downloads the attachment into the user's default download directory	Mozilla FireFox	Displays a Save As dialog box from which the user can select the destination into which the attachment may be saved	Microsoft Internet Explorer 11 running under Microsoft Windows 10	Displays a Save As dialog box from which the user can select the destination into which the attachment may be saved	Microsoft Internet Explorer 11 running under Microsoft Windows 7	This is not supported by the browser	Microsoft Edge	Downloads the attachment into the user's default download directory
Google Chrome	Downloads the attachment into the user's default download directory										
Mozilla FireFox	Displays a Save As dialog box from which the user can select the destination into which the attachment may be saved										
Microsoft Internet Explorer 11 running under Microsoft Windows 10	Displays a Save As dialog box from which the user can select the destination into which the attachment may be saved										
Microsoft Internet Explorer 11 running under Microsoft Windows 7	This is not supported by the browser										
Microsoft Edge	Downloads the attachment into the user's default download directory										
ATTACHMENT_ID	This is an internal ID used by ExtraView. It is not likely that you will give permission to this key for any user role.										
ATTACH_CONTENT_TYPE	This is the mime content type of the attachment. You can control the visibility of this key with read permission. You cannot write to this field.										
ATTACH_CREATED_BY_USER	This is the name of the user who created the attachment. Once again, you cannot write to this field, and its presence or absence is controlled with the read flag.										
ATTACH_DATE_CREATED	This is the date that the attachment was created. Once again, you cannot write to this field, and its presence or absence is controlled with the read flag.										
ATTACH_FILE_DESC	This is the description of the attachment that the user enters. Both write and read operations are allowable on this field.										
ATTACH_FILE_NAME	This is the name of the file that is attached to the issue. Once again, you cannot write to this field, and its presence or absence is controlled with the read flag.										

ATTACH_FILE_SIZE	This is the size, in bytes, of the attachment. Once again, you cannot write to this field, and its presence or absence is controlled with the read flag.
ATTACH_PATH	This is the path in which the file was originally stored on the local file system of the creator's computer. Once again, you cannot write to this field, and its presence or absence is controlled with the read flag.
ATTACH_THUMBNAIL	This previews the attachments of image types (JPG, PNG and GIF) at a small size, in order that the user may see the image while they are inserting and updating issues, as well as seeing the field on reports when they are looking at attachment records.

Fields

Field Name	Purpose
ATTACH_CHANGE_TYPE	Used within a fixed layout displayed when the user clicks the ATTACHMENT_VIEW button to show the history of accesses to the attachment. This will show whether the attachment was inserted, viewed or deleted
ATTACH_CONTENT_TYPE	Used to display the Mime type of the attachment
ATTACH_CREATED_BY_USER	The user who inserted the attachment
ATTACH_DATE_CREATED	The timestamp of when the attachment was created
ATTACH_FILE_DESC	The user supplied description of the attachment
ATTACH_FILE_NAME	The file name of the attachment as it existed when it as uploaded
ATTACH_FILE_SIZE	The file size, in bytes, of the attachment
ATTACH_HIST_TIMESTAMP	Used within a fixed layout displayed when the user clicks the ATTACHMENT_VIEW button to show the history of accesses to the attachment. This field shows when the change to the attachment occurred or the attachment was viewed
ATTACH_LAST_DATE_UPDATED	Used within a fixed layout displayed when the user clicks the ATTACHMENT_VIEW button to show the history of accesses to the attachment. This field shows when the change to the attachment occurred
ATTACH_LAST_UPDATED_BY_USER	Used within a fixed layout displayed when the user clicks the ATTACHMENT_VIEW button to show the history of accesses to the attachment. This shows who last changed the attachment
ATTACH_LAST_UPDT_COMPANY	Used within a fixed layout displayed when the user clicks the ATTACHMENT_VIEW button to show the history of accesses to the attachment. This shows the company name of the user who last viewed or updated the attachment
ATTACH_PATH	The path to the attachment from the computer that uploaded the attachment
ATTACH_SELECT	This field controls the presence of a checkbox by each attachment, allowing the user to select one or more attachments for further operations, such as deleting them
ATTACH_THUMBNAIL	A thumbnail of attachments with an image type. A behavior setting named THUMBNAIL_MAX_SIZE controls the maximum size of the thumbnail images. Users may click on the thumbnail image to view / download the attachment
ATTACHMENT_ID	The internal ID of the attachment
ATTACHMENT_EDIT	A button that allows the user to edit / delete the attachment
ATTACHMENT_SAVE	Used within a fixed layout displayed when the user clicks the ATTACHMENT_VIEW button to show the history of accesses to the attachment. This allows the user to save their changes
ATTACHMENT_VIEW	This places a View button on the screen. When pressed, the user will either see the attachment in a new window, or will be prompted to save the attachment on their local computer

Add & Edit Layouts

There is a default layout in the Global Area, Master Project that defines the layout for file attachments. This layout is named ATTACHMENT_SECTION. This may be embedded within any *add* or *edit* layout. Before any alterations, this looks like the following:

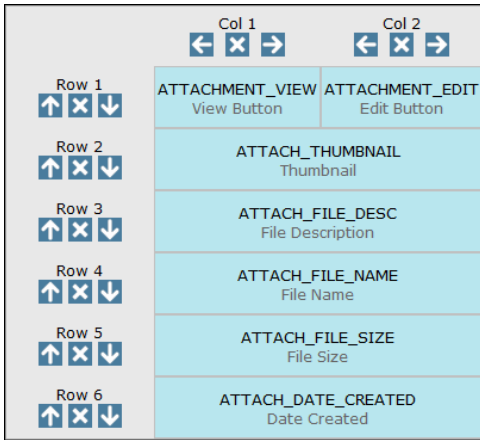
Col 1	Col 2	Col 3	Col 4	Col 5	Col 6	Col 7	Col 8	Col 9	Col 10	Col 11
ATTACHMENT_VIEW View Button	ATTACHMENT_EDIT Edit Button	ATTACH_SELECT Select?	ATTACH_THUMBNAIL Thumbnail	ATTACH_FILE_DESC File Description	ATTACH_PATH Attachment Path	ATTACH_FILE_NAME File Name	ATTACH_FILE_SIZE File Size	ATTACH_CREATED_BY_USER Created By	ATTACH_CONTENT_TYPE Attachment Content Type	ATTACH_DATE_CREATED Date Created

The security permission keys PR_ADD_PROBLEM.ATTACHMENT and PR_RESOLUTION.ATTACHMENT control the overall visibility of the layout, and the following security permissions control the ability to place attachments from within the *add* and *edit*

screen layouts. Security permission entries exist for both the PR_ADD_PROBLEM set of keys and the PR_RESOLUTION set of keys, except for ATTACHMENT_DELETE, ATTACHMENT_EDIT, ATTACHMENT_HIST, and ATTACHMENT_VIEW which only exist for the PR_RESOLUTION set of keys.

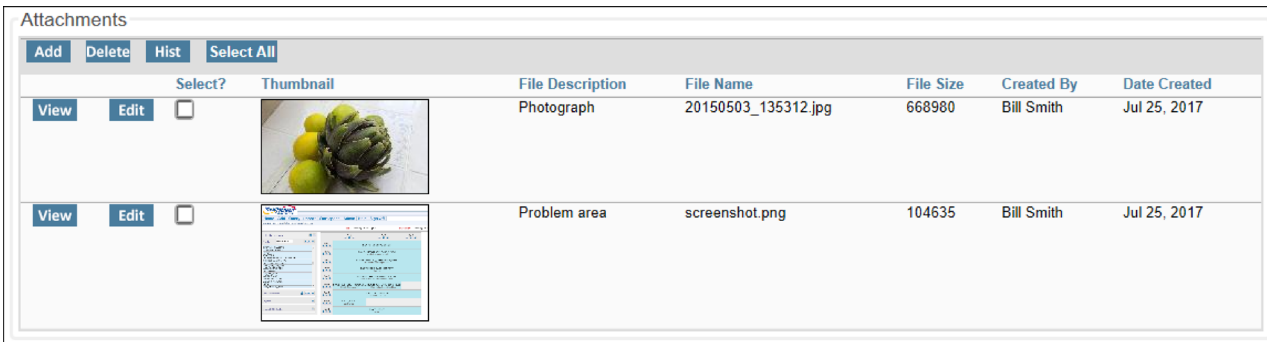
Recommendation

If you are configuring mobile layouts, consider saving the ATTACHMENT_SECTION layout as a mobile layout and removing fields which are going to clutter up small screens, especially on phone targets. You can configure the fields on the layout vertically as opposed to horizontally, similar to this:





Multiple attachments can be added to issues, on both the *add* screen and the *edit* screen, if the user role has permission. Note the **Select?** checkbox on *add* and *edit* screens. The presence of this is made by adding the ATTACH_SELECT field to the attachment layout. With this configuration, a **Delete** button will also be displayed, and the user can select any of the attachments then press the **Delete** button.

Note that if an attachment is added to an issue when you are updating an issue, the issue itself is immediately updated.



Portion of edit screen showing attachments


Attachments						
	Thumbnail	File Description	File Name	File Size	Created By	User
View		Photograph	20150503_135312.jpg	668,980	Bill Smith Jul 25, 2017	Bill Smith Jul 25, 2017
View		Problem area	screenshot.png	104,635	Bill Smith Jul 25, 2017	Bill Smith Jul 25, 2017

Portion of detailed report showing attachments

A behavior setting named THUMBNAIL_MAX_SIZE controls the size of the thumbnail. This is the maximum number of pixels in either the horizontal or vertical direction to which thumbnail images will be generated. The aspect ratio of the original image will be retained. Thumbnail images are generated for file attachments and for fields with a display type of image. If you change this value, existing thumbnail images will remain at their original size and new thumbnails will be generated at the changed value.

Detailed Report Layouts


You should not embed the ATTACHMENT_SECTION layout within Detailed Report layouts. Instead, there is a field with special properties, named ATTACHMENT. This field should be placed on the Detailed Report layout. You then can control the presence or absence of the individual fields that comprise the attachment information with their security permission key. This leads to a layout for detailed reports that looks similar to this:

Attachments						
	Thumbnail	File Description	File Name	File Size	Created By	User
View		image.jpg	image.jpg	30,554	Bill Smith October 13, 2013 2:40:17 PM PDT	Bill Smith October 13, 2013 2:40:17 PM PDT

[Click for end user documentation](#)

Associating Attachments with Fields

In some applications, users may add a significant number of attachments within a single issue. It can then be useful to associate specific attachments with specific fields, or updates to a specific log area field entry. For example, this can provide a shortcut to viewing an attachment that was uploaded at the same time a specific comment was made.

When an attachment is associated with a field, its file name will appear beneath the attachment. The field is a link and clicking on the link will open the attachment in exactly the same way that opening the attachment from viewing within the attachment layout within the screen. Fields that may be associated with attachments will have a  button on the menubar of the HTML Area field, or a similar button to the side of Text Area fields. Clicking this pops up the same Attachment Add window that is used when the **Add** button is clicked on the Attachment layout. Adding attachments via this button result in the uploaded files being regular attachments, and with a link to the field from which they were added.

Attachments associated with the use of EVMail do not have any user interface elements, and will appear the same as attachments associated through the user interface.

The associated attachments are displayed correctly, and will be cleared from the user interface if the attachment is deleted. An audit trail of the changes to associated attachments are viewable in the History of the issues.

ExtraView provides two methods to achieve this configuration, through the user interface on *add* and *edit* screens, and when inserting or updating an issue via EVMail.

Configuration for *Add* and *Edit* Screens

The feature may be configured on fields with these display types:

- Text Area
- HTML Area
- Log Area (including those with the **Present as HTML** option set in the Data Dictionary)

To configure the option, edit the layout where you want to use the feature within the Design Center and add the layout cell attribute named ATTACHMENT LINK. Alternatively if you want to use the feature throughout the installation on a field, set the ATTACHMENT LINK attribute as a global attribute from within the field inside the Data Dictionary.

You may set the attribute on any number of fields within *add*, *edit* or layouts embedded within these.

The following security permission keys control the behavior of attachments:

PR_ADD_PROBLEM.ATTACHMENT_LINK	Controls the presence of the Attachment Link button on <i>Add</i> screens
PR_RESOLUTION.ATTACHMENT_LINK	Controls the presence of the Attachment Link button on <i>Edit</i> screens
PR_ADD_PROBLEM.ATTACHMENT_ADD	Controls the presence of the Add Attachment button on <i>Add</i> screens
PR_RESOLUTION.ATTACHMENT.ADD	Controls the presence of the Add Attachment button on <i>Edit</i> screens
PR_RESOLUTION.ATTACHMENT_LINK_NOTIFICATION	Controls the presence or absence of the Attachment Link on outgoing emails. This is useful to allow users in specific roles to see the text within the field associated with the attachment, but not to see or be able to download the attachment

Configuration for EVMail

Properties must be set within the EVMail task configuration. These will associate incoming file attachments with the field that will contain the body of the incoming email.

If the field containing the body is plain text, set these options:

EVMAIL_BODY_UDF	This provides the field name that will contain the body of the incoming email when creating new issues within the database
EVMAIL_BODY_UPDATE_UDF	This provides the field name that will contain the body of the incoming email when updating existing issues
EVMAIL_BODY_UDF_ATTACHMENT_LINK	Set this option to a value of YES if you want ExtraView to associate any attachments to the incoming email to the field set in EVMAIL_BODY_UDF
EVMAIL_BODY_UPDATE_UDF_ATTACHMENT_LINK	Set this option to a value of YES if you want ExtraView to associate any attachments to the incoming email to the field set in EVMAIL_BODY_UPDATE_UDF

If the field containing the body is to be handled as HTML, set these options:

EVMAIL_BODY_HTML_UDF	This provides the field name that will contain the body of the incoming email when creating new issues within the database
EVMAIL_BODY_HTML_UPDATE_UDF	This provides the field name that will contain the body of the incoming email when updating existing issues
EVMAIL_BODY_HTML_UDF_ATTACHMENT_LINK	Set this option to a value of YES if you want ExtraView to associate any attachments to the incoming email to the field set in EVMAIL_BODY_HTML_UDF

EVMAIL_BODY_HTML_UPDATE_UDF_ATTACHMENT_LINK

Set this option to a value of YES if you want ExtraView to associate any attachments to the incoming email to the field set in EVMAIL_BODY_HTML_UPDATE_UDF

History Layouts

Before discussing history layouts, it is important to understand the behavior setting named HISTORY_DISPLAY. This offers the ability to configure one, two or three different methods to display the historic audit trail of each issue. A value of ABBREVIATED for this setting will show changed fields only in history records and will not use the history layout to display the audit trail. A value of SIDE_BY_SIDE will display the same information as ABBREVIATED, but with the addition that you have a side-by-side comparison of the current value at each point in time along with the previous value. The LAYOUT setting is designed to show all the field values as the issue moves through its process. The Report – History layout will show the fields that you want to see as part of your audit trail process. The following points are important with history layouts:

- The audit trail is kept on all fields, not just those on the layout. Thus you can add fields to the layout at any time, and the new fields will show the audit back to the creation of the issue.
- If you have a checkbox field on the *edit* layout, but not on the *add* layout, and do not make a change to its value on the first occasion you update the issue, the field will still show a change to N or whatever the off title is in the data dictionary. The reason for this is that ExtraView interprets the field as having moved from a null condition on the add screen to N on the *edit* screen. You can prevent this by making the default value for the field N in the data dictionary
- Before a field can be displayed on a history layout, it must have the **Select for Reports** attribute set to **Yes** in the data dictionary
- The field named RELEASE must have the **Select for Reports** attribute set to **Yes** in the data dictionary before you can display any repeating rows on the history layout
- You may not place any buttons on the history layout
- Use the behavior settings named HIGHLIGHT_COLOR, HIGHLIGHT_COLOR_ADD, HIGHLIGHT_COLOR_DELETE and HIGHLIGHT_COLOR_UPDATE to set the colors that indicate each of the conditions for a field within the history layout

Placing the Audit Trail for Related Issues on the History Layout

You may add an embedded layout prepared to display related issues to a History Layout. As explained in the section about preparing layouts for Related Issues, these layout types always begin with the character string RELATED_. This produces a related issue display at the point in time on the history record when the issue was updated, not at the current time.

Attachment History Layouts

The history button available on *edit* screens controls access to a pop up screen that shows the history of additions, updates and deletions to attachments. In addition, the screen shows a record of all users who have downloaded the attachment to their own computer.

The same ATTACHMENT_HISTORY_LAYOUT is typically used throughout an installation, and can be defined in the global layout area only. Other Business Areas and Projects will automatically inherit it from there. Of course, different ATTACHMENT_HISTORY layouts may be defined in each Business Area and Project.

Attachment History for ID # 10525							
File Name	Change Type	File Size	File Description	Created By	Date Created	Last Updated by User	Last Date Updated
arrow.psd	Insert	3875	attach	Bill Smith	2006-02-16 22:41:04.0	Bill Smith	2006-02-16 22:41:04.0
arrow.psd	Update	3875	attach	Bill Smith	2006-02-16 22:41:05.0	Bill Smith	2006-02-16 22:41:04.0
bear.jpg	Insert	180532	picture of bear	Bill Smith	2006-02-17 11:44:38.0	Bill Smith	2006-02-17 11:44:38.0
bear.jpg	Update	180532	picture of bear	Bill Smith	2006-02-17 11:44:39.0	Bill Smith	2006-02-17 11:44:38.0
arrow.psd	View	3875	attach	Bill Smith	2006-02-16 22:41:05.0	Bill Smith	2006-02-16 22:41:04.0
arrow.psd	Update	3875	This file shows an image of the issue to be implemented	Bill Smith	2006-02-16 22:41:05.0	Bill Smith	2006-02-18 22:33:42.0
bear.jpg	Update	180532	Prototype photograph of the replacement	Bill Smith	2006-02-17 11:44:39.0	Bill Smith	2006-02-18 22:34:05.0

Attachment History Screen

The following fields may be placed on the layout, and they must have read permission to be viewable by the user role:

Field Name	Purpose
ATTACH_CHANGE_TYPE	The operation on the attachment. This is one of Delete, Insert, Update, View
ATTACH_CONTENT_TYPE	The content type of the attachment
ATTACH_CREATED_BY_USER	The name of the user who created the attachment
ATTACH_DATE_CREATED	The date the attachment was created
ATTACH_FILE_DESC	The description of the attachment
ATTACH_FILE_NAME	The filename of the attachment
ATTACH_FILE_SIZE	The size, in bytes, of the attachment
ATTACH_HIST_TIMESTAMP	The timestamp of the event, such as when a user views the attachment
ATTACH_LAST_DATE_UPDATED	The timestamp that the attachment metadata was altered, or the attachment deleted
ATTACH_LAST_UPDATED_BY_USER	The user who performed the operation
ATTACH_PATH	The original path on the client machine where the attachment was stored
ATTACH_THUMBNAIL	A thumbnail image if the field is an image

Notification Section Layouts

There is a default layout in the Global Area, Master Project that defines the layout for notifications. This may be embedded within any *add* or *edit* layout. Before any alterations, this looks like the following:

	Col 1	Col 2	Col 3	Col 4
Row 1	SHADE_PRE_NOTIFICATION			
Row 2	NOTIFICATION_GENERATE_EMAIL Generate Email	NOTIFICATION_CC_EMAIL_USERS CC Email		
Row 3	NOTIFICATION_INT_LIST_SELF Include self on interest list	NOTIFICATION_INT_LIST_OTHERS Add users to interest list		
Row 4	NOTIFICATION_TO_CUSTOMER Include Customer users	NOTIFICATION_MAILING_LIST Mailing List		
Row 5	NOTIFICATION_EMAIL_ATTACHMENT Include selected attachments			
Row 6	SHADE_POST_NOTIFICATION			

The security permission keys named PR_ADD_PROBLEM.NOTIFICATION and PR_RESOLUTION.NOTIFICATION control overall presence of the layout on the *add* and *edit* screens. The functionality of the fields within the layout are controlled by their individual security permission keys.

Field/Security permission key	Purpose
NOTIFICATION_GENERATE_EMAIL	This is an overall checkbox which acts as a switch, allowing the user to send or inhibit the sending of email notifications when the current issue is inserted or updated. The default for the checkbox may be set globally by the behavior setting named GENERATE_EMAIL_BOX or by a business load directive rule. Further business rules may alter the value of the checkbox during the refresh and preupdate stages
NOTIFICATION_CC_EMAIL_USERS	This provides an input text box with search capability, allowing the user to enter the email addresses or user ID's of users to notify, when these users are not on the notification mailing list generated
NOTIFICATION_INT_LIST_SELF	This checkbox allows the current user to place themselves on an interest list for the current issue, no matter who else may be notified during the processing of the issue. The user can later change this value through their personal options - on the Notification tab
NOTIFICATION_INT_LIST_OTHERS	This checkbox allows the current user to place others on an interest list for the current issue, no matter who else may be notified during the processing of the issue. These users can subsequently change this value through their personal options - on the Notification tab
NOTIFICATION_TO_CUSTOMER	This allows the current user to determine when to send a notification from the current issue to users who are members of the DEFAULT_USER_ROLE. This email is obviously subject to the permissions of this role, and will often use a simpler layout customized to the communication needs of your customers
NOTIFICATION_MAILING_LIST	This shows a list of the users who are on the standard distribution list for the current issue, as determined by the ORIGINATOR, ASSIGNED_TO, CONTACT and LAST_UPDATED_BY fields
NOTIFICATION_EMAIL_ATTACHMENT	This checkbox is used in conjunction with the Select ? attachment checkboxes. When attachments are selected and this checkbox is checked, the selected attachments are sent with the email notification.
NOTIFICATION_PRIORITY	If this checkbox field is placed on the notification layout then it provides the ability for a user to set a high priority status on the outgoing email that is to be generated.

The Data Dictionary is the central place where all field definitions are stored and maintained. The data dictionary is found within the System Configuration administrative menu.



Data Dictionary screen tabs

Fields

These are the fields within ExtraView that are used within all processes. There are two types of fields, built-in fields and users defined fields (UDF's). Built-in fields are provided as part of all ExtraView installations. Although you may modify various attributes of built-in fields, such as their title and their default value, you should never delete an built-in field. You may create as many UDF's as you require for your installation. There is no limit on the number of UDF's that may be created. All fields have four basic properties, their scope, a fixed name, a title and a display type. It is the display type

that gives a field most of its functionality. See later in this section for a complete explanation of all the field types. Once any UDF is defined in the data dictionary it will behave the same as if it were an inbuilt field. You will be able to attach permissions to the field, place it on any layout, report on the field, etc. End users will not be able to detect the difference between an inbuilt field and a UDF. When viewing a list of fields in the data dictionary, you will only see the fields in the Business Areas and Projects to which you have permission. This typically includes all the fields which are global in their scope.

As a technical point, there is no real limit to the number of UDF's you create. In addition, creating a UDF does not result in any change to the underlying database schema. There is no system degradation in creating a large number of UDF's.

Expressions

Expression fields are used in reporting to derive or calculate the value of a reporting column. Each expression may have a default expression which is then automatically used on any report which contains the expression field. Expression fields also have a range of display types, although this range is more limited than a field display type. You may define any number of additional expression fields, or reuse the same expression fields for different purposes on different reports.

Labels / Buttons

This section is where field screen elements that are not database fields can be defined or altered. Buttons for menubars are also maintained within this tab. Once again, it is unlikely that the administrator will remove fields from this section. Labels can also be added as User Defined Fields, so it is unlikely that the administrator will add new fields to this section of the data dictionary.

Screens

These fields are for the inbuilt screens within ExtraView. A few additional supporting fields in this area affect screen displays. Administrators should not need to add or remove entries from this section, but can rename the individual screens within their installation.

Session Variables

Fields found in this area pertain to options having to do with the user's current, active ExtraView session. Fields defined in this section are principally used in reporting

Reserved Field Names

This is an informational section which displays the names of fields which are used internally within the ExtraView software. These names may not be used as User Defined Field names.

Special Variables

These fields generally are those that manage functions involving calculations of some kind, such as the internal data/time stamping functionality.

Key Uses of the Data Dictionary

This core component of ExtraView controls many of the attributes of each field, such as:

- Display type of each field
- Display title for each field. The title that is used for all screen labels can be altered at will for each field
- Whether the field is selectable for reports
- Setting up field dependencies
- Populating the values into lists
- Default values
- Help text

Documenting the Purpose and Use of Fields

It is often useful for the administrator to document the purpose of any field within their system. To achieve this, add a global attribute to any field, with the type of ADMIN_NOTES. The text entered within this field is not utilized outside the data dictionary, but serves as documentation regarding that field. This text is also visible within the design center when a field is placed on a layout. It can be viewed within the Cell Attributes section of the screen.

Note that if you want to view where a field is used within the overall system, you can use the **Where Used** tab within the data dictionary.

Built-In & User Defined Fields

Built-In fields are part of the basic ExtraView product and exist in all databases. Most of these fields have special properties. For example there is a built-in field named **ID** that is used to provide a unique identifier for every issue stored. Built-in fields should not be deleted from the database else functionality may be lost, or in the worst case, ExtraView will not function. User Defined Fields are fields that are created within your ExtraView installation and do not exist in the basic product. Since you may want to customize your own site to include fields that are more specific and appropriate to your needs, UDF's satisfy this requirement. UDF's are a highly efficient and extensible mechanism. An unlimited number of UDF's may be created. All User Defined Fields are created and maintained in the Data Dictionary. UDF's must be typed, i.e. they will take on one of many display types such as *text*, *number* or *date*. The display type is the most important property of each UDF. In addition, UDF's that have a *list* type can retain multiple values at one time, with the values being individual members of the whole list.

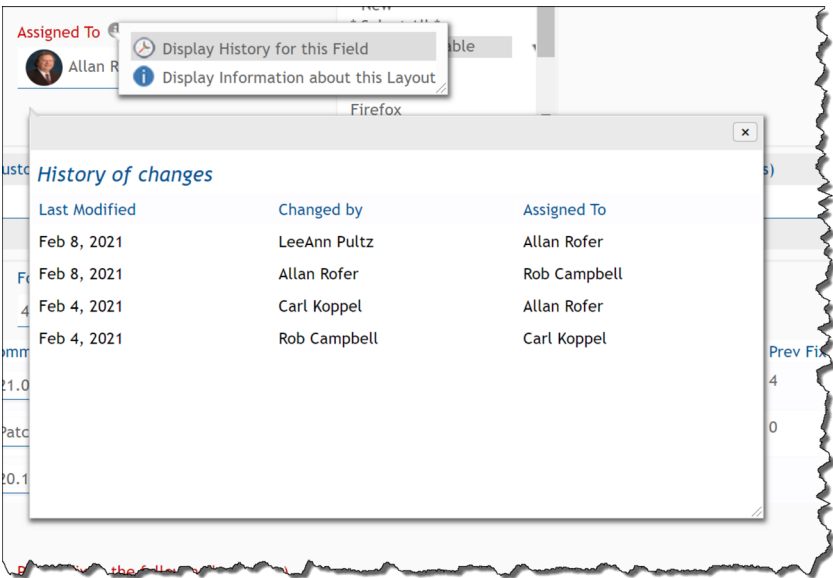
Scope

Fields may be created and assigned to be global, or created and assigned to an individual Business Area, or created and assigned to an individual Project within a Business Area. This is termed the scope of the field. All inbuilt fields are global in their scope. When a field is restricted in its scope to an individual Business Area, or to a Project within a Business Area, then you will not see that field unless you have permission to read fields in that Business Area and Project. Similarly, you cannot write to a field unless you have write permission to the field in the Business Area and Project within which it is held.

Field Properties

Fields have properties, or attributes, that enhance their capabilities, and provide options as to how they should work. Not all properties are applicable to all field display types. The following is a complete list of properties. Only the properties for any individual field display type will be shown on the user interface. As you choose a field's display type, only the valid properties will be displayed.

Field Property	Explanation
Business Area & Project	Sets the scope for the field. If Global Area is selected, then the field will be available over all Business Areas. If a specific Business Area is selected, along with its Project Defaults, then the field will be available throughout that Business Area. If a specific Business Area and a specific data project is selected, then the field will only be available within that Business Area and Project
Field Belongs To	Enter the record type that the UDF is to be associated with against the prompt <i>Field belongs to</i> . There are presently two choices: see Issue Records – this indicates the UDF is to be associated with the main record for each issue in the database Repeating Records – this indicates the UDF is to be associated with each repeating row added to the main issue. Repeating rows maintain a many-to-one relationship with issues, therefore the UDF you create will be available for each repeating record that is added to the main issue. Note: You cannot change this property once the field has been created
Fixed Name	The <i>Name</i> is the fixed name of the field. This field is required. <i>Names</i> may be from one to thirty characters long, and must be composed of the characters – A – Z 0 – 9 _ The first character of a name must be alphabetic. You must not have consecutive underscore characters in a fixed name. Field names must be unique across an installation
Title to Display	The <i>Title</i> will appear on screens and reports. It may be from 1 to 255 characters in length and is required. It may contain any text. If you have turned on multiple locales, this field may be translated into any valid language and

	<p>its length may be up to 3,800 characters. The title may contain HTML for formatting purposes but it is a best practice not to include HTML within the field title. You should provide a plain text title within the data dictionary, and use HTML to embellish the field title using an ALTERNATIVE TITLE within the layouts where the field is used. If you do include HTML within the field title and access the field through the API or CLI then the HTML will be passed through to the output. If you do not want to display a title, use a space character as the title</p>															
<p>Display Type</p>	<p>The data type of the field, controlling its appearance and behavior. Example display types are text, number, checkbox and date. For a complete list of display types, click here</p>															
<p>Allow Selection on Reports</p>	<p>A switch to allow or disallow the field to be selectable for reports. If this option is not set to Yes, then the field will not be available in reporting and on the abbreviated history display. This is useful in order to prevent fields used as labels and for formatting appearing in field lists within reporting. It's important to note that not all fields should be allowed on reports. For example, you may not use all of ExtraView's inbuilt fields within your installation and therefore want to hide them from the view of users (note you can also do this by changing the field's permission so it cannot be read). There are also fields in the Data Dictionary, such as images, buttons and screens that should not be selectable for reporting. It is highly recommended that you set all fields to No if they are not used in your installation. This avoids the lists of fields that your users can select from to be populated with unneeded entries</p>															
<p>Context Menu</p>	<p>The default for this option is Yes. The option places a small icon by the value on the field when the user mouses over it. When the user clicks on this icon, it brings up a context menu providing additional options for the field. For example:</p>  <p>In this example, the user is an administrator, and sees an entry to Display Information about this Layout in addition to the entry Display History for this Field. The screenshot shows the history of changes for this field, the Assigned To field.</p> <table border="1" data-bbox="332 842 1068 1247"> <thead> <tr> <th>Last Modified</th> <th>Changed by</th> <th>Assigned To</th> </tr> </thead> <tbody> <tr> <td>Feb 8, 2021</td> <td>LeeAnn Pultz</td> <td>Allan Rofer</td> </tr> <tr> <td>Feb 8, 2021</td> <td>Allan Rofer</td> <td>Rob Campbell</td> </tr> <tr> <td>Feb 4, 2021</td> <td>Carl Koppel</td> <td>Allan Rofer</td> </tr> <tr> <td>Feb 4, 2021</td> <td>Rob Campbell</td> <td>Carl Koppel</td> </tr> </tbody> </table> <p>This option also has further controls within the Design Center. In the Design Center the administrator can turn the context menus for the entire <i>add</i> and <i>edit</i> screens on and off, and may also control the context menu for each individual field. Setting the option within the data dictionary provides a global control for the field, across the entire system.</p>	Last Modified	Changed by	Assigned To	Feb 8, 2021	LeeAnn Pultz	Allan Rofer	Feb 8, 2021	Allan Rofer	Rob Campbell	Feb 4, 2021	Carl Koppel	Allan Rofer	Feb 4, 2021	Rob Campbell	Carl Koppel
Last Modified	Changed by	Assigned To														
Feb 8, 2021	LeeAnn Pultz	Allan Rofer														
Feb 8, 2021	Allan Rofer	Rob Campbell														
Feb 4, 2021	Carl Koppel	Allan Rofer														
Feb 4, 2021	Rob Campbell	Carl Koppel														
<p>Associate image with values</p>	<p>This property is only applicable to list fields. This enables the field to use an image in conjunction with, or as an alternative to the text values within the list. When this is enabled, the list management utility allows for an image to be uploaded, updated and deleted against each field value.</p>															
<p>Allow image to be enlarged</p>	<p>This works in conjunction with Associate image with values. This is used when you want to be able to see the image associated with the value at a large size. For many purposes, the image is purely a small icon and is only required to be viewed at its small size within the list. However, there are occasions when you may wish to store images such as photographs within the list image. Then, if this attribute is enabled, the user can click on the iconic image within the list and see it enlarged. Within a mobile client, an icon is placed alongside the value and icon within the list so that the user can click on this to see a larger version of the image</p>															
<p>Remember Last Value</p>	<p>If you set this option, the last value that individual users enter or select on both the Add Issue and the Search screens will be remembered. This serves the purpose of remembering values that may not change frequently. For example, many users may work with the same <i>Product</i> for extended periods of time. Note that you can only set this feature for fields where the value of "field belong to" in the data dictionary is Issue records. The feature is</p>															

not supported with the following field display types, but you can use a load directive within a business rule to achieve the same result:

- Text Area fields
- HTML Area fields
- Log Area fields
- Fields embedded on repeating row records

Display as URL

This option need not be completed for any UDF. You can use either the name or value associated with the field as part of the URL that you generate. This allows you to link any field value on a form with any remote application (or an inbuilt ExtraView function that can be accessed with a URL) and optionally to use values on the form to pass as a parameter to another application. If a field with this attribute is rendered as read-only on an *Add* or *Edit* screen or a browser-based report, then it becomes a link to the URL specified. To activate a field with a link to a URL, click the **Display as URL** radio button to Yes.

Parameter	Purpose
\$\$VALUE\$\$	Pass the current value of the field as a parameter in the request
\$\$DDNAME.VALUE\$\$	Pass the current value of the field named DDNAME as the parameter in the request
\$\$DDNAME.NAME\$\$	Pass the name of the item for the field named DDNAME as it is stored in the database as the parameter. For example, if you have a field named STATUS , with a name of FIXED and a value of Fixed , then \$\$STATUS.NAME\$\$ will pass FIXED as the parameter.
\$\$DDNAME.TITLE\$\$	Pass the title of the item for the field named DDNAME as it is stored in the database as the parameter. For example, if you have a field named STATUS , with a name of FIXED and a value of Fixed , then \$\$STATUS.TITLE\$\$ will pass Fixed as the parameter. This is equivalent to the \$\$DDNAME.VALUE\$\$ parameter.
\$\$URL\$\$	Pass the un-escaped value of the current field as a parameter in the request. The URL form is used to link the field to a URL that is fully formed, without escaping special characters. For example, with a data dictionary URL value of \$\$URL\$\$, a field containing http://www.yahoo.com would link directly to the Yahoo! site when the button for the Display as URL button is clicked
\$\$DDNAME.URL\$\$	Pass the un-escaped value of the field named DDNAME as the parameter in the request

- Type the appropriate URL in the field below the **Display as URL** radio button.
- You can pass values from the data dictionary field you are defining or from other fields on the form. The form of the values that you can pass as parameters are as follows –
- Note that the trailing \$\$ on an entry is optional
- Use the tag \$\$APP_HOME\$\$ to include the current path to the ExtraView instance that you are running
- If the DDNAME is the name of a data dictionary Special Variable (e.g. SYSDATE) then the value passed is the value of the Special Variable
- If the DDNAME is the name of a data dictionary Session Variable (e.g. USER) then the value passed is the value of the Special Variable
- You may call other functions within ExtraView and cause them to take the appropriate action. For example, you can set up a field with a link that utilizes the search function and display the results in a Quicklist report

Example 1 – Pass a value to a remote application as a parameter –

[http://search.yahoo.com/search?p=\\$\\$VALUE\\$\\$](http://search.yahoo.com/search?p=$$VALUE$$)

This will pass the current value of the field to Yahoo, and perform a search of the value. The results will be displayed in a new window.

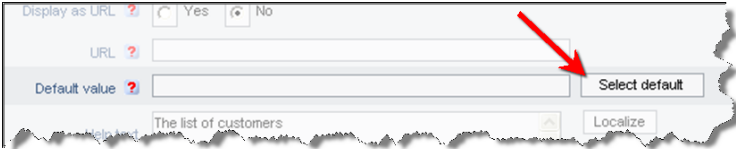
Example 2 – Display a window with a user’s details –

?p_action=showUserDetails&p_option=admin.UserAccountsDisplay&p_user_id=\$\$NAME\$\$

This will access ExtraView’s pop-up display for a user’s details. Use this URL in conjunction with a User display type field.


Example 3 – perform a search with a keyword, and display a Quicklist with the results –

?p_action=doRunQuicklist&p_option=search.SearchDisplay&searchword=\$\$VALUE\$\$
&product_name=\$\$PRODUCT_NAME\$\$&assigned_to=\$\$ASSIGNED_TO\$\$

	<p>This example is placed in the URL value of the field (all on one line). This will access ExtraView's search class and produce a Quicklist report, using the value in the display field named searchword, and the current values of the product_name and assigned_to fields</p> <p>Example 4 – Edit an issue whose ID is in the field with the display as URL –</p> <pre>?p_action=doEditDisplay&p_option=Display&p_id=\$\$VALUE\$\$&p_from_action=search&p_from_option=search&p_close_win=true&ev_menu=off</pre> <p>This will open an edit screen window using the value of the field with the Display as URL as the ID to the issue. Note that the parameter p_close_win=true is used to close the edit screen window once the issue has been updated. Also note that the parameter ev_menu=off is used to suppress the ExtraView navigation bar in the new edit screen window.</p> <p>h. The URL form is used to link the field to a URL that is fully formed, without escaping special characters. For example, with a data dictionary URL value of \$\$URL\$\$, a field containing http://www.yahoo.com would link directly to the Yahoo! site when the button for the Display as URL button is clicked.</p>
Image for Display as URL	This optional entry is used in conjunction with the Display as URL setting. If provided, the entry is the file name of an image in the directory specified in the IMG_NAV_BAR_HOME behavior setting. When this image is provided and Display as URL is set to Yes, then your image is used rather than the inbuilt LinkButton.gif image. Care should be taken not to provide an image that is too large. The recommended size is 18 x 18 pixels.
URL	An optional URL which can be used to link the field to any other application
Default Value	<p>A field must be created before you may give it a default value. This is because default values are used most commonly in list fields, and you need to populate your field with these values before you can select one to be the default. If you provide a default value for a field, the value specified will be auto-selected whenever you are adding a new issue. Note that if you also have remember last value set on the field, the last value will be used in preference to the default value. The default value is used to populate a field in a record, when the field is visible on the <i>add</i> layout for an issue. You may also use a load business rule to set a default value on a field.</p> <p>Note: Default values for fields of display types Checkbox, List, Pop-up, Radio Button – Horizontal, Radio Button – Vertical, Tab and User must be entered using the Select Default button. Entering text into the box for these fields does not work. The reason for this is that in addition to the value that is displayed, ExtraView also needs to know the internal ID value of these fields. You may enter text directly for other display types, such as Text. Default values may only be entered after the field has been created, by editing the field.</p>  <p>Entering Default values</p>
Help Text	This field provides a facility that when you mouse over the label adjacent to a field you can provide a tool tip message that will appear. You can have up to 2,000 bytes in a tool tip, without localization being turned on in your ExtraView instance. If localization is turned on, then the tooltips can store up to 3,800 bytes. However it is not recommended that you have large tooltips, because of the way in which Windows and other operating systems display these. Typically they are displayed for around 2 seconds, so you should not store more information that can be read in that time
Help URL	With a Help URL, you can link this to a bookmark or page in your own online help system. If you are an ExtraView customer hosted by ExtraView Corporation, note that this URL need not be on our server. You can store and access these files anywhere over the Internet
Currency unit	This block of information only appears if you have chosen a field display type of Currency . Choose the currency symbol to display for the field. The list of currency units is complete, and you may select one for each field. You cannot use a field with a currency display type if you want it to signify different currencies. You can choose how to display negative currency values from one of the negative display options shown below
Negative Display	This block of information only appears if you have chosen a field display type of Decimal , Currency or Number . Simply choose the formatting you require for the field using the radio buttons
Symbol	This block of information only appears if you have chosen a field display type of Currency . This determines whether the currency symbol will appear along with the number when the field is displayed
Thousands Separator	This block of information only appears if you have chosen a field display type of Decimal , Currency or Number . Select whether you do or do not want a thousands separator to appear with the field
Rounding mode	This block of information only appears if you have chosen a field display type of Decimal , Currency or Number . The default rounding mode is ROUND_HALF_UP for Decimal and Number display types. For

Currency display types, the default rounding mode is the rounding mode of the currency instance for the chosen currency locale. This table shows the result of rounding data input to one digit, with the given rounding mode:

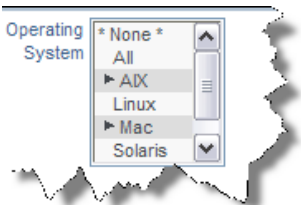
Input Number	UP	DOWN	CEILING	FLOOR	HALF UP	HALF EVEN	HALF DOWN	UNNECESSARY
5.5	6	5	6	5	6	5	6	throw Exception
2.5	3	2	3	2	3	2	2	throw Exception
1.6	2	1	2	1	2	2	2	throw Exception
1.1	2	1	2	1	1	1	1	throw Exception
1.0	1	1	1	1	1	1	1	1
-1.0	-1	-1	-1	-1	-1	-1	-1	-1
-1.1	-2	-1	-1	-2	-1	-1	-1	throw Exception
-1.6	-2	-1	-1	-2	-2	-2	-2	throw Exception
-2.5	-3	-2	-2	-3	-3	-2	-2	throw Exception
-5.5	-6	-5	-5	-6	-6	-5	-6	throw Exception

Internal Precision	This block of information only appears if you have chosen a field display type of Decimal , Currency or Number . This is a number from -24 to 10 indicating how many digits of precision should be maintained for internal computations with this field
Report Precision	This block of information only appears if you have chosen a field display type of Decimal , Currency or Number . This is a number from -24 to 10 indicating how many digits of precision should be displayed on reports or read-only displays of this field
Percentage	This block of information only appears if you have chosen a field display type of Decimal . If you set the <i>Percentage</i> option, then users must enter the number with a percentage sign. This will be converted internally by ExtraView and stored as a decimal value
Alias Of	A field that is the alias of another field is restricted to fields that you create with a display type of List, Pop-up or Tab. When you create a field with this setting, you will not maintain the list of values for the field, but the field will be created using the list of values from the field you select in the Alias of selection list. This is a labor saving device that is used when you require more than one field with the same list of values, but you only want to maintain the list in a single place. For example, you may want to create a list of product releases, and use this list in two forms, one for Release Found and one for Release Fixed. You can place both these fields on a single edit screen, and update the fields independently, but only maintain the field in a single place. A field that is an Alias of another field may still be controlled by its own allowed value list. This allows you to create different lists from one base list, where each of the aliased lists is a subset of a master list. This entry only appears when you are creating a new field, or when you are editing a field with a display type of List, Pop-up or Tab. The option is only valid when creating a field of the same types. When creating a new field, you may point it to another list field and the new field will be an alias of the field to which it point. It will be kept in synchronization with the first field. If you are editing an existing entry which is an alias of another field, you can remove the alias entry, from which time the fields will work independently
Total Field on Reports	This only has an effect on numeric display types. When this is selected, the field will be totaled automatically on column reports. This setting is ignored if the field does not have a display type of <i>Number</i> .
Enable Interest List	This flag in a data dictionary item enables a notification interest list for specific values of the field. For example, you may want to create an interest list based upon issues that have a critical severity level. If you enable the interest list for <i>severity level</i> , then the administrator can edit the <i>critical</i> list item in the severity level interest list and maintain the list of user names in the interest list
Auto-complete	<p>This option may be used with popup list fields and with user fields when the behavior setting named USER_LIST_DISPLAY is set to a value of POPUP. Auto-complete, or type-ahead as it is sometimes known, works by having one or more characters typed into the list and then automatically presenting you with the most likely matches for the value you are composing. At any time you can select a value from those presented to you by clicking on the value, or you may continue typing in characters until you complete the value. As you type, the values presented in the list are refined to further match your entry.</p>  <p>Example of an Auto-complete field</p> <p>When you set auto-complete to on for a field, then you also select the number of characters that the user enters before the auto-complete is activated. There is also control over the maximum number of entries returned in the</p>

list and control over the height of the list. This allows fine-tuning when you are dealing with very large lists, ensuring that the user does not retrieve a very large number of records while they are typing characters into the list

Multiple Value

Multiple values can only be enabled for UDF's with a display type of LIST, POPUP or User. If you enable a UDF to have multiple values, you are allowing the user to select any number of items from its list as being valid entries. For example, say you have a list of operating systems against which an issue may be recorded. If you want to note that the issue is found in some of the operating systems, but not all, you can choose the relevant entries from the list. A behavior setting named SORT_SELECTED_VALUES controls how the selected values in multi-valued lists and multi-valued user lists are sorted. When this is set to NO, all multi-valued lists will be displayed in the order set by the field's standard sort sequence. When this value is set to YES, all selected values will be displayed at the beginning of the list, using their sort order, then the non-selected values will be displayed using their sort order. Note that if you place a multiple value list UDF on an *add* or *edit* screen layout, and then add a layout cell attribute of FIELD REMOVE NONE, and you then deselect the very last value in a list, the first value in the list will be selected when you submit the form. If this behavior is not desirable, then the recommendation is to also make the field required, which will force the user to select a value before the record is inserted or updated. You can set the character used to signify that a value in a multi-valued field is selected with the behavior setting named MULTI_VALUE_HIGHLIGHT_CHAR. The default value is &# 9654;. This displays as a ? against the selected value. If you want to use a character that is in the basic character set of older computer browsers, it is suggested you use the + character.



Example of a multi-value list field

Filter Criteria

This option allows the field to be selected on a query filter layout, as a criteria for a search. Only if this item is checked can the field allowed to be placed on a filter screen layout for querying and searching. Note that not all display types can be used as filter criteria. Fields with a display type of Label, Image, Text Area, Log Area and Print Text cannot be used as filter criteria

Is Sortable

If this option is set to Yes, then the field will appear on the Sort Order lists on report composition screens. Typically fields with a display types as follows should be flagged as sortable or not:

Sortable	Not Sortable
Checkbox	Button
Date	Custom
Day	HTML Area
List	Label
Number	Log Area
Pop-up	Print Text
Tab	Text Field
User	Text Area

Used for user attributes

This is only an option when the user's role has permission to SE_USER_ATTRIBUTES and the field being modified is a UDF, with a type of List, Popup or Tab. When set to *Yes*, the field is placed on the User Account Administration screen, under the tab which has the default title of **Attributes**. Custom code must support this operation, typically defining what happens to issues when the user does or does not have specific values set in the lists. Once this option has been set on any field, and the administrator has set a value into the field within the user accounts maintenance screens, then you cannot remove this attribute from field, without first removing all the values in all the users who have this field set

Sort sequence for user attributes

This field only appears when **Used for user attributes** is set to *Yes*. It provides the ability to sort the different fields that are used as user attributes on the User Account Administration screen. The default if this is not set is to sort the fields alphabetically

Encrypt this field

This field only appears for fields with a display type of **Text Field**, and only when adding a new field. This enables encryption for the field, at the database level. The key purpose is to provide an additional level of protection against unauthorized access direct to your database. The feature works in conjunction with a secret key obtained from a keystore. They secret key(s) must be defined before you create fields that utilize encryption. View the page on [Encryption Key Management](#) for more information.

Note: You cannot change this property once the field has been created

Reserved Field Names

Also, note that there are reserved field names that cannot be used as UDF names that you create. You will see a list of these reserved names on the **Reserved Field Names** tab of the data dictionary. These are:

ACCESS_UDF_DATA
ACTION
ACTION_OPTION
AREA_ID
CALLED_FROM
CHECK
CHILD
CLASS
CUSTOM_URL
DATE
EXT_SITE_URL
FROM_ACTION
FROM_OPTION
GROUP
INTERFACE
LANGUAGE
LAYOUT_SESSION_TAG
MODE
NEW_REPORT
NOTIFY
OPTION
PAGE_LENGTH
PARENT
PROJECT_ID
RECORD_COUNT
RECORD_START
REPORT_DESC
REPORT_ID
REPORT_OWNER
REPORT_TITLE
RG_NAME
RG_NAME_FIELD
RG_REFERENCE_ID_FIELD
RG_REFERENCE_NAME
RG_REF_ID
RG_RELATE_THIS_TO
RG_RELATION
RG_RELATION_FIELD
SCREEN_LOAD
SCREEN_NAME
SEARCH_ATTACH_SIZE
SECURITY
SELECTED
SELECTEDSO
SEND_EMAIL
SHOW_EXPANDED
SITE_URL
SOURCE
SOURCESO
STATEVAR
TAG
TARGET
TEMPLATE_EXPANDED
USER_ROLE

Display Types

[Click for end user documentation](#)

Each field in ExtraView, whether it is an inbuilt field, or a user-defined field, has a display type that controls the presentation and behavior of the field, both in input mode on Add and Edit screens, as well as on output for reports. The range of Display types that can be set is as follows:

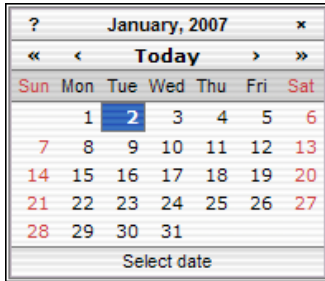
<p>Button</p>	<p>There are inbuilt fields with a display type of Button such as for <i>View, Edit, History, Delete</i> and <i>Select</i> fields. These are used on reports to provide access to the appropriate functions. These fields appear within the data dictionary under the Labels tab. There are a few other inbuilt Button fields for internal ExtraView functions.</p> <p>When a user clicks on a field with a display type of button, it is expected that some action will take place. These actions need to be defined with custom code within the ExtraView environment. To create a custom button, you will create a field within the data dictionary with a display type of Custom. Custom code must be defined to perform the action. Functions are available within the custom code environment to detect when a custom button is clicked and from there your code must handle the action.</p>																																																																						
<p>Checkbox</p>	<div data-bbox="277 600 586 674" style="border: 1px solid #ccc; padding: 5px; margin-bottom: 10px;"> <input checked="" type="checkbox"/> Publish Article? <input type="checkbox"/> Knowledgebase Top Issue </div> <p>Each checkbox generates a single field on the screen. Apart from being able to set the title of the field, the administrator can also select the values that appear on reports according to whether the box is checked or unchecked. The default is for Y to appear if the box is checked, and N to appear if it is not checked. These values can be altered to any other titles such as Yes and No, On and Off or similar. Note that if a checkbox is never set to being checked or unchecked by a user, or is never specifically set by a default value or a rule, then the checkbox actually has a null value, and is never stored in the database. This is an important distinction, as a null value is not the same as a N value. Querying for a null value with * None *, will give different results to querying for N values.</p>																																																																						
<p>Currency</p>	<p>This field allows the user to enter numbers that will be displayed with the formatting seen on currency amounts, such as a currency symbol, thousands separators and decimal points. The user may choose from a list of valid currency symbols, as well as set the formatting for negative numbers and set the thousands separator. Note that the formatting information for currency fields is entered into a box that appears in the data dictionary when you select the display type of Currency from the selection list. The implementation uses a precision of 38 and scale of 10 (28 digits to the left of the decimal point and 10 digits to the right) when the value is stored in the database. If a user attempts to insert a number larger than this into a currency field, it is not possible to accurately display the number. At this point, ExtraView converts the number to a null value, and enters a message into the application log file.</p>																																																																						
<p>Custom</p>	<p>This field assumes that ExtraView's user custom code will provide the contents and management of the field, allowing you to extend the functionality of ExtraView with new custom display objects. The field title will be rendered as normal, using the title of the object. The method call to user custom that provides the code is:</p> <pre>ucValue = Z.userCustom.ucRenderEmbeddedObject(dbconn, session, layoutType, dde, ddName, selectedVals, selectedVal, multipleVals, attributes, prefix, le, row, styleVal, doHiddenInput);</pre> <p>The returned value ucValue is a String. For fuller details on this display type, please see the User Custom Guide. However, it is worth noting here that almost any code can be generated into your layouts with this display type.</p>																																																																						
<p>Date</p>	<div data-bbox="272 1528 594 1839" style="border: 1px solid #ccc; padding: 5px; margin-bottom: 10px;"> <table border="1" style="width: 100%; text-align: center; border-collapse: collapse;"> <tr> <td colspan="7">? January, 2007 x</td> </tr> <tr> <td colspan="7">« < Today > »</td> </tr> <tr> <td>Sun</td><td>Mon</td><td>Tue</td><td>Wed</td><td>Thu</td><td>Fri</td><td>Sat</td> </tr> <tr> <td></td><td>1</td><td>2</td><td>3</td><td>4</td><td>5</td><td>6</td> </tr> <tr> <td>7</td><td>8</td><td>9</td><td>10</td><td>11</td><td>12</td><td>13</td> </tr> <tr> <td>14</td><td>15</td><td>16</td><td>17</td><td>18</td><td>19</td><td>20</td> </tr> <tr> <td>21</td><td>22</td><td>23</td><td>24</td><td>25</td><td>26</td><td>27</td> </tr> <tr> <td>28</td><td>29</td><td>30</td><td>31</td><td></td><td></td><td></td> </tr> <tr> <td colspan="7">Time: 16: : 11</td> </tr> <tr> <td colspan="7">Select date</td> </tr> </table> </div> <p>This field type allows dates and their time component to be entered and stored. The date field is automatically provided with a popup button on each add or edit screen. This button provides access to a calendar. Dates are validated against the user's locale. For example, if your locale is US English, the date 1/5/05 is interpreted as January 5th, 2005, while if your locale is GB English, the date 1/5/05 is interpreted as May 1st, 2005. All dates are stored with a time component. When a user's time zone is different from the time zone stored in the behavior setting named DB_TIMEZONE, the date / time a user enters is converted to its equivalent in the DB_TIMEZONE, and stored as such. For storage, all dates are further converted to UTC format. When the same user accesses and displays the date again, it is converted to his personal time zone and redisplayed. If a user is in a time zone different to the user who entered the date / time, and is in a time zone different to the DB_TIMEZONE, the date and time are converted to their personal time zone and displayed accordingly. When any user displays a Date field, the date is displayed with the user's own personal date format. When entering a Date field, the user's locale is used to assist in validating the entry. If the user's date format begins with the day, it is assumed that dates entered will also start with the day. If the user's date format begins with the month, it is assumed</p>	? January, 2007 x							« < Today > »							Sun	Mon	Tue	Wed	Thu	Fri	Sat		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31				Time: 16: : 11							Select date						
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Time: 16: : 11																																																																							
Select date																																																																							

that dates entered will also start with the month. This avoids ambiguity with dates such as 3/6/2012 which can be interpreted as March 6th or the 3rd June, depending on where you are located. If your application does not require time with any date you want to store, it is recommended you use the 'Day' display type to define the field.

Note: Microsoft SQL Server has a limitation in that any date before 1753 is invalid and cannot be stored, and calculations based on dates before this are invalid. If your installation is running on SQL Server, this is a limitation that ExtraView cannot work around.

Users who have write permission to date fields on *add* and *edit* screens and whose personal date format is set to exclude time, for example using SHORTDATE, can still enter time into a date field. The popup calendar will supply the time automatically, but the user can override this. This avoids problems between users when some are using a personal date format that contains time, while others use a personal date format that excludes time.

Day



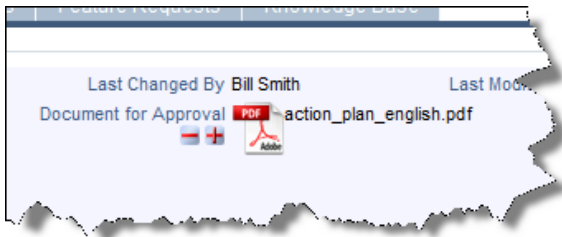
Day field types operate differently than fields with a display type of Date. Firstly, they do not have a time component, and only the date is ever displayed on a screen or report. Secondly, when a field value is input, displayed, or filtered, it is treated the same for all users in all time zones. Day field types still respect the locale and date format of the user, although no time fields will ever be shown for a Day value on reports, admin screens, or add/edit screens. If you require time as part of the field, use the 'Date' display type field. When entering a Day field, the user's locale is used to assist in validating the entry. If the user's date format begins with the day, it is assumed that dates entered will also start with the day. If the user's date format begins with the month, it is assumed that dates entered will also start with the month. This avoids ambiguity with dates such as 3/6/2012 which can be interpreted as March 6th or the 3rd June, depending on where you are located. Using a Day type field within a Business Rule is consistent when it is compared or combined in expressions with other Day type fields. When compared with Date fields, the Date is converted to a Day value using the user's time zone (to which the Date value is, by definition, relative) and the comparison is done with a Day field to Day field comparison or calculation. The date will be presented to each user with the date format they have selected.

Note: Microsoft SQL Server has a limitation in that any date before 1753 is invalid and cannot be stored, and calculations based on dates before this are invalid. If your installation is running on SQL Server, this is a limitation that ExtraView cannot work around.

Decimal

This allows a number with a number of decimal points to be entered and stored. The implementation uses a precision of 38 and scale of 10 (28 digits to the left of the decimal point and 10 digits to the right) when the value is stored in the database. If a user attempts to insert a number larger than this into a decimal field, it is not possible to accurately display the number. At this point, ExtraView converts the number to a null value, and enters a message into the application log file.

Document

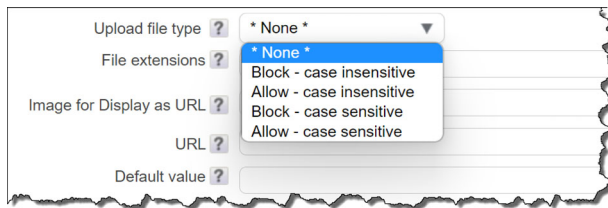


Document fields store a document of any type. For example, you might have a document that is required as part of the submission of an issue, or you may require an approver of a document to provide a signature indicating their approval of a document. Documents are represented on the screen with an icon that shows its type. For example, if the document is a spreadsheet, you will see a spreadsheet icon beside its filename. Unlike attachments, documents are subject to workflow, such as being required if a condition is true, or a signature might be

required indicating approval of a document that was uploaded. Document fields are only searchable with keyword searching, and only using Quickfind searching. Document fields are not searchable by default, and searching must be activated through the behavior setting named FULL_TEXT_SEARCH_COLUMNS or by updating the searchable columns on the Quickfind settings screen. When uploading a document field, the permission keys named PR_ADD_PROBLEM.ATTACH_DESC and PR_RESOLUTION.ATTACH_DESC are used to control the requiredness of the description to the document field.

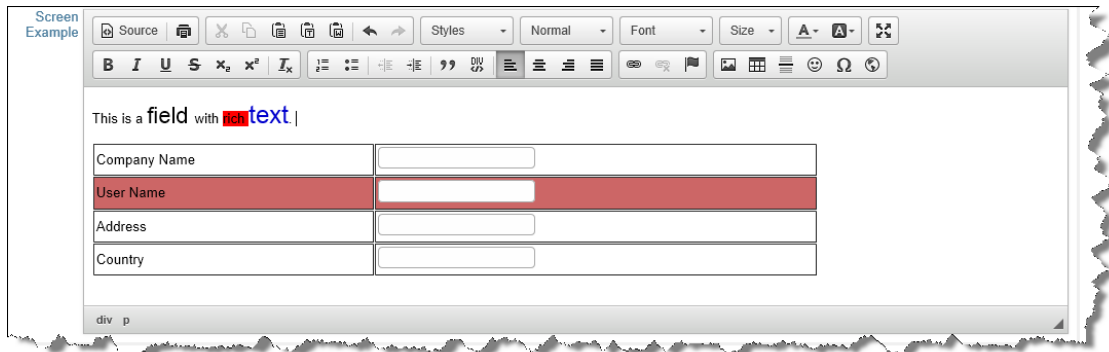
You can control the file types being uploaded as documents with an option within the data dictionary.

Use the **Upload file type** list option to block or allow specific file extension types. Note that this may be case sensitive or case insensitive. Following this, enter a comma-delimited list of the extension types to allow or block within the **File extensions** entry field.



HTML Area

This display type offers the ability to enter and edit text with an HTML editor. This field will appear on the *add* and *edit* screens with a toolbar, much as you have with a word processor. On reports, the HTML within the fields is rendered, including embedded objects such as images. You can control which buttons appear on the toolbar, and the style of the toolbar with the behavior settings named EDITOR_BUTTONS and EDITOR_STYLE respectively. The row height of HTML areas throughout ExtraView is controlled with a behavior setting named HTMLAREA_ROW_HEIGHT. Each HTML Area field may store up to 5MB of data.



Image



This display type allows images to be stored within issues in the database. These images appear as fields within layouts, and can be added, deleted and updated within issues like all alphanumeric field display types. Image fields may be placed on report layouts and column reports. When an image is uploaded into an issue, a thumbnail is generated and used on the *add*, the *edit* and report layouts. The size of this thumbnail is controlled by the behavior setting named THUMBNAIL_MAX_SIZE. The aspect ratio of the thumbnail will always be preserved, but the maximum number of pixels in the horizontal or vertical direction will not exceed the setting. When the user clicks on the thumbnail image, a window opens with the image being displayed in its

full size. A behavior setting named MAX_IMAGE_DIMENSION_PIXELS controls the maximum dimension of any image that may be uploaded. Images that have a height or width greater than this value will not be stored in the field. When uploading an image field, the permission keys named PR_ADD_PROBLEM.ATTACH_DESC and PR_RESOLUTION.ATTACH_DESC are used to control the requiredness of the description to the image field.

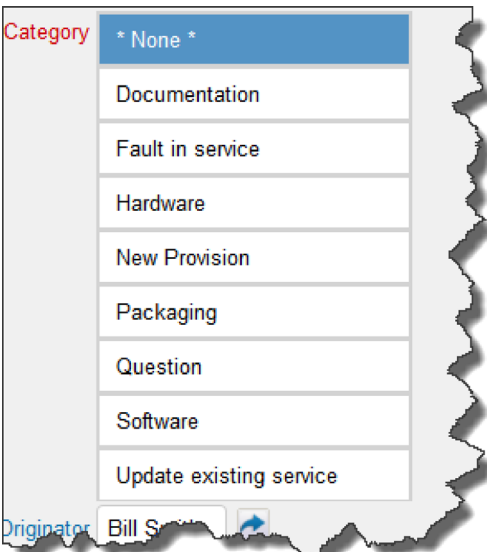
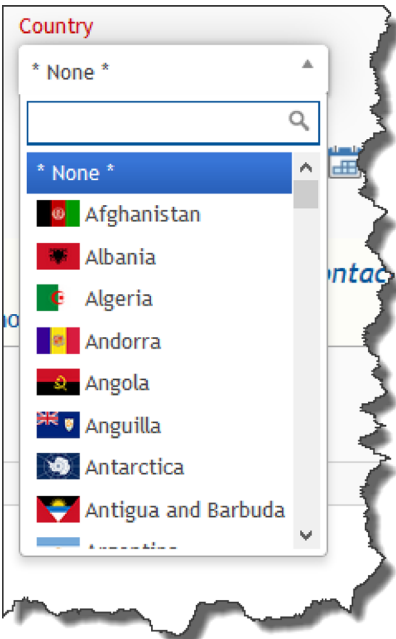
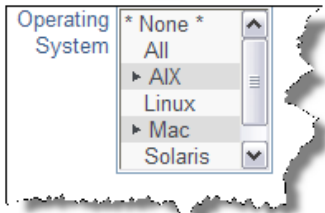
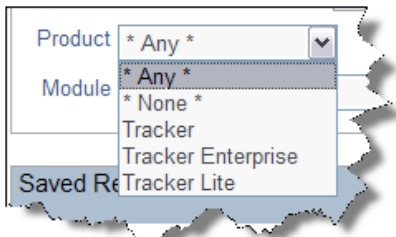
Label

A label is used as a display item only. No issue data is stored in the database against any label field. Labels are given a value in the data dictionary default value field, and this is displayed on the screen in read only mode. Some inbuilt labels are also used internally within ExtraView, to provide a means of altering a term such as “problem” to be suitable for the use of ExtraView in any customer installation. Labels may be placed on layouts such as the *add* and *edit* layouts. They can be used to provide instructions to users or other information.

As an alternative, you can use label fields to display informative or explanatory information on an *add* or *edit* screen. To achieve this, you use the **Display Text** field within labels in the Data Dictionary. This field supports rich text.

List

A list of values; when you have a field with a list display type, it will have an entry on the Field List Maintenance section of the administration screen. From there or from the data dictionary screen, or from any layout that includes the field, you can add, modify or delete list items.



Lists are often used with allowed values, controlling the absence or presence of any individual item when in data entry mode. If you require two or more fields that are populated with the same list of values, you can create the second and subsequent fields using the *Alias Of* feature. You will maintain the list of values in the first field created, and ExtraView will automatically keep the aliased lists up to date. This is a labor saving device, and ensures that you can keep identical lists in step with each other. At the same time, you may define separate allowed value entries for each of the fields. You may also use the layout cell attribute **Add the * New * entry to list fields** to allow the user to create new values for a list, without requiring the user to have administrative privileges.

For scalability, fields with the **List** display type may be changed to the display type of **Pop-up**. Note that when you make this change, any business rules in force are not refreshed immediately, so any rules using the field you altered may not work until the rules refresh themselves (an automatic process performed by the server every few hours). If you want the rules to work immediately, just go to the rules screen, and press the **Update** button.

An attribute of list fields is that they may be set to accept a single entry, or multiple values within the list may be selected. Multi-valued list fields have an indicator to the left of the field value when that value is selected. In addition, the value is highlighted. Reports will display all the selected values when the field is shown.

List fields may be set to associate an image with each value. For example, you might have a list of countries within a field, and associate the flag for each country along with the name of the country. Lists with images are generated with dynamic HTML. Some layout cell attributes such as *SIZE* cannot be used to alter the width of the field on *add* and *edit* screens. You should use a layout cell attribute, or a global attribute set in the data dictionary of *STYLE* with a value of *width:nnnpx* where *nnn* is the width in pixels of the field.

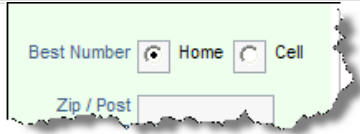
An option within the data dictionary allows images to be stored alongside the text values within lists. For example, one of the screenshots to the left shows how country flags can be stored and displayed. There are options to turn the images and text off and on within screens and reports. You may store large images such as photographs with each value. These will be displayed as thumbnail sized images within the lists and within reports, but a mouseclick on the image will expand the image to a larger size. Within mobile devices which do not have the capability to click within a list value, an additional icon is placed by the list value allowing the user to view the large-sized image.

Another representation of list fields can be achieved by setting the option **Display Format** within the data dictionary. You may have list fields represented by boxes, each selectable with a mouse click. You may also use this option to also display the list values with a checkbox as the select mechanism. When multi-valued lists are represented by boxes, you may want to remove the + and - buttons alongside the title of the field. This can be achieved within the Data Dictionary by using a LABEL TAG layout cell attribute with a value of *style='display:none'*.

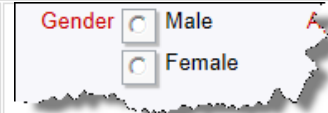
<p>Log Area</p>	<p>This field functions as a log of successive text entries to a field. Without access to the security permission key named PR_RESOLUTION.EDIT_LOGAREA_FIELDS, the user cannot edit or delete previous entries but can only add additional entries. The user's name and a time stamp are shown against each entry. When the field can be updated, two buttons, to shrink and enlarge the text area appear adjacent to the field. There is a behavior setting named LOG_AREA_DISPLAY_CHARS in the Display Settings area of Administration. This can be used to truncate the size of the old entries displayed on the edit screen. When the field is truncated, "more..." is displayed at the end, allowing the user to refresh the screen with the entire entry. Each entry into a Log Area field may store up to 5MB of data.</p> <p>When there is more than one entry within a log area fields, sort icons will appear by the user's name and timestamp of the first entry. The user can use these to resort the comments in different directions. Use the LOG_AREA_INITIAL_SORT behavior setting to determine the direction of the initial presentation.</p> <p>Log area fields may be entered on forms and presented on existing entries and reports as rich text, when the prompt Present as HTML is set to Yes in the data dictionary definition for the field. This option is not available on log area fields which are defined for repeating rows.</p> <p>It is not recommended that you place log area fields on repeating record layouts. Each entry in a log area field is preceded by a header that shows a combination of the user's name, the user's company name, the timestamp of the comment and a sequence number for the comment. See the text for the behavior setting named LOG_AREA_TEMPLATE to adjust the presentation of log area fields.</p> <p>Note: If a user does not have read permission to the security permission key named PR_RESOLUTION.ASSIGNED_TO, then they will not see the name of the person who created the entry to the log area. This is useful if you want to allow customers or guests to see the comments made, but to not know who made the entry.</p> <p>You can make the size of the log area field auto-size to the amount of text in the field, by adding a layout cell attribute of <i>onkeyup=autoSize(this);</i>. This attribute will only apply to the layout within which it is set. With this attribute, the number of rows that the field occupies will increase automatically as the user enters additional text.</p>
<p>Number</p>	<p>This is a field that accepts and stores only numbers. Numbers may have decimal points, but they must not have other formatting. The internal data type used for the NUMBER data type is double, allowing precision of approximately 16 decimal digits (0 to 9007199254740992). You cannot enter numbers larger than this, without losing precision and accuracy.</p>
<p>Pop-up</p>	<div data-bbox="277 1209 646 1325" data-label="Image"> </div> <p>Similar to the display type of List, except a separate popup window opens with list of possible values. The user may either type an entry directly into the field, or select a value from the list in the popup window. This field is useful if the list is long (say more than 100 entries), as it is easier to search a pop-up box. If there are more entries in the list than the number defined by the behavior setting named POPUP_LIST_SIZE, the popup list is embellished with a search box, and a list of the first characters of the data entry values (usually A – Z), to make it easy to search the list. Similar to fields with a display type of List, you can create Pop-up list fields that are aliased to a master list, reducing the amount of maintenance needed. Pop-up fields have an attribute that allows type-ahead, or auto-complete. You can set from 1 to 5 characters that are entered before triggering the presentation of the closest matches to the characters you have typed into the field.</p> <p>Multi-valued popup fields can be created. These may be presented on the user interface to appear either horizontally or vertically. This is set with an option on the field within the data dictionary, Display Format. When the field is displayed as a Horizontal Delimited List, all selected values are presented on a single row with a semi-colon delimiting each value. When Vertical Presentation is selected, each value is presented on a separate row. Images associated with each list value are only displayed when using the Vertical Presentation.</p>
<p>Print Text</p>	<p>This is similar to the Text Area type field, but on display, a fixed-width font is used for the field. This can be used if the field may routinely be used to hold diagrams drawn with characters such as +-----+ on the keyboard and you want to preserve the spatial accuracy of the diagram. Print text fields can store up to 128k of text at one time and while they are in edit mode, two buttons appear adjacent to the field, allowing you to expand or shrink the area for text entry. Text output fields to reports with a type of Print Text will preserve exactly the spacing that the field was created with, including spaces and returns in the data. This preservation of the input may cause reports such as the detailed report to display wider than normal. You can make the size of the log area field auto-size to the amount of text in the field, by adding a layout cell attribute of <i>onkeyup=autoSize(this);</i>. This attribute will only apply to the</p>

layout within which it is set. With this attribute, the number of rows that the field occupies will increase automatically as the user enters additional text. Each Print Text field may store up to 5MB of data.

Radio Buttons



Horizontal Radio Button



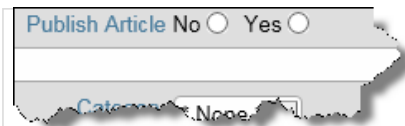
Vertical Radio Button

Radio buttons will use a list of values to create a set of buttons on the screen. The user can select only one value from the list when they are filling in an *add* or *edit* screen. You must create at least two values for the field to function properly. It is usual to select one value as a default value. This will be the selected value when the form is first displayed. Horizontal radio buttons are rendered across the screen on both *add* and *edit* forms. Vertical radio buttons are rendered down the screen on both *add* and *edit* forms. On query screens, the radio button will act like a single-valued list field, and the results on reports will look just like results from a single-valued list field.

Like all other field types that render a list-like object, the default rendering of a radio button will include a value option of *** None *** in the list. However, a global attribute is automatically added to a newly created radio button, to **Remove the * None *** Entry from the field. You may delete this attribute if you do want a *** None *** entry within the field when it's displayed.

Within a Quickedit session, radio buttons are rendered as list fields, as the amount of space occupied by a radio button with many values may cause navigation problems within the Quickedit session. Also, within a Quickedit session, a value of *** None *** is added to the list, even if there is a layout cell attribute with a value of **Remove None**. This ensures that the first value in the list is not selected automatically when it has no value. Radio buttons are treated as list fields internally within ExtraView, but there are very few occasions when you want the default *** None *** value to be displayed.

Radio buttons have two ways in which they may rendered on the screen. Further, it is possible to set a "toggle" option, allowing the user to deselect a radio button, as opposed to only allowing them to select values.



Standard style radio button

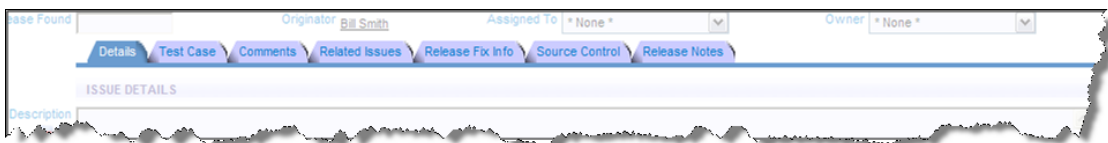


Box style radio button

Note that when you display radio buttons on the ExtraView Mobile app, radio buttons are always displayed with the box style. Standard radio buttons are most often too small to select with a finger.

Tab

This field behaves like fields with a display type of List, except that the list of values that is displayed as a set of tabs across the screen. Typically, this is used to provide a high-level selection on a screen, where the subsequent fields depend on the tab selected. You should not use this display type if the supporting list has more entries than fit across the screen.



Example of a tab field

When you create a new Tab field in the data dictionary, it is strongly recommended that you add a global attribute of REMOVE NONE, so that the *** None *** value does not appear on the row of tabs that are generated. If you want the Tab field to default to a specific value, you should set a default value for that tab.

Text Area



This is multi-line text field. Text area fields can store up to 128k of text. When the field is in edit mode, two buttons appear adjacent to the field, allowing you to expand or shrink the area for text entry. Note that text area fields may not contain tab characters. You can make the size of

the log area field auto-size to the amount of text in the field, by adding a layout cell attribute of `onkeyup=autoSize(this);`. This attribute will only apply to the layout within which it is set. With this attribute, the number of rows that the field occupies will increase automatically as the user enters additional text. A behavior setting named `TEXTAREA_ROW_HEIGHT` allows the administrator to set the default height of all text area fields. Each Text Area field may store up to 5MB of data.

Text Field

This is a single-line text field. Up to 1,000 characters may be stored in a Text Field. Note that you can control the width of the text box into which data is typed within each layout on which the Text field is used, using the Layout Cell Attribute named `SIZE`.

Encryption

Text fields may be encrypted. To achieve this, you must set up a keystore with the encryption key(s) and decide which fields are to be encrypted within the data dictionary, on a field-by-field basis. Note that with encryption, less than 1,000 characters may be stored in a text field. The precise amount of characters being stored varies with the encryption algorithm, but the encrypted fields typically require more than double the amount of characters in the unencrypted value.

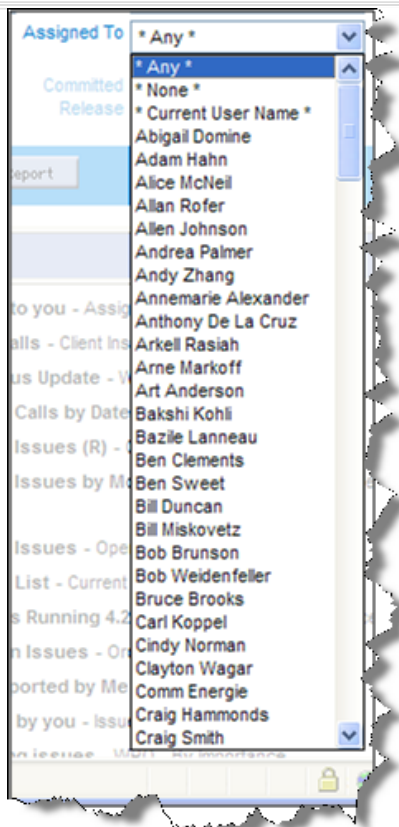
Telephone Number Formatting of a Text Field

There is a built-in function that can be applied to a text field to apply standard formatting for US-style telephone numbers. To enable this feature on a text field, you create either a data dictionary global attribute or a layout cell attribute with the following HTML modifier: `onkeyup=formatAsPhoneNum2(this)` In addition, set a layout cell attribute of `SIZE = 15` to ensure the phone number is of the correct number of characters. If you create the attribute as a global attribute within the data dictionary, there is no need to add the layout cell attribute to each layout that uses the function. There is a deprecated telephone format using an HTML modifier function of `formatAsPhoneNum()`. This should no longer be used as it does not work within all browsers. If you require the formatting of a telephone number in a different way, or if you require the formatting of any text field in an efficient way, it is recommended that you write a user JavaScript function and call this from an HTML modifier on the field.

Time Interval

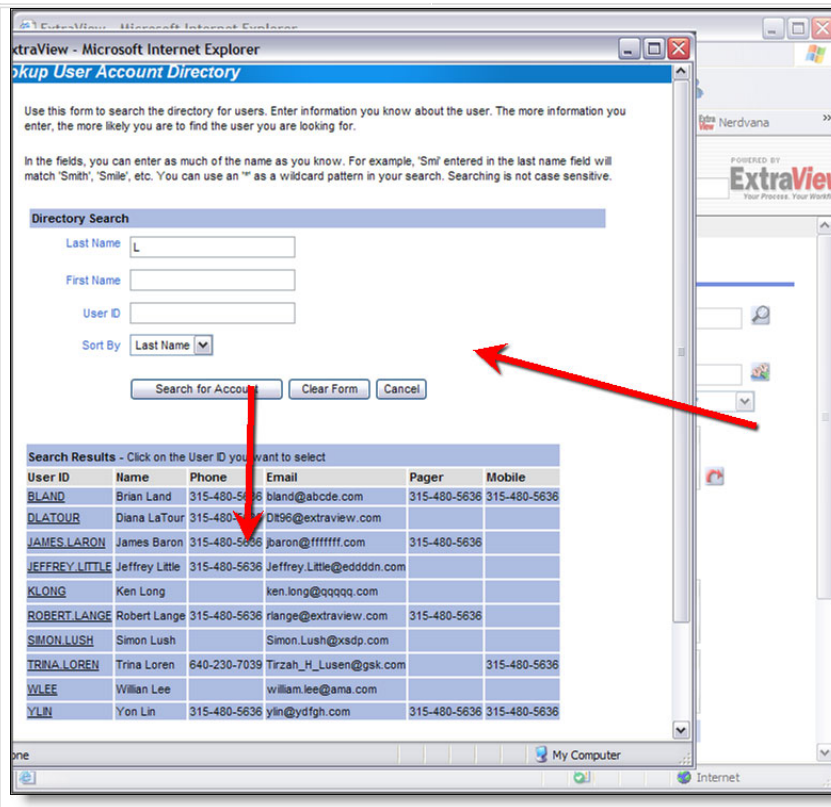
Time interval fields are inbuilt fields only and are used to display the formatted results of measuring time in a Service Level Agreement (SLA). These fields are automatically generated and placed in the data dictionary when an SLA is created. The administrator may choose the format in which to display the time measurement on an SLA report. All the normal attributes and permissions for fields apply to time interval fields.

User

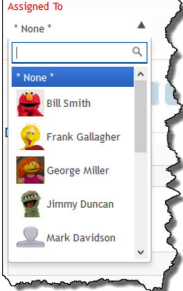



The inbuilt fields *assigned_to*, *originator*, *owner* and *contact* are User fields. User Lists displaying these fields will display the *first_name* and *last_name* or the user ID, depending on what is set in the `USERNAME_DISPLAY` property as the behavior setting. You can define a User Defined Field with the display type User. This will generate a list populated with a list of active users in the system. If the behavior setting named `USER_LIST_DISPLAY` has a setting of `POPUP`, then user fields have an attribute that allows type-ahead, or auto-complete. You can set from 1 to 5 characters that are entered before triggering the presentation of the closest matches to the characters you have typed into the field.

Note: If your installation is configured to use an LDAP connection with the behavior setting named `LDAP_USER_LOOKUP` having a value of `YES`, when auto-complete is configured, only users that are currently stored within ExtraView are returned with auto-complete, as opposed to all potential users in the LDAP server. This prevents a potential performance issue, returning a huge number of records from the LDAP server to ExtraView, whenever a user presses a single key.



User fields may be configured with images to accompany the name of the user. The images are sourced from each user's account where the user can upload their photograph. The way in which the fields are rendered on forms is different, according to whether the field is single- or multi-select.

Single Select User Fields	Multi-Select User Fields
 <p data-bbox="511 1087 868 1470">Selecting values in a single select user field with images is very similar to their usage when no images are present. Simply click on the input field and select the name of the user. Note there is also a search box into which you can start typing the name of the user you are searching for and the list will be pared down to those that contain the characters you have entered. You can then click on your selection.</p> <p data-bbox="511 1501 868 1554">You can use the X at the right of the list to delete the user.</p>	 <p data-bbox="1120 1087 1485 1554">When you first view a multi-select user field, you may either start to enter the characters of the name, or use the icon to the side of the list to bring up a search dialog. As you enter the characters, a list of matching names that contain these characters will be displayed. This is the second image to the left. Select the first name. To select further entries, click on the entry field again and search box appears into which you can start entering the name of the next user to add to the list. Select the user by clicking on their name.</p> <p data-bbox="1120 1585 1485 1638">You can use the X at the right of the list to delete a user.</p>

Altering the Display Type of a Field

The data dictionary allows the administrator to make changes to the display type of fields. While these are allowable, they may have consequences if the fields are used within any business rule. For example, you may alter the display type of a field from **List** to **Pop-up**. This is a legitimate change and the rules you have written about the field will still be valid. However, for efficiency, the display information about the field is cached within ExtraView, and changing its display type will render this information out-of-date. ExtraView refreshes the rules and re-caches this information several times a day, but there will be periods when the cache has out-of-date information. If this proves to be a problem, you can simply enter the rules file and press the **Update** button to refresh the information immediately.

[Click for end user documentation](#)

Creating & Updating Fields

Consult the pages on [Built-In & User Defined Fields](#) and [Display Types](#) in conjunction with this page for complete details on how to create and update fields. Access to the Data Dictionary is from the System Configuration tab. The initial data dictionary screen is similar to the following:

The screenshot shows the 'Data Dictionary' interface. At the top, there are buttons for 'Return' and 'Print Page', and a 'Data Dictionary' label with a help icon. Below this is a navigation bar with tabs: 'EXPRESSIONS', 'LABELS', 'NAVIGATION BAR BUTTONS', 'SCREENS', 'SESSION VARIABLES', 'RESERVED FIELD NAMES', 'SPECIAL VARIABLES', and 'FIELDS'. The 'FIELDS' tab is selected. A '+ Add a new user defined field to the Data Dictionary' button is visible. Below that is a 'Hide Filters' button. A 'Filter List' section contains instructions: 'Select the column to use as a filter for the list. You may click on a letter to produce a list of the items which begin with this character, or you may enter a search pattern, including wildcards (*). The Export button creates a CSV file of the results currently displayed on the screen.' It includes a 'Fixed name' dropdown menu, a list of letters 'A | B | C | D | E | F | H | I | L | M | N | O | P | Q | R | S | T | W | <all> | <none>', and an 'Enter search expression' field with 'Go' and 'Export' buttons. The main area is a table with the following columns: Fixed name, Title to display, Field type, RR?, Display type, Business Area, Project, Help Tip, Created, and Last updated. The table contains 12 rows of field data.

Fixed name ▲	Title to display	Field type	RR?	Display type	Business Area	Project	Help Tip	Created	Last updated
ABSTRACT	Abstract	User Defined Field		HTML Area	* Global Area *	* Master Project *	Provide a short description of what this test case is intended to achieve	11/9/05 12:00 AM	3/9/20 10:10 AM
ALT_ID	Test Case ID	Inbuilt Field		Text Field	* Global Area *	* Master Project *	This is the alternative ID for an issue	1/1/05 12:00 AM	7/24/20 6:30 PM
AREA	Business Area	Inbuilt Field		Tab	* Global Area *	* Master Project *	The business area this problem belongs to	5/26/00 11:26 AM	3/13/20 2:25 PM
ASSIGNED_TO	Assigned To	Inbuilt Field		User	* Global Area *	* Master Project *	The name of the user that this problem is currently assigned to.	5/26/00 11:26 AM	8/3/20 5:23 PM
ATTACH_CREATED_BY_USER	Created By	Inbuilt Field		User	* Global Area *	* Master Project *	The person who created the attachment	1/1/05 12:00 AM	3/18/20 1:10 PM
ATTACH_LAST_UPDATED_BY_USER	User	Inbuilt Field		User	* Global Area *	* Master Project *	The last person who updated the attachment	2/13/06 6:42 PM	3/18/20 1:10 PM
AUTOMATED	Automated	User Defined Field		Checkbox	* Global Area *	* Master Project *	Check this box if this is an automated test	11/9/05 12:00 AM	3/9/20 10:08 AM
BUTTON_COPY_TEST_CASE		User Defined Field		Custom	* Global Area *	* Master Project *	Create a Copy of this Test Case	3/22/12 4:10 PM	7/24/20 6:31 PM
CASE_HAS_RESULTS	Case has Test Results	User Defined Field		Text Field	* Global Area *	* Master Project *	Flag used to determine whether the test case has test results	4/12/13 6:41 PM	8/2/13 8:52 AM

Data Dictionary screen

If your current user role does not have any read or write access permission to a field, it will not appear in the list of fields displayed. Normally this is only an issue when there are multiple administrative roles defined, and your role only has permission to a subset of the available fields.

Creating Fields

From the data dictionary, under the **Fields** tab, click the **Add** button. A screen similar to the following appears:

The screenshot shows a web form titled "Add a new field to the Data Dictionary". At the top, there are buttons for "Add", "Cancel", and "Print Page". The form contains several sections:

- Select Area:** A dropdown menu with the selected value "Global Area".
- Select Project:** A dropdown menu with the selected value "Master Project".
- Field belongs to:** A dropdown menu with the selected value "Issue records".
- Fixed name:** An empty text input field.
- Title to display:** An empty text input field.
- Display type:** A dropdown menu with the selected value "Select display type from list".
- Remember last value:** Radio buttons for "Yes" and "No", with "No" selected.
- Display as URL:** Radio buttons for "Yes" and "No", with "No" selected.
- Image for Display as URL:** An empty text input field.
- URL:** An empty text input field.
- Help Text:** A large text area with a scroll bar.
- Help URL:** An empty text input field.

At the bottom of the form, there is a button labeled "Set security permissions for this field". The bottom of the form also features "Add", "Cancel", and "Print Page" buttons.

Add a Data Dictionary Entry screen

Follow the instructions on the screen to create your field. For a complete list of instructions and a definition of each of the fields on the screen, click [here](#).

Updating Fields

Click the **Edit** button next to the field that you want to modify. Pressing **Update** within the edit screen will save the changes. Notice that fields with a display type of List have a button which allows you to access their values to add, edit and delete these. Also note that you can edit a field from the Design Center, by right clicking on the field and choosing the Edit option. The tabs within the data dictionary offer access to the field attributes as follows:

Note the **Edit** button for each occurrence where the field is found on a layout. Clicking this takes you to the layout opened within the Design Center.

- **Field Properties** - all the basic properties of the field can be altered within this tab. Note that only the properties appropriate for the display type of the field are displayed and available to alter.

Update Cancel Print Page

Change a Data Dictionary Entry

Fixed name **ASSIGNED_TO**

Title to display **Assigned To** Localize

Type of field **Inbuilt field**

Field belongs to **Issue records**

Display type **User**

FIELD PROPERTIES
GLOBAL ATTRIBUTES
PERMISSIONS
WHERE USED

Allow selection on reports Yes No

Display on abbreviated history reports Yes No

Filter criteria Yes No

Is sortable Yes No

Enable interest list Yes No

Allow context menu Yes No

Associate image with values Yes No

Remember last value Yes No

Display as URL Yes No

Image for Display as URL

URL

Default value Select default

Help Text Localize

Help URL

Field properties

- Global Attributes** - The most important use of global attributes is to create field properties that will be inherited and used when the field is placed within all layouts. For example, you might set a style or size for the field as a global attribute, which becomes the default wherever the field is used on an *add* or *edit* layout. This property is inherited by, but may be overridden on any one of these layouts by providing a local layout cell attribute. You often want a field to have the same properties and attributes wherever it is used, and this mechanism provides a means to achieve this, so you do not need to set up layout cell attributes on all the layouts where you use it..

It is recommended that you do not configure attributes such as **VISIBLE IF** and **REQUIRED IF** at a global level.

Update Cancel Print Page Change a Data Dictionary Entry

Fixed name ASSIGNED_TO
 Title to display Localize
 Type of field Inbuilt field
 Field belongs to Issue records
 Display type

Field Properties **Global Attributes** Permissions Where Used

New Create a new attribute

Attribute Name	Attribute Value	Field Name	Operator	Field Value	Created
<input type="button" value="Edit"/> <input type="button" value="Del"/>	USER_LIST_DISPLAY POPUP				Bill Smith 11/28/11 1:30 PM

Update Cancel Print Page

Global Attributes

When you add a new optional attribute, you will see a screen similar to the following. Information on these attributes is found on the page [layout cell attributes](#).

Add new attribute Cancel Print Page Manage Dictionary Attributes

Fixed name

- ADD NEW - Add the * New * entry to list fields - applies to add and edit layouts
- EXPRESSION TEXT - expression for user-defined report field
- HEIGHT - the number of rows with which textarea, log area, and print text fields will be opened
- HTML MODIFIER - to add additional attributes to the HTML tag for the field
- LABEL TAG - adds an HTML attribute to the TD tag of the field's label
- MAXLENGTH - the maximum number of characters allowed in text and number fields
- ONCLICK_JS - the javascript to execute when the button is clicked
- REMOVE ANY - remove the * Any * entry from list and user fields - applies to search layouts
- REMOVE LABEL NOWRAP - removes the "nowrap" attribute from the field's label cell - applies to add/edit layouts only
- REMOVE NONE - remove the * None * entry from list and user fields - applies to add and edit layouts
- REMOVE VALUE NOWRAP - removes the "nowrap" attribute from the field's value cell - applies to add/edit layouts only
- SIZE - the width in characters, of text, text area, print text, log area, date, and number fields

Adding a New Optional Attribute

- **Database** - The Database tab only appears if you are the ADMIN user. It is highly unlikely that you will need to access this tab, and when you change anything on this tab, it should be under the direction of the ExtraView Support team.
- **Permissions** - This tab displays the security permissions for the field, for each role to which you have permission. You can update the permissions for the field here. For more information on security permissions, visit the page on [security permissions](#).

Update Cancel Print Page Change a Data Dictionary Entry

Fixed name ASSIGNED_TO
 Title to display Localize
 Type of field Inbuilt field
 Field belongs to Issue records
 Display type

Field Properties Global Attributes **Permissions** Where Used

Select a different Area * Global Area * * Master Project *
 Key Y = Yes N = No

Area: * Global Area * : * Master Project *	Read		Write		Administrator		Customer Support		Customer		Development Engineer		Quality Assurance	
Assigned To PR_ADD_PROBLEM.ASSIGNED_TO	Set All Row:				Read	Write	Read	Write	Read	Write	Read	Write	Read	Write
Assigned To	All to Y	<input type="checkbox"/>	All to Y	<input type="checkbox"/>	Y	<input checked="" type="checkbox"/>	Y	<input checked="" type="checkbox"/>	Y	<input checked="" type="checkbox"/>	Y	<input checked="" type="checkbox"/>	Y	<input checked="" type="checkbox"/>
	All to N	<input type="checkbox"/>	All to N	<input type="checkbox"/>	N	<input type="checkbox"/>	N	<input type="checkbox"/>	N	<input type="checkbox"/>	N	<input type="checkbox"/>	N	<input type="checkbox"/>
Assigned To PR_RESOLUTION.ASSIGNED_TO	Set All Row:				Read	Write	Read	Write	Read	Write	Read	Write	Read	Write
Assigned To	All to Y	<input type="checkbox"/>	All to Y	<input type="checkbox"/>	Y	<input checked="" type="checkbox"/>	Y	<input checked="" type="checkbox"/>	Y	<input checked="" type="checkbox"/>	Y	<input checked="" type="checkbox"/>	Y	<input checked="" type="checkbox"/>
	All to N	<input type="checkbox"/>	All to N	<input type="checkbox"/>	N	<input type="checkbox"/>	N	<input type="checkbox"/>	N	<input type="checkbox"/>	N	<input type="checkbox"/>	N	<input type="checkbox"/>

Update Cancel Print Page

Field permissions

Note that you are viewing the permissions for the object, at the highest level to which you have permissions. If you do not have permissions to view / update the global area / master project level, you will not see these. If you have permission to view / update the object's permissions at the global area / master project level, this will be the top level display of permission radio buttons. You can view and alter the permissions for the level of the currently displayed Business Area and Project by using the Show Dependent Permission Keys, Hide Dependent Permission Keys buttons. You can also switch to a different Business Area and Project's keys by using the select lists at the top of the window

- **Where Used** - This tab allows you to find out all the places where a field is used within ExtraView. For example, you might want to delete a field, but want to know where it is being used before you do so. The first screen within this section shows a list of all the high level places where a field is used, such as **Layouts**. You can drill down on this to see the exact layouts where the field is used.

Update Cancel Print Page Change a Data Dictionary Entry

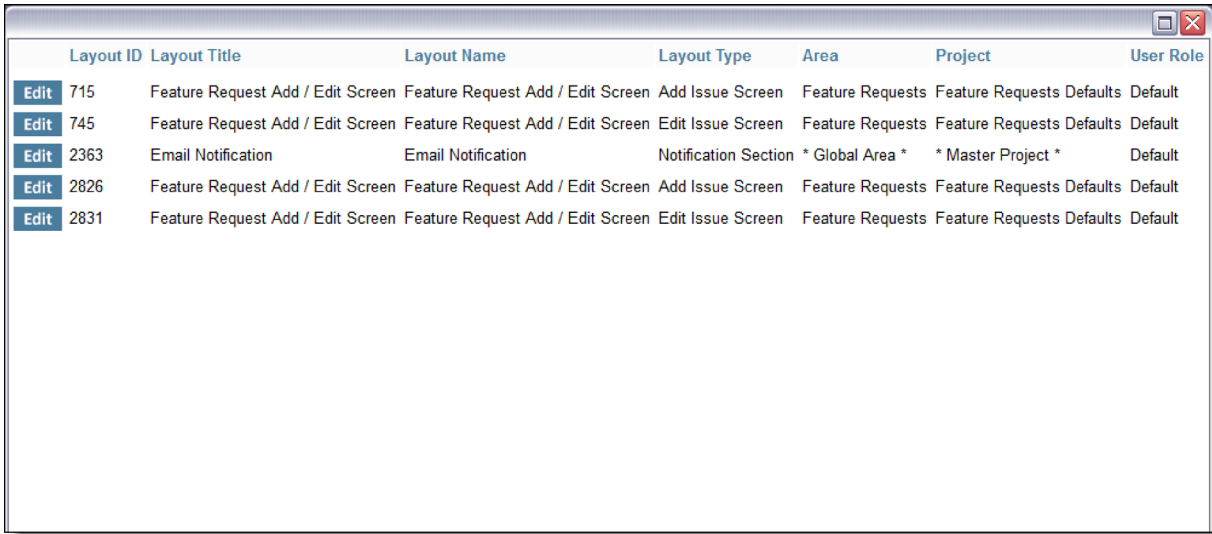
Fixed name ASSIGNED_TO
 Title to display Localize
 Type of field Inbuilt field
 Field belongs to Issue records
 Display type

Field Properties Global Attributes Permissions **Where Used**

- Layouts
- Report Filters
- Table SORT_ORDER_FIELD

Update Cancel Print Page

Where Used



The screenshot shows a window titled 'Where Used' with a table containing layout information. Each row in the table has an 'Edit' button to its left. The table columns are: Layout ID, Layout Title, Layout Name, Layout Type, Area, Project, and User Role.

	Layout ID	Layout Title	Layout Name	Layout Type	Area	Project	User Role
Edit	715	Feature Request Add / Edit Screen	Feature Request Add / Edit Screen	Add Issue Screen	Feature Requests	Feature Requests Defaults	Default
Edit	745	Feature Request Add / Edit Screen	Feature Request Add / Edit Screen	Edit Issue Screen	Feature Requests	Feature Requests Defaults	Default
Edit	2363	Email Notification	Email Notification	Notification Section	* Global Area *	* Master Project *	Default
Edit	2826	Feature Request Add / Edit Screen	Feature Request Add / Edit Screen	Add Issue Screen	Feature Requests	Feature Requests Defaults	Default
Edit	2831	Feature Request Add / Edit Screen	Feature Request Add / Edit Screen	Edit Issue Screen	Feature Requests	Feature Requests Defaults	Default

Drilling Down in Where Used

Note the **Edit** button with each occurrence of the field on a layout. Clicking this will take the user directly to the Design Center where they can view and modify the layout.

Lists

List administration is the administrative section where you can manipulate all the lists that comprise the metadata values within ExtraView. For example, this is where you maintain lists of business areas, products, modules, and many other items. This includes all the lists that you create as User Defined Fields.

For convenience, the list of items on this screen includes Privacy Groups and User Roles. These lists can be viewed and modified both from this administrative section as well as within the Users section.

The metadata field lists that appear on this screen include all fields with a data dictionary display type of List and Tab.

Lists values may be dependent upon values in other lists. This is termed Allowed Values, and is covered in more depth in the Field Administration section of this guide.

Interest Lists are also maintained for field values within List maintenance. For example, if you want to maintain an interest list for a specific product, or an interest list for Priority 1 issues, then this is completed through the add and edit functions of each list.

Managing Lists


Lists are managed in the same way, from a variety of different places in ExtraView. For example, there are lists of field values, lists of behavior settings, lists of fields in the data dictionary, interest lists and many others.

When you first access a screen with a list it will look similar to this:

Return Print Page Data Dictionary

Expressions Labels Screens Session Variables Special Variables **Fields**

Add Add a new user defined field to the Data Dictionary

Show Filters 

	Fixed name	Title to display	Display type	Area	Project	Help tip	Created	Last updated
Edit	AA	aa	Label	* Global Area *	* Master Project *		7/2/11 4:36 PM Bill Smith	7/2/11 4:36 PM Bill Smith
Edit	ABSTRACT	Abstract	Text Area	* Global Area *	* Master Project *		11/9/05 12:00 AM * None *	5/28/11 10:32 PM Bill Smith
Edit	ALT_ID	Test Case ID	Text Field	* Global Area *	* Master Project *	This is the alternative ID for an issue	1/1/05 12:00 AM ExtraView	11/17/05 12:00 AM * None *
Edit List	AREA	Area	Tab	* Global Area *	* Master Project *	The business area or division of the company	1/1/05 12:00 AM ExtraView	12/22/10 2:08 PM Bill Smith
Edit	ASSIGNED_TO	Assigned To	User	* Global Area *	* Master Project *	The name of the user that this problem is currently assigned to	1/1/05 12:00 AM ExtraView	9/4/11 10:58 AM Bill Smith
Edit	ATTACH_CREATED_BY_USER	Created By	User	* Global Area *	* Master Project *	The person who created the attachment	1/1/05 12:00 AM ExtraView	1/1/05 12:00 AM ExtraView
Edit	ATTACH_LAST_UPDATED_BY_USER	User	User	* Global Area *	* Master Project *	The last person who updated the attachment	2/13/06 6:42 PM ExtraView	3/14/06 1:35 PM Bill Smith
Edit List	AUTOMATED	Automated	Checkbox	Test Cases	Test Case Defaults		11/9/05 12:00 AM * None *	8/10/08 9:56 AM Bill Smith
Edit List	CATEGORY	Category	List	* Global Area *	* Master Project *	The category of the issue	1/1/05 12:00 AM ExtraView	1/1/05 12:00 AM ExtraView
Edit	COMMENTS	Comments	Log Area	* Global Area *	* Master Project *	Comments are appended to the issue. You may not alter previous comments entered	1/1/05 12:00 AM ExtraView	3/7/07 3:43 PM Bill Smith
Edit	CONTACT	Contact	User	* Global Area *	* Master Project *	The contact for the issue	1/1/05 12:00 AM	1/1/05 12:00 AM

Data dictionary list

If you do not have either read or write permission to a field, it will not appear in the above list.

You can manage the list by using the Add button to add a new entry, or by clicking the Edit button at the left hand side of each entry in the list. Some lists such as behavior settings allow you to edit a value, by clicking on the value. If there is a delete capability, edit the list entry and delete the value from there.

Note the **Show Filters** button on the above screen. This is provided to offer a search capability on long lists. When you click on this button, you will see a screen like this:

Return Print Page Data Dictionary

Expressions Labels Screens Session Variables Special Variables **Fields**

Add Add a new user defined field to the Data Dictionary

Hide Filters

Filter List
Select the column to use as a filter for the list. You may click on a letter to produce a list of the items which begin with this character, or you may enter a search pattern, including wildcards (*). The Export button creates a CSV file of the results currently displayed on the screen.

Select filter column for report: Fixed name

or click on a letter: A | C | D | E | F | G | H | I | K | L | M | N | O | P | R | S | T | V | W | <all> | <none>

or enter a search expression and click the Go button:

	Fixed name	Title to display	Display type	Area	Project	Help tip	Created	Last updated
Edit	AA	aa	Label	* Global Area *	* Master Project *		7/2/11 4:36 PM Bill Smith	7/2/11 4:36 PM Bill Smith
Edit	ABSTRACT	Abstract	Text Area	* Global Area *	* Master Project *		11/9/05 12:00 AM * None *	5/28/11 10:32 PM Bill Smith
Edit	ALT_ID	Test Case ID	Text Field	* Global Area *	* Master Project *	This is the alternative ID for an issue	1/1/05 12:00 AM ExtraView	11/17/05 12:00 AM * None *
Edit List	AREA	Area	Tab	* Global Area *	* Master Project *	The business area or division of the company	1/1/05 12:00 AM ExtraView	12/22/10 2:08 PM Bill Smith
Edit	ASSIGNED_TO	Assigned To	User	* Global Area *	* Master Project *	The name of the user that this problem is currently assigned to	1/1/05 12:00 AM ExtraView	9/4/11 10:58 AM Bill Smith
Edit	ATTACH_CREATED_BY_USER	Created By	User	* Global Area *	* Master Project *	The person who created the attachment	1/1/05 12:00 AM ExtraView	1/1/05 12:00 AM ExtraView
Edit	ATTACH_LAST_UPDATED_BY_USER	User	User	* Global Area *	* Master Project *	The last person who updated the attachment	2/13/06 6:42 PM ExtraView	3/14/06 1:35 PM Bill Smith
Edit List	AUTOMATED	Automated	Checkbox	Test Cases	Test Case Defaults		11/9/05 12:00 AM * None *	8/10/08 9:56 AM Bill Smith
Edit List	CATEGORY	Category	List	* Global Area *	* Master Project *	The category of the issue	1/1/05 12:00 AM ExtraView	1/1/05 12:00 AM ExtraView
Edit	COMMENTS	Comments	Log Area	* Global Area *	* Master Project *	Comments are appended to the issue. You may not alter previous comments entered	1/1/05 12:00 AM ExtraView	3/7/07 3:43 PM Bill Smith
Edit	CONTACT	Contact	User	* Global Area *	* Master Project *	The contact for the issue	1/1/05 12:00 AM	1/1/05 12:00 AM

Data dictionary list with filters

Set the filter column to one of the columns displayed in the list, and then click on a letter to see all the list entries that have the displayed column's first character.

You can enter a search expression, including wildcards, to retrieve the subset of records you want to work with. For the longer lists, you can also use the Export button to create a CSV (Comma Separated Value) file with the list values.

Lists behave differently, according to how many entries are in the list, and the value of the behavior setting named `ADMIN_LIST_SIZE`, in order to provide a balance between ease of use and scalability, when the number of records retrieved for an administration list exceeds the value of `ADMIN_LIST_SIZE`.

When the number of entries in a list is less than the value of `ADMIN_LIST_SIZE`, the list is immediately displayed in its entirety. When the number exceeds the value, a search screen is displayed, with the first character of each entry of the list being available to click on as a shortcut to looking only at these records. Thirdly, if you set a negative number, as opposed to a positive number, the list acts similarly to the second option, but with an abbreviated interface.

Sorting Lists

You can sort lists by clicking on any of the column headings that have a **■** symbol in the heading. When you click on a column heading that is sorted in an ascending order and shows a **▼** then the sort symbol alters to show **▲** and the list is sorted in descending order using this column.

Sorting List Values

You can sort a field list within the add, edit and query screens for each list field by allocating a sort sequence to its entry within list administration. The sort sequence is a number or string of letters. Valid sort sequences would be:

23	2	a	2a	open
----	---	---	----	------

If no sort sequences are provided, the list is sorted alphabetically, using the title of the field. If you provide a sort sequence, then the entries to the list are sorted in their ASCII sort order sequence. It is recommended that you establish a sort sequence for a list, allowing room to insert new values in the future. This will give the most flexibility. For example, if you have a list that starts with five values, but may grow, use a sequence such as:

010	020	030	040	050
-----	-----	-----	-----	-----

This will allow you to insert new values between each of the entries, if needed in the future.

Enabling and Disabling List Values

Within all user defined lists, there is the opportunity to disable a value. Once the value has been disabled, it will not appear in any screen in a selectable manner. If an existing record already has the value set, then the user may leave the value in place or they may select a new, enabled value.

Note that checkbox fields are stored internally as lists that are constrained to just two values, typically *Yes* and *No*, *On* and *Off* or something similar. You may not disable a value within a checkbox field.

Field List Values

List values are maintained from one of several places - the **Manage List Values** administration menu, the **List** button by each list type field in the **Data Dictionary**, or by using your mouse to right-click on a list type field within the Design Center. This screenshot shows the **Manage List Values** screen as seen from the **Manage List Values** and the **Data Dictionary**. From within the **Design Center** you access the maintenance screen for each individual field directly:

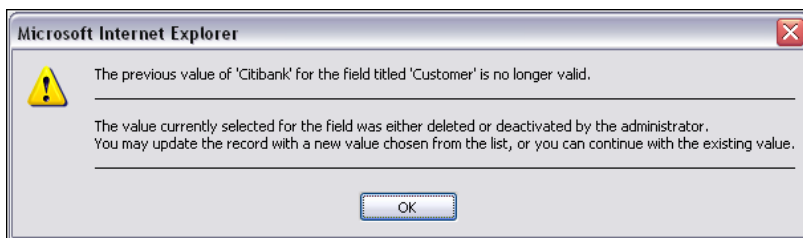
Return Print Page List ?

Show Filters

Name	Display Title	Display Type	List ID	Help Tip	Created By	Last Updated By
AREA	Area	Tab		The business area this problem belongs to	ExtraView	ExtraView
AUTOMATED	Automated	Checkbox	1789		6/12/19 12:00 AM	6/12/19 12:00 AM
CATEGORY	Category	List		The category of the problem.	ExtraView	ExtraView
CITY	City	List	2658		6/12/19 12:00 AM	6/12/19 12:00 AM
CONTINENT	Continent	List	2638		ExtraView	ExtraView
COUNTIES	Counties	List	2653		6/12/19 12:00 AM	6/12/19 12:00 AM
COUNTRY	Country	List	2643		ExtraView	ExtraView
CUSTOMER	Customer	Pop-up	2444		6/12/19 12:00 AM	6/12/19 12:00 AM
CUST_LIST	Customer Name	Pop-up	705	The list of customers	ExtraView	ExtraView
CUST_SELECT_TABS	Customer Select Tabs	Tab	800		6/12/19 12:00 AM	6/12/19 12:00 AM
CUST_SOFTWARE_ISSUE	Software Bug?	Checkbox	1516		ExtraView	ExtraView
CUST_SOURCE	Source	List	780	The source of the customer issue	6/12/19 12:00 AM	6/12/19 12:00 AM
DEV_DOC_CHANGE	Needs Doc Change	Checkbox	209	Does this issue require a documentation change, or a release note?	ExtraView	ExtraView
DEV_ISSUE_REL_NOTES	Publish Release Note	Checkbox	525	If this box is checked, we will publish a release note for this issue	6/12/19 12:00 AM	6/12/19 12:00 AM
DEV_OCCURRENCE	Occurrence	List	460	The frequency with which the bug can be reproduced	ExtraView	ExtraView

Managing field lists

Note that once you have one or more values entered against any list type field by adding or updating issues, you are not able to delete the list value. If you want to remove a value from a list after data has been recorded against the value, most lists allow you to disable the value, so it will not appear in the add or edit screens. This allows reporting to show the historic data, even though the value is not currently being used. If a user edits an issue which has a disabled value in a list, they will see a message similar to this:



Warning when viewing a disabled value














The user may either update the record with the out-of-date value, or choose a new valid entry from the list. If the out-of-date value is removed from the list and the record updated, no user will be able to choose that value again. The behavior setting named IGNORE_DEACTIVATED_USER_FIELDS may contain a delimited list of fields with a display type of USER. Users will not be warned if they edit an issue which has a field in this list with a deactivated user. If a USER field does not appear in this list, the user will always be warned if the field has a deactivated user, when they edit the issue. There are a few lists which are managed differently:

- Business Area and Project lists. These are used to set up and maintain the business areas and projects within your system. Values within these lists may not be disabled. Security permission keys exist to turn Business Areas on and off for different user roles
- Values within the Category, Priority, Product Line, Status and User Role lists may not be disabled. Note that there are security permission fields that can be used to disable and enable the visibility of the Status field values
- The Product and the Module fields work together, and the Module field administration will ask you to select a valid Product before you maintain any modules. Module field values may not be disabled
- List which have the data dictionary property to associate an image with the list values are shown like this:

Import Field Values Return Print Page User defined field lists
Country

+ Add a new entry to the list

Show Filters

Title to display	Image	Sort sequence	Enabled	Provenance	Do Not Migrate	List ID	Created From Import	Created	Last updated
<input checked="" type="checkbox"/> Afghanistan			Yes		No	66119	No	6/12/19 12:00 AM	6/12/19 12:00 AM
<input checked="" type="checkbox"/> Albania			Yes		No	66124	No	6/12/19 12:00 AM	6/12/19 12:00 AM
<input checked="" type="checkbox"/> Algeria			Yes		No	66129	No	6/12/19 12:00 AM	6/12/19 12:00 AM
<input checked="" type="checkbox"/> Andorra			Yes		No	66134	No	6/12/19 12:00 AM	6/12/19 12:00 AM
<input checked="" type="checkbox"/> Angola			Yes		No	66139	No	6/12/19 12:00 AM	6/12/19 12:00 AM
<input checked="" type="checkbox"/> Anguilla			Yes		No	66144	No	6/12/19 12:00 AM	6/12/19 12:00 AM
<input checked="" type="checkbox"/> Antarctica			Yes		No	66149	No	6/12/19 12:00 AM	6/12/19 12:00 AM
<input checked="" type="checkbox"/> Antigua and Barbuda			Yes		No	66154	No	6/12/19 12:00 AM	6/12/19 12:00 AM
<input checked="" type="checkbox"/> Argentina			Yes		No	66159	No	6/12/19 12:00 AM	6/12/19 12:00 AM
<input checked="" type="checkbox"/> Armenia			Yes		No	66164	No	6/12/19 12:00 AM	6/12/19 12:00 AM
<input checked="" type="checkbox"/> Aruba			Yes		No	66169	No	6/12/19 12:00 AM	6/12/19 12:00 AM
<input checked="" type="checkbox"/> Ascension			Yes		No	66174	No	6/12/19 12:00 AM	6/12/19 12:00 AM
<input checked="" type="checkbox"/> Australia			Yes		No	66179	No	6/12/19 12:00 AM	6/12/19 12:00 AM

When images are associated with list fields, the list add and edit screens display a message to aid in the formation of the images. This provides links to several useful resource sites that offer a wide selection of images and icons that can be used to populate ExtraView's list fields. Please note that most these sites have license terms which govern their use. Some are free, some have their images available for a fee.

To add an entry to the list, press the **Add** button. To edit an entry, press the **Edit** button by the value you want to edit.

Add Return Print Page Add User defined field lists entry
Customer Name ?

UDF

Title to display ?

Sort sequence ?

Owner ? * None *

Enabled ?

Populate this list with 3 new list values?

Basic UDF Details

Interest List

Create a global interest list for this value ?

Add user to this interest list ? * Select a User *

Interest List Details

XML Export / Import Parameters

Provenance ? UDF UTILITY

Do not migrate this field value ?

Created by XML import ?

Migration Details

Allowed Values

This field is a child in a parent-child allowed value relationship. Check all parent values where you want this item to appear in the allowed values list when inserting or updating records

Select Business Area * Select Business Area *

Select Project * Select Project *

Business Area List

Allowed Value Details

Add Return Print Page

Editing a list entry

Basic UDF Details	<p>These always appear, and you must provide a Title for the field. It's optional to provide a Sort Sequence and an Owner, and you may enable or disable the field value. If the behavior setting named <code>COMPANY_NAME_LIST_UDF</code> has the current field as its value, there is the additional prompt, Populate this list with nn new list values. This allows you to synchronize the list with the user's company's names. If the data dictionary property to associate images with the list values is enabled, you will see an additional prompt within the basic UDF details that allows you to upload an image against each value.</p> <p>Images are restricted in their size, to 50kB each. Images larger than this will be resized so they do not occupy additional space. As each image is displayed on <i>add</i>, <i>edit</i> and report screens, they will also be sized to be as uniform as possible and to match the user's personal text size option. This utilizes the behavior setting named <code>LIST_IMAGE_SIZE_PCT</code> which has a default value of 100. At 100%, the images are sized to have the same height as text characters used for list values and reports. You may decide to make this value larger or smaller to display correspondingly larger or smaller on user's screens.</p>
Interest List Details	<p>If the field may be used as an Interest List, this section appears. If more sophisticated processing of an interest list for the value is required, then the administrator should use the Interest List menu under the Notification tab of Administration.</p>
Migration Details	<p>It is occasionally useful to inhibit the migration of some list values between instances when performing XML exports / imports. This section allows the administrator to flag specific values so they will not be migrated between instances. Note that this section also displays how a specific list value has been created, for example through the user interface of this utility, or perhaps as a value created by an OBJECT business rule.</p>
Allowed Value Details	<p>This section allows you to define which parents a field value belongs to in allowed value relationships.</p>

Loading List Values from Files

This feature only works to load values into user defined field lists. It does not work with inbuilt fields such as **STATUS**, **CATEGORY**, **RESOLUTION** and user field lists. This is not a real limitation as these inbuilt field lists tend to be small lists. Each user defined field list has a button **Import Field Values**. When this is pressed, the administrator is able to load a file of values into the field.

Import Field Values
Return
Print Page

User defined field lists - City
?

+
Add a new entry to the list

Show Filters

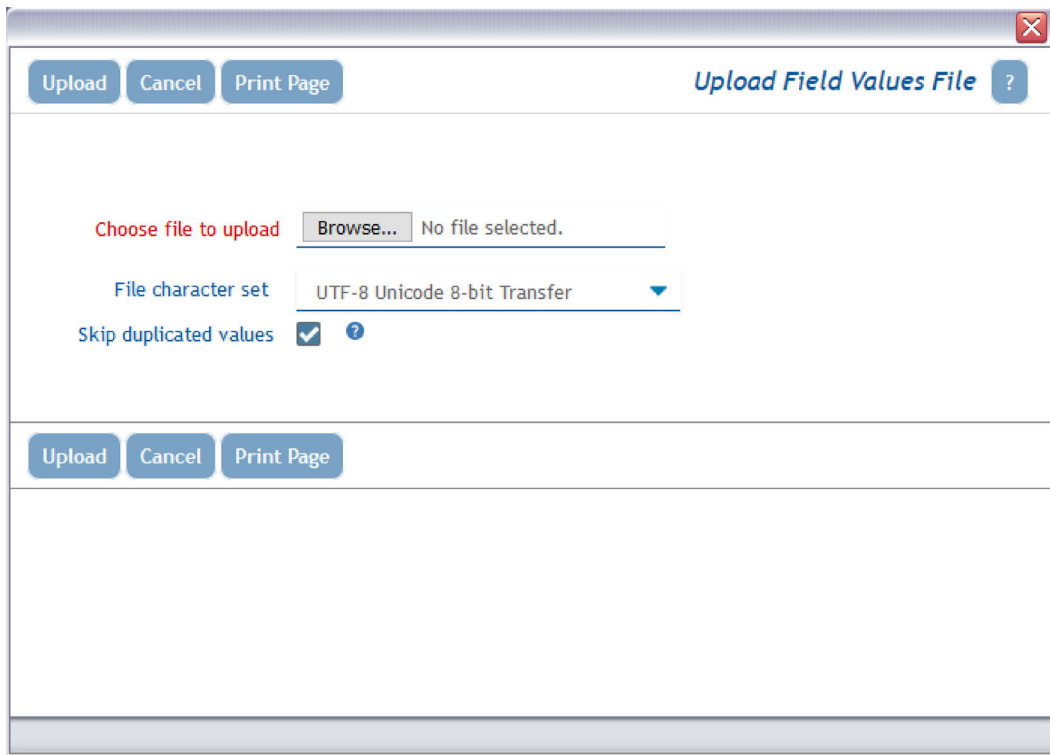
Title to display	Sort sequence	Enabled	Provenance	Do Not Migrate	List ID	Created From Import	Created	Last updated
<input checked="" type="checkbox"/> Abbotsford		Yes		No	68929	No	Jun 12, 2019 12:00:00 AM	Jun 12, 2019 12:00:00 AM ExtraView
<input checked="" type="checkbox"/> Capitola		Yes		No	68899	No	Jun 12, 2019 12:00:00 AM	Jun 12, 2019 12:00:00 AM ExtraView
<input checked="" type="checkbox"/> Cheyenne		Yes		No	68939	No	Jun 12, 2019 12:00:00 AM	Jun 12, 2019 12:00:00 AM ExtraView
<input checked="" type="checkbox"/> Costa Mesa		Yes		No	68909	No	Jun 12, 2019 12:00:00 AM	Jun 12, 2019 12:00:00 AM ExtraView
<input checked="" type="checkbox"/> Darlington		Yes		No	68919	No	Jun 12, 2019 12:00:00 AM	Jun 12, 2019 12:00:00 AM ExtraView
<input checked="" type="checkbox"/> Durham		Yes		No	68914	No	Jun 12, 2019 12:00:00 AM	Jun 12, 2019 12:00:00 AM ExtraView
<input checked="" type="checkbox"/> Irvine		Yes		No	68904	No	Jun 12, 2019 12:00:00 AM	Jun 12, 2019 12:00:00 AM ExtraView
<input checked="" type="checkbox"/> Keil		Yes		No	69084	No	Jun 12, 2019 12:00:00 AM	Aug 27, 2019 9:44:21 PM ExtraView Bill Smith
<input checked="" type="checkbox"/> London		Yes		No	68924	No	Jun 12, 2019 12:00:00 AM	Jun 12, 2019 12:00:00 AM ExtraView
<input checked="" type="checkbox"/> Long Beach		Yes		No	68889	No	Jun 12, 2019 12:00:00 AM	Jun 12, 2019 12:00:00 AM ExtraView
<input checked="" type="checkbox"/> Santa Cruz		Yes		No	68894	No	Jun 12, 2019 12:00:00 AM	Jun 12, 2019 12:00:00 AM ExtraView
<input checked="" type="checkbox"/> Vancouver		Yes		No	68934	No	Jun 12, 2019 12:00:00 AM	Jun 12, 2019 12:00:00 AM ExtraView
<input checked="" type="checkbox"/> Overland Park		Yes		No	68884	No	Jun 12, 2019 12:00:00 AM	Jun 12, 2019 12:00:00 AM ExtraView

Import Field Values
Return
Print Page

13 record(s) selected from a total of 13 record(s)

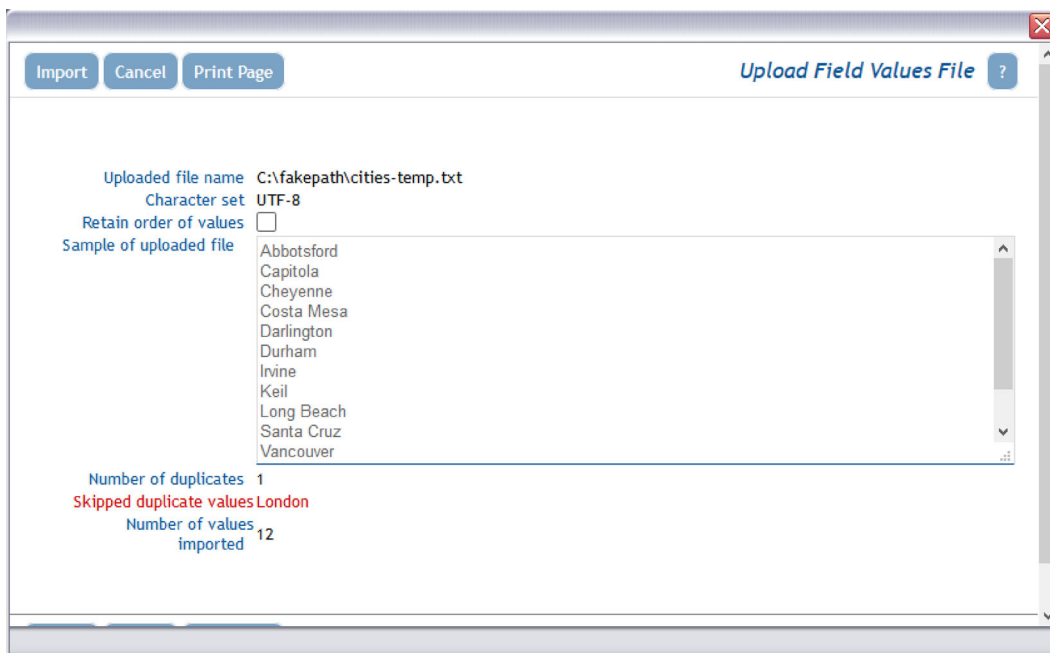
Importing a file of list values

The format of the file to be uploaded is very simple. It is simply a file with a single value per row. The list of values may be ordered and the order retained when it is imported, or it may be unordered, in which case ExtraView will sort the file alphanumerically. When the administrator presses this button, the following dialog appears:



Specifying the file to upload

When the file is uploaded, you will see a sample of the file:



Sample of uploaded file

Note the prompt that allows you to retain the order of the field values in your import file, or allows the list to be sorted alphanumerically. Warnings may also be issued if duplicate values are found. In this case you may either proceed with the import, or cancel the operation.

Lists with Images

If you are importing records into a list which has images enabled, the import file will have the images encoded with the Base 64 algorithm, and ExtraView will convert the encoded information back to images. Note that when you export a list with images, ExtraView does the Base 64 encoding for you. This allows you to transfer images between fields and between instances.

Upload Cancel Print Page Upload Field Values File ?

Choose file to upload Browse... No file selected.

File character set UTF-8 Unicode 8-bit Transfer

Skip duplicated values ?

Insert and/or replace images ?

Upload Cancel Print Page

List Entries with Allowed Values

Editing lists that are the child in an allowed value relationship is a little different. As seen in the screenshot below, the list of all the potential parents is displayed, each with a checkbox. Also, if Business Areas and Projects are enabled, you must select the Business Area and Project for which you want to set the allowed values (see the next section).

Click on each of the parent values that this child is allowed to be related to. The example shows an allowed value relationship between two fields, where the field named *Building* is the parent and the field named *Floor Number* is the child.

Update User defined field lists entry Floor Number Update Delete Cancel Print Page

Title to display Basement Localize

Sort sequence

Owner * None *

Enabled

List of allowed values

This field is a child in a parent-child allowed value relationship. Check all parent values where you want this item to appear in the allowed values list when inserting or updating records

Select Business Area * Select Business Area *

Select Project * Select Project *

Building List Building One Building Three Building Two

Update Delete Cancel Print Page

Allowed Value relationships are maintained within their child list

Note that this screen allows you to modify the allowed value children for a single parent, on a single screen. This is ideal for making alterations to existing relationships. If you want to add a series of allowed value relationships for different parents, you may find it more convenient to use the administration screen under Allowed Value Types. Both methods will result in the same changes, but sometimes it is more convenient to take a “top-down” rather than “bottom-up” approach.

Business Areas and Allowed Value Relationships

It is important to note that when Business Areas and Projects are enabled, the allowed values that you set are only for the selected Business Area and Project. This is controlled by additional prompts on the maintenance screen as shown above. You must set up the allowed value relationship for each Business Area and Project.

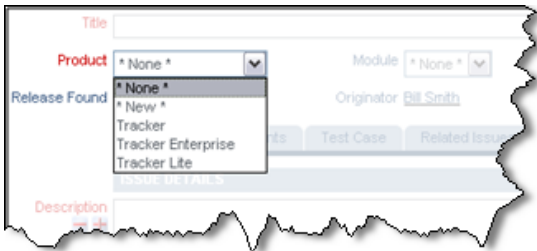
Note: If the Business Area field is the parent field in the allowed value relationship then you should be aware of how the interaction with the fact that allowed values are dependent upon Business Area works. The implication is that you can only define the child in the relationship to either belong, or not belong to the currently selected Business Area. There is no meaning to allowing the child to be selected with other Business Areas. Therefore, you will only see the currently selected Business Area with a checkbox in the list of possible allowed values.

Note: You can set up a set of default values for a relationship. These will be used, unless overridden by a specific set up within any Business Area and Project.

End-User List Management

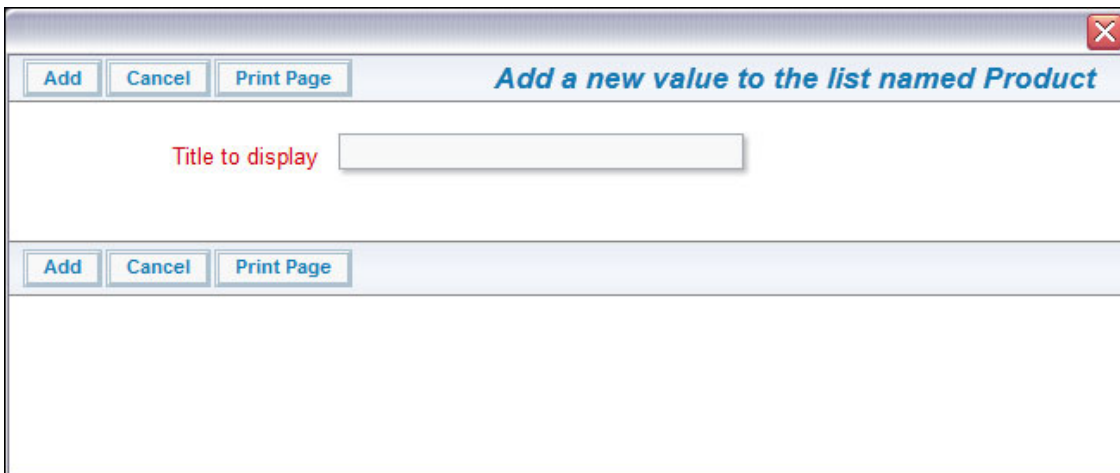
End users may add new values to lists under certain circumstances, where the administrator has enabled the feature with security permissions, and has turned on the feature on specific layouts.

To an end user, the ability to add a new value to a list appears like this:



Adding a new value to a list

When the end user selects the *** New *** entry in the list, a window pops up, asking for the details of the list. The appearance of this popup varies a little, according to whether the list is an inbuilt list field (such as **product_name**), a child list such as **module_id** or **release_found** or **release_fixed**, or is a user-defined field list. The inbuilt fields require the addition of the field’s fixed name, plus its title. Dependent child fields require the parent field to be selected, and the relevant fixed name and/or title. User defined fields only require the title to be input. This is an example of a popup:



Adding a new value from a list field

To configure a field to use this feature, take the following steps. Note that only a small number of inbuilt fields may be used in this way, but any user defined field list may be configured.

Field	Security Permission Key
PRODUCT_NAME	CF_PRODUCT
MODULE_ID	CF_MODULE
RELEASE_FOUND, RELEASE_FIXED	CF_PRODUCT_RELEASE
All UDF's with a display type of List, with the exception of multi-valued lists	CF_UDF_LIST

- For the user role or user roles that you want to be able to add new values to a list, give the security permission key in the above table write access
- The * **New** * entry is added to the list by adding a layout cell attribute to the field on the appropriate *add* and/or *edit* layout. The layout cell attribute is named **ADD_NEW - Add the * New * entry to list fields - applies to add and edit layouts**.
- The feature works with UDF list and popup fields on repeating rows as well as on standard list fields
- The feature works with multi-valued list and popup fields on standard list fields only. It does not work with multi-valued list fields on repeating row fields
- The feature does not work with fields being used on reports with the Quickedit mode
- The feature does not work with other types of list fields such as tab and radio button.

Aliased Lists

Within the data dictionary you can create list type fields which are the alias of other list type fields. ExtraView will keep the values of the two (or more) lists synchronized. However, you can only edit values within the original list. If a field has other fields that are aliased to it, you will see a message when editing the list, similar to:

This field is also the alias for 'Customers', 'OEM Customers'. Modifying the values in this list will modify all the values in all the lists.

If the field is the alias of another field, you are not able to edit its values. There will be a message similar to:

This field is an alias of the field named 'Customer'. You may not edit the list values for this field. Please go to the alias list to make changes to the entries for this list.

You can create an alias list for fields with a display type of List, Popup and Tab.

If you delete a list which is the original of a list with an alias, then the aliased list becomes an independent, stand-alone list. Of course, you may only delete a list when there are no values with data stored against it.

Lists with Enabled Interest Lists

When an interest list for a field is enabled, the administrator has the option to create an interest list entry for the value they create, when they are adding a new value to the list. Under these circumstances, the screen to add an item to the interest list also contains two additional fields, **Create a global interest list for this value** and **Add users to this interest list**. This is shown in the following screenshot.

The screenshot shows a web form titled "Privacy Groups" with a light blue header and footer. The header contains "Add", "Cancel", and "Print Page" buttons. The form contains the following elements:

- A text input field labeled "Fixed database name" with a red asterisk.
- A text input field labeled "Title to display on screens" with a red asterisk.
- A checkbox labeled "Create a global interest list for this value".
- A dropdown menu labeled "Add users to this interest list" with the text "* Select a User *". A red arrow points to this dropdown menu.

The footer also contains "Add", "Cancel", and "Print Page" buttons.

Creating an interest list entry while adding a new value to a list

Lists with Special Properties

Business Areas

Business Areas are created as a list, like all other lists. From an administrator's perspective, a Business Area is created like any other list. Internally, many actions are taken to prepare ExtraView for the new business process you have just added. In summary, these are –

- If `DISALLOW_AREA_0_DATA` and `DISALLOW_PROJECT_0_DATA` are set to YES, then two projects are created automatically. The first is named by appending *Project Defaults* to the title of the new business area. The second is named by appending *Project Data* to the title of the new business area. The *Project Defaults* is the project with the `PROJECT_ID` of 0. This is the project from which other projects inherit their characteristics. The *Project Data* is the project in which the issue data will be stored, assuming you do not create other projects within the business area. You may alter the titles of these projects for your own purposes. **It is not normal practice to set these two settings to anything other than a value of YES. These settings are mainly used for backwards compatibility with sites created prior to ExtraView version 5.**
- Security permission keys are created for each user role for the new business area. These security permission keys are named with the following convention when you look at the Grant Security Privileges screen – `AREA.id (area_title)` where `id` is the internal ID of the business area and `area_title` is the title of the business area. The effect of the security permission keys for user roles is to enable / disable the ability for a user within a specific role to be able to view and / or select the business area on all the *add*, *edit* and *query* functions. You can lock any user role out of any business area with this facility.
- The layout editor will make the new area available to create new layouts. Until you create a new layout within the new area, the layouts from the Global Area will be inherited.
- The new area will be available within the status rules administration screen, to allow you to set status rules for the new area. Until you create status rules for the new area, the rules will be inherited from the Global Area.
- You can define multiple roles with access to administration. However, each of these roles can be permitted to see only a specific combination of business areas.
- Note: Even if a user role does not have permission to see a business area, that role may still be able to retrieve records from that area. For example, a query that asks to retrieve all the “open” issues irrespective of business area will do just that, including records from areas where no permission exists to see the area. You can prevent this behavior by setting a layout cell attribute on query layouts with the `FIELD REMOVE NONE` attribute. This will force the user to select one or more areas to which they have access as part of their query.

Business Area

You create and modify Business Areas on this screen. This is where the high level separate issue tracking systems are defined for your ExtraView database. Each Business Area may contain any number of individual Projects.

The Global Business Area contains the defaults for the entire system. Each Business Area you create will inherit the characteristics of the Global Business Area. This includes the fields, the security permissions, and the screen and report layouts. Once you have defined a new Business Area, you can use the inherited characteristics from the Global Area, or you can define its own characteristics. When you create a new Business Area, two Projects are created automatically. The first Project within each Business Area contains the defaults for the Business Area. Item (or issue) data is not stored in the first Project. The second Project within the Business Area is where data will be stored, i.e. it inherits its characteristics from the first default Project of the Business Area. You can create any number of additional Projects within a Business Area. Each of these will inherit the characteristics of the default Project.

Note that item (or issue) data will be stored in the Projects within the Business Areas you define, not in the Global Business Area or the Business Areas themselves.

Add Add a new Business Area to the database

Name	Screen Title	Sort sequence	Created	Last updated
Edit GLOBAL	Global Area		ExtraView 10/1/03 12:00 AM	Bill Smith 2/7/08 3:12 PM
Edit BUGS	Bugs	10	ExtraView 10/1/03 12:00 AM	ExtraView 10/1/03 12:00 AM
Edit HELPDESK	Helpdesk	20	ExtraView 10/1/03 12:00 AM	ExtraView 10/1/03 12:00 AM
Edit ASSETS	Assets	30	ExtraView 10/1/03 12:00 AM	* None * 5/27/05 12:18 AM
Edit CUSTOMER_ISSUES	Customer Issues	40	ExtraView 10/1/03 12:00 AM	Bill Smith 11/20/05 7:34 PM
Edit CUSTOMERS	Customers	45	ExtraView 10/1/03 12:00 AM	* None * 5/27/05 12:18 AM
Edit FEATURE_REQUESTS	Feature Requests	50	ExtraView 10/1/03 12:00 AM	ExtraView 10/1/03 12:00 AM
Edit KNOWLEDGE_BASE	Knowledge Base	60	ExtraView 10/1/03 12:00 AM	* None * 8/7/05 9:50 PM

8 record(s) selected from a total of 8 record(s)

Business Areas and Projects Relationship

Business Areas are linked to Projects, and vice versa. The relationship is that many projects can belong to a single business area.

ExtraView Corporation does not recommend that the global business area (i.e. the business area with the internal ID of 0) is used to store data. It should be used primarily to store metadata about the installation, such as the security permissions to be used as defaults throughout the system, and the layouts that are common across the entire system. Taking this step will simplify the installation of ExtraView when it is to be used for multiple tracking purposes.

The same principle holds true for the global project within each business area, and we recommend that this not be used to store data.

However, this may be cumbersome if you only intend to use ExtraView for a single tracking function and you have the option to alter this behavior. To accommodate the differences, there are two behavior settings in the Workflow Settings menu of Administration.

Setting Name	Default Value	Purpose
DISALLOW_AREA_0_DATA	YES	When this setting is NO, issue data may be entered into AREA 0. This is provided for backwards compatibility for installations created prior to version 4.2. Installations created with version 4.2 and greater should not allow issue data to be placed in AREA 0. With installations from 4.2 onwards, this should be set to YES
DISALLOW_PROJECT_0_DATA	YES	When this setting is NO, issue data may be entered into PROJECT 0. This is provided for backwards compatibility for installations created prior to version 4.2. Installations created with version 4.2 and greater should not allow issue data to be placed in PROJECT 0. With installations from 4.2 onwards, this should be set to YES

The default business area and project lists in the list modification screens do not include entries for the global area (0), if DISALLOW_AREA_0_DATA is YES or project (0), if DISALLOW_PROJECT_0_DATA is YES. In addition, when adding or editing an area, a warning is issued if DISALLOW_PROJECT_0_DATA is YES and the area added or modified has no projects beyond the global project.

Project Lists

The PROJECT field is the child of the AREA field. This relationship is more fully explained in the page on [Business Area](#) lists. The default project is used as the default project for all layouts, fields and values within the entire project, and each of these objects may be inherited from the default project to other projects within the business area. Each business area has a minimum of two projects, the default project and a data project. The default project only stores default metadata for the entire set of projects within the business area, and never stores any issue data. The remaining projects may store metadata that overrides the metadata within the default project as well as issue data for that project.

By convention, the default project always has a value for the field PROJECT_ID of zero. When a business area is created, the first two projects are named XXXX_DEFAULTS and XXXX_DATA where XXXX is the name of the business area. When you are modifying the data for a project, there are a number of behavior setting values you can override. The behavior settings are default-wide settings; if you provide entries within the default project, the values become the values for the entire business area. If you provide an entry within any project other than the default project, then the value is only used for that project. The project-level settings that override the settings stored within the behavior settings are modified within the edit screen for any specific Project. Use the list management utility, or navigate to the PROJECT field within the data dictionary and edit the project field which will store the values that override the behavior settings.

For email notification the list of behavior settings that you can modify is:

- AD_HOC_EMAIL_FROM_ADDRESS
- AD_HOC_EMAIL_FROM_SENDER
- EMAIL_ADMINISTRATOR_NAME
- EMAIL_ADMINISTRATOR_USER_ID
- EMAIL_FROM_USER_NAME
- EMAIL_FROM_USER_ID
- SUPPRESS_STANDARD_EMAIL_LIST

There is a further behavior setting that can be set at the Project level. This is EDIT_TAB_TITLE. By default, this system-wide behavior setting is:

ExtraView - \$\$ID\$\$

You may set your own template for the display of the title in the browser tab title by altering this setting, Project by Project. You can include the following fields within \$\$ characters and the appropriate title will be displayed on the browser tab:

- ID
- ALT_ID
- AREA
- PROJECT
- STATUS
- CATEGORY
- PRIORITY
- PRODUCT_NAME
- Any text field

Status List

The status list drives workflow, and is explained fully in the section within this guide entitled Workflow Setup. The list has the following special properties in addition to driving the workflow:

- Security permission keys are created for each status list entry. These allow you to control the visibility of the status entry in an absolute fashion, for the list entry within each user role
- There is a behavior setting named STATUS_CLOSED_NAME. This should be set to the status name for the value that means “closed” in your installation. This is usually CLOSED, but you may alter this as you need. You should not alter this value on a production system, as you will lose the historic tracking related to the dates that issues were closed. Set this value at the time of implementation only.
- The status list will be populated on *add* and *edit* screens according to the rules set within the workflow setup section. Fundamentally, the workflow can be different or the same for any combination of business area, project, and user role or product.
- Although ExtraView allows duplicate titles in lists it is strongly advised that you do not create status values with duplicate values. If you do so, ExtraView will give a warning.

Deleting a Status Name and Value

Like all field values, you must delete or remove all dependent data before you can remove the status name and value. The following is the suggested order of removing a status name and its value:

- First you must ensure that no issues exist with the status value. With an empty database, nothing needs to be done. If values exist, use the mass update feature within reporting to select all records with the value you want to remove, and then alter the value to a new value you have created, or to one of the status values you are keeping
- You must next remove all the status change rules that use the value you want to remove. With this version of software, you must remove these individually. In future versions this will be simplified
- Check that the value you are removing is not the behavior setting named STATUS_CLOSED_NAME
- Check that the value you are removing is not the default value for the STATUS field within the data dictionary
- Finally, remove the status value from the Status List maintenance screen

Product Lists

Product Line Lists

Note: This field is deprecated and should only be used within existing applications. Newly configured applications should substitute the product line list functionality by creating a new user defined list field, then creating an allowed value relationship where this field is the parent, and the **product_name** field is the child field. Product lines (the **product_line** field) have a special relationship with products (the **product_name** field). Any single product may belong to any number of product lines.

Adding a product to one or more product lines

When adding or editing a product line, you will see a list of all products, each with a checkbox. To add a product to a product line, simply check the box. When you place both the product line and product fields on an add screen or edit screen, they interact as follows:

Condition	Behavior
No allowed values on the <i>product_name</i> field	When a product line is selected, the screen refreshes and the list of products will reflect the values of products in the list for the product line
<i>product_name</i> is the child in an allowed value relationship	When a product line or the parent field in the relationship is chosen, the screen refreshes and the list of products displayed will be those that both belong to the product line, and are a child in the allowed value relationship

Product Name Lists

Product name lists (**PRODUCT_NAME**) have an additional attribute that gives the ability to deactivate a product. When you deactivate a product, the product will no longer appear within the select list on the Add and the Edit screens. If the user edits an issue with an inactive product, then they will receive a warning that it is no longer a valid option. The user may update the issue with the inactive product, or they can select a new active product.

Deactivating a product

Module Name Lists

Use of the built-in **MODULE_ID** field is discouraged for new configurations. This field and its relationship with the built-in **PRODUCT_NAME** field will be deprecated in a future release. Support for existing use of the field will continue at this time. You should configure a UDF in place of the **MODULE_ID** field.

Module names are managed a little differently to other lists. This is because there is a built-in relationship between **PRODUCT_NAME** and **MODULE_ID**. ExtraView does not use an Allowed Value relationship to manage this.

To add or modify a *Module*, click **Module Names** on the Lists tab. The following screen appears:

Module Names screen

Click the **Add** icon to create a new Module Name. Since *Module* depends on *Product*, you will have to choose an applicable *Product* from the drop-down list to associate with your new *Module*. Fill in the appropriate fields and click the **Update** button.

Adding a Module Name

To modify an already existing *Module Name*, return to the Administration menu, click the Manage Field List Data tab, and select *Module Name*, as in step 4. Select the *Product* that pertains to the *Module* that you want to edit.

If you have set the display type for the *MODULE_ID* field to be popup, then searching for a value is slightly different than for other fields. The search mechanism utilizes the **name** value of this field, not the value of the **title**. In most instances, the name and title of the field values for modules are the same, but in the cases where they are not identical, the popup list will display **name_value(title_value)**, allowing you to distinguish between the name and the title.

The owner of the module will automatically receive email notification when the module is selected on an issue. Also, there are two behavior settings that affect the way notification happens with the *module* field.

Setting	Purpose
EMAIL_MODULE_OWNER_ALWAYS	Email the module owner irrespective of whether they are assigned to an issue. Valid values are YES and NO
LINK_MODULE_USER	Links the module owner field to the specified user field. This will automatically set the value of the user field specified to the value stored in the <i>Module Owner</i> field This can have a value of ASSIGNED_TO, CONTACT or OWNER

Module names Return Print Page

Add a new module

Product
 ^ Select a Product *
 Tracker
 Tracker Enterprise
 Tracker Lite

	Module Title	Sort sequence	Owner	Module type	Created	Last updated
<input type="button" value="Edit"/>	CLI	CLI	Jimmy Duncan		Mary Brown 1/23/04	Mary Brown 1/23/04
<input type="button" value="Edit"/>	DATABASE	Database	Bill Smith		Bill Smith 12/24/04	Bill Smith 12/24/04
<input type="button" value="Edit"/>	GUI	GUI	Mary Brown		Mary Brown 1/23/04	Mary Brown 1/23/04
<input type="button" value="Edit"/>	PROCESSOR	Processor	Mary Brown		Bill Smith 12/24/04	Bill Smith 12/24/04
<input type="button" value="Edit"/>	XX	xxxx			Bill Smith 12/20/05	Bill Smith 12/20/05

5 record(s) selected from a total of 5 record(s) Return Print Page

Editing an Existing Module

Click the **Edit** button next to the *Module* that you wish to change. On the screen that appears, you can edit the values, and then **Update** the record.

Release Found & Release Fixed Lists

Use of the built-in RELEASE_FOUND and RELEASE_FIXED fields are discouraged for new configurations. These field and its relationship with the built-in PRODUCT_NAME field will be deprecated in a future release. Support for existing use of the fields will continue at this time. You should configure UDF's in place of the RELEASE_FOUND and RELEASE_FIXED fields

Release Found Return Print Page

Add a new field to the database

Product Show inactive releases

	Name	Title	Active	Release type	Sort sequence	Created
<input type="button" value="Edit"/>	v1	v1	Y			Mary Brown 1/23/04 12:00 AM
<input type="button" value="Edit"/>	v2	v2	Y			Mary Brown 1/23/04 12:00 AM
<input type="button" value="Edit"/>	v3	v3	Y			Mary Brown 1/23/04 12:00 AM
<input type="button" value="Edit"/>	v4	v4	Y			Bill Smith 1/12/05 12:00 AM
<input type="button" value="Edit"/>	v5	v5	Y			Bill Smith 8/23/05 7:18 PM
<input type="button" value="Edit"/>	v6	v6	Y			Bill Smith 3/24/07 3:47 PM
<input type="button" value="Edit"/>	v7	v7	Y			Bill Smith 4/3/07 11:53 AM

7 record(s) selected from a total of 7 record(s) Return Print Page

These lists have several special properties:

- They point to the two inbuilt fields RELEASE_FOUND and RELEASE_FIXED
- These fields belong to repeating row records. They should not be used on layouts other than repeating row records. If you want to use a field or fields for the functionality of RELEASE_FOUND or RELEASE_FIXED on layouts such as an add or edit layout, then define UDF's and use these
- These fields use PRODUCT_NAME as their parent value, and therefore separate lists can be defined for each product in the system
- Both lists adopt the same values and are maintained in a single place within the List maintenance screen
- Releases may be made inactive. Once inactive, they will not appear within lists as you add or update an issue. However, if you edit an issue where the release found or release fixed is inactive, you will see a warning, which you can choose to ignore
- The sort sequence of the Release Found and Release Fixed lists can be sorted in an ascending or descending order. This is controlled with the behavior setting named RELEASE_SORT_ORDER on the Workflow Settings administration menu
- If you have set the display type for the RELEASE_FOUND and RELEASE_FIXED fields to be popup, then searching for a value is slightly different than for other fields. The search mechanism utilizes the **name** value of these fields, not the value of the **title**. In most instances, the name and title of the field values for RELEASE_FOUND and RELEASE_FIXED are the same, but in the cases where they are not identical, the popup list will display **name_value(title_value)**, allowing you to distinguish between the name and the title.

The screenshot shows a web form titled "Add an entry to Release Found". The form includes a "Product" dropdown menu set to "Tracker", three text input fields for "Release name", "Release title", and "Sort sequence", and a radio button group for "Active" with "Yes" selected. The form has "Add", "Cancel", and "Print Page" buttons at both the top right and bottom right corners.

Adding a new entry to the release list

Company Name Lists

It is often useful to be able to maintain a reference list of Company Names. A User Defined Field list can be created and linked to the User Account Maintenance screens. This may prevent the duplication of multiple versions of a single company name. For example, you may otherwise enter a company name as Superior Corp, Superior Corporation, Superior Corp., etc.

To facilitate this:

- Create a user defined field which is to retain the list of company names
- Place the name of this user defined field in the behavior setting named COMPANY_NAME_LIST_UDF
- When you add a new user to your site, you will then see a list of all current company names, and you may then select from a previously entered name or you may create a new one.

Primary email address: csr@xxx.com

Job title: []

Company name: Superior Software Corp

Address: 269 Mount Hermon Road

City: Scotts Valley

State / Province: CA

Zip / Postal code: 95066

Country: USA

Work phone: (831) 461-7100

Home phone: (831) 461-7100

Cell phone: (831) 461-7100

Fax: (831) 461-7100

Pager: (831) 461-7100

COMPANY_NAME_LIST dropdown:

- Bank of America
- Bear Inc.
- Chrysler
- Cisco
- Citibank
- Coca-Cola
- Corona
- CVS
- Duane Cor
- Evian
- Ford Motor Co
- Fortune Industries
- Freedom
- GE
- Hewlett Packard
- Info Technology
- Liberty
- NEC
- NTT
- SoftWorks
- STH Computers
- Super Corp
- Storage Networks

Use of the COMPANY_NAME_LIST user defined field

When you edit the list defined by COMPANY_NAME_LIST_UDF, it has a special property as shown in the screenshot below:

Add User defined field lists entry

Customer

Title to display: []

Sort sequence: []

Owner: []

Enabled:

Populate this list with 293 new list values?:

Create a global interest list for this value:

Add users to this interest list: []

Updating the COMPANY_NAME_LIST field

This indicates that when you add the new value to the list, that you can synchronize the list values with the list of users. Normally you should select this checkbox and perform the synchronization.

Relationship Group List

It is often useful to be able to maintain a reference list of Relationship Groups. A User Defined Field list can be created and linked to the Relationship Group Maintenance screen. To facilitate this:

- Create a user defined field which is to retain the list of Relationship Groups
- Place the name of this user defined field in the behavior setting named RELATIONSHIP_GROUP_LIST_UDF
- When you add or update issues to a relationship group, you will then see a list of all current relationship groups, and you may then select from a previously entered name or you may create a new one.

Special Purpose Fields

Most fields in the data dictionary refer to a field that may be placed on the *add* layout, the *edit* layout, a *search* layout or a report layout. Examples are inbuilt fields such as PRODUCT_NAME and ID, or UDF's such as COMMENTS and DESCRIPTION.

However there are a number of fields whose purpose requires some additional explanation.

Attachments

When you are adding attachments to an issue from both the *add* and *edit* screens, you use the PR_ADD_PROBLEM security permission key. This is not immediately obvious with regard to the *edit* screen.

Also note that the ATTACH_FILE_DESC permission key has special properties with regard to fields with a display type of document and image.

Field Name	Title	Definition
ATTACHMENT	Attachments	This field is used on reports to display all the fields that comprise the attachment record. All fields that may be placed on the attachment record are displayed, assuming they have read permission.
ATTACHMENT_ID	Attachment ID	The internal ID for the attachment. Used within the ATTACHMENT field and the ATTACHMENT_HISTORY layout.
ATTACH_CHANGE_TYPE	Change Type	The type of attachment change. Used on the ATTACHMENT_HISTORY layout.
ATTACH_CONTENT_TYPE	Attachment Content Type	The mime type of the attachment. Used within the ATTACHMENT field and the ATTACHMENT_HISTORY layout.
ATTACH_CREATED_BY_USER	Attachment Created By	The person who created the attachment . Used within the ATTACHMENT field and the ATTACHMENT_HISTORY layout.
ATTACH_DATE_CREATED	Attachment Date Created	The date the attachment was created. Used within the ATTACHMENT field and the ATTACHMENT_HISTORY layout.
ATTACH_FILE_DESC	Attachment File Description	<p>The description of the attachment. Used within the ATTACHMENT field, the ATTACHMENT_HISTORY layout and on fields with a display type of IMAGE and DOCUMENT. This field has some special properties.</p> <ul style="list-style-type: none"> • If PR_ADD_PROBLEM.ATTACH_FILE_DESC is writable, then the description for all upload objects is required on the <i>add</i> screen • If PR_ADD_PROBLEM.ATTACH_FILE_DESC is readable, then the description for all upload objects is permitted, but not required on the <i>add</i> screen • If PR_ADD_PROBLEM.ATTACH_FILE_DESC is neither writable nor readable, then the description for all upload objects is not shown on the <i>add</i> screen • If PR_RESOLUTION.ATTACH_FILE_DESC is writable, then the description for all upload objects is required on the <i>edit</i> screen • If PR_RESOLUTION.ATTACH_FILE_DESC is readable, then the description for all upload objects is permitted, but not required on the <i>edit</i> screen • If PR_RESOLUTION.ATTACH_FILE_DESC is neither writable nor readable, then the description for all upload objects is not shown on the <i>edit</i> screen.
ATTACH_FILE_NAME	Attachment File Name	The file name of the attachment. Used within the ATTACHMENT field and the ATTACHMENT_HISTORY layout.
ATTACH_FILE_SIZE	Attachment File Size	The file size of the attachment . Used within the ATTACHMENT field and the ATTACHMENT_HISTORY layout.
ATTACH_PATH	Attachment Path	The original path in which the attachment was stored . Used within the ATTACHMENT field and the ATTACHMENT_HISTORY layout.
ATTACH_HIST_TIMESTAMP	Attachment History Timestamp	The timestamp of attachment history. Used on the ATTACHMENT_HISTORY layout.
ATTACH_LAST_DATE_UPDATED	Last Date Updated	The last date the attachment was updated. Used on the ATTACHMENT_HISTORY layout.
ATTACH_LAST_UPDT_COMPANY	Company	The last date the attachment was updated. Used on the ATTACHMENT_HISTORY layout.
ATTACH_SELECT	Select?	An optional field. When the security permissions for this field are turned on, this causes a column on the attachment layout to be made visible, with a checkbox by each attached file added to the issue. This works in

		conjunction with another field, NOTIFICATION_EMAIL_ATTACHMENT. This field appears in the notification layout. When a user checks the NOTIFICATION_EMAIL_ATTACHMENT field, then each of the file attachments checked in the list of attachments is sent out as an attachment to the notification. In this way, file attachments can optionally be sent to users connected with an issue, when the issue is either added or updated. This field is also subject to control with the ADD and COPY business rules, as well as being available within user custom code.
ATTACH_THUMBNAIL	Thumbnail	Preview a thumbnail image of the attachment. Used within the ATTACHMENT field and the ATTACHMENT_HISTORY layout.
NUMBER_OF_ATTACHMENTS	Number of Attachments	This field may be placed on reports, or used as a report filter and provides a count of the number of attachments on an issue. For example, you may use this as an advanced filter to show all the issues that have attachments, when used as Number of Attachments > 0 .

Behavior Settings

Setting Name	Default Value	Description
ALLOWED_ATTACH_SEARCH_FILE_EXT	application/pdf,application/msword,application/vnd.msexcel,text/csv,text/html,text/plain,text/rtf	This is a list of the allowed mime types for attachment files to be searched for keywords, when the user checks the Search Attachments box. If the file in the list to be searched does not have one of these mime types, it is skipped. This is used to skip searching of files such as image files, to speed the search process
ATTACHMENT_CONTROL_FIELDS	NO	This setting is only used in conjunction with the Java user custom exit named ucAllowAttachmentOperation. This setting enables the functionality within this method. When the value is NO the user custom exit is not called. When the value is YES the code within the method is called and acted upon
ATTACHMENT_REPOSITORY_DMAX	999	The maximum number of files or directories that will be created under one node of the external directory structure. The default for this value is 999. It is not likely that this value needs to be altered
ATTACHMENT_REPOSITORY_OPT	INTERNAL	This setting controls whether attachments are stored internally within the database, externally on the file system, or in some combination of the two methods. If the value of this setting is INTERNAL, then all attachments are stored internally within the database. If the value of this setting is EXTERNAL, then all the attachments are stored on the external file system. Alternatively, you may provide a comma separated list of file extensions and then all files with these extensions will be stored externally while all others will be stored in the database. For example, if you set the value of this setting to "avi,png,gif,jpg" then files of these types will be stored externally. This strategy leaves the files stored internally in the database as searchable by keywords, while the image and video files are stored externally. The default for this value is INTERNAL. Also, ensure that the setting ATTACHMENT_REPOSITORY_ROOT is

		set correctly before storing attachments outside the database
ATTACHMENT_REPOSITORY_ROOT		The name of the directory on the file system where file attachments will be stored. Before any attachments are stored externally, you must also provide a valid setting for the setting ATTACHMENT_REPOSITORY_OPT. You must also ensure that the path is valid from the application server(s) that are running ExtraView, and that you have all the permissions to read and write to the storage. You must also ensure that you set up a separate backup method for this external storage as backing up your database will no longer backup the file attachments
ATTACH_SELECT_CHECKBOX	UNCHECKED	This setting controls behavior of the Attachment Select box (ATTACH_SELECT) on the Add and Edit layouts. Valid values are UNCHECKED, CHECKED and CHECKED ON ADD. A value of CHECKED or UNCHECKED will set the checkbox for an attachment on entry to the screen or when a new attachment is added. A value of CHECKED ON ADD will cause the checkbox to be checked only when the attachment is first added, otherwise it will be unchecked
BLOCK_ATTACHMENT_EXTENSIONS		If a user uploads an attachment, or a file into a document field or a file into an image field, with an extension that is in this list, the file will not be stored on the server, and the user will receive a message that informs them that they are not allowed to store files of that type. The default is that all files of all types are stored. The list of file extensions is comma delimited. For example, you might set a value of <i>exe, js, com</i> to prohibit end users from uploading files of these types.
COPY_ATTACHMENT_ON_CLONE	YES	When this setting is YES, attachments will be copied to the new issue when an issue is cloned
DEFAULT_ATTACHMENT_CHARSET	UTF-8	The default character encoding for files being uploaded to ExtraView. This value is used to select the initial value presented to the administrator when creating a new user
SEARCH_ATTACH_THRESHOLD	100000000	The size of attachments to be searched, before the user is alerted of performance cost. If the size of attachments to be searched exceeds this value, then the user is shown a dialog box and asked to confirm whether they want to proceed with the search
THUMBNAIL_MAX_SIZE	150	This is the maximum number of pixels in either the horizontal or vertical direction to which thumbnail images will be generated. The aspect ratio of the original image will be retained. Thumbnail images are generated for file attachments and for fields with a display type of image. If you change this value, existing thumbnail images will remain at their original size and new

thumbnails will be generated at the changed value

Built In Repeating Row Fields

Field Name	Title	Definition
RELEASE	Release	The key field used to provide repeating records with a title on screen. It's security permissions control the presence or absence of the repeating record on add and edit screens
RELEASE_ASSIGNED_TO	Release Assigned To	Used to provide a title for Release Assigned To. It's security permissions control access to the value.
RELEASE_FIXED	Release Fixed	Used to provide a title for Release Fixed. It's security permissions control access to the value.
RELEASE_FOUND	Release Found	Used to provide a title for Release Found. Its security permissions control access to the value.
RELEASE_FOUND_HIST	Historical Release Reference	History is maintained on repeating records within ExtraView. This field refers to that history
RELEASE_OWNER	Release Owner	Used to provide a title for Release Owner. It's security permissions control access to the value.
RELEASE_PRIORITY	Release priority	Used to provide a title for Release Priority. It's security permissions control access to the value.
RELEASE_PRODUCT	Release Product	Used to provide a title for Release Product. It's security permissions control access to the value.
RELEASE_RESOLUTION	Release resolution	Used to provide a title for Release Resolution. It's security permissions control access to the value.
RELEASE_SEVERITY	Release Severity	Used to provide a title for Release Severity. It's security permissions control access to the value.
RELEASE_STATUS	Release Status	Used to provide a title for Release Status. It's security permissions control access to the value.

Button Fields

Inbuilt Button Fields

Field Name	Title	Definition
DELETE_BUTTON	Delete Button	The item delete button. Access to the security permissions for this button allow users to delete issues
EDIT_BUTTON	Edit Button	The drill down edit button used on reports and within email
HISTORY_BUTTON	History Button	The button that accesses history from the edit screen or reports
QUICKEDIT_BUTTON	Quickedit Button	The button that accesses the Quickedit mode from column reports and Quicklists
VIEW_BUTTON	View Button	The drill down button that allows you to see the detailed report for an issue
SAVE_BUTTON	Save Button	This button is used on attachment layouts, allowing users to save rather than view attachments

User Defined Button Fields

The preferred method of creating button fields is to use the LABELS / BUTTONS tab within the data dictionary and create the button field there. Historically, before version 20.0, button fields were created as UDF fields with a specially formatted name and with a Custom display type. The Help Text was used to create the label text for the button. Whilst the old method is maintained for backwards compatibility it is now recommended that you create a native type button field.

The historic method allows you to create and place a button with any label of your choosing on an *add* or *edit* screen by defining a field with a display type of Custom in the data dictionary, with its name beginning with the characters **BUTTON_** or ending with the characters **_BTN**. Placing this field on an *add* or *edit* screen layout results in a button being generated on the screen, when you place

the field on a layout. Note that when you create a button field in this manner, a global attribute named CONFIRM_STANDARDS is added to its data dictionary entry. This does not need to be altered in any way by the administrator.

The following are used to define these historic buttons:

Data dictionary field	Purpose
Name	This defines the name of the field. For example, a button named BUTTON_GENERATE is valid.
Display Type	Must be Custom
Title	Typically this is a space character
Help Text	This will become the text on the button

To provide the action for the button, place a layout cell attribute of type FIELD HTML MODIFIER within the layout upon which you place the button. There are three primary ways you can provide an action for this button:

- If you want to open a new window where you can add a different issue, your FIELD HTML MODIFIER may look like this:

```
onclick=window.open("evSignon?
p_action=doAddDisplay&p_option=Display&p_close_win=true&ev_menu=off&p_area=7&p_project=9")
```

The parameters for the Area and Project use their respective IDs. Note that the URL does not need to reside within ExtraView and your action might open up a web address anywhere. See the API Guide for more information.

- Your button might look to execute business rules. As an example, you might want to add a new issue directly into the database, using values from the current issue. When pressing your button executes an onchange business rule, ExtraView will execute the necessary onclick action to initiate the action.

In versions of ExtraView prior to 10.0, you may have added a JavaScript function via the HTML_MODIFIER attribute, such as:

```
onclick='javascript::userSubmitChangeAjax(this.name)';
```

This is no longer required for the functionality to work. If you have such a HTML_MODIFIER, it will adversely effect the smooth functioning of the ExtraView code by introducing unnecessary screen refreshes. Therefore, remove the HTML_MODIFIER if it exists from a previous version

- Create your business rules. This example shows how you might add an issue into a different business area, while copying over some of the field values from the current issue. It is based upon your button field name being BUTTON_CREATE_TEST_CASE:

```
if (BUTTON_CREATE_TEST_CASE.{changed}) {
  ADD :
    AREA = 'Test Case Management';
    TEST_CASE_STATUS = 'New';
    PROCEDURE = TEST_INSTRUCTIONS;
    MODULE_ID = MODULE_ID;
    ASSIGNED_TO = '{null}';
    CREATED_FROM_BUG_ID = ID;
    COMMENTS = DESCRIPTION;
}
```

- You can provide an action for the button by implementing custom code within the method named ucRenderEmbeddedObject. The standard distribution of ExtraView that ships with the user custom class named CustomCodeBase.java contains this functionality. In this case, you would write a user custom JavaScript function that submits a URL to the server to execute the server-side code within CustomCodeBase.java.

Date & Date Range Fields

Date Fields

The following date fields in the data dictionary provide a means to display information about an issue, calculated from when the issue was initially created.

Field Name	Title	Definition
DAYS_OPEN	Days Open	The number of days that an issue has been in a status that is not closed. The closed status is defined by the setting of the behavior setting named STATUS_CLOSED_NAME. The result is rounded to the nearest day.

WEEKS_OPEN	Weeks Open	The number of weeks that an issue has been in a status that is not closed. The closed status is defined by the setting of the behavior setting named STATUS_CLOSED_NAME. The result is rounded to the nearest week
MONTHS_OPEN	Months Open	The number of days that an issue has been in a status that is not closed. The closed status is defined by the setting of the behavior setting named STATUS_CLOSED_NAME. The result is rounded to the nearest month.
SYSDATE	Current Date	This is a Special Variable Field. When this is encountered within a date field within a query, in the form \$\$\$SYSDATE\$\$, ExtraView will substitute the current date, complete with the current time. This allows users to compose and save queries that have a range to or from the present date.
SYSDAY	Current Date	This is a Special Variable Field. When this is encountered within a date field within a query, in the form \$\$\$SYSDAY\$\$, ExtraView will substitute the current date, without time. The time is set to 00:00. This allows users to compose and save queries that have a range to or from the present date, as of midnight.

Date Range Fields

The date fields within the ExtraView database have an extra field defined in the data dictionary that works in conjunction with the date. This additional field works as a filter on ExtraView report screens, allowing reports to be defined that will select results based on a number of days since the date.

The date fields and the additional field are:

Data dictionary main field	Data dictionary additional field	Comment
DATE_CREATED	DATE_CREATED_SINCE	Days since the issue was created
TIMESTAMP	TIMESTAMP_SINCE	Days since the issue was last updated
DATE_LAST_STATUS_CHANGE	DATE_LAST_STATUS_CHANGE_SINCE	Days since the issue's last change of status
DATE_CLOSED	DATE_CLOSED_SINCE	Days since the issue was closed

Email Fields

Field Name	Title	Definition
MAILING_LIST	Mailing List	This field is used in conjunction with its security permissions to define which user roles have visibility to the mailing list on the <i>add</i> and <i>edit</i> screens
CC_EMAIL	CC Email	This field is used in conjunction with its security permissions to determine which user roles have the ability to see and use the CC email list on the <i>add</i> and <i>edit</i> screens
GENERATE_EMAIL	Generate Email	In conjunction with security permissions, this field is used to control the visibility of the Generate Email checkbox on the <i>add</i> and <i>edit</i> screens. Without permission, this checkbox will not be visible
CUSTOM_EMAIL	Custom Email	In conjunction with security permissions, this field is used to control the visibility of the Email button on the action bar within the <i>edit</i> screen. With permission, the user role will be able to send custom emails
EMAIL_ADDRESS	Email Address	This field may be placed upon layouts. It serves a special purpose. When a user accesses the custom email function from the <i>edit</i> screen, to send an ad-hoc email, or an email created from a pre-defined template, this field will be used to automatically populate the email address to which the mail is to be sent. This simplifies communication to users who, for example, enter an email address when reporting an issue. The value stored in this field automatically gives a return address.
NOTIFICATION_EMAIL_ATTACHMENT	Include selected attachments	This field works in conjunction with the attachment field named ATTACH_SELECT. Both fields need to be turned on with permissions for this feature. When enabled, there is an additional checkbox within the notification area. When a user checks this box, and the user has checked one or more file attachments that has the Select? checkbox also checked, then the selected attachments will be sent along with the email notification sent when the issue is added or updated.

Expression Fields

Expression fields are used to calculate, and display the results of the calculation, on a column report, a Detailed report or a Quicklist report. For example, you might use a numeric expression to calculate the sum of two or more fields within an issue. The Default value of the expression field may store an expression that will be evaluated as the default when the field is placed on a report. See the section in this guide for [Reporting and Querying](#) for a discussion of valid expressions.

Expression fields with a type of Duration are used as filters in queries, where they compute the value associated with a **date** or **day** field. For example, you might use an expression to filter all the issues with a *date created of last month*.

This list shows the built-in expressions provided with ExtraView. Administrators may create their own expressions. It is recommended that you do not alter the value of the built-in *duration* expressions. You may add additional expressions of any type.

Data dictionary field name	Title	Type
EVDTF_LAST_FISCAL_QUARTER	Last fiscal quarter	DURATION
EVDTF_LAST_FISCAL_YEAR	Last fiscal year	DURATION
EVDTF_LAST_FQ_TO_DATE	Last fiscal quarter to date	DURATION
EVDTF_LAST_FY_TO_DATE	Last fiscal year to date	DURATION
EVDTF_LAST_MONTH	Last month	DURATION
EVDTF_LAST_MONTH_TO_DATE	Last month to date	DURATION
EVDTF_LAST_WEEK	Last week	DURATION
EVDTF_LAST_WEEK_TO_DATE	Last week to date	DURATION
EVDTF_LAST_12_MONTHS	Last 12 months	DURATION
EVDTF_NEXT_4_WEEKS	Next 4 weeks	DURATION
EVDTF_NEXT_FISCAL_QUARTER	Next fiscal quarter	DURATION
EVDTF_NEXT_FISCAL_YEAR	Next fiscal year	DURATION
EVDTF_NEXT_MONTH	Next month	DURATION
EVDTF_NEXT_WEEK	Next week	DURATION
EVDTF_THIS_FISCAL_QUARTER	This fiscal quarter	DURATION
EVDTF_THIS_FISCAL_YEAR	This fiscal year	DURATION
EVDTF_THIS_FQ_TO_DATE	This fiscal quarter to date	DURATION
EVDTF_THIS_FY_TO_DATE	This fiscal year to date	DURATION
EVDTF_THIS_MONTH	This month	DURATION
EVDTF_THIS_MONTH_TO_DATE	This month to date	DURATION
EVDTF_THIS_WEEK	This week	DURATION
EVDTF_THIS_WEEK_TO_DATE	This week to date	DURATION
EVDTF_TODAY	Today	DURATION
EVDTF_YESTERDAY	Yesterday	DURATION
EXP_CURRENCY	Expression - Currency	CURRENCY
EXP_DATE	Expression - Date	DATE

EXP_DAY	Expression - Day	DAY
EXP_DECIMAL	Expression - Decimal	DECIMAL
EXP_NUMBER	Expression - Number	NUMBER
EXP_TEXTFIELD	Expression - Text Field	TEXTFIELD

FILTER CHILD VALUES Field

The FILTER_CHILD_VALUES field is a special field that controls the ability to return, or not return, all matching repeating rows from a query. When this field is placed on a search query layout, a checkbox will appear to the end user when they are using the Standard Query screen. When this is not checked, a query that generates repeating row records will return all the repeating rows within an issue. When it is checked, the query will only return repeating row records that match the remaining filters in the query.

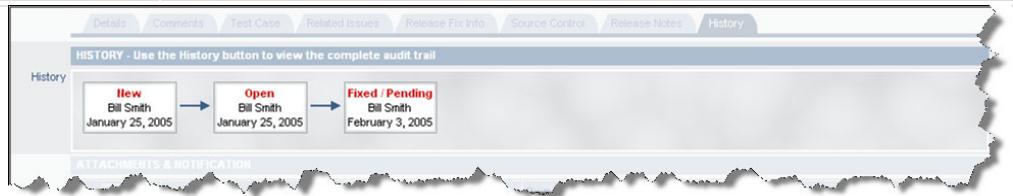
If the user has selected Advanced Query mode, then the option appears a a checkbox at the top of the filter selection list.

Before this field can be placed on a search layout, the behavior setting named FILTER_CHILD_VALUES must be set to have a value of USER.

History Fields

Field Name	Title	Definition
ATTACHMENT	Attachments	This field provides visibility of attachment history within the history of an issue. There is an accompanying permission key named PR_RESOLUTION.ATTACHMENT_HISTORY. This field provides a display of a record of which attachments were added or deleted when the update to the issue was made. However, if you are using the behavior setting named ABBREVIATED_HISTORY, then the attachment history is still shown, as part of each history entry
HIST_RANGE_END	Historic data filter	This field is used as a report filter to show the results as of a specific point in time. If this is selected, the results returned by a query are not the results as of the current time. This allows the user to go back in time and determine what issues looked like as of the date/time entered. This is also used within the <i>evhist</i> CLI command to determine the end date of transactions being generated
HIST_RANGE_START	Historic data filter (start)	This field is used within the <i>evhist</i> CLI command to determine the start date of transactions being generated.
MINI_HISTORY	History	<p>This is a UDF with a Custom display type that can be placed on layouts (typically edit screen layouts and detailed reports. This field generates an area that is about the width of your screen, that displays, by default, the status change dates and the person responsible for the change. If you are creating this field in your own environment, then make certain that you set Allow selection on reports to Yes in the data dictionary, and that you provide read access to the field for the roles that are allowed to see the information.</p> <p>There is a behavior setting named MINI_HISTORY_FIELDS that is used to define the names of the fields that are displayed within the mini-history area. By default, these fields are STATUS, TIMESTAMP and ASSIGNED_TO. The first field is usually the STATUS field, and it is changes in the values of this field that trigger a new box being displayed. You may use any User Defined Field for this first value, as opposed to using the inbuilt STATUS field.</p> <p>Beyond the first value in the list, the only valid fields that can be displayed are: SEVERITY_LEVEL, PRIORITY, STATUS, PRODUCT_NAME, OWNER, TIMESTAMP, ASSIGNED_TO, PRIVACY, LAST_CHANGE_USER, ALT_ID, AREA, PROJECT, CATEGORY, RESOLUTION, PRODUCT_LINE, DATE_LAST_STATUS_CHANGE, CONTACT,</p>

	<p>ORIGINATOR, and HIST_TIMESTAMP. In total, up to five fields can be displayed.</p> <p>You may alter the width and height of the field by setting a width and height (both measured in pixels) into the default value of the field in the data dictionary. Use a delimiter of a semi-colon between the values. For example, a default value of 1000;100 will set the size of the field to 1,000 pixels wide and 100 pixels high. Note that you must be precise with the syntax of the default value as no error checking is performed. If you do not provide a default value, a width of 900 pixels and a height of 80 pixels will be assumed. If the field is placed on a detailed report, then the standard width of the detailed report is used, and the height of the field will automatically expand as required, so that no scrolling takes place. This allows the user to print the detailed report and see all the data. An example is:</p>
--	---



The MINI_HISTORY field

NOTIFICATION_HISTORY	Notification History	This field is placed on History layouts to provide a record of the users who were sent notification at each update of the issue. There is an accompanying permission key named PR_RESOLUTION.NOTIFICATION_HISTORY. This field provides a display of a record of the users who were sent a notification upon the update to the issue. However, if you are using the behavior setting named ABBREVIATED_HISTORY, then the record of email notifications are still shown, as part of each history entry
PRODUCT_NAME_HIST	Historical Product Reference	This field refers to the name of a product (PRODUCT_NAME) within an issue's historic audit trail
RELEASE_FOUND_HIST	Historical Release Reference	History is maintained on repeating records within ExtraView. This field refers to that history
RELATIONSHIP_GROUP_TXNS		This field provides visibility of related issue transactions within the history of an issue. There is an accompanying permission key named PR_RESOLUTION.RELATIONSHIP_GROUP_TXNS. This field provides a display of a record of changes to related issues to the current issue. However, if you are using the behavior setting named ABBREVIATED_HISTORY, then the related issue transactions are still shown, as part of each history entry
STATUS_HIST	Historical Status	Full history is maintained on all status changes to issues. This field refers to the status history

- [Add new comment](#)

ID and ALT_ID Fields

Each item added to the ExtraView database is automatically given an ID. The ID is a sequence which is incremented by one for each issue that is inserted into the database. The field is always read-only to users and developers. It may be used as a filter on reports. The ID is the primary key to all items. The sequence is applied without reference to which Business Area or Project to which the item belongs. For some purposes it is useful to have a unique sequence per Business Area or per Project, with the items within each Business Area or Project being given sequential numbers.

Further, it can be advantageous to provide formatting to this identifier to easily distinguish items in different Business Areas/Projects. This can be achieved through the use of the ALT_ID field. The ID field is still maintained automatically within ExtraView, but the mechanism described here can be set up to provide a unique sequence within the ALT_ID field. You should only set up this mechanism on a new database as existing items are not back-populated with the ALT_ID values. To set up separate sequences for each Business Area:

- Within the data dictionary entry for the ALT_ID field, place a pattern in the default value of ALT_ID

- You should not use the characters < and > within ALT_ID titles

Entering the ALT_ID pattern

This pattern is created as follows:

- o **\$\$AREA.SEQ\$\$**. This is the unique sequence for the area within which the item is being created. You should always include this
- o **\$\$AREA.SHORT_TITLE\$\$**. This is an optional set of characters entered into the definition for the Business Area. For example, you may provide a short title in the Business Area maintenance screen of CR to define a change request and a short title of FR to indicate a feature request. You enter the short title into the **Abbreviated title for ALT_ID** field

Entering an abbreviated title for the ALT_ID

- o Any constant string. For example, you may include punctuation characters such as : and –
- o Replaceable variables of the form **\$\$FIELD_NAME\$\$**. These allow the use of other fields on the input form to become part of the ALT_ID
- o You must not use a space character within the pattern. This ensures that keyword searching is kept simple within installations that have enabled ALT_ID
- o Set a starting number for the sequence at the prompt **Starting sequence number for ALT_ID**
- You must set the behavior setting **ITEM_ID_DISPLAY** to a value of ALT_ID
- Place the ALT_ID field onto all appropriate layouts as opposed to using the ID field. Typically this will be the *add, edit, detailed report, Quicklist* and other similar layouts. You may still set a layout cell attribute of FIELD/LAYOUT VISIBLE IF ID is not null to hide the ALT_ID before the item is saved.

- If you clone an issue, then the new ALT_ID is generated from the default pattern if it is writeable, and the default value for ALT_ID is non-empty.

To use this feature for Projects, within the definition for the PROJECT field, use the above instructions with **\$\$PROJECT.SEQ\$\$** as opposed to **\$\$AREA.SEQ\$\$**.

Examples:

ALT_ID Default Value	Example Output
\$\$AREA.SHORT_TITLE\$\$:\$\$AREA.SEQ\$\$	FR:12345
\$\$AREA.SEQ\$\$(\$\$AREA.SHORT_TITLE\$\$)	12345(CR)

Fields

Field Name	Title	Definition
ALT_ID_START_SINCE	Start Issue ID	In conjunction with ALT_ID_STOP_SINCE, this field is used to establish a search range for issues on any query filter layout. Both this and ALT_ID_STOP_SINCE should be created on the layout. The user can enter the start of a range to search for in this field. If it's left blank, but the ALT_ID_STOP_SINCE field has a value, then all issues with values less than ALT_ID_STOP_SINCE will be returned
ALT_ID_STOP_SINCE	Stop Issue ID	In conjunction with ALT_ID_START_SINCE, this field is used to establish a search range for issues on any query filter layout. Both this and ALT_ID_START_SINCE should be created on the layout. The user can enter the end of a range to search for in this field. If it's left blank, but the ALT_ID_START_SINCE field has a value, then all issues with values greater than ALT_ID_START_SINCE will be returned

KEYWORD Field

This field is used on search layouts to provide a text input box for the purpose of enabling keyword searches through the ExtraView database. This field has the usual security permission key associated with the field, named PR_RESOLUTION.KEYWORD. However, there is a second security permission key, named PR_RESOLUTION.SEARCH_ATTACHMENTS. This also applies to the KEYWORD data dictionary field. If a user role has permission to read this key, then a checkbox appears directly beneath the KEYWORD field. This controls the ability to search attachments as part of the query.

Notepad Field

A Notepad field is deliberately rendered at the a fixed position within *add* and *edit* screens, to provide a non-scrollable area into which the user may enter notes about the current issue. It is usually rendered at the top of the screen. The Notepad field will remain stationary as the remainder of the form is scrolled within the browser window (or panel within a workspace). This screenshot shows how the Notepad field is first rendered on an *add* screen:

Submit Print Page My Add Issue Screen ?

Notes

Customer

Customer Name Phone Number Address Originator Bill Smith

Fax Number Owner *None*

Contract Number Contract Date Renewal Date Actual Renewal Date

Customer Contacts

Customer Contact	Job Title	Email Address	Phone Number	Cell Phone	Fax Number
Description <input type="text"/>		Comments <input type="text"/>			

Attachments

Thumbnail	File Description	File Name	File Size

Notifications

Generate Email CC Email

Include self on interest list Add users to interest list

Include Customer users Mailing List Bill Smith ;

This screenshot shows how the Notepad field remains stationary, when the window is scrolled:

To setup the Notepad field, take these steps:

- On the first row of an *add* or *edit* layout, place the built-in field named EV_NOTEPAD_FOR_LAYOUT. This is a custom field which renders within a fixed area at the top of the layout
- Provide read and write permission for the fields EV_NOTEPAD_FOR_LAYOUT and EV_NOTEPAD for the roles which are used to access the field.
- You may tailor the presentation of the Notepad field with the following layout cell attributes, all placed on the EV_NOTEPAD_FOR_LAYOUT field:

SIZE	This attribute is the width, in characters, of the Notepad field
HEIGHT	This attribute is the number of rows that will be rendered with the Notepad field. A scrollbar appears if you exceed this number of rows
LEGEND: <i>title</i>	The default title to the Notes section is the word Notes . You can change this by entering an HTML MODIFIER where <i>title</i> is the text you want to use to replace the word Notes
BGCOLOR: <i>color</i>	This is entered as an HTML MODIFIER attribute, and allows you to modify the background border color of the Notepad field on the screen. <i>color</i> is a standard HTML color, entered either as a name or as a hexadecimal value
TOP:nn	This is entered as an HTML MODIFIER attribute, and is the number of pixels from the top of the <i>add</i> or <i>edit</i> screen that the Notepad field is rendered. The default is 30 pixels, allowing room for the menubar buttons. This number is automatically adjusted for the user's text size and for workspaces. It is unusual to need to add this HTML MODIFIER as a layout cell attribute, but it may be used to position the Notepad field at the bottom or side of the screen
BODY_OFFSET:nn	This is entered as an HTML MODIFIER attribute, and is the number of pixels from the top of the <i>add</i> or <i>edit</i> screen that the first row of the layout following the Notepad field is rendered. The default is 145 pixels, and is automatically adjusted for the user's text size and for workspaces. The most likely need to add this attribute is if you also add a HEIGHT attribute to the Notepad field or you want to eliminate the offset to position the Notepad field at the bottom or side of the screen.

- The EV_NOTEPAD user defined field is used to store the text that the user enters into the field. You can use this a normal user defined field with a display type of text area, but you cannot place it on the same layout as the EV_NOTEPAD_FOR_LAYOUT field

- You can use the EV_NOTEPAD field, which has a default title of **Notepad**, within reports.

Progress Bars

There are two types of progress bars that can be configured and then displayed on *add* and *edit* screens as well as reports.

Milestone Progress Bars

Milestone progress bars utilize a multi-valued list field that contains the values of the individual milestones. The milestones appear as colored dots indicating which milestones have been reached in the workflow of an individual issue:



The colors of the dots may be styled, but the above example shows the status progress of an issue, where the issue was first given a status of **New**, then moved to a status of **Open**, and is currently residing in a status of **Fixed**. The dot with no color signifies the issue has not reached the status of **Closed**.

The recommended set up for milestone progress bars is as follows. This document will use an issue's status as the example, although it can be based on any list field with any purpose.

First, you define a field in the data dictionary to be used for the progress bar. This must be a field with a display type of **List**. The field properties you define should be:

Property	Value
Multiple value	Yes
Allow selection on reports	Yes
Filter criteria	No
Is sortable	No
Enable interest list	Either Yes or No
Allow Context Menu	Either Yes or No, but usually No
Associate image with values	If you are providing each of the milestone values with an image, then Yes, else No
Allow image to be enlarged	No
Display format	Progress Bar
Remember last value	No
Used for user attributes	No
Display as URL	No
Image for Display as URL	Should be blank
URL	Should be blank
Default value	Should be blank
Help text	Optional, with any text you define
Help URL	Optional

Now, edit the list values for the progress bar you are defining. For our example, here are the values:

Title to display	Image	Sort sequence ▲	Enabled	Provenance	Do Not Migrate	List ID	Created From Import	Created	Last updated
<input checked="" type="checkbox"/> New		10	Yes	UDF UTILITY	No	69577	No	7/28/22 10:08 AM Bill Smith	7/28/22 10:17 AM Bill Smith
<input checked="" type="checkbox"/> Open		20	Yes	UDF UTILITY	No	69582	No	7/28/22 10:08 AM Bill Smith	7/28/22 10:17 AM Bill Smith
<input checked="" type="checkbox"/> Fixed		30	Yes	UDF UTILITY	No	69587	No	7/28/22 10:09 AM Bill Smith	7/28/22 10:16 AM Bill Smith
<input checked="" type="checkbox"/> Closed		50	Yes	UDF UTILITY	No	69597	No	7/28/22 10:09 AM Bill Smith	8/15/22 6:25 PM Bill Smith

The values for this progress bar are kept in step with the values of the STATUS field. The progress bar field is deliberately configured as a separate field from STATUS for two reasons:

1. We are only using a subset of all values of STATUS configured on the site for the progress milestones

2. The field is deliberately set as multi-valued, whereas the STATUS field is singled-valued.

To map the values from the STATUS field to our progress bar field, we define business rules. For the example, note the name of the user defined field we are defining is STATUS_PROGRESS_BAR and it has four values **New**, **Open**, **Fixed** and **Closed**. In addition in the following code example, if the user skips a step / value in the workflow, the color of the bubble on the screen that value remains uncolored.

```
<== load ==>
  if (SCREEN_NAME = 'ADD') {STATUS = 'New'; STATUS_PROGRESS_BAR = 'New'};

<== preupdate ==>
  if ((STATUS.{changed} && STATUS = 'New') || STATUS = 'New') { STATUS_PROGRESS_BAR = 'New' };
  if ( STATUS.{changed} && STATUS = 'Open')    { STATUS_PROGRESS_BAR += 'Open' };
  if ( STATUS.{changed} && STATUS = 'Fixed')   { STATUS_PROGRESS_BAR += 'Fixed' };
  if ( STATUS.{changed} && STATUS = 'Closed')  { STATUS_PROGRESS_BAR += 'Closed' };
```

If the user reverses one or more steps in the workflow, the milestone bubble you move from will remain colored. Additional rules would be required to define what milestone steps should and should not be displayed with each transition.

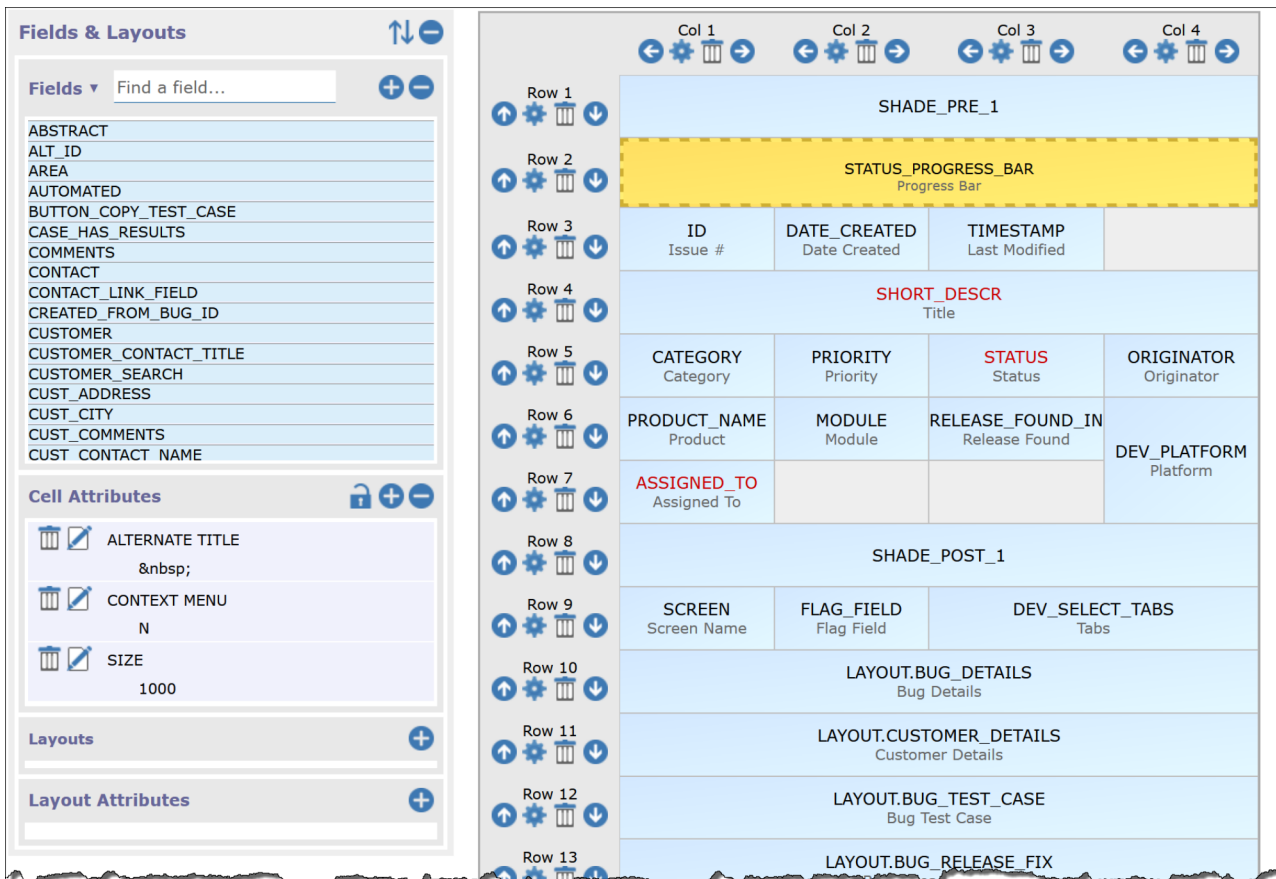
You will not typically display the progress bar field on an *add* layout, as the intent here is to simply set the STATUS to a value of **New** with the *load* directive when the issue is submitted.

There are many permutations of how you can control the appearance of the individual milestone bubbles within the progress bar. For example, you may use layout cell attributes such as *VISIBLE VALUE IF* and *HIDDEN VALUE IF* to control the visibility of individual bubbles. More sophisticated rules may be written to set / reset the colors of the bubbles, especially if you want to allow users to retrace their workflow steps. As an example, after the user moves the STATUS backwards in the workflow, you might rebuild the progress bar as follows:

```
<== preupdate ==>
  if ((STATUS.{changed from: 'Fixed'} && STATUS.{changed to: = 'Open' }
  { STATUS_PROGRESS_BAR.{clear};
    STATUS_PROGRESS_BAR += 'New';
    STATUS_PROGRESS_BAR += 'Open';
  };
```

The Layout

On your EDIT_PROBLEM layout (or an embedded layout within there), you will place you progress bar field:



Note that we gave the STATUS_PROGRESS_BAR field three cell attributes:

Attribute	Purpose
ALTERNATE_TITLE = 	This suppresses the field title on the rendered layout, as the progress bar is self-explanatory
CONTEXT_MENU = No	Turns off the field's context menu. Note that this could be defined as a global layout cell attribute within the data dictionary
SIZE = 1000	Sets the width of the progress bar on the rendered layout

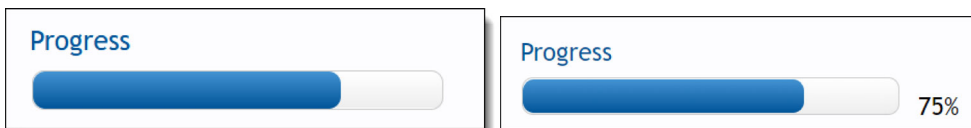
Other layout cell attributes may be defined, typically to set the colors rendered on the buttons.

When users subsequently **Edit** the issue and update the STATUS, the preupdate rules will trigger and set the appropriate milestone value to display.

One important point is that when using progress bars within your workflow to look at many milestones, it may be acceptable to not complete every milestone, or to complete milestones out of order as they appear along the line of values. Milestones that were set as values will be shown in their shaded color, while ones that were never set will appear with a clear background. This visual indicator assists users in seeing the workflow steps more accurately.

Percentage Progress Bars

Percentage progress bars display a single horizontal bar that indicates the percentage towards a goal of a task:



The percentage displayed may be set using a single numeric field with a value between 0 and 100, a calculation based on a single field and the result based as a percentage, or a calculation between two or more numeric fields. The colors of the bars may be styled. It is optional to display the actual percentage value alongside the bar.

The recommended set up for percentage progress bars is as follows. This example is set to show how to express a number as a percentage of 100%.

First, you define a field in the data dictionary to be used for the progress bar. This must be a field with a display type of **Number**. The field properties you define should be:

Property	Value
Allow selection on reports	Yes
Filter criteria	Yes
Is sortable	Yes
Total field on reports	No
Enable interest list	Either Yes or No
Allow Context Menu	Either Yes or No
Render as progress bar	Yes
Negative display	Not used
Thousands separator	Not used
Rounding mode	Not used
Internal precision	1
Report precision	1
Use as a rank field	No
Remember last value	No
Used for user attributes	No
Display as URL	No
Image for Display as URL	Should be blank
URL	Should be blank
Default value	Should be blank
Help text	Optional, with any text you define
Help URL	Optional

You use a business rule to calculate the percentage value you wish to display. For this purpose, we set up the above **Number** field in the data dictionary with a name of `FINAL_PCT`. For the calculation, two numeric fields named `CURRENT_NUM` and `TARGET_NUM`.

The business rule that calculates the percentage is:

```
<== onchange ==>
if (CURRENT_NUM.{changed} || TARGET_NUM.{changed}) {
    FINAL_PCT = CURRENT_NUM;
    FINAL_PCT /= TARGET_NUM;
}
```

The conversion of a decimal value to a percentage of 100 is automatically performed for the user.

To complete the configuration for this example, all three fields `CURRENT_NUM`, `TARGET_NUM` and `FINAL_PCT` are placed on the appropriate *edit* layout.

When either of the two numbers is altered on the rendered layout by the user, the percentage progress bar is immediately updated as per this example:



Progress Bars on Reports

Any progress bar may be displayed on Column Reports and TreeGrid reports. It's worth noting that it can be advantageous to take advantage of the following, for the best presentation of progress bars on reports:

1. After placing the field containing the progress bar on the report, use a right-mouse click on the red button by the field and set the width of the bar as you want it to appear on the report output
2. For percentage progress bars where the value is not important to display, set a global cell attribute of `SUPPRESS_VALUE` within the data dictionary. This will remove the percentage number from all reports you create and is simpler than applying the attribute to each individual *add* or *edit* layout.

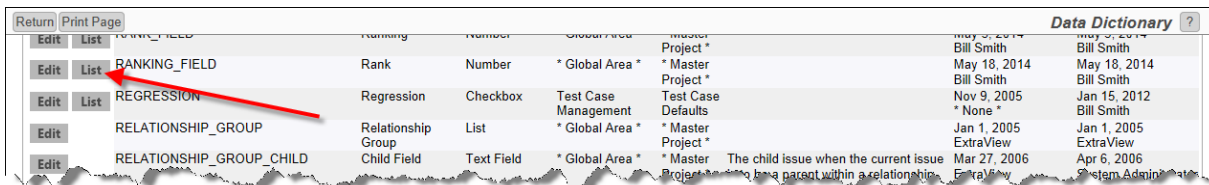
Ranking Fields

Ranking fields allow the end user to order a logical collection of issues. The collection of issues is defined by a filter on the ranking field and can therefore contain any subset of issues within your database. For example, you might have a ranking that contains all the issues in a product release within a product, within a specific business area. An end user may then order the issues within the collection, using the ranking field to depict the ranking of an individual issue. Rank fields have the following attributes:

- A rank field is defined in the data dictionary as a field with a display type of number
- You set an attribute on the field to define its use as a rank field. This ensures the field will behave with its special characteristics
- Rank fields can be updated within an *add* or *edit* screen or within a column report. However the ability to manipulate the ranking of issues on a column report is recommended within a workspace, where the user can drag-and-drop an issue to change its position in the rank. Outside a workspace, an end user can use Quickedit to update the ranking of any field, but the underlying report will need to be manually refreshed to see the updated rankings
- Any one issue may belong to different rankings, and have a different position in the ranked order for each of these different ranks. Each of these different rankings is specified with a different ranking field
- Each of the ranking fields that pertain to an issue should, at minimum, be placed on the *edit* layout of the issue. You may hide the field(s) from users
- Although rank fields may be placed on *add* and *edit* layouts, they are not placed within the audit trail (history) of the issues. The principal reason is that when a user is using a report to rank their issues, they may perform many, many re-rankings within a short space of time. These interim rankings have little value within the audit trail, and if, for example, a user places a top-ranked issue at the bottom of 1,000 issues within the ranking report, 1,000 updates to history would need to be made. This would lead to a very unresponsive and slow user interface.

Creating a Ranking Field

1. Within the data dictionary, create a field with these attributes:
 1. A valid **Business Area**, or ** Global Area **
 2. A valid **Project** or the ** Master Project **
 3. **Field Belongs** to must be *Issue records*
 4. Any valid **Fixed name**
 5. Any valid **Title**
 6. A **Display type** of *number*
 7. Set **Use as a Rank Field** to *Yes*
 8. Set **Allow selection on reports** to *Yes*
 9. Set **Filter criteria** to *Yes*
 10. Set **Is Sortable** to *Yes*
 11. **Add** the field
2. The new field you created has a **List** button, as shown in this screenshot. This button accesses the screen where you create and maintain specific ranking definitions for the ranking field



3. Click the **List** button and then click the **Add** button to add a new definition for the ranking field. The entries on this screen are used to define filters to select the scope of the ranking. Only issues that fall within the collection of issues defined by this scope can be ranked with this filter. Only fields with display types that are enumerated lists can be used to define the scope of the ranking. For example, list, multi-valued lists, radio button, user and tab fields may be used as filters for the definitions, but you cannot use numeric type fields

Select Field	Operator	Value
Area(AREA)	equals	* Any * Clients Contacts Customer Support Engineering Issues
and	equals	* Any * * None * Question Feature Enhancement Product Bug
and	equals	* Any * * None * P 1 P 2 P 3

Note that you will be creating one or more reports that use this ranking definition, and these reports may have filters that display a subset of the issues within the scope of the ranking

4. **Add** the ranking definition to the database
5. You may create many ranking definitions for one ranking field.

Using Ranking Fields

Ranking fields can be placed on *add*, *edit* layouts and reports. The use of a ranking field within an *add* or *edit* layout is somewhat limited in that you only have a view of that issue, and not the complete collection of issues within the ranking. Consideration should be made to making the ranking field read-only, through the use of the **read only if** layout cell attribute. You may also hide the field on the layout if you do not wish users to modify its value within issues.

Their primary use is within workspaces, where the user might want to rank a large number of issues at one time. This is documented on the page [Ranking Reports](#).

Relationship Group Fields

Field Name	Title	Definition
RELATIONSHIP_GROUP_ID	Relationship Group	The internal ID of a relationship group. The only significant change an administrator should make to this field is to alter the title "Relationship Group"
RELATIONSHIP_GROUP_REMOVE_BTN	Remove ?	When this is placed on a related issue layout, it allows the user to remove the issue from the relationship group
RELATIONSHIP_GROUP_OWNER	Relationship Group Owner	This field is used to specify the user ID of the owner of a relationship group. The only significant change an administrator should make to this field is to alter the title "Relationship Group Owner"
RELATIONSHIP_GROUP_TITLE	Relationship Group Title	This field is used to specify the title of a relationship group. The only significant change an administrator should make to this field is to alter the title "Relationship Group Title"
RELATIONSHIP_GROUP_TYPE	Relationship Group Type	This field is used to specify the type of relationship group. This field is for ExtraView internal use only

STATUS Field

The STATUS Field

The STATUS field has several properties that separate its functionality from other fields, including other inbuilt fields. As its name implies, it is used to track the *status* of issues as they transition through the workflow you configure. The handling of the STATUS field has these properties –

- The STATUS field is used on issues to manage workflow. There is a complementary field available for repeating rows named RELEASE_STATUS. Both fields share the same set of values and the same workflow. The values for both lists are defined within the STATUS field list
- You may set up workflow around the transitions of the states of an issue between the STATUS values. This workflow may be set up role-by-role or product-by-product. It may also be set up globally and inherited by different business areas and projects, or it can be set up individually within any business area and project combination
- The STATUS field is unique in that each value (such as *Open* or *Closed*) is given two security permission keys, one for adding and one for updating issues. If the user does not have write permission to a STATUS add value, then the value will not be displayed in the STATUS list. If the user does not have permission to the key when updating an issue, they will still see the value in the list, but they may not select that value from the list and update the issue. They may still edit and update the issue with other STATUS values to which they do have permission. They simply cannot update the issue to a value of the STATUS field to which they do not have permission. This functionality is desired as a user may have permission to update an issue, but they may not have permission to update to an individual STATUS value. When in query screens, the user will see all STATUS values, irrespective of whether they have read or write permission. If you require to hide STATUS values from users, consider using an allowed value relationship, where STATUS is the child, and use this capability to control the visibility of individual STATUS values.

STATUS_TRANSITION Field

This is defined within the data dictionary as a UDF with a display type of **Custom**. This field provides an alternative to the STATUS field, offering a visual way of highlighting the status of an issue and showing exactly which statuses are valid to transition the issue to, obeying the workflow and status change rules. It looks like this:



The STATUS_TRANSITION field

The current status is highlighted. The user can click on any of the statuses shown, in order to transition the issue to that status. For this to operate, you should retain the STATUS field on the same layout, but you may hide this from the user, using a layout cell attribute of FIELD STYLE. For example, setting a value of **display:none** will hide the STATUS field list. Setting an alternate title of a space character will hide the label to the STATUS field on this form. Only the STATUS_TRANSITION field will be displayed in an editable form - actually it's a clickable field.

If the STATUS field is displayed on the same screen as opposed to being hidden, then both the STATUS and STATUS_TRANSITION fields will work in tandem.

You may alter the width and height of the field by setting a width and height (both measured in pixels) into the default value of the field in the data dictionary. Use a delimiter of a semi-colon between the values. For example, a default value of **1000;100** will set the size of the field to 1,000 pixels wide and 100 pixels high. Note that you must be precise with the syntax of the default value as no error checking is performed. If you do not provide a default value, a width of 900 pixels and a height of 80 pixels will be assumed.

Tag Cloud Fields

A **Tag Cloud** field is a graphical representation of the values in a list field. The values in the **Tag Cloud** field are clickable to allow the user to select or de-select them; selected values are highlighted with the color configured in the HIGHLIGHT_COLOR behavior setting. The **Tag Cloud** field is configured in the following manner:

- A UDF with a display type of List. This is termed the **source list field**. This contains the list of values in the tag cloud
- A UDF with a display type of Custom. The name must start with the same name as the **source list field** and end in **_TAG_CLOUD**
- Optionally, the Default value field in the Data Dictionary entry for the custom field can be configured with the following parameters for rendering the field:
 - height=NNN (default 100)
 - width=NNN (default 900)
 - columns=NNN (default 10)

Multiple parameters must be separated by commas. E.g, **height=90,width=800,columns=7** overrides all the default values. You need not specify all the all parameters. E.g, **columns=5** renders list values in five columns with the default height and width.

On the *Add* or *Edit Screen* layouts, both the **source list field** and the **Tag Cloud** fields must be included, where the **source list field** must precede the **Tag Cloud** field in order on the layout, i.e, the Tag Cloud field must be on a row and column higher than the **source**

list field. The **Tag Cloud** field includes support only for the REMOVE_NONE layout cell attribute, which removes the *None* value from the list of values rendered; all other layout cell attributes configured on the **Tag Cloud** field are ignored.

Layout Editor Tip: In order to hide the source List field and make only the Tag Cloud field visible to users, configure the source List field with the following layout cell attributes:

- FIELD ALTERNATIVE TITLE = " " (a blank space; this will replace the original title of the source List field)
- FIELD STYLE = display:none (this will cause the values drop-down box to be hidden)

This will cause the **source list field** to be rendered on the screen in a hidden mode, but still be accessible to internal routines that are used to communicate between the source list and Tag Cloud fields. Other layout cell attributes configured on the source List field, such as FIELD REQUIRED, will continue to be enforced. Note that using the FIELD/LAYOUT VISIBLE IF layout cell attribute to hide the source List field will disable the Tag Cloud field functionality.

The Security Permissions configured for the Tag Field affect how the values are rendered: if readonly, then values are displayed as plain text without hyperlinks; if read/write, then values are displayed as hyperlinked text.

Telephone Number Fields

ExtraView has the ability to enter phone numbers which will be formatted automatically and will, to a reasonable extent, be verified as correct numbers. For example, US entries that begin with the number 0 will be assumed to be incorrect. This feature will also automatically format international telephone numbers. When a field is configured to view international telephone numbers, it will also display a flag of the country. On an *add* or *edit* screen, when making a selection, the field will look like this:



The phone number field is created with a display type of **text field**. The feature is enabled with these steps:

- Consider whether you want to format and store phone numbers from more than the USA. If so, you want to ensure that the behavior setting named PHONE_NUM_STORE_COUNTRY_CODE has a value of YES. The fields will then store the country code along with the phone number and will display a country flag in the selection list. If the value is NO, the assumption is that all phone numbers are within the USA and there is no need to store the +1 prefix
- Create a field with a display type of text to store the phone number
- Place a layout cell attribute on the form where the feature is to be enabled, or place a global attribute of PHONE_NUMBER on the field. It is of more general use to use the global attribute within the data dictionary, as this will enable the feature on all forms where the field is placed
- Place the field on the *add* and *edit* screens where it is required.

Once configured, the user only needs to enter the digits of the phone number, and the appropriate spacing and formatting is applied automatically.

Text Type Field Special Properties

URL's and Links

A special end-user property of text fields is that if they enter a URL into the field, then when the field is rendered on a report, or the field is rendered in a read-only mode, the URL becomes a hyperlink to the URL. For example, if you enter <http://www.mycompany.com> or www.mycompany.com into a text field, then it will appear as <http://www.mycompany.com> or www.mycompany.com on a report, and if you click the text, a new window will open at the address of the URL. This behavior is extended one step further. Assuming that the title for the ID field in your instance is **ID #**, then entering **ID # 12345** into a text field, will provide a link on reports and read-only versions of the field, to the detailed report view of the issue with the ID of 12345. If the title to the ID field is **Report Number**, then the end user would enter **Report Number 12345** for the same effect.

Rendering HTML within a Field or within a Field Title

It is possible to render HTML within a field on a report which has a display type of either text area, print text or log area. This is separate from the capability offered with fields with a display type of HTML Area, which is the recommended way of handling fields that will routinely hold HTML. The normal behavior with text area, print text and log area fields is that ExtraView will “escape” the sent being sent to the report in the browser. For example, HTML being sent to a field of these types will be shown as HTML and not rendered within the browser. This is the normal mode of working, as ExtraView is often used to track defects or bugs that refer to HTML code. There are some circumstances when you may want to actually view the code rendered as HTML within the text field. In order to do this, place the following text within the text field as you create –

```
<!-- generated valid html - don't escape! -->
```

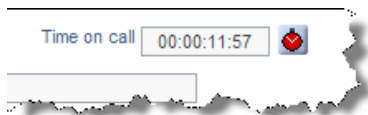
All code following this, until the end of the field will be rendered in the browser. It is the user’s responsibility to ensure the code placed following the above text is valid HTML and will render appropriately. One interesting side effect of this feature is that you can legitimately place a complete program, along with buttons, forms and JavaScript within a field!

The field can be populated with code within user custom routines. For example, a field on an *add* or *edit* screen can contain the complete results of a query in report format.

This convention can also be used to decorate field titles and default values in the data dictionary.

Timer Field

The function of this field is to create an onscreen timer that is used to measure how much time is spent processing an issue. The timer may be initialized on an *add* or *edit* layout in either the **on** or **off** state using the default value of the **TIMERFIELD**. Assuming the timer is **on**, then time is accumulated in the field with each successive edit session. The user will see the timer updating each second that it is turned on.



Timer field on a layout

At this time, only one timer field is supported in an installation within a business area. To configure the timer, you must have the following fields defined in the data dictionary:

Field	Configuration
TIMERFIELD	Display type – Custom Allow selection on reports – No Default value – On or Off Help text – The time spent working on this issue This field may be placed on an <i>add</i> or an <i>edit</i> layout and presents the timer to the user, with a button that is used to turn the timer on and off. Being a custom field, it is not possible to report on this field, therefore a second field is defined which is used to provide reporting.
TIME_ON_CALL	Display type – Text Field Allow selection on reports – Yes Filter Criteria – Yes Is Sortable - Yes Help text – The time spent working on this issue This field is maintained by ExtraView custom code and takes its value from the TIMERFIELD when an issue is inserted or updated.

User Fields

These fields are additional to the inbuilt user fields of **OWNER**, **ORIGINATOR**, **CONTACT** and **ASSIGNED_TO**.

Field Name	Title	Definition
LAST_CHANGE_USER	Changed by	This is the user ID of the user who last updated the issue.

USER	*Current User Name*	This field adopts the value of \$\$USER\$\$ when used. ExtraView interprets this value as the user ID of the user who is signed on to the current session.
------	---------------------	--

User Fields with Different Display Formats

The display format of user fields is globally set using the behavior setting named `USER_LIST_DISPLAY`. This is set to either a value of **LIST** or **POPUP** to determine how all user fields on the user input screens will appear.

You can set an Optional Attribute in the data dictionary for any field with a display type of user. This Optional Attribute is also named `USER_LIST_DISPLAY`. Setting this to either **LIST** or **POPUP** will override the behavior setting, giving you control over the way user's input values into each field with a display type of user.

Note: You should not try to set the attribute of `USER_LIST_DISPLAY` as a Layout Cell Attribute within the Data Dictionary. This is not supported. You must set the attribute as a global attribute for the field, in the data dictionary.

Multi-Valued User Fields

To configure a User field as a multi-valued field perform the following steps:

- Create the field in the data dictionary with a display type of **User**
- Note that there is not an option on the initial data dictionary screen to make the field multi-valued
- Click on the **Global Attributes** tab
- Add a new global attribute of type **USER LIST DISPLAY** with a value of **POPUP**
- You should now set the data dictionary value for **Auto-Complete** to an appropriate value for the field.

User Fields with Images

The images for users are sourced from within each user's account. The user may upload their own photograph to their account.

Within the data dictionary, set the option **Associate image with values** to **Yes**. The field will then be rendered on *add* and *edit* forms, and on reports, with the user's image.

Behavior Settings

Behavior settings control many aspects of ExtraView behavior. Behavior settings tend to be set up with your initial configuration and then retain that value for ExtraView to behave the correct way for your purpose.

The behavior settings are grouped together in like categories, and each category forms one of the following pages. All settings can be modified by clicking on the *Value* field. If the setting must have a specific value from a list, then the administrator can choose the value from the list. If the *value* is a text entry, then that can be entered or updated after clicking on the *Value*.

The Behavior Setting utility offers the ability to filter the settings list by using the search boxes at the head of each column in the display. If you make a partial entry, e.g. typing DATE into the **Database Field** search box, then only fields which contain the term DATE will be displayed. Clicking on the column header will sort the values by that column.

Categories can be chosen by using the * **Search** * select list.

Behavior Settings

Show Filters

Database field	Value	Description	Category
ABBREVIATED_HOME_PAGE	NO	A value of NO will display the sign on message and up to three user-defined reports on the Home Page. A value of YES will only display the sign on message	Reporting / Querying
ADMIN_LIST_SIZE	1000	This number will determine how many records will be displayed on any administrative list. If the number of rows to be displayed exceeds this behavior setting value, then the records are not immediately displayed. Instead, there will be a drilldown capability, with the administrator being able to search the list, or to use the first character of the entry they are searching for to see a limited number of entries. Note that if a negative number is used, then the functionality remains the same, except the search capability is compressed on the screen, to a single line.	Display
ADMIN_LIST_SIZE_MIN	50	Below this number, any administration list will not display the button which allows the set of filters to be displayed. This prevents the display of a button on moderate-sized lists where no filtering is typically needed.	Display
ADMIN_OVERRIDE_ROLE	ADMIN	This is the name of the user role that has enhanced privileges, allowing them to override status change rules and to alter the MS Office character set of users.	Workflow
ADMIN_RECORDS_PER_PAGE	20,100,500	This sets the values available for the Filter List Display Size on the User Account Maintenance page for the records per page setting.	Display
AD_HOC_EMAIL_FROM_ADDRESS	xxx@mycompany.com	This is the default return address for emails sent using templates. Templates are emails sent by using the Email button on the edit screen of issues or by emails sent with business rules. You may override this setting within each PROJECT in the list management screen for the PROJECT field	Email
AD_HOC_EMAIL_FROM_SENDER	My Company	Name for the user specified in the setting named AD_HOC_EMAIL_FROM_SENDER that template email originates from. This setting is text that is inserted into the header information of the outgoing notification along with the email address. You may override this setting within each PROJECT in the list management screen for the PROJECT field	Email
ALLOWED_ATTACH_SEARCH_FILE_EXT	application/pdf,application/msword,application/vnd.ms-excel,text/csv,text/html,text/plain,text/rf	This is a list of the allowed mime types for attachment files to be searched for keywords, when the user checks the "Search Attachments" box. If the file in the list to be searched does not have one of these mime types, it is skipped. This is used to skip searching of files such as image files, to speed the search process	Reporting / Querying
ALLOWED_VALUES_ON_QUERY	YES	This setting enables or disables the use of allowed values when creating filters for queries that use advanced filters. When set to YES, the child values in filter fields will only display allowed child values, assuming the parent value has already been selected in a filter that the user has already created. All values will be displayed in child allowed value lists when the setting has a value of NO.	Reporting / Querying
ALLOW_ANONYMOUS_API_ACCESS	NO	When this is set to YES, users can make calls to the API, without having a valid user name and password. Typically used when you are integrating ExtraView within your own website, and you do not want to give your external users (usually your customers) a user ID within ExtraView. Use this in conjunction with ANONYMOUS_API_USER_ID. Valid values are YES and NO	API

When updating the value in a behavior setting by clicking on the value, the behavior is different according to the type of field:

- If the value is to be set at one of a specific list of valid entries, all the possible entries are displayed in a list, and you choose the appropriate one
- If the value contains a color, then a color picker is displayed when you click on the value, allowing you to choose from one of many preset colors or to enter your own value
- If the value contains text, an editable text field opens and you can enter the appropriate value.

API Settings

This section of behavior settings deals with API settings. The available settings are:

System Controls menu- API Settings	Typical Value	Description
ALLOW_ANONYMOUS_API_ACCESS	NO	When this is set to YES, users can make calls to the API, without having a valid user name and password. Typically used when you are integrating ExtraView within your own website, and you do not want to give your external users (usually your customers) a user ID within ExtraView. Use this in conjunction with ANONYMOUS_API_USER_ID. Valid values are YES and NO
ANONYMOUS_API_USER_ID	guest	If you have ALLOW_ANONYMOUS_API_ACCESS set to YES, this is the user ID that is set within issues as the ORIGINATOR
ALLOW_CLI_UPDATE_ORIGINATOR	YES	YES will allow a user to update the ORIGINATOR field through the CLI
CLI_EDIT_MULTI_VALUE_FIELDS	NO	Indicates whether you can edit multiple value UDFs through the CLI
DEFAULT_TEXT_REPORT_DELIMITER		Single character to place between data fields on text reports. When you output results to a text file, or through the API / CLI, this character is used to delimit the individual fields
MAX_REPORT_TEMP_FILE_HOURS	2880	This is the number of hours for which temporary report files used by the API will be kept on the file system of the server. Following this number of hours, the temporary files are removed by ExtraView.
MULTI_RELEASE_XML	NO	To enable multiple release to be output to XML through the API. Valid values are YES and NO

Authentication Settings

This section of behavior settings deals with LDAP, SSO and SAML settings. The available settings are:

Behavior Setting	Value	Description
ALLOW_SSO_AT_SIGN	NO	If set to YES, SSO user id's will be generated from the SSO primary key in its entirety. If set to NO, the User ID within the header is treated as a potential email address, and the characters preceding @ are assumed to be the User ID within ExtraView. For example, if the User ID within the header is john_smith@mycompany.com, then the resultant User ID is assumed to be john_smith
CUSTOM_AUTHENTICATION	NO, YES, HYBRID, LDAP, LDAP-HYBRID, SAML	This setting can have one of five values, NO, YES, HYBRID, LDAP or LDAP-HYBRID. When the value is NO, ExtraView uses its standard inbuilt authentication. If it set to YES, custom authentication (with user custom code) will be used rather than using the inbuilt user authentication scheme. If the value of HYBRID is selected, then ExtraView attempts to perform the custom authentication first. If this is unsuccessful, then the standard inbuilt authentication method is called. If it set to LDAP, LDAP authentication will be used rather than the inbuilt user authentication scheme. If the value of LDAP-HYBRID is selected, then ExtraView attempts to perform the LDAP authentication first. If this is unsuccessful, then the standard inbuilt authentication method is called. When the CUSTOM_AUTHENTICATION behavior setting is set to YES and a user's account is updated with the Expire password checkbox being checked, then if the custom authentication routine returns true indicating that the authentication was successful, the Change Password form is presented to the user during the login process. When the CUSTOM_AUTHENTICATION behavior setting is set to HYBRID and the user's account is set to expired (same as above), then it does not matter what the custom authentication routine returns as long as the credentials are valid, and the Change Password form is also presented for the user to change their password.
ENABLE_DEVICE_VERIFICATION	NO	When this setting has a value of YES, then ExtraView will perform an additional check when users sign on. If the user is signing on from an unrecognized browser or device, an email is sent to the user with a code they need to enter to have that browser or device recognized as a trusted source
ENABLE_TWO_FACTOR_AUTH	NO	When this setting is YES, ExtraView will require a second level of authentication before allowing the user access to their account. This second authentication factor is via an email sent to the user with a verification code that must be entered before the user enters their account
LDAP_ALLOWED_STALE_INTERVAL	240	The minimum number of minutes between LDAP upsert operations on a single user. This stops ExtraView accessing the LDAP server with every operation that requires user information in order to optimize performance. After this interval, a fresh check of the LDAP server is made
LDAP_DEFAULT_AREA	<AREA_ID>	The default area_id to be set when adding a new user by retrieving their details from the LDAP server
LDAP_DEFAULT_PROJECT	<PROJECT_ID>	The default project_id to be set when adding a new user by retrieving their details from the LDAP

		server
LDAP_HOST	ldaps://<hostname>:<port>	The URL to the LDAP server, e.g. ldap://blah.com:389
LDAP_MANAGER	<DN_FOR_USER_LOOKUP>	The “Security Principal” or user accessing LDAP
LDAP_PSWRD	<LDAP_MGR_PASSWORD>	The password to the LDAP server. Note that this does not appear in clear text, but as a row of asterisks.
LDAP_ROOT	<SEARCH_BASE_DN>	The root directory of the LDAP server or search base, e.g. ou=blahWorker, o=blah.com
LDAP_SEARCH_FILTER		LDAP filters may be defined in the behavior setting or may be defined in the Configuration.properties file. The behavior setting takes precedence over the Configuration.properties entry. LDAP filters are defined in RFC 2254. As an example, if you wanted to add a filter to only retrieve records with mycompany within the email address, you could set this as the filter: (mail=*mycompany*) The parentheses are essential.
LDAP_UPSERT	YES	This setting controls upserting LDAP information to ExtraView. The possible values are YES or NO. When this value is NO, LDAP will not be used to add or update ExtraView user information. A valid LDAP user that is not already an ExtraView user will not be able to log in to ExtraView. When this setting is set to YES, the LDAP Background Task must be configured and must be running. The timer in LDAP_ALLOWED_STALE_INTERVAL is used to refresh the LDAP cached information within ExtraView. The information within ExtraView for a user is also refreshed when the user signs on.
LDAP_UPSERT_DEFAULT_USER_ROLE	<EXTRAVIEW_ROLE>	If this setting contains a valid role, then this is the role a user is given when the LDAP upsert takes place. If this setting does not contain a value, then the role defined in the behavior setting named LIMITED_USER_ROLE is used instead.
LDAP_USER_LOOKUP	YES or NO	When this behavior setting is set to YES, whenever a user performs an operation to lookup the details of another user, ExtraView will ask the LDAP server for the information. At the same time this is done, the information for the user within ExtraView, will be synchronized with the information within the LDAP record
SAML_ASSERTION_CONSUMER_URL		The URL of the consumer service that receives the authentication response from the SAML IDP. This is the URL that invokes the Consumer Servlet. This field is required to be set when CUSTOM_AUTHENTICATION = SAML
SAML_AZURE_ENCODING	NO	This setting may be YES or NO. It defines whether or not to URI encode the Base64-encoded AuthnRequest in the SAML 2.0 protocol
SAML_ESIG_MODAL_WINDOW		Setting this to a value of YES will cause the system to display E-signature validation in a modal popup window when using SAML authentication. If not set to YES, the system will display a child a popup window
SAML_PASSWORD_AUTHEN_CTX	YES	When using SAML as an authentication protocol, setting this to a value of YES will cause the system to add the user's password to the AuthnContextClassRef, otherwise an empty value will be added. Normally this should have a value of YES.

SAML_SSO_SERVICE	<some url>	When using the SAML authentication protocol, this is the URL of the SSO service to which the SAML SP sends an authentication request. This URL points to a target in the IDP
SAML_SSO_SP_ENTITY_ID		The SP Entity ID is typically the URL or other identifier given by the Service Provider (SP) for the SAML authentication service that uniquely identifies it to the IDP
SSO_DEFAULT_AREA	0	This setting is used to identify the Business Area ID for a new user being created within ExtraView, when SSO headers authenticate the new user, and it is the first time the user has signed on. In this case, the user is created automatically and this Business Area ID is associated with the user.
SSO_DEFAULT_PROJECT	0	This setting is used to identify the Project ID within the Business Area specified in SSO_DEFAULT_AREA, for a new user being created within ExtraView, when SSO headers authenticate the new user, and it is the first time the user has signed on. In this case, the user is created automatically, and this Project ID is associated with the user. Set this to zero if you do not want to associate the user with a specific Project, but you have set SSO_DEFAULT_AREA to a value
SSO_SIGNOFF_REDIRECT_URL		This is a URL to which the user is directed, after signing off from ExtraView
SSO_STATE	NO	Enable Single Sign On in this instance (YES/NO)

Company Information Settings

This section of behavior settings deals with Company Information settings. The available settings are:

System Control menu- Company Information Settings	Typical Value	Description
COMPANY_ADDRESS1		The company's address
COMPANY_ADDRESS2		Second line of your company's address
COMPANY_CITY		The company's city
COMPANY_EMAIL		The company's general email address
COMPANY_NAME		The company's name
COMPANY_PHONE		The company's phone number
COMPANY_STATE		The company's state
COMPANY_ZIP		The company's postal or zip code
EXTRAVIEW_TITLE	ExtraView	This is the title used on browser tabs. You may alter this value to brand your site
LICENSE_INSTALL_EXPIRATION_DAT		This setting defines the date after which the license key may no longer be installed
LICENSE_UPGRADE_VERSION		This setting contains the VVV.SSS version of code beyond which the site cannot be upgraded by the administrator, unless a new activation key is obtained from ExtraView
LIMITED_USER_UPDATABLE_FIELDS	CUSTOMER_COMMENTS, ATTACHMENT, PRIORITY	This setting contains the comma-separated field names of fields that may be modified by a limited user

Display Settings

This section of behavior settings deals with Display settings. The available settings are:

Workflow menu- Display Settings	Typical Value	Description
ADMIN_LIST_SIZE	1000	This number will determine how many records will be displayed on any administrative list. If the number of rows to be displayed exceeds this behavior setting value, then the records are not immediately displayed. Instead, there will be a drilldown capability, with the administrator being able to search the list, or to use the first character of the entry they are searching for to see a limited number of entries. Note that if a negative number is used, then the functionality remains the same, except the search capability is compressed on the screen, to a single line
ADMIN_LIST_SIZE_MIN	50	Below this number, any administration list will not display the button which allows the set of filters to be displayed. This prevents the display of a button on moderate-sized lists where no filtering is typically needed
ALLOW_HELP	YES	When this is set to YES, tooltip help is displayed when placing the mouse over a field label on the add and edit screen and clicking on the field label will result in a pop-up window with help on the field. When the value is set to NO, no tooltip or pop-up window is generated
AUTO_SCROLL_TO_CLICKED_LAYOUT	NO	If this value is set to YES, then when a user clicks on a field within an embedded layout which causes a screen refresh, the screen is automatically scrolled to the top of the embedded layout. This can be useful if you have relatively long add and edit screens, as it takes the user to the same area of the screen on which they were working, as opposed to seeing the top of the form on each refresh. If this value is NO, the screen refresh leaves the user at the top of the form.
BG_ALT_COLOR	#DEF0F8	Alternative background color for tables. Used as a complementary color to BG_COLOR
BG_COLOR	#dddddd	Background color for tables. Used as a complementary color to BG_ALT_COLOR
BORDER_COLOR	#C7C9C7	Border colors on the Search / Report page
CACHE_AREA_PROJECT	YES	Specify YES to allow the caching of area/project dropdown lists in templates built internally from layouts. Specify NO to force a dynamic refresh of the area/project list for each screen refresh in <i>add</i> or <i>edit</i> mode. This should always be YES unless there is some dynamic list modification by USER_CUSTOM code.
CALENDAR_STYLE	fancyblue	Use this setting to set the color and style of the popup calendar used to select dates. Valid entries are aqua, bluexp, fancyblue, forest, green, greengrass, maroon, win2k, winter, winxp, wood and yellow
CLICK_LOCKDOWN_TIMEOUT_SECS	0	The number of seconds to wait after an <i>add</i> or <i>edit</i> screen begins loading to unlock the page for mouse clicks and input. The minimum, and the default setting is that ExtraView will wait for up to 20 seconds for an Ajax server response. This option should be set higher if you have a number of users who have very low bandwidth access to ExtraView and as a result, the <i>add</i> and <i>edit</i> screens take a very long time to load. This setting prevents the user

		seeing errors if they attempt to set a value in a field which causes a screen refresh, but the initial screen has yet to complete loading.																
DATE_FORMAT	DD-MON-YYYY hh24:mi	Default format for displaying date fields (do not include seconds)																
DB_TIMEZONE	PST	The time zone of the database server and the reference from which all local times are calculated for each user. This value should be set on the initial installation of ExtraView, and it should not be altered from that time. Altering this behavior setting to a different time zone will cause all timestamps in the system to be displayed with a different value than with which they were created. Normally, this time zone should be the same time zone of the system clock of the server on which the installation resides. Note that you must restart the ExtraView server for this setting to take effect																
DEFAULT_DATE_FORMAT	MEDIUMDATE	<p>The system default date format for presenting user's data. This may be one of the following, with the result of the example shown:</p> <table border="1"> <tr> <td>SHORTDATE</td> <td>11/28/03</td> </tr> <tr> <td>MEDIUMDATE</td> <td>Nov 28, 2003</td> </tr> <tr> <td>LONGDATE</td> <td>November 28, 2003</td> </tr> <tr> <td>FULLDATE</td> <td>Friday, November 28, 2003</td> </tr> <tr> <td>SHORTDATETIME</td> <td>11/28/03 7:20 AM</td> </tr> <tr> <td>MEDIUMDATETIME</td> <td>Nov 28, 2003 7:20:08 AM</td> </tr> <tr> <td>LONGDATETIME</td> <td>November 28, 2003 7:20:08 AM WST</td> </tr> <tr> <td>FULLDATETIME</td> <td>Friday, November 28, 2003 7:20:08 AM WST</td> </tr> </table> <p>In addition, this may be set to a custom format. For example, you might set DEFAULT_DATE_FORMAT to a value such as <i>yyyy-MM-dd hh:mm:ss</i>, in which case this becomes the default date format used to present dates to the user. See the Appendix on date formats for an explanation of valid formats.</p>	SHORTDATE	11/28/03	MEDIUMDATE	Nov 28, 2003	LONGDATE	November 28, 2003	FULLDATE	Friday, November 28, 2003	SHORTDATETIME	11/28/03 7:20 AM	MEDIUMDATETIME	Nov 28, 2003 7:20:08 AM	LONGDATETIME	November 28, 2003 7:20:08 AM WST	FULLDATETIME	Friday, November 28, 2003 7:20:08 AM WST
SHORTDATE	11/28/03																	
MEDIUMDATE	Nov 28, 2003																	
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FULLDATE	Friday, November 28, 2003																	
SHORTDATETIME	11/28/03 7:20 AM																	
MEDIUMDATETIME	Nov 28, 2003 7:20:08 AM																	
LONGDATETIME	November 28, 2003 7:20:08 AM WST																	
FULLDATETIME	Friday, November 28, 2003 7:20:08 AM WST																	
DEFAULT_CHART_FONT	Arial, Helvetica, sans-serif	The font used for the body of almost all pages. It is suggested that you provide three font names, in the order of preference, as different browsers, on different platforms may only have access to some of the fonts in the list																
DEFAULT_PDF_FONT	Arial	The default font for selection as the text font for PDF's. It is essential that this font exists on the server and contains all the characters you are likely to display in Adobe PDF documents. This is particularly important if you are working in a double-byte language such as Japanese.																
DISPLAY_EMPTY_REPORT_FOLDERS	NO	If you set this to a value of YES, then the report tree on the report screen will display report folders that have no reports stored within them. The typical use is to hide these empty folders with a value of NO.																
DISPLAY_ICONS_ON_MENU_BUTTONS	YES	When this is set to a value of YES, all buttons on the menubars of all screens will have a graphical icon alongside the text on the button. Note that the icons on menubar buttons on <i>add</i> and <i>edit</i> screens are set within the data dictionary fields for each button																

DISPLAY_SIGNON_PROD_INFO	YES	If this is set to a value of YES, ExtraView will display marketing information sourced directly from ExtraView's servers
DISPLAY_SIGNON_URL_1	http://prodinfo.extraview.com/site/content/product-information-1	This is the URL of the right-hand frame sent to the sign on page if DISPLAY_SIGNON_PROD_INFO is set to YES. Care should be taken to ensure you enter a valid absolute URL into this field
DISPLAY_SIGNON_URL_2	http://prodinfo.extraview.com/site/content/product-information-2	This is the URL of the left-hand frame sent to the sign on page if DISPLAY_SIGNON_PROD_INFO is set to YES. Care should be taken to ensure you enter a valid absolute URL into this field
EDIT_TAB_TITLE	ExtraView - \$\$ID\$\$	This is a template for the title of browser tabs within <i>edit</i> screens. Characters within \$\$ delimiters are required to be valid field names within the data dictionary. Allow for the fact that browser tab titles are not very long, and therefore you may not see the entire title generated. This setting is the system-wide default but a different template can be defined for each PROJECT in the system via the PROJECT list management utility. Not all fields may be placed within the template. Use any of these with safety: <ul style="list-style-type: none"> • ID • ALT_ID • AREA • PROJECT • STATUS • CATEGORY • PRIORITY • PRODUCT_NAME • Any text fields
EDITOR_TOOLBAR	STANDARD	This sets the toolbar for the HTML editor used in HTML Area fields and other screens. The possible values for this setting are BASIC, MODERATE, STANDARD, FULL or CUSTOM. CUSTOM toolbars must be supported with JavaScript code in the UserJavaScript.js file
EDITOR_TOOLBAR_BUTTONS	NO	This setting provides control over whether the toolbar buttons within HTML Area fields are visible when HTML Area fields are first displayed. If set to NO, then the user clicks a button in the toolbar area to see the toolbar buttons, if set to YES, the toolbar buttons are visible when the screen is first displayed, and the user can click the icon to hide the buttons.
ENABLE_SPELLCHECK	YES	This setting enables and disables ExtraView's internal spellchecking software. Many browsers offer a spell-checking feature, but this may be used in place of these. See the Appendix entitled Spell Checker for more details.
FIXED_WIDTH_FONT	'Lucida Console', Courier, monospace	Font used for the display of Print Text user defined fields and used for read-only description fields and old log area fields, if REPORT_WITH_FIXED_WIDTH_FONT is YES
FOLD_DISPLAY	TRADITIONAL	This setting controls the appearance of accordion folds on <i>add</i> and <i>edit</i> screens. The values of TRADITIONAL, SIMPLE and THIN_LINE are supported. This setting may be overridden for any Business Area and Project by editing the list values for the PROJECT field and setting a valid entry within that screen
FOLD_TEXT_POSITION	100	This specifies the character position at which to fold text lines in read-only fields with a display type of text area, print text and log area. You should not

		specify a number lower than 65. If you specify a high number, such as 99999, the text input will never be folded. Note that FOLD_WORD_POSITION has precedence over this setting
FOLD_WORD_POSITION	100	This specifies the character position at which to break up a long word in fields of Text Area, Print Text, and Log Area fields. You should not specify a number lower than 65. If you specify a high number, such as 99999, long words will never be broken up. This can be used in conjunction with FOLD_TEXT_POSITION. Set FOLD_WORD_POSITION to a high number if you make routine use of long URL's in your text fields. This will ensure the URL's are not broken onto more than one line, and that the user can click on the URL with success
GUI_VERSION		This setting provides the means to provide alternative GUI elements depending on the version of ExtraView. Prior to version 12.1, this setting has no effect. To keep backwards compatibility with the older GUI style, leave the setting blank. For version 12.1, use a setting of 2019 to see the new styles
HIDE_MOBILE_SIGNON_SCREEN	NO	This setting may have the value of YES, NO or SIGNON_BUTTON. When the value is NO, the User ID and Password fields are always visible. When the setting is YES, the input fields for the User ID and Password are never viewable and the client is reliant on one or more of the behavior settings named MOBILE_DIRECT_ACCESS_1 through MOBILE_DIRECT_ACCESS_5 providing direct access to screens within ExtraView. When the value is SIGNON_BUTTON, there is a button with the title Sign On and when this is clicked, the User ID and Password fields become visible.
HIGHLIGHT_COLOR	#FF0000	Highlight color for a table cell when you use a layout element attribute of FIELD HIGHLIGHT IF
HIGHLIGHT_COLOR_ADD	#FF0000	The color to indicate an added value between updates of a record, in history and email notifications
HIGHLIGHT_COLOR_DELETE	#CCCCCC	The color to indicate a value deleted in an update of a record, in history and email notifications
HIGHLIGHT_COLOR_UPDATE	#ff0000	The color to indicate an updated value, in history and email notifications
HIGHLIGHT_TIMESTAMP	YES	If set to YES, the TIMESTAMP field will always be highlighted on email and history report. Valid values are YES and NO
HIGHLIGHT_VALUE_STYLE		A CSS style that is applied to the value of a field on an add or an edit layout when the layout cell attribute named FIELD VALUE TAG is applied to the cell.
HTMLAREA_ROW_HEIGHT	10	The number of rows to display on the <i>add</i> or <i>edit</i> screen for fields with a display type of HTML Area.
IMG_HOME		This is a relative path within the locales directory for your language where all the buttons and images used within the main application frame reside. For English this is normally locales/en_US. If you want to create your own image set, copy an existing directory to a new folder in the path locales/en_US/images, e.g. locales/en_US/images/my_images. Then set this behavior setting to a value of ../images/my_images/

IMG_NAV_NAV_BAR_HOME		This is a relative path within the locales directory for your language where all the buttons and images used for the navigation bar reside. For English this is normally locales/en_US. If you want to create your own images for your navigation bar, copy an existing directory to a new folder in the path locales/en_US/nav_bar, e.g. locales/en_US/images/my_nav_bar. Then set this behavior setting to a value of ../images/my_nav_bar/
LABEL_COLOR	#0000FF	Color of field labels on the <i>add</i> , <i>edit</i> and <i>query</i> screens
LABEL_TAG_DEFAULT		This provides a point where a default style for all labels for fields on add and edit screens may be inserted. The insert is an HTML attribute that sits within the table cell that holds the label for fields on these screens. For example, you may insert a CSS style that is applied to all the field labels on the form. You may override the default in this setting on a field by field basis with the layout element attribute LABEL_TAG. The default value in a new instance of ExtraView is that this setting has no value.
LABEL_WRAP_POSITION	15	Character position after which to wrap label text in the <i>add</i> and <i>edit</i> issue screens and the search screen. Note that if a layout element attribute for a field of FIELD ALTERNATIVE TITLE is set, then this is ignored and the administrator will set his own formatting in the field
LAYOUT_SCREEN_TITLES	NO	If this value is NO, the screen title in the top right-hand corner of each <i>add</i> and <i>edit</i> screen is taken from the data dictionary screens ADD_PROBLEM and EDIT_PROBLEM_SUMMARY respectively. If the value is YES, then the screen title is taken from the Description field within each <i>add</i> and <i>edit</i> layout, thereby allowing you to have a different screen title on each <i>add</i> and <i>edit</i> screen
LIST_IMAGE_SIZE_PCT	100	This setting provides a scaling of the height that images are displayed alongside list values. The number is a percentage of the height of the text that is displayed, taking into account a user's personal text size - small, medium or large. For example, the default of 100 renders an image at the same height as the text, 200 renders the image at double the height, and 50 is half the height of the text
LOG_AREA_BREAK_LINE	NO	If this value is YES and ExtraView is rendering the LOG_AREA field as HTML rather than text, then text up until a or a </p> tag will be rendered, followed by a link with the word "more". Upon pressing the "more" link, the entire field will be rendered. Note that this can override the functionality offered by the setting named LOG_AREA_DISPLAY_CHARS. If you want this setting to override LOG_AREA_DISPLAY_CHARS, then set that value to 32000
LOG_AREA_DISPLAY_CHARS	250	Maximum character length of log area fields before they are truncated on the <i>edit</i> issue screens. Once truncated, the word "More" appears and the user can drill down on this word to see the remainder of the text. Do not set to less than 80 or more than 32000
LOG_AREA_INITIAL_SORT	DESC	This setting controls the initial order of the log area entries. Valid values are ASC for ascending times and DESC for descending times
LOG_AREA_TEMPLATE	\$\$LA_DATE\$\$ \$\$LA_USER\$\$	This setting controls the appearance of the header on fields with a display type of Log Area. You may use

		<p>any text within the header, plus the following variables:</p> <ul style="list-style-type: none"> • <code>\$\$LA_DATE\$\$</code> - the date the field was updated • <code>\$\$LA_USER\$\$</code> - the name of the user performing the update • <code>\$\$LA_COMPANY\$\$</code> - the company name of the user making the update • <code>\$\$LA_SEQNUM\$\$</code> - a sequence number for the comment within an issue, starting with 1
MANDATORY_FIELD_POST		HTML tag or characters to place after mandatory field labels. The default is to use the HTML end bold tag, but you can substitute and valid HTML or characters
MANDATORY_FIELD_PRE		HTML tag or characters to place before mandatory fields labels. The default is to use the HTML bold tag, but you can substitute any valid HTML or characters
MAX_EMBEDDED_IMAGE_WIDTH	640	This provides a means to limit the width of images displayed within HTML Area fields and Log Area fields which display HTML. Users often capture full-screen or other large images and they consequently make edit screens and email notifications overly wide so that users need to scroll horizontally within their browsers to view all the fields within these issues. The images are stored with their original size in the database, and are resized for display only.
MAX_IMAGE_DIMENSION_PIXELS	4000	This setting defines the maximum number of pixels in either the horizontal or vertical direction that an image may be, to load it into a field with a display type of Image.
MENU_BUTTON_POSITION	LEFT	This setting allows the swapping of the screen title and the menu buttons at the top and bottom of each screen. If the setting is LEFT then the buttons appear at the left of the screen.
MENU_SIZE	105	Width or height of the navigation bar, in pixels, according to whether MENU_DIRECTION is VERTICAL or HORIZONTAL. Note that you must sign off from ExtraView and sign on again for this setting to take effect
MINIMUM_KEYWORD_SEARCH_CHARS		This setting applies to the "Keyword Drilldown" option on reports. Keyword entries into the search field that contain a minimum of the number of characters in this setting will be added to the filters of the report and the report will be regenerated. Once this minimum number of characters has been entered, or the user presses the Enter key, the new results will be generated.
MOBILE_DIRECT_ACCESS_1 to MOBILE_DIRECT_ACCESS_5		This setting defines the title for a button, and a URL within the ExtraView installation to which the user is directed when they press the button. The syntax of the entry in the setting is button_title:URL. When this is defined, a button will be displayed on the sign on screen of the mobile client and when this is clicked, the user will next see the screen defined by the URL
MORE_HISTORY_NUMBER_ROWS	25	Defines the number of rows to be shown before the MORE... message in a related issue display on a history report
MOUSEOVER_COLOR	#E0E8F3	The color of rows on reports when the user places their mouse over the row
MULTI_VALUE_HIGHLIGHT_CHAR	▶	This value is the character that will be used to highlight the selected values in a multi-valued UDF

		list field. If the value is left blank it will display a + next to selected values. The value ▶ will display as a ► character. Use a single character, or a string that your browser will interpret as a single Unicode character. If this character does not display in your user's browsers, select an ASCII character such as +
NAV_BAR_BG_COLOR	#f5f5f5	This is the default color for the background to the navigation bar buttons. This can be a valid hexadecimal value or a valid HTML color
NAV_BAR_DISPLAY	STYLE	This must have a value of STYLE or IMAGE, When the value is IMAGE, the navigation bar buttons are rendered using images stored on the filesystem of the server. When the value is STYLE, the navigation bar buttons are rendered using HTML and CSS. For images, button design is accomplished with an external graphics application such as Adobe Photoshop. For styles, design is accomplished by altering behavior settings. The behavior settings can be overridden within the Navigation Bar Editor for individual buttons
NAV_BAR_DRILLDOWN_BOX_STYLE	position:relative; left:-30px	The CSS style to be applied to the table containing the drilldown box on the navigation bar. This is only used when the MENU_DIRECTION is set to HORIZONTAL with horizontal style navigation bars and is used to alter the position of the drilldown box for different styles of navigation bar. Most frequently, you can position the drilldown box in an absolute position on the navigation bar, but you can also use effects such as altering the background-color to change the presentation of the control.
NAV_BAR_FONT	Franklin Gothic, Arial	The default font face applied to the text on navigation bar buttons when NAV_BAR_DISPLAY = STYLE
NAV_BAR_FONT_SIZE	14	The default font size of the text on navigation bar buttons when NAV_BAR_DISPLAY = STYLE. This can be in points or pixels. If neither are specified, points are assumed
NAV_BAR_GO_BUTTON	NO	This places a Go button onto the navigation bar by the drilldown box. Valid values are YES and NO. After changing this setting, you must sign off from ExtraView and sign on again for this setting to take effect.
NAV_BAR_HOVER_COLOR	#dedede	The default background color to navigation bar buttons when the user places their mouse over the button. Leave blank if you want no background change
NAV_BAR_ICON_POSITION	TOP	Place the icons on the navigation bar to the TOP or LEFT of the title when NAV_BAR_DISPLAY = STYLE
NAV_BAR_LOGO_STYLE	padding:20px 0px 0px 25px	This style is used to position the Company Logo on the navigation bar, when the MENU_DIRECTION is set to HORIZONTAL
NAV_BAR_SEARCH_TITLE	* Search *	This provides the title to the Search drilldown field on the navigation bar. The value can be localized by clicking on the Edit button and providing localized values for all configured languages
NAV_BAR_STYLE	text-align:right	This allows you to apply a CSS style to the navigation bar buttons. For example you can use the style to left or right align all the buttons on the navigation bar
NAV_BAR_TEXT_COLOR	#015597	The default color of the text on navigation bar buttons when NAV_BAR_DISPLAY = STYLE

NAV_BAR_TEXT_HOVER_STYLE		The default CSS style applied to the text on the navigation bar buttons when the user places their mouse over the button
NAV_BAR_TITLES	NO	When this is set to NO, titles to the fields that display the user's available roles and the available Business Area and projects are suppressed. Setting the value to YES causes the titles to be displayed
NAV_BAR_USER_SETTINGS_STYLE		This is the style used to place the user's settings, including their role and current business area onto the navigation bar
POPUP_LIST_SIZE	100	The number of entries on a pop-up list, before the list is accessed through a list of the characters A .. Z as opposed to a list of the entries themselves
POPUP_WIN_STYLE	silverxp	This setting provides different styles for the decoration of popup windows. You may select "default", "minimal", "osx", "plain", "silverxp" or "winoxp" as valid styles. The value must be in lower case.
RECORD_COUNTER_COLOR		The color of the record counter display on reports
REFRESH_LIST_MAX_SIZE	200	A fast refresh using JavaScript will occur in lists that are less than this size and the refresh JavaScript option has been selected for an allowed value relationship. This setting allows the administrator to make a trade off for their users, as to the time to load metadata into a browser and perform a fast refresh when selections are made, compared to the time it takes to refresh the metadata lists from the server
REPORT_HEADER_FOOTER_COLOR	#ADBFD0	This is the background color of the headers and footers on reports
REPORT_SUMMARY_TOTAL_COLOR	#ADBFD0	The background color of the total rows on summary reports
RULES_DISPLAY	HTML	This setting may have the value of either HTML or TEXT. When the value is HTML, the business rules editor will use a rich text editor for its display, with a limit of 32,000 lines in the entire set of rules. If the setting is TEXT, then a plain text editor is used, without the same limitation in the size of text for the rules. This setting is required to be switched to TEXT for extremely large sets of rules or when the administrator's browser returns an out-of-memory error within the rules editor
SCREEN_HEADER_FOOTER_BG_COLOR	#E1EFEE	The background color of the screen titles and footers
SHOW_FOOTER	YES	If the value of this setting is YES, then the footer with action buttons is displayed on all screens. If the value is NO, the footer is suppressed.
SHOW_PRINT_BUTTON	YES	If this setting has a value of YES then a button allowing the user to print the current screen will be displayed on all menubars.
SIGN_ON_SCREEN_LOGO	../images/CompanyLogo.gif	This is the path to the logo placed on the sign on screen. This setting allows you to use a different logo on the sign on screen than is used on the navigation bar. You can point this image to any file your server can access
SIGN_ON_SCREEN_LOGO_STYLE	position: absolute; left:10px;top:10px	The style to be applied to the sign on screen logo. The default position is the top left-hand corner of the screen
SUPPORT_LINK	<a onclick='window.open ("http://support.extraview.net/");return false' style="font-size:8pt; color:#666666; text-decoration:underline;	This HTML statement is used for the link at the end of the copyright statement on each screen. Normally used to direct your users to a specific place for support. You should use the JavaScript function <i>window.open</i> to provide a link, as opposed to using the HTML

	cursor:pointer">ExtraView Support Site	attribute <i>href</i> . This provides a more general method to link to URLs that are outside of the domain where your ExtraView server is installed. The example value shows how to open a web page. You can also open a new email by using the parameter mailto:xxx@yyy.com?subject=Please%20provide%20assistance .
TAB_DISPLAY	TAB	This setting may have the values of either TAB or BUTTON. When this is set to TAB, tab fields are rendered with a traditional look, with an underline. When set to BUTTON, tabs are rendered as separate buttons with the same style as the buttons on the menubar.
TABS_PER_ROW	10	Limits the number of tabs on a form such as the <i>add</i> or <i>edit</i> screen, in a single row when being displayed on the add or edit issue screens. If more values than this number need to be displayed, they are placed on a separate row
TAB_FONT_OFF_COLOR	#444444	Color of the font on non-selected tabs that are generated with the tab display type and within the administration area
TAB_FONT_ON_COLOR	#FFFFFF	Color of the font on the selected tab. This is used for fields that have a display type of tab and within the administration area
TAB_OFF_COLOR	CCCCFF	Off color is the unselected tabs color that are generated with the tab display type and within the administration area
TAB_ON_COLOR	6666FF	On color is the selected tabs color. This is used for fields that have a display type of tab and within the administration area
TAB_SEPARATED_EXPORT	NO	When you are exporting information from the administration list utilities, the default is that the data will be exported in CSV (comma separated value) format. Most browsers will place this information in a Microsoft Excel spreadsheet by default. There are some occasions when you may want to export the list information in TSV (tab separated value) format, and setting this value to YES achieves this. If you work predominantly with double-byte character sets (e.g. you may be working in Japanese) TSV may be the preferable format. Note that you can often configure your browser to work with TSV files. Consult the documentation for your browser on how to achieve this if you require this functionality.
TEXTAREA_ROW_HEIGHT	4	The number of initial rows of data to display on the <i>add</i> and <i>edit</i> screens for fields of display type Text Area, Print Text, Log Area
THUMBNAIL_MAX_SIZE	150	A behavior setting named THUMBNAIL_MAX_SIZE controls the size of the thumbnail. This is the maximum number of pixels in either the horizontal or vertical direction to which thumbnail images will be generated. The aspect ratio of the original image will be retained. Thumbnail images are generated for file attachments and for fields with a display type of image. If you change this value, existing thumbnail images will remain at their original size and new thumbnails will be generated at the changed value.
TITLE_HEIGHT		The height, in pixels, of the title bar holding the screen title and menubar button options
USE_ALLOWED_VALUE_SORT_ORDER	NO	If set to YES, the child allowed values list will be sorted by the sort_seq in the allowed values table

		instead of the meta data sort_seq
VALUE_TAG_DEFAULT		This provides a point where a default style for all value fields on add and edit screens may be inserted. The insert is an HTML attribute that sits within the table cell that holds the value for fields on these screens. For example, you may insert a CSS style that is applied to all the values on the form. You may override the default in this setting on a field by field basis with the layout element attribute FIELD VALUE TAG. The default value in a new instance of ExtraView is that this setting has no value.
WINDOW_BG_COLOR	#ffffff	Window background color

Email Settings

This section of behavior settings deals with Email settings. The available settings are:

Email Notification Menu- Email Settings	Typical Value	Description
AD_HOC_EMAIL_FROM_ADDRESS		Return address for all emails sent using templates or ad hoc text entry. These are emails sent by using the Email button on the <i>edit</i> screen
AD_HOC_EMAIL_FROM_SENDER		The User ID of the sender of all template and text emails sent from the Email button on the <i>edit</i> screen. The user's email address will be taken from his account information
CHECK_EMAIL_ADDRESS_FORMAT	YES	If you set this value to YES, then the email address entered on the user accounts screen will be checked to ensure it has a valid format with a fully qualified domain. If set to NO, the format of the email address is not checked
CONTACT_ADMINISTRATOR	NO	When this setting is YES, a prompt appears on the sign on page, with a default message of "Forgotten Password?". When this link is pressed, a mailto the user defined in the setting named EMAIL_ADMINISTRATOR_USER_ID is started, allowing the user to send a message. When the setting is NO, the prompt does not appear. Note that this link will only appear if the site has EMAIL_NOTIFICATION set to YES, and a valid directory set for EMAIL_DIRECTORY
EMAIL_ADMINISTRATOR_NAME	ExtraView Administrator	This is the title to the email address for the ExtraView administrator. Emails that are automatically generated by ExtraView are originated with this name. Examples are emails sent upon the self registration of a user, or an unauthorized access attempt. This setting is used alongside the EMAIL_ADMINISTRATOR_USER_ID
EMAIL_ADMINISTRATOR_USER_ID	admin@my_company.com	This is the email address from which emails originating within ExtraView are sent. This is usually the administrator's email address or an alias for the administrator. This setting is used alongside the EMAIL_ADMINISTRATOR_NAME
EMAIL_ALLOW_UNQUAL_ADDRESSES	NO	If your company's email server allows unqualified email addresses (i.e. email

		addresses without the @company.com part of the address), then set this to YES and users will not need to use the complete email address.
EMAIL_BCC_ARCHIVE		The email address where a copy of template and ad hoc emails are sent as Blind Carbon Copy (bcc)
EMAIL_CC_NOTIFICATION_LIST	YES	This setting controls whether a CC list is appended to the bottom of outgoing notification emails. It can have a value of YES or NO, or a number. If it is a number, then the CC list is suppressed if there are more than this number of users on the CC list
EMAIL_CHARSET	UTF-8	The default character set that is used by each user when email notification is sent to them by the ExtraView server
EMAIL_CONTACT_ADMINISTRATOR	admin@my_company.com	The email address for the administrator who will be contacted via the sign on page when a user clicks the link "Forgotten Password?"
EMAIL_CUSTOMER_BOX	UNCHECKED	This setting can have a value of CHECKED or UNCHECKED. When this is CHECKED, the checkbox on the <i>add</i> and <i>edit</i> screens that controls whether the LIMITED_USER_ROLE users (usually customers) is checked by default.
EMAIL_DIRECTORY	../mailbox	Email Directory for outgoing messages to be stored. This is the location on your server where the batchmail process looks for outgoing emails. You may use an absolute path, or a relative path. Relative paths are relative to the WEB-INF directory
EMAIL_FROM_USER_ID	support@yourcompany.dom	Return address for all email originating in ExtraView. This allows the recipients of emails to reply to the email, and know there is a valid destination
EMAIL_FROM_USER_NAME		Alias for the real user name that email originates from. This is inserted into the header information of the outgoing notification
EMAIL_MAX_SIZE_MB	8	This is the maximum size, in MBytes, of an outgoing email being sent from ExtraView. This value should be the same, or smaller, than the size your corporate mail server will send. This setting is provided to ensure that mail that exceeds the limit is not sent. If the mail being sent is larger than this size, the images and embedded documents will be removed to reduce the size of the message.
EMAIL_MODULE_OWNER_ALWAYS	YES	Email module owner irrespective of whether they are assigned to an issue. Valid values are YES and NO
EMAIL_NOTIFICATION	YES	Turn email notification of changes on and off. Valid values are YES and NO. This is the master control for enabling and disabling email. When this is set to NO, email addresses are not required when creating or editing users. When the value is set to NO, no email is sent and no warnings are generated to users.
EMAIL_NOTIFY_USERS_ALWAYS	YES	This behavior setting controls whether ExtraView will always send a notification to a user when an issue is updated, or whether notification is only sent when one or more

		fields on the layout that is used to communicate with the user are changed. Set this value to YES if you always want users to receive notification. Note that a change does not mean any change to the issue being updated, but means a change to a field that is on their email layout must occur. Also, note that if more than one update to a record occurs within a minute, and the user's timestamp does not include seconds, then they will only receive the first update made within a minute. The user can set his personal date format to include seconds if he wants to be certain that he will receive multiple updates within a single minute.
EMAIL_RETURN_ADDRESS		A value in this setting sets the email address as the return address into the outgoing message header. This is typically used to provide a return path for messages that cannot be delivered.
EMAIL_STYLESHEET	<pre>* {font-family: Arial,Helvetica,sans-serif !important; font-size:10pt} .text {font- family:Arial,Helvetica,sans-serif !important; font-size:10pt} .report_text {font-family: Arial, Helvetica,sans-serif !important; font-size : 10pt} .title_text {font-family: Arial,Helvetica,sans- serif !important;font- size:13pt;color:#AAAAAA;font- style:italic;font-weight:bold} .reportRIDHeader {background- image:url('\$IMG_HOME\$ButtonBar.png'); color:#AAAAAA;font-weight:bold } p {display:block;-webkit-margin- before:0;-webkit-margin-after:0; -webkit-margin-start:0;-webkit- margin-end:0; margin-top:0; margin-bottom:0; padding- bottom:2px} .msoNormal {padding:0 0 0 0 !important; margin:0 0 0 0 !important}</pre>	The style for outgoing HTML-based email. This is included within the body of the email notification sent, so that the user does not need access to a server when reading their email. An entry in EMAIL_STYLESHEET is pure CSS and it gets embedded into an HTML <style>...</style> tag, so the user does not need to be online when they receive the email. You can use any valid CSS in here, either as the global style or to embellish the text or report_text styles. The style is relatively complex as Microsoft Outlook does its best to render HTML-based emails from other sources in ways that remove spacing information.
EMAIL_SUBJECT_TEMPLATE	ExtraView Notification [\$\$ID\$\$]: \$\$STATUS\$\$ - \$\$SHORT_DESCR\$\$	Format for subject line of emails. The tokens between the \$\$ signs will be replaced with the actual value from the current record
EMAIL_TABLE_WIDTH	660	This setting controls the width of the output within email clients, for standard system generated notifications. The normal value is 660. If you want to generate standard notifications that are not fixed in width, set a value of 0.
EVMAIL_DELIMITER_TEXT	~~~~~	When generating outbound email in HTML format, ExtraView surrounds the body of the email with this text within invisible tags. If a user replies to this mail notification, thus generating an update to the issue, the evmail utility will suppress all the text between the two tags, thus eliminating the outgoing email from being added into the issue as part of the update

GENERATE_EMAIL_BOX	CHECKED	The default value for the Generate Email Box on the <i>add</i> and <i>edit</i> screens. Valid values are CHECKED and UNCHECKED
MAX_SIZE_EMAIL_ATTACHMENTS	0	This is the maximum size, in bytes, of attachments that are sent out with standard email notifications. If the size of attachments exceeds this number of bytes, then the issue is not updated, the notification is not sent and the user will receive a warning. The user may remove attachments from the notification using the Select? checkbox, and then attempt to update the issue again. If the value is 0, the size of attachments is not sent. This setting is useful if you are working within an email environment which has a low setting for processing the size of emails and rejects emails over a specific size.
SET_EMAIL_ENCRYPTION	NO	Show encryption option in ad hoc email screen. Valid values are YES and NO
SUPPRESS_STANDARD_EMAIL_LIST	NO	If this is set to a value of YES, then no email notification is made by using ExtraView's inbuilt logic. Instead rules defined in the Email Rules script are used to generate notifications to users. An exception to this is that email generated using email templates will still send email to the users attached to the template.

Environment Settings

This section of behavior settings deals with Environment settings. The available settings are:

Advanced menu- Environment Settings	Typical Value	Description
ALLOWED_VALUES_ON_QUERY		This setting enables or disables the use of allowed values when creating filters for queries that use advanced filters. When set to YES, the child values in filter fields will only display allowed child values, assuming the parent value has already been selected in a filter that the user has already created. All values will be displayed in child allowed value lists when the setting has a value of NO.
ALLOW_DEBUG_URL	YES	Allows user to set up debug level of the application server log. Valid values are YES and NO. If turned off, then the user cannot alter the debug level of the log with a URL. The form of the URL is: http://server.extraview_domain.com/evj/ExtraView?DEBUG=6 The default level of debug messages is 6. Valid values are in the range 1 to 12
ALLOW_MOBILE_CLIENTS	YES	This behavior setting enables or disables access to the site by mobile phones and tablets. If this is set to NO, then users will not be able to sign onto the site with the ExtraView Mobile app. This does not preclude users from using a standard browser within their mobile device to sign onto ExtraView.
ATTACHMENT_PERMANENT_DELETE	YES	When this setting is set to YES, any file attachment is permanently deleted from the server when the user deletes an attachment. When the setting is NO, the attachment is retained on the server, but is not visible on add / edit screens or on reports. However, the attachment may be viewed from the Attachment History screen for audit trail purposes.

ATTACHMENT_REPOSITORY_DMAX	999	The maximum number of files or directories that will be created under one node of the external directory structure. The default for this value is 999. It is not likely that this value needs to be altered.
ATTACHMENT_REPOSITORY_OPT	INTERNAL	This setting controls whether attachments are stored internally within the database, externally on the file system, or in some combination of the two methods. If the value of this setting is INTERNAL, then all attachments are stored internally within the database. If the value of this setting is EXTERNAL, then all the attachments are stored on the external file system. Alternatively, you may provide a comma separated list of file extensions and then all files with these extensions will be stored externally while all other files will be stored in the database. For example, if you set the value of this setting to "avi, png, gif, jpg" then files of these types will be stored externally. This strategy leaves the files stored internally in the database as searchable by keywords, while the image and video files are stored externally. The default for this value is INTERNAL. Also, ensure that the setting ATTACHMENT_REPOSITORY_ROOT is set correctly before storing attachments outside the database.
ATTACHMENT_REPOSITORY_ROOT		The name of the directory on the file system where file attachments will be stored. Before any attachments are stored externally, you must also provide a valid setting for the setting ATTACHMENT_REPOSITORY_OPT. You must also ensure that the path is valid from the application server(s) that are running ExtraView, and that you have all the permissions to read and write to the storage. You must also ensure that you set up a separate backup method for this external storage as backing up your database will no longer backup the file attachments.
BLOCK_ATTACHMENT_EXTENSIONS		If a user uploads an attachment, or a file into a document field or a file into an image field, with an extension that is in this list, the file will not be stored on the server, and the user will receive a message that informs them that they are not allowed to store files of that type. The default is that all files of all types are stored. The list of file extensions is comma delimited
CACHE_ENABLE_FIX_FOR_IE	NO	There is a bug in Microsoft Internet Explorer which prevents documents being uploaded to a server where there is non-secure back-end server instance in a network with secure proxies. To counteract this, set the value of this behavior setting to YES when you have a network configured in this manner. This is highly unusual and most instances should not need to reset the default value of NO for this setting.
CSS_HOME		This is the name of the directory within the stylesheets folder that contains the set of CSS files used by the user interface theme for the installation.
DEFAULT_ATTACHMENT_CHARSET	UTF-8	The default character encoding for files being uploaded to ExtraView. This value is used to select the initial value presented to the administrator when creating a new user.
DEFAULT_LANGUAGE	en	Default language for the installation. This is typically EN for English
DEFAULT_REGION	us	Default region for the installation. This is typically US for the United States
DEFAULT_VARIANT		Default variant for the installation. This is not typically used
DOCUMENTATION_ACCESS	YES	This setting defines whether end users may access relevant documentation pages from a link on the menubar of their screens. Set to YES to enable this feature.
DOCUMENTATION_BASE_URL	https://docs.extraview.com/extraview-121/	This is the location of the document pages on the ExtraView Corporation servers. This points to the documentation version of this installation.

DOMAIN		Cookie domain - normally this is left blank. If altered, you must restart the ExtraView server for the new value to be recognized
ENABLE_AREAS	YES	This setting controls whether the installation works with multiple business areas or a single business area. Values can be YES or NO
ENABLE_PROJECTS	YES	This setting controls whether you can use multiple projects within each business area. Valid values are YES and NO. Note than if you use YES, then ENABLE_AREAS must also be set to YES
ENABLE_QUICKFIND	NO	This setting controls whether QuickFind text search is used for keyword searches. Valid values are YES and NO. Note that if you use YES the database must have text indexes created to perform the searches.
HELP_HOME		The default for this is a null entry, in which case ExtraView points to ../WEB-INF/locales/en_US/help for the default locale. An absolute URL An absolute path may be entered into this setting to point to an alternative help system for your installation
HTTP_CHARSET	UTF-8	The name of the default character set used within the user's browser. It is recommended that this be "UTF-8". If altered, you must restart the ExtraView server for the new value to be recognized
LOCALIZE_TITLES	NO	Used to turn off and on the localization buttons within administration. This is used when you are using ExtraView's multiple languages on the user interface. When this option is set to YES, a button with the title of "Localize" will appear beside all metadata titles and values that can be localized into different languages. Valid values are YES and NO
MAX_LAYOUTS_IN_CACHE	100	This is the maximum number of layouts that will remain cached in memory once they have been built upon their first access. This layout caching improves the performance of ExtraView significantly. If this number is increased, attention should be paid to the amount of free memory available in the application server. If this number is too high compared to the amount of memory available, then the system may run out of memory
MESSAGE_WORKER_COUNT	1	The behavior setting MESSAGE_WORKER_COUNT controls the number of Message Workers to be allocated for message and title access. This must be set to an integer from 1 to n. Each Message Worker requires a single Connection to be permanently allocated to that Worker. Therefore, setting this value to a high number (near the ConnectionPool's maximum number of connections, for example), will starve other threads of available connections. Normally 1 is the recommended value. The maximum number should be the maximum number of connections defined in your Configuration.properties file
MULTI_LOCALE	YES	<p>ExtraView will behave as a single locale system, using the language specified in the behavior setting named DEFAULT_LANGUAGE when this value is NO. When it is set to YES, then the administrator may add additional language locales to the system, and provide localized messages and metadata for each locale.</p> <p>From version 23 onward, it is recommended that you set this setting to a value of YES. Some years ago, having the setting as NO gave slightly better performance, but but with up-to-date hardware, this is no longer an issue. In the future, some features may not work in single locale instances,</p>
QUICKFIND_ACTIVE_INDEX	PRIMARY	This setting determines which index is currently active for QuickFind. The value may be PRIMARY or ALTERNATE. Quickfind keyword searches are performed using the

		directory in QUICKFIND_INDEX_LOCATION as the primary or QUICKFIND_INDEX_LOCATION_ALT as the alternate respectively
QUICKFIND_INDEX_ENUMERATED	NO	This setting controls whether the titles to UDFs are indexed. If indexed, keyword searches that contain issues with the values of these titles will be returned within the results
QUICKFIND_INDEX_LOCATION		The name of the directory on the file system where the Quickfind text indexes will be stored. Before any indexes are built, you must also enable full text searching by setting ENABLE_QUICKFIND. You must also ensure that the path is valid from the application server(s) that are running ExtraView, and that you have all the permissions to read and write to the storage. You must also ensure that you set up a separate backup method for this external storage as backing up your database will not backup the full text indexes
QUICKFIND_INDEX_LOCATION_ALT		This is an alternate directory path for the QUICKFIND index files. When using the ALTERNATE QUICKFIND_ACTIVE_INDEX, keyword searches are performed using this directory.
QUICKFIND_INDEX_USERS		This setting controls whether Quickfind includes user IDs in the text search for keyword searches. Valid values are YES and NO.
REAL_IP_HEADER		The name of a request header to use to retrieve a client's IP address. This is useful if the application server works behind a proxy or load balancer, and the request comes from that IP, and a header was added with the clients original IP address. If this behavior setting is configured, and the header exists in the request, and it has a reasonable value, then it is used as the IP address. Many proxy servers, load balancers and some application servers do not set the standard HTTP header properly. This setting may be used when your application server works behind a proxy server or load balancer, and users are seeing unexpected session expiries.
RESPONSE_COMPRESSION_THRESHOLD	0	This setting provides optional compression for the responses to Ajax calls from the user's screen. A setting of 0 does not provide any compression. The value is the number of kilobytes of data that are to be sent to the browser within the Ajax response. When the amount of data to be sent is above this threshold, the data will be compressed on the server, and then expanded by the client browser. There is a tradeoff that is highly dependent on the speed of the network between your users and the server. The higher the volume of data to be sent, the longer the transmission time, but the client browser then needs time to decompress the data. If you believe your installation will benefit from this compression, we suggest starting with a value of around 50. If your network is slow, a smaller number may provide better performance.
SERVICE_STATISTICS	NO	YES writes additional statistics to the application server log, providing detailed timings of the execution of each service and how much data was generated and sent to the client browser. NO turns this facility off
SITE_URL		The full URL of the site, e.g. http://extraview.company_name.com. This setting is optional. If it is not provided, ExtraView assigns two values internally, one to be used from within the company's network, and one to be used externally. When the ExtraView application server initializes, the server will look at the value in this behavior setting. If the incoming request to start the server originated from a SSL session, the two values set internally will similar to: Internal URL: http://extraview.company_name.com/evj External URL: https://extraview.company_name.com/evj The values set can be seen in the application server log in the startup section. If the incoming request to start the server originated from a

		<p>standard HTTP session, the two URL's will be identical. There are some circumstances where the administrator will need to set a different URL, and this is done by placing the value directly into the SITE_URL value. The most common reason for requiring this is when you see a notification email from ExtraView, where the Edit button is missing and its URL is malformed. The setting is also sensitive to your web server configuration and any redirection provided there. If you have set up redirection in your web server, these URL's may be different. If SSL is being used within your environment and the URL to access ExtraView therefore begins with https://, then the SITE_URL must be set to https://extraview.companyname.com/evj in order for drill downs from email and other remote applications to work correctly. With redirection, it is probable that you may not use a form such as http://extraview.company_name.com/evj/ExtraView to sign on. It is most probable that you will use http://extraview.company_name.com/evj. If you provide an incorrect value for this setting, it is highly likely that users will not be able to sign on to ExtraView. If altered, you must restart the ExtraView server for the new value to be recognized</p>
USER_CUSTOM_CLASSNAME	com.extraview. usercustom. CustomCodeBase	Log timing data for every user custom method call. Valid values are YES and NO
USER_CUSTOM_ENABLE_METRICS	NO	Log timing data for every user custom method call. Valid values are YES and NO
USER_CUSTOM_JAVASCRIPT		This setting provides the capability for custom JavaScript files to be loaded into the <i>Add</i> and <i>Edit</i> screens. To load multiple files, separate the entries with a semi-colon. The path(s) you enter are relative to the directory named javascript within your ExtraView instance. No checking is done by ExtraView for the existence of the file, so it is important to enter the correct path(s) and filename(s)

Report & Query Settings

This section of behavior settings deals with the Report and Query settings. The available settings are:

Layout & Display menu - Report and Query Settings	Typical Value	Description
ABBREVIATED_HOME_PAGE	NO	A value of NO will display the sign on message and up to three user-defined reports on the Home Page. A value of YES will only display the sign on message
ALLOWED_ATTACH_SEARCH_FILE_EXT	application/pdf,application/msword, application/vnd.ms-excel,text/csv,text/html, text/plain,text/rtf	The allowed attachment files of the types in this list to be searched for keywords, when the user checks the "Search Attachments?" box. If the file in the list to be searched does not have one of these extensions, it is skipped. This is used to skip searching of files such as image files, to speed the search process
ALLOW_SEARCH_DEACTIVATED_USERS	YES	The behavior setting controls whether you will allow users to include deactivated users when querying and the setting of USER_LIST_DISPLAY is set to POPUP. If the value is YES, then an additional option appears in the popup search screen. This option allows you to enable querying for deactivated users. Users can search for

		repeating row child values. Values are YES and NO
FULL_TEXT_SEARCH_COLUMNS	ITEM.SHORT_DESCR ITEM_TEXT.TEXT ATTACHMENT.FILE_DESC ATTACHMENT.FILE_NAME ITEM_UDF.VALUE ATTACHMENT_ CONTENT.CONTENT_BLOB	This is a comma-delimited list of the database columns that will be indexed and used to perform high speed keyword searches for users. If a column is in this list, and there is no suitable index for that column in the underlying database, search queries using standard SQL will be used when the user searches that column. There is typically no need for the administrator to modify the list in the value of this behavior setting as all the columns used to store text within issues are on the list.
GRANULAR_REPORT_DEFINITIONS	NO	By default, the report editors allow the end user to output all the report definitions with a single mouse click. When this setting has a value of YES, then the end user can elect to output any combination of the Report Definition, Report Filters and Custom Filters, though individual checkboxes.
HIGHLIGHT_LAST_CHANGE_USER	YES	If set to YES, the LAST_CHANGE_USER field will always be highlighted on email notifications and history report. Valid values are YES and NO
HISTORY_DISPLAY	ABBREVIATED, SIDE_BY_SIDE, LAYOUT	This setting allows the administrator to set which methods for the presentation of history are available to the end user. You may set one, two or three of the values ABBREVIATED, SIDE_BY_SIDE and LAYOUT, separated by commas. For each of these values, a button will appear on the menubar of the history screen, and the user can switch between the alternatives. The first value in the list is the default value when the user first enters history for an issue
INSERT_REPORT_HEADERS	YES	This setting controls whether header and footer information is inserted into reports with a destination of Microsoft Excel or Text. Values may be either YES or NO. Note that headers and footers are always generated for reports output to the browser and Microsoft Word.
ITEM_TABLE_CARDINALITY		The optimal order for indexed queries.
KEYWORD_SEARCH_FIELD_SECURITY	NO	Determines whether field security is checked on keyword search for text fields. Use YES to check, NO to skip
LIMIT_GROUP_BY_ITERATIONS	40	This setting will limit the number of iterations produced by an Group By Container Report. The report will stop running after the limit has been reached. The last row of the table of contents will show an error message informing the user that the limit has been reached. The default is 40.
LIMIT_HOMEPAGE_QUERY_ROWS	20	Maximum number of rows that will be returned by any column report from homepage. This is used in conjunction with ALLOW_UNLIMITED_SEARCH to provide the limit of rows returned by a query.
LIMIT_MASS_UPDATE_BATCH_SIZE	100	This is the number of issues that mass update processes in memory at one time. The higher the number, the faster the processing occurs, but more memory is consumed. If you

		encounter out-of-memory errors when running mass updates, you should reduce the number from the default of 100
LIMIT_QUERY_ROWS	10000	Maximum number of rows that will be returned by any search query. This is used in conjunction with ALLOW_UNLIMITED_SEARCH to provide a limit to the number of rows returned by a query. Note that a user whose current role is ADMIN, bypasses this check
LIMIT_SUMMARY_QUERY_ROWS	1000	Maximum number of rows that will be returned by a summary report. This is an exception to LIMIT_QUERY_ROWS which is the limiter for most other report types
LIMIT_WORD_DETAILED_RECORDS	10000	The maximum number of detailed records on a MS Word report. Use this if you encounter the bug in Microsoft Word (pre-2007) where it freezes when downloading or loading large HTML reports. This is an exception to LIMIT_QUERY_ROWS which is the limiter for most other report types
LIMIT_WORD_RECORDS	25000	The maximum number of records returned from a search to a MS Word report. This is used to limit the amount of HTML data being sent to Word (pre-2007), if you encounter the bug where Word freezes when loading a large amount of HTML data. This is an exception to LIMIT_QUERY_ROWS which is the limiter for most other report types
MASS_DELETE_TEMPLATE	VIEW_BUTTON, ID, AREA, PROJECT, SHORT_DESCR	This provides a list of the fields displayed on the review screens when the user clicks the Mass Delete button from Quicklists and Column reports
MAX_CELLS_ON_TASKBOARD	500	The maximum number of cells that will be rendered when producing a Taskboard report. Browsers may run out of resources and consequently hang, on client computers if you attempt to render a huge taskboard with too many cells. This setting provides the means to set sensible limits on the size of taskboards
MAX_DRAG_NUM_PROMPT	5	This is the maximum number of issues which may be dragged and then dropped onto a report, before a warning is provided to the end user, indicating how many issues are being moved, and asking them to confirm that it is OK to proceed. The update proceeds without any warning to the user when the number of issues being dropped is equal to or less than this number
MAX_PDF_COLS	12,15	This sets the maximum number of columns that a user can place on a report being outputted to PDF. This setting has two comma separated values. The first value is the number of columns when generating portrait output, and the second indicates the number of columns when generating landscape output.
MAX_REPORT_FIELD_HEIGHT_PIXELS	0	This setting controls the maximum height, in pixels, of values of Text Area, HTML Area, Log Area and Print Text fields when output to reports. When the unconstrained height of an individual field value on a report is greater than the value of this setting, the height is constrained to the value of the setting, and buttons are placed beneath the value to allow

		<p>the user to see the entire contents, and to reduce the height back to the initial value. A value of 0 implies there is no limit on the height and the entire contents of the field are always displayed.</p> <p>As a guide, a row of characters is approximately 25 pixels high. This varies however, depending on the text size of the user.</p> <p>Also, for reference, characters are approximately 12 pixels wide, but as font characters have different widths, some are narrower, and some are wider.</p>
MENUBAR_SEARCH_TARGET_WIN	main	When you drill down to an issue from the navigation bar, a value of MAIN will place the results in the main window alongside the navigation bar. A value of __BLANK will open a new window for the display
MINIMUM_SEARCH_FIELDS	0, 0	This setting is used to force a user to select a number of filters before their queries will be executed. If you specify a single number, then this specifies the number of filters in addition to the KEYWORD filter that must be provided. If you provide two numbers, separated by a comma, then the first number specifies the number of filters in addition to the KEYWORD filter that must be provided and the second number specifies the number of filters that must be provided when no KEYWORD filter is provided. The default is 0,0. For large databases, a setting of 2 or 3 for each number typically provides sufficient control, to ensure that only a small section of the database is searched at one time, and that users do not attempt to download millions of records or perform complex queries across millions of records.
MS_OFFICE_CHARSET	UTF-16LE	The default character set for reports sent to Microsoft Office Products. The default value is UTF-16LE, which is the appropriate value for English language versions, and most foreign language versions of MS Office
MULTIPLE_VALUE_REPORTING	RELEASE	Must be RELEASE, MODULE or NONE - Note this is not on the GUI and is set to RELEASE as this is the only valid option at this time
QL_REPORT_LAYOUT_AREA_PROJECT		This setting defines the business area and project to be used when creating a Quicklist report. If defined, the value of QL_REPORT_LAYOUT_AREA_PROJECT has two comma-separated values - Area_Title, Project_Title, where Area_Title and Project_Title must exist. These values are used to select the layout for the Quicklist if the business area and project can not be resolved uniquely in the search filters for the Quicklist report. This happens if there are no business area/project filters selected and more than one exist, or there is more than one business area and project pair combinations selected. If QL_REPORT_LAYOUT_AREA_PROJECT is not defined, the current business area and

		project for the current user is used to select the layout.
QUERY_TIMEOUT_SECONDS	0	The maximum number of seconds that any SQL query is allowed to run in the database before it is aborted. This prevents any one query from taking all the database resources, and in the worst case, stops a query that may never end. A value of 0 allows a query to run to completion, regardless of how long it may take
QUICKFIND_MAX_HITS	20000	This setting provides a limit to the number of results returned with a Quickfind query.. It is possible to generate extremely large (and somewhat unusable) result sets, especially when using wildcards in queries, and this setting provides a throttle.
RECORDS_PER_PAGE	20, 100, 500	The number of records per display page that a user can select on reports. These values will populate the list box on the Search / Report screens. If ALLOWED_UNLIMITED_SEARCH is YES, then Unlimited is also appended to the list of values
RECURRENCE_ISSUES	RECURRENCE_ISSUES	This value is used by ExtraView to relate issues together by the recurrence generator in the calendar report. It is highly suggested you do not edit this field. Editing this field after a recurrence has been generated will result in the loss of that recurrence
REPORT_AUTO_REFRESH	YES	This setting controls whether report results are auto-refreshed after a user drills down into an issue and updates it. The report results are updated following the update if the value of this setting is YES. In addition, each user can override the default value of this setting in their personal report options
REPORT_DTL_ITEM_DATA_LAYOUT	NO	When this is set to YES Detailed Reports will be rendered with the layout for the each issue's area and project and the current user's role. If this is set to NO, the layout used will be that of the user's current area and project, and their current role
REPORT_FILTER_BY_CURRENT_ROLE	NO	When this is set to YES, the user will only see reports on the Query / Report page that are valid for their current role. Typically this means they will see their personal reports, shared reports and reports that are visible to their current role. If this is set to NO, then they will also see reports that are valid for other roles that they are eligible to see.
REPORT_IN_NEW_WINDOW	NO	If set to NO the Quicklist and Detailed Report will be opened in the main ExtraView window. If set to YES, the Quicklist and Detailed Report will be opened in a new window.
REPORT_LABELS_POSITION	TOP	Position of the labels on reports, relative to the data. Valid values are LEFT and TOP. When the value of LEFT is set, the detailed report uses the layout defined for the purpose. If you set the value to TOP, then the detailed report will be displayed in a single column, with the labels to the left and the values presented top to bottom. The order of fields is

		taken from the detailed report layout, from left to right, top to bottom.
REPORT_REL_ISSUES_EXCEL_TEXT	NO	When this behavior setting is set to YES, reports that are output to Microsoft Excel or to text, will include the RELATED_ISSUE_DISPLAY layout for related issues to the records being output. When this is set to NO, related issues will be suppressed on Microsoft Excel and text output. Note that browser output and Microsoft Word output will always contain the RELATED_ISSUE_DISPLAY for related issues if it has been defined.
REPORT_SUPPRESS_BLANK_LINES	YES	If YES, the detailed report will suppress any row where the data values are all null. Valid values are YES and NO. This is used to shorten the length of reports that may contain a significant amount of blank cells. Note that if any field or files on the detailed report layout span more than a single row, and if the value is YES, then the setting is ignored
REPORT_TABLE_WIDTH	100%	This setting controls the width of displayed information and tables on all the query screens and the home page report widths. The most common setting is to use 100% as the value, but the setting can be an absolute number of pixels for the width of objects on most screens presented to end users
REPORT_WITH_FIXED_WIDTH_FONT	NO	When this is set to YES, fields with a display type of "text area" and "log area" will display their contents with the FIXED_WIDTH_FONT. When this field is set to NO, these fields will display their contents using the DEFAULT_FONT. Note that this setting also applies to the display of log area fields on the <i>edit</i> screen.
RESTRICT_ROLE_BASED_REPORTS		Any report created for * All Roles * is visible to everyone that means RESTRICT_ROLE_BASED_REPORTS behavior setting is ignored if a report is created for All Roles. If the setting of RESTRICT_ROLE_BASED_REPORTS is left blank, all users will see all reports that match the role(s) they may adopt, if the role has been given access to role-based reports. If the setting of RESTRICT_ROLE_BASED_REPORTS is set to COMPANY_NAME, users will see all reports that match the role(s) they have, and that have been created by a user with the same company name as their user account, if the role has been given access to role-based reports. If the setting of RESTRICT_ROLE_BASED_REPORTS is set to COMPANY_NAME_OR_ADMIN, users will see all reports that match the role(s) they have, and that have been created by a user with the same company name as their user account or that were created by the ADMIN user, if the role has been given access to role-based reports. This setting does not affect reports saved for shared reports - all shared reports are available to all users, if

		their role has permission to that type of shared report via the security permission keys.
RID_PAGING_DEFAULTS	0,0	This behavior setting determines whether the results returned within a related issue display are paged, with Next and Previous buttons to move between pages. The page size and the minimum number of rows where related issue displays are rendered in pages are separated by commas. A page size of 0 is unlimited, resulting in no paging.
THUMBNAIL_THROTTLE	50,1000,1000	This setting is comprised of three numbers separated by commas that determine how thumbnail images are rendered on detailed reports and edit screens. The first number is the minimum number of attachments before the throttle is applied. A value of 0 disables throttling. The second, optional, number is the interval in milliseconds between rendering of thumbnails. The third, optional, number is the delay in milliseconds before the first thumbnail on the page is rendered.

Security & Session Settings

This section of behavior settings deals with the Security and Session settings. The available settings are:

Systems Control menu- Security and Session Settings	Typical Value	Description
ALLOW_CHANGE_LOCALE_AT_SIGNON	NO	If this setting is set to YES, then there is an additional prompt on the sign on screen, where users may elect to alter their language setting as they sign on. This only has meaning in a multi-locale system and where users are regularly changing which language they use
ALLOW_PASSWORD_AUTOCOMPLETE	NO	This setting allows or disallows your browser to cache the user's password and to auto-complete this for the user. Note that setting this to YES may be a security risk if users access ExtraView from public computers. Also note that this setting allows the browser's Back button to be used to go back and retrieve the original sign on page with the valid User ID and password. It is not recommended that you turn this feature on if you are not completely certain of who can access your installation
ALLOW_SECURITY_PERMISSIONS	NO	When you create a new user defined field it will be given read and write permissions for all user roles if the value of the setting is YES. If the value of this setting is NO then only the ADMIN role will be given read and write permission. The latter is a more secure mode
APP_HOME		Only used if value is not the default for the system. This is the path to the ExtraView Java servlet. If altered, you must restart the ExtraView server for the new value to be recognized
AUTO_SIGNOFF_ON_USER_EXIT	NO	YES or NO to sign off user if the user closes the last ExtraView window, or navigates to another site. If NO, the session cookies remain and the user can press the browser Back button to go back to their ExtraView session. If YES, the user's session is terminated when they navigate to another site or close the ExtraView window. If your installation is being used as a remote site with OAuth2 tokens being granted to users on other sites, the

		<p>valud of this setting should be kept as YES. This is a security precaution which prevents the small possibility of a user being able to access the site for some period of time after their account is deactivated.</p>
CACHE_COHERENCY_POLL_TIME		<p>The number of seconds between updating cached metadata information within the server. This setting provides a compromise between between performance and up-to-date information being available across all nodes of a multi-server environment, and across different sessions within a single application server environment. The longer the cache interval, the higher the performance of the server, but the increased likelihood that a user will access stale information within the server cache. The default if you do not enter a value is 5 seconds. If you change metadata often on an installation with clustered application servers, the recommendation is to keep this value at 5 seconds so that any metadata change is propagated promptly to all the application servers and sessions. If you change metadata rarely, or the metadata is only changed on a staging server and then propagated to a production server, you can consider extending the time</p>
CLIENT_IP_ADDRESS_CHECK	YES	<p>YES or NO to check or ignore that the client workstation maintains a constant IP address during a session. Usually YES, but may need to be set to NO if your server is accessed via a proxy server</p>
CONFIDENTIALITY_MESSAGE		<p>This setting allows the administrator to create a system-wide confidentiality statement that appears at the bottom of most screens and reports. This statement may be up to 4,000 characters in length and may contain valid HTML</p>
DEFAULT_TIMEZONE	America/Los_Angeles	<p>This time zone will be used as the default for all new users who are created. Please make sure the time zone is spelled correctly. You can consult the Appendix on Time Zones for a list of valid time zone</p>
ENABLE_TWO_FACTOR_AUTH	NO	<p>When this setting is YES, ExtraView will require a second level of authentication before allowing the user access to their account. This second authentication factor is via an email sent to the user with a verification code that must be entered before the user enters their account.</p> <p>Note that the SYSTEM and ADMIN accounts bypass two factor authentication. This allows an administrator to still gain access to the system when some features of ExtraView, such as email notification, are inoperable.</p>
ENABLE_DEVICE_VERIFICATION	NO	<p>This is used in conjunction with the ENABLE_TWO_FACTOR_AUTH setting. When this setting is set to YES, then a user has an option to remember that they have used that computer and internet browser combination to previously connect to ExtraView. If this is not so, they will be sent an email with a verification code and they are asked whether they should be remembered in that browser on that computer. Note ENABLE_TWO_FACTOR_AUTH must also be set to YES. Also note that if the user clears their browser cache, the user will need to verify themselves again the next time they sign on.</p> <p>Note that this setting is bypassed if the BatchMail task is not running.</p>
ENHANCED_SECURITY	NO	<p>This setting provides password access to the User Accounts Maintenance screen for enhanced security</p>

KEEPALIVE_INTERVAL_SECS	300	This is the number of seconds between polling operations from the <i>add</i> or <i>edit</i> screen. This timer is used to send a message from the user's browser to the server, to allow the server to keep track of users with open <i>add</i> or <i>edit</i> sessions. If the user closes their browser or navigates away from an <i>add</i> or <i>edit</i> page, then the server will be able to recognize this event.
KEEP_FAMILY_SESSIONS_TIMEOUT	NO	If this behavior setting is NO, then each window that opens a new session within ExtraView will set up its own measurement against SESSION_EXPIRE_TIME_HOURS. If this is set to YES, then all sessions in all windows will share a single SESSION_EXPIRE_TIME_HOURS. The NO value provides for more efficient memory utilization on the server, but may lead to unexpected session timeouts of ExtraView for individual users, when they operate with a significant number of open windows
KEY_STORE_ID		This setting is the entry name used for access to the keystore which contains the certificate with the credentials for SAML. If used, the default value is SPKey
LICENSE_USAGE_WARNING	90	This should be a decimal number. It will be interpreted as a percentage. When the number of concurrent licenses consumed exceeds this amount, ExtraView will send an email to the administrator to warn them of this event. If the number of concurrent licenses is 10 or less, then the email is sent only when a user is denied access because of no availability of licenses. If the setting is zero, then this warning is not generated
MAX_SIGNON_ATTEMPTS	3	The maximum number of consecutive failed sign on attempts allowed by an individual user before their account is disabled. The number of failures is measured in the period defined in SIGNON_PERIOD_MINUTES. Note that all users who have the administrator role defined by the setting ADMIN_OVERRIDE_ROLE are notified by email when a user's account is disabled. Note that if you are using custom authentication, then MAX_SIGNON_ATTEMPTS is not operative.
MAX_SIGNON_ID	IP_ADDR	Use a setting value of either USER_ID, IP_ADDR or BOTH. This setting configures the administrator warning about a user attempting to sign on more than MAX_SIGNON_ATTEMPTS, to recognize each attempt as originating from the entry of a specific USER_ID, or originating from a single IP Address, or originating from a combination of both.
NOSPILL_SESSION_COUNT	500	Two numbers control the number of sessions that can reside in memory at any one time: <ul style="list-style-type: none"> • SPILL_SESSION_COUNT • NOSPILL_SESSION_COUNT <p>A session is created in memory in response to a login by a user or as a "sub-session" of some previously created session. These sessions require memory resources to maintain the context of individual users "conversations" with ExtraView. When the number of sessions gets too large, they threaten the continued ability of the system to operate by consuming too much resource such as memory; therefore, there is a mechanism to "spill" old sessions to disk and retrieve them only when they are needed. When the number of sessions in memory reaches or exceeds the NOSPILL_SESSION_COUNT, the "oldest" sessions are written to the database and removed from memory. In this context, the "oldest" session is the one that has not been touched by some user action for the</p>

		<p>longest period. The writing of the session data to disk occurs as a background task and does not directly affect the creation or utilization of sessions that are in memory. Responsiveness is affected only when a disk-resident session is invoked by some user activity that requires a short delay to "de-serialize" the session and reconstitute it in memory from the database. When the number of sessions in memory reaches the SPILL_SESSION_COUNT, the in-memory session cache is "full" and new session requests must wait for older sessions to be written to the database. In this case, there is a direct effect on responsiveness while the user waits for old sessions to be written and in-memory session slots to be made available. Often, this delay is not noticeable. Another way of looking at it is that the system is in one of three states at any one time: (N_SESSIONS is the number of sessions in memory)</p> <ol style="list-style-type: none"> 1. Non-spill state: $N_SESSIONS < NOSPILL_SESSION_COUNT$ In this state, no sessions are written to the database and new sessions are created directly in memory. 2. Spill state: $SPILL_SESSION_COUNT > N_SESSIONS \geq NOSPILL_SESSION_COUNT$ In this state, a background task is writing the oldest in-memory sessions to disk, and new sessions are created directly in memory without any delays. 3. Full state: $SPILL_SESSION_COUNT \leq N_SESSIONS$ In this state, a new session creation request will be delayed until at least one old session is written to disk to free a "slot" for the new session. <p>Note that $NOSPILL_SESSION_COUNT < SPILL_SESSION_COUNT$ in all cases. If the behavior settings do not adhere to this invariant, the default values (480 / 500) will be used. Note also that these behavior settings must be set when ExtraView is started, and they are not inspected after startup. If they are changed, a restart of the ExtraView application server is necessary for them to take effect.</p>
PASSWORD_EXPIRE_TIME_DAYS	0	<p>This is the number of days which a user's password will last, before it automatically is expired. Every time this number of days elapses, the user will be prompted to create a new password when they next sign on. If this setting has a value of zero, passwords will never expire. Note that if a user is created when the value is zero, and this setting is then changed from zero to any number, then existing users passwords will never expire. The administrator will then need to set a new date for the expiry in the users accounts.</p>
PASSWORD_FORGOTTEN	YES	<p>When this is set to YES, then a prompt "Forgotten Password?" appears on the sign on screen and users will be able to reset their password without intervention from the administrator</p>
PASSWORD_REUSE_DAYS	0	<p>This is the number of days that must go by before a password can be reused, after it is changed. The default value of zero disables checking for reused passwords.</p>
PASSWORD_RULES	0,0,0,0	<p>PASSWORD_RULES has four or five numbers separated by commas.</p> <p>The first number is the minimum number of characters required to compose a valid password. The default is 0, which indicates that passwords may be of any length.</p>

		<p>The second number is the minimum number of numeric characters. Numeric characters have values between 0 and 9. The default is 0 which indicates that passwords need not contain any numeric characters.</p> <p>The third number defines the minimum number of characters in upper case. Upper case characters have values in the range A to Z. (All passwords are case sensitive.)</p> <p>The fourth number is the minimum number of non-alphabetic and non-numeric characters. These are characters that are not in the ranges of 0 - 9 and a - z and A - Z, but are valid characters to store in a password. Double-byte characters are not allowed, but characters such as -, =, +, !, @, #, \$, and % are allowed.</p> <p>The fifth, optional number defines the minimum number of alphabetic characters that must be entered. Any upper or lower case alphabetic characters satisfy this requirement.</p>
REAUTH_REDIRECT_PARAM		After the re-authentication with a status signature, this is the URL and parameter that ExtraView will go to
REAUTH_URL		When performing a re-authentication with status signature rules, this is the URL that will perform the re-authentication
SECURITY_CACHE_MINUTES	30	Number of minutes before refresh of session security cache. If you alter security permission settings and do not wish to wait for this cycle to complete to automatically refresh the settings, you can sign off and sign on again
SESSION_EXPIRE_TIME_HOURS	24	Maximum session idle time in hours, the session data for a user is kept. After the period set in USER_EXPIRE_TIME_HOURS and before the value of this setting, ExtraView will attempt to restore a user's data when their session has expired. Beyond the time specified in SESSION_EXPIRE_TIME_HOURS the data will be lost. If the value of this setting is less than one minute or 0, then the session data will be kept permanently until the server is restarted. This is not recommended.
SESSION_MONITOR_POLL_SECS	300	This is the number of seconds between periodic tests from the server, for session removal due to user expire time activity. The server will test to see if the user still has an open session at this interval. This is only used if USER_TIMEOUT_SESSION_REMOVAL is YES. and if the user's browser has not reported to the server that a session is still active with the KEEPALIVE_INTERVAL_SECS timer.
SESSION_NAME_EXPIRE_TIME_HOURS	24	This is the session expiry period measured in hours for a user who occupies a named user license and who remains idle. Note that this is different from the period for users who occupy a concurrent license. Their expiry period is defined in the behavior setting named SESSION_EXPIRE_TIME_HOURS. After the period set in USER_EXPIRE_TIME_HOURS and before the value of SESSION_NAME_EXPIRE_TIME_HOURS, ExtraView will attempt to restore a user's data when their session has expired. Beyond the time specified in SESSION_NAME_EXPIRE_TIME_HOURS the data will be lost. If the value of this setting is less than one minute or 0, then the session data will be kept permanently until the server is restarted. This is not recommended.

SESSION_WARNING_INTERVAL_SECS	0	This setting works in conjunction with SESSION_WARNING_TIME_SECS. When the idle time for a user reaches SESSION_WARNING_TIME_SECS before the expiry time, the user will see a message on their screen warning them of the impending session expiry. This warning will repeat every SESSION_WARNING_INTERVAL_SECS until the expiry time, when the session will finally expire. If the user takes some action to submit the form on the screen to the server during this process, the timers are reset and the user session remains active. A value of zero means that no repeat warnings will be given.
SESSION_WARNING_TIME_SECS	0	This setting works in conjunction with SESSION_WARNING_INTERVAL_SECS. When the idle time for a user reaches SESSION_WARNING_TIME_SECS before the expiry time, the user will see a message on their screen warning them of the impending session expiry. This warning will repeat every SESSION_WARNING_INTERVAL_SECS until the expiry time, when the session will finally expire. If the user takes some action to submit the form on the screen to the server during this process, the timers are reset and the user session remains active. A value of zero means that no warning of an impending session expiry will occur.
SIGNON_PERIOD_MINUTES	5	Once a user fails to sign on because of an invalid password, they will be allowed to make a total of MAX_SIGNON_ATTEMPTS in this period. Note that all users who have the administrator role defined by the setting ADMIN_OVERRIDE_ROLE are notified by email when a user's account is disabled
SPILL_SESSION_COUNT	1000	Please see the entry for NOSPILL_SESSION_COUNT
SYSTEM_LOG_EXPIRE_TIME_DAYS	30	This is the number of days of history in the system log and the user signon log that information will be kept before it is purged from the system. The default is 30 days but you may increase this if you want to retain the information for longer periods. Stale information is purged from the log each time you access the logs, but if this setting is changed before you access the logs, then the information is retained.
USER_EXPIRE_TIME_HOURS	8	Description - This is the time in hours for which a user will remain signed in to ExtraView, when his computer is idle. ExtraView recognizes a user as still active when an action causes the user to access the server. When a user's session expires, ExtraView will ask the user to sign in again, and will attempt to restore any data being inserted or updated, and take the user to the point where they were working. Note that the ability to restore data is only enabled for the period specified in the setting named SESSION_EXPIRE_TIME_HOURS. For this reason, SESSION_EXPIRE_TIME_HOURS should always be equal to or greater than USER_EXPIRE_TIME_HOURS. If the value of this setting is less than one minute or 0, then the session will not time out.
USER_TIMEOUT_SESSION_REMOVAL	NO	The value of YES implies that sessions are killed after USER_EXPIRE_TIME_HOURS of inactivity, unless the user has sessions that remain active in the add or edit screen mode. NO implies that these sessions are not killed after this period of inactivity. The user's browser is checked by the server every SESSION_MONITOR_POLL_SECS to see if the ExtraView session is still active.

User Settings

This section of behavior settings deals with the User settings. The available settings are:

Users menu - User Settings	Typical Value	Description
ALLOW_PASSWORD_CHG_AT_SIGNON	YES	This setting controls the visibility of the Change Password link on the user sign on screen. If the value is YES, the link is shown, if the value is NO, the link is not shown. Also note this link is inoperable if the setting named LDAP_USER_LOOKUP is equal to YES.
CHECK_SAME_FIRST_LAST_NAME	YES	This setting gives the administrator control over whether a check is instituted when adding a new user or updating an existing user, as to whether ExtraView will provide a warning if the combination of first and last name is already used
COMPANY_NAME_LIST_UDF		If this field is populated with the name of a User Defined Field with a display type of list, then the Company Name field on user account administration screens becomes a list, with the values being populated from the UDF. This accompanies the text field for entering company names. The UDF may also be used as a regular field on add and edit screens as well as being used on reports.
CONTACT_ADMINISTRATOR	NO	When this setting is YES, a prompt appears on the sign on page, with a default message of "Contact Site Administrator?". When this link is pressed, a mailto to the user defined in the setting named EMAIL_ADMINISTRATOR_USER_ID is started, allowing the user to send a message. When the setting is NO, the prompt does not appear. This feature may not work correctly with Asian character sets or European accented characters with all email clients. The mailto protocol allows pass-through of non-ASCII characters in the subject and body using the RFC-2047 standard, which is not implemented correctly in many email clients. At this time, the only mail client that appears to be fully compliant with the standard is Mozilla Thunderbird. The RFC-2047 allows the specification of the character set for the subject and body (and other header fields) for the mailto protocol URI. The character set that ExtraView uses is the character set specified in the EMAIL_CHARACTER_SET behavior setting, or UTF-8 if this is not specified. RFC-2047 only comes into play for these fields when non-7-bit-printable ASCII appear in the subject and/or body fields. Thus, the fields will be encoded when double-byte or European accented characters are present in those fields. ExtraView uses the "B" (base64) encoding in all cases to transmit non-ASCII characters.
DEFAULT_START_PAGE	Home Page	<p>This setting allows the Start Page to default to one of several screens when creating a new user. This sets the start page of the new user. The value of <i>Home Page</i> is the system default. The potential values are:</p> <ul style="list-style-type: none"> • Home Page • Workspace • Query Screen • Report Screen • Administration • Add Issue Screen <p>It is possible for the administrator to add additional start pages through the administration utility which may also be selected as the default start page by using this setting</p>
ENABLE_PRIVACY_GROUPS	YES	Turn the Privacy Group feature on and off. Valid values are YES and NO. If you set NO, then user administration screens will not offer the ability to set privacy groups for users, and you will not be able to create and maintain privacy groups

ENFORCE_DETAILED_USER_INFO	NO	This turns extra fields on for mandatory field checking on user account screen. Valid values are YES and NO. Note that although the user's primary email address may be mandatory when this value is YES, it is not mandatory to enter the primary email address when the setting EMAIL_NOTIFICATION is set to NO
IGNORE_DEACTIVATED_USER_FIELDS	ORIGINATOR	This is a delimited list of fields with a display type of USER. Users will not be warned if they edit an issue which has a field in this list with a deactivated user. If a USER field does not appear in this list, the user will always be warned if the field has a deactivated user, when they edit the issue.
OMITTED_IMPORT_USER_COLUMNS		This is a comma-separated list of column names in the table named security_user. The list of columns named here will be ignored when an XML export file is imported into a target database. Thus fields that are frequently altered by a user, such as SECURITY_PASSWORD, will not be overwritten during the import of data. Note that this setting should be set in the target system that is importing the data. It is not referenced when exporting the data. The topic on importing user information has a complete list of the fields you can reference. You should not omit the SECURITY_USER_ID or the LOGIN_ID fields from the export, else you will not be able to successfully migrate users with the XML export / import
SEF_REG_DEFAULT_AREA	0	This setting is used to identify the business area ID to associate with a new user, when the user is created thru self registration.
SELF_REG_DEFAULT_PROJ	0	This setting is used to identify the project ID to associate with a new user, when the user is created thru self registration.
SELF_REG_USE_COMPANY_NAME	NO	When set to YES the value of COMPANY_NAME application default will be used for self-registered users. Otherwise, the user_id will be used for user's company name.
SELF_REG_USE_EMAIL_ADDR_AS_UID	NO	If this setting has a value of YES, then the email address is used for users who use the self registration process, as opposed to allowing the user to choose a User ID. The email address becomes the User ID when the database is updated
USER_DEFINED_START_PAGE	YES	If this is set to YES, the user is allowed to set their start page when entering ExtraView, to a commonly used page such as the Home Page, the Add Issue screen or the Search / Report screen. This is set on their personal preferences page
USERNAME_DISPLAY	FIRST	Display choice for user names (ID, LOGINID, FIRST, LAST). For example, if the users name is Mary Jones and their user ID is MSMITH, and their Alternative ID is MJONES then ID would display msmith, LOGINID would display mjones, FIRST would display Mary Jones and LAST would display Jones, Mary
USER_ADMIN_DISPLAY_COLUMNS		The default list of fields displayed on the user accounts maintenance screen is: User ID, User Name, Email Address, Company, Enabled, License type, Last access, Date Created, Date Last Updated. If you want to alter this list, you can place a list of the fields from the database table security_user in this setting. The fields you can place on the screen are chosen from: USER_IMAGE, USER_ID, LOGIN_ID DISPLAY_NAME, PHONE, EMAIL, JOB_TITLE, TIMEZONE, ROLES, COMPANY_NAME, PAGER, and MOBILE. To include any of the user defined field names, use the convention USER_FIELD_1 through USER_FIELD_10. If you want to include a field that has been configured as a user attribute, then use the convention ATTR:field_name, where field_name is the name of the user defined field used for the attribute. This convention allows for the possibility that some of the attribute fields may have the same name as the database field name with the user information. Note that the fields ROLES and ATTR:field_name have the potential to contain multiple values in a single record.
USER_LIST_DISPLAY	LIST	POPUP or LIST. If POPUP, then users are selected for adding and updating issues via a popup window. If LIST, the user names

		appear in a select list. Typically, if you have a large number of users, you will use POPUP
USER_POPUP_COLUMNS	YES	The fields displayed in a user search popup window are configurable using this setting. This setting takes a list of fields (using the schema column names) from the security_user table and presents these to the user. If there is no value provided for this setting, then the following fields are displayed: User ID, Name, Phone, Email address, Company name, Pager and Mobile number. You can select from any of the following fields: USER_ID, DISPLAY_NAME, PHONE, EMAIL, JOB_TITLE, COMPANY_NAME, PAGER MOBILE, USER_DEFINED_1 through USER_DEFINED_10
USER_SELF_REGISTRATION	YES	You can allow your users to self-register, or you can be the registrar. When this is set to YES, a prompt appears on the Sign On screen, allowing a user to navigate to a page where they can register themselves as a user in ExtraView. When a user registers in this way, they will only be given the privileges of the user role defined in the behavior setting named LIMITED_USER_ROLE, but no user role is set in their account. When a user self-registers, an email is sent to an administrator, as defined by the following settings with Email Settings on the Email Notification administration menu. The user created will be in the business area and project defined by the behavior settings named SELF_REG_DEFAULT_AREA and SELF_REG_DEFAULT_PROJECT. Note that for users to be able to self-register, that the GUEST user role must have read and write permission to user fields. The most important of these is USER.USER_LAST_NAME. The user's default AREA and PROJECT is assigned from the behaviour settings named SELF_REG_DEFAULT_AREA and SELF_REG_DEFAULT_PROJECT. You should ensure that these behavior settings have valid entries when you wish to allow users to self-register. The EMAIL_NOTIFICATION setting must be set to YES as well, in order for user self-registration to be active.

Workflow Settings

This section of behavior settings deals with the Workflow settings. The available settings are:

Workflow menu- Workflow Settings	Typical Value	Description
ADMIN_OVERRIDE_ROLE	ADMIN	<p>Name of the user role that bypasses several security controls, and has special properties. Users who have this set as their current role have the following properties:</p> <ul style="list-style-type: none"> • Status change override privileges. The status change rules are not obeyed for this user role. This is a significant reason why the ADMIN_OVERRIDE_ROLE user role should not be used for normal operational work • The security key CF_SECURITY_ROLES in combination with the admin-bypass-group, determines what user role you need to be in order to see and edit other users' privacy groups and user roles. For example, if the ADMIN role has read and write privileges, but SUPPORT is the ADMIN_OVERRIDE_ROLE user role, members of the ADMIN user role will only be able to edit privacy groups and roles for users who are also in the ADMIN role. If ADMIN is the ADMIN_OVERRIDE_ROLE user role,

		<p>members of ADMIN can edit privacy groups and roles for all users</p> <ul style="list-style-type: none"> If ExtraView access is disabled by an administrator, only members of the ADMIN_OVERRIDE_ROLE user role will be able to access ExtraView, until ExtraView access is restored
ALLOW_BILEVEL_GROUPS	NO	This setting is provided for backwards compatibility. From version 5.0 onwards, bi-level relationship groups have been superseded by many-to-many and one-to-many relationship groups. Only set this to YES if your system was created prior to version 5.0 and you previously used bi-level relationship groups. With a value of NO, you cannot select bi-level as a value for a new relationship group.
ATTACHMENT_CONTROL_FIELDS	NO	This setting is only used in conjunction with the Java user custom exit named ucAllowAttachmentOperation. This setting enables the functionality within this method. When the value is NO the user custom exit is not called. When the value is YES the code within the method is called and acted upon
ATTACH_SELECT_CHECKBOX	UNCHECKED	This setting controls behavior of the Attachment Select box (ATTACH_SELECT) on the Add and Edit layouts. Valid values are UNCHECKED, CHECKED and CHECKED ON ADD. A value of CHECKED or UNCHECKED will set the checkbox for an attachment on entry to the screen or when a new attachment is added. A value of CHECKED ON ADD will cause the checkbox to be checked only when the attachment is first added, otherwise it will be unchecked
AUTO_POPULATE_ALLOWED_VALUES	YES	When this setting is YES, then in a popup from an <i>add</i> or <i>edit</i> screen that adds a new value to a list, and that list is the child within an allowed value relationship, then the new value will be added to the list and will be automatically added to the currently selected parent(s). If the value is NO, then the user will be prompted to select the Business Area, Project and the specific parent values to which the newly created child value will be added within the allowed value relationship.
AV_INTERSECT_WITH_NULL_PARENT	NO	When there are multiple allowed values defined with the same child field, and one of the parents does not have any children defined when the selected value is *None*, the default behavior is to show no values in the child field, as there are no valid values for *all* parent field selected values, and the default value for this setting is NO. However, older installations may have configurations where they expect that if one of the parent selected values is *None* that this parent field is not included in the determination of which child values to display, and the child field should display the intersection of the permitted child values for the other parent(s) field(s). In this case, set this behavior setting to YES.
AV_NULL_PARENT_IS_NONE	YES	If the value of this setting is NO and no parent value is selected in an allowed value relationship, then child fields will be populated with all the possible child values. If the value of this setting is YES, then the values displayed in the child field will be those defined for the parent value of *None*. If the allowed value relationship utilizes reverse lookup, this setting is ignored.
CLONE_RELATION_GROUP		Relationship group name for clone relationships

COMPANY_OVERRIDE_FIELDS		This setting contains a comma separated list of field names with a display type of User, that must exist and that contain the users that the company name security feature works with. By default company name security works with only the ORIGINATOR field. This setting extends the feature to these other fields
COPY_ATTACHMENT_ON_CLONE	YES	When this setting is YES, attachments will be copied to the new issue when an issue is cloned
DEFAULT_USER_ROLE	GUEST	Default role for users, if they have not been assigned a role
DISABLE_INACTIVE_UDF_WARNINGS	NO	When this value is set to YES the warning message caused by references to inactive UDF list values will be disabled. The default value is NO.
DISALLOW_AREA_0_DATA	NO	When this setting is NO, issue data may be entered into AREA 0. This is provided for backwards compatibility for installations created prior to version 4.2. Installations created with version 4.2 and greater should not allow issue data to be placed in AREA 0. With installations from 4.2 onwards, this should be set to YES
DISALLOW_PROJECT_0_DATA	NO	When this setting is NO, issue data may be entered into PROJECT 0. This is provided for backwards compatibility for installations created prior to version 4.2. Installations created with version 4.2 and greater should not allow issue data to be placed in PROJECT 0. With installations from 4.2 onwards, this should be set to YES
EMBEDDED_LAYOUT_REFRESHES	NO	This setting is provided for full backwards compatibility with all versions prior to 6.0. When the value is NO (the default), sublayouts such as those rendered with the LAYOUT SELECTED mechanism and with the FIELD/LAYOUT VISIBLE IF mechanism are refreshed using AJAX calls to the server. This is fast, but browsers do not have the capability to retain the initial presentation of the fields refreshed. If you set the value to YES, then the sublayouts are refreshed by a return to the server, and the alignment is retained. The tradeoff is between speed and the alignment of the fields on the screen. For many purposes the precise alignment of embedded layouts is not significant and not noticeable by users
ENABLE_COMPANY_NAME_ACCESS	YES	When this behavior setting is set to YES (the default value), a user's company name overrides the privacy setting for an issue and gives the user access to all records that were originated by other users with the same company name. Valid values are YES and NO
ENABLE_GOOGLE_LANGUAGE_API	NO	When this setting has a value of YES, then the Google Language API is enabled. This relies on the presence of a JavaScript function in UserJavaScript.js. This function may be customized by the administrator. See the Application Programming Interface guide for more details on how to configure this feature.
ENABLE_PRIVACY_GRP_OVERRIDE	YES	This setting may have the value of YES or NO. When set to YES, any one issue in a one-to-many relationship group may only have a single parent at one time. This implies that if you set a different parent ID for an issue, then ExtraView will remove the issue as being the child of the original issue, and set the new parent ID for the issue in its place. If you have NO for the setting, then an issue may have more than one parent at one time.
ENABLE_VALIDATION_POPUP_FORM	YES	A value of YES provides users with a pop up window when an add or edit screen submission has missing

		required fields that must be completed. A value of NO provides the old-style text alerts as a message. Version 23 is the first to support this setting.
ENFORCE_ONE_TO_MANY_RG	YES	This setting may have the value of YES or NO. When set to YES, any one issue in a one-to-many relationship group may only have a single parent at one time. This implies that if you set a different parent ID for an issue, then ExtraView will remove the issue as being the child of the original issue, and set the new parent ID for the issue in its place. If you have NO for the setting, then an issue may have more than one parent at one time
ENFORCE_STATE_CHANGE_RULES	NO	Switch to enforce state change rules. Valid values are YES and NO
ENFORCE_UNIQUE_RELEASES	YES	Enforces uniqueness of RELEASE_FOUND in a repeating record row. If the value of this default is YES, repeating rows cannot be added where the field named RELEASE_FOUND has a null value. In addition, you may not have duplicate RELEASE_FOUND values within a single record. If the value of this default is NO, a repeating row will be added if any of the writeable fields in the repeating record row on screen are not empty (including default values). Also note that the fields named RELEASE_FOUND and RELEASE_FIXED are the children of the field named PRODUCT_NAME. Therefore, if you use these fields on a repeating row record, then you must also have the PRODUCT_NAME field on the same layout.
FILTER_CHILD_VALUES	NO	This may have the values YES, NO or USER. The setting controls search behavior when the query filter contains repeating row values. If set to YES, only those rows that match the search criteria will be returned by the query. If set to NO, all rows are returned for any issue where at least one row matches the criteria. If set to USER, this behavior is controlled by a checkbox that appears on the search screen.
FILTER_MODULE_BY_CATEGORY	NO	Allow filtering of modules by category. Valid values are YES and NO. This allows selection of a subset of modules based on both the module type and a category . By selecting Category , only the corresponding module types are displayed as valid choices within the select list of modules on the <i>add</i> and <i>edit</i> screens. For example, products may have hardware, software and documentation modules. If a problem is related to software, only software the modules should be selectable. This feature relies on use of the Category field in the Item record to store a value for Module Type . When FILTER_MODULE_BY_CATEGORY is set to YES the value entered for CATEGORY is used as a second parent value for the module (MODULE_ID field) by providing a value for MODULE_TYPE in the same way that the product (PRODUCT_NAME field) is used as the first parent value. Note that this requires identical enumerated values for both CATEGORY and MODULE_TYPE. In the Data Dictionary setup for the MODULE_ID field, the following should be set: First Parent Field Name = PRODUCT_NAME First Parent SQL = where product_name Second Parent Field Name = CATEGORY Second Parent SQL = and module.category To make these changes in the data dictionary, you must sign on to ExtraView with the <i>admin</i> user account.

HIDE_ISSUE_ID	NO	Controls the title of the detailed report and the edit screens. When this is set to "YES" the standard title will be replaced with the text "ExtraView" and the current time
ISSUE_LINK	DETAILED_REPORT	This setting has two possible values, DETAILED_REPORT and EDIT_SCREEN. When ExtraView automatically places a link on an issue within a report, this setting defines the destination when the user clicks on the link.
ITEM_ID_DISPLAY	ID	When this setting has a value of ID, then the internal issue ID is used in all the main display screens as the issue number that the user is dealing with. However, if the administrator sets their own logic to process the unique reference number to each issue, then setting the ALT_ID as the value of this setting tells ExtraView to display the ALT_ID value in place of the ID value
LIMITED_USER_ROLE	GUEST	This role does not own and cannot be assigned problems. This is typically the guest or customer user role in your installation
LINK_MODULE_USER	ASSIGNED_TO	Links the module owner field to the specified user field. Can be ASSIGNED_TO, CONTACT or OWNER
MINI_HISTORY_FIELDS	STATUS, TIMESTAMP, LAST_CHANGE_USER	This setting defines the fields that will be displayed on the MINI_HISTORY field when it is used on a layout. The STATUS field should always be used, and up to four additional fields can be defined. The additional fields that are available are: SEVERITY_LEVEL, PRIORITY, STATUS, PRODUCT_NAME, OWNER, TIMESTAMP, ASSIGNED_TO, PRIVACY, LAST_CHANGE_USER, ALT_ID, AREA, PROJECT, CATEGORY, RESOLUTION, PRODUCT_LINE, DATE_LAST_STATUS_CHANGE, CONTACT, ORIGINATOR, and HIST_TIMESTAMP
MULTIPLE_FIELD_SEPARATOR	-/-	Used as a separator for child level multi- value UDF's
OAuth2_TOKEN_LIFETIME_SECONDS	3600	This setting defines the lifetime from token creation to expiration, of tokens created on this instance.
RELATION_GROUP_DEFAULT		The name of the relationship group that will be used for any issue being placed into a relationship group. This default can be overridden by using a layout cell attribute on the RELATED_ISSUE_DISPLAY, or by using the field RELATIONSHIP_GROUP on the add or edit layout to offer the user a choice of relationship groups
RELATIONSHIP_GROUP_EMAIL_LIMIT	30	When you update the status of an issue within a relationship group, each issue will be subject to the standard notification process. When there are more than RELATIONSHIP_GROUP_EMAIL_LIMIT entries in the group, notification is only made to the users in the parent issue, and a comment is inserted on the issue with this information
RELATIONSHIP_GROUP_LIST_UDF		This setting is the name of a user defined field with a display type of list. This UDF is used to maintain a list of the names of relationship group for related issue display. The UDF is maintained by ExtraView as relationship groups are created or deleted. The UDF can also be aliased by other UDF's to provide an unlimited number of fields that can be used to identify the relationship group names to support multiple related issue displays on a single edit screen.
RELATIONSHIP_GROUP_MAX_DISPLAY	0	Maximum number of issues to display on the relationship group screen. A value of 0 will display all the records. Note that if your role is the one defined in ADMIN_OVERRIDE_ROLE then all the issues will always be displayed.
RELATIONSHIP_LINK_DISPLAY	SELECT	Display choice for relationship group indicator on edit screen (LINK or SELECT)

RELEASE_SORT_ORDER	DESCENDING	ASCENDING or DESCENDING
RG_UPDATE_BILEVEL_ONLY	NO	This behavior setting is for backwards compatibility with ExtraView version 4.x. If you set the value to YES, then related issue updates are only triggered when a change to the STATUS field takes place. If this is set to NO then updates to related issues may be triggered on different events and many updates to different fields are possible
RULES_DEFAULT_CALENDAR	24_BY_7	This setting selects the number of business days in a week. Valid values are 24_BY_7 or WEEKDAY. The WEEKDAY calendar runs Monday through Friday. The 24_BY_7 calendar uses all days
SAVE_AND_CONT_ACTION	PAGE	This setting determines how the Update and Continue button on Edit screens behave. The valid entries for this setting are AJAX and PAGE. When the PAGE option is set, all LOAD directive business rules are triggered when the button is pressed by the user, after the issue is updated. When the AJAX option is set, the issue is saved, no LOAD directive rules are executed, but any values changed by the update process are displayed.
SAVE_AREA_PROJECT_CHANGES	NO	If the SAVE_AREA_PROJECT_CHANGES behavior setting is YES, then when a user changes their business area and/or projects while entering or updating an issue, the change will be reflected in both the current session and set as their personal default. If the behavior setting is set to NO, then any changes to the business area and/or project will not affect the user's personal setting or the value for the current session. This setting is not applied when the user is operating within a workspace
SAVE_ROLE_CHANGES	YES	Unless you have custom code that dynamically switches roles back and forward for a specific requirement of your site, then this should always be set to YES, allowing any change of role for a user, by themselves or by an administrator to be saved into the ExtraView database. If there is custom code that switches a user's role and you do not want to make this role change stick in the database or be visible to the user, then the value should be set to NO.
SEPARATE_WORK_FLOW	PRODUCT	Allow separate work flows per USERGROUP (role) or PRODUCT or NONE
SHOW_CLOSED_REL_GROUPS_PERIOD	0	The list of items on a relationship group will be displayed until all issues have been closed for a minimum number of days specified by this value. Valid values are numbers equal to or greater than 0. 0 means that as soon as all items within a relationship group are of the status specified by STATUS_CLOSED_NAME they will not be displayed on the list of relationship groups.
SORT_SELECTED_VALUES	NO	When this is set to NO, all multi-valued lists will be displayed in the order set by the field's standard sort sequence. When this value is set to YES, all selected values will be displayed at the beginning of the list, using their sort order, then the non-selected values will be displayed using their sort order
STATUS_CLOSED_NAME	CLOSED	Data dictionary name of the closed status of a problem. This value is typically set when configuring a new system, and should not be changed after that time. The consequence of changing this value, and using a different value is that history is no maintained, and it will not be possible to either know when past issues were closed.

SUPPRESS_EMPTY_HISTORY_ROWS		If the value is set to YES, then if the only fields that would display for a transaction in history would be ID, LAST_MODIFIED_DATE and LAST_CHANGE_USER - then the history entry will be suppressed entirely. A value of NO will display every transaction in the history even if the field that was modified, is not available to the user. This setting applies only to abbreviated history reports.
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Business Rules

There are many occasions when you need to set the value of a field based upon the value of one or more fields. Contemporary products typically achieve this via modifying the programming language. ExtraView allows you to set field values using this administrative feature. Field values can be set at different points in the process.

Business rules are also used to link together values from different business areas, creating relationships between different Business Areas. For example, a relationship can be created to populate a set of fields on a field within a Customer Issue business area, based upon the value of a customer name created in business area that contains a list of customers.

Email rules can also be created, giving fine control over who will receive email upon the creation or updating an issue. The default notification scheme in ExtraView will send email to any user whose name appears on a form, and to members of any interest list. Email rules can complement or replace this arrangement, and give precise control over the notification process. For example, you might want to send notification to a user, only when the Status changes to a specific value, or if the Status changes. Email rules are only applied after you submit an issue to be inserted or updated, and therefore the names that are added to the mailing list that is displayed on the *add* and *edit* screen will not display these names.

Note that ExtraView's inbuilt notification rules remain active, and users will be notified as normal, unless you set the behavior setting named SUPPRESS_STANDARD_EMAIL_LIST to a value of YES. This can be found in the Email Settings administrative function.

Rules may be defined as either global in scope, or to only be executed within a specific business area within your installation. Global rules have precedence over rules defined in a specific business area. Therefore, rules in a specific business area are executed first, and then the global rules are executed. This ensures that rules defined with a global scope will be the last to be executed. There is no checking of whether rules in a specific business area may be in conflict with one or more rules in the global area. It is the administrator's responsibility to ensure that rules work together. To avoid the possibility of a conflict, you may set a policy that no rules will be created as global, and are therefore all local in their scope. When the administrator views the list of business areas, they will only see those to which they have permission, thus enforcing the privacy of rules set in a business area to which the current administrator does not have permission.

Automatic Backup of Rule Updates

As with all metadata changes, when you update the rules an entry is made in the System Log of the event. In addition to the usual information, a copy of the old rules text is also placed in the System Log. You may copy the text from the System Log and paste it back into the rules text area if you need to restore a prior set of rules.

If the rules text is greater than 3,800 characters in length, there is insufficient room to hold all the information in the System Log, so a partial entry is made there and the complete rule text is written to the application server log file.

The Rules Editor

The rules editor is accessed at **Admin --> Site Configuration --> Setup and Maintain Business and Email Rules**.

You first select the AREA within which you want to create or update rules. For rules created in the global area, you may specify the fields AREA and PROJECT as part of filters. Indeed you may need to specify these as filters for the desired execution. For rules specified in an individual AREA, there is no need to specify the AREA field as a filter, and all rules imply that the AREA is selected as a filter. You must supply a PROJECT filter if you want to confine the scope of a rule to an individual PROJECT.

When you initially create rules, you will typically do this within the **Full View** tab. As you enter more and more rules, you may wish to split these rules into logical blocks each within a separate tab within the editor. Tabs are used for the clarity while editing only and are of no consequence when executing the rules, except that the rules are executed in this order:

- Rules within the **Full View** tab

- Rules specified within each tab, in the order each tab is seen on the rules editor screen. Note that you may drag and drop each tab you create to alter the order of execution of the rules
- Rules within the * **Global Area** *.

Tabs are most often used to break down the rules by PROJECT, or by the business function you want to achieve. There is no limit to the number of tabs you can create within an AREA.

Rules Instructions

Rules may be defined in the Global Area or within a specific Area for your installation. Rules defined within a specific Business Area are executed first. Following this, rules defined within the Global Area are executed. There is no checking as to whether rules defined in a specific Business Area are in conflict with rules in the Global Area. Global Area rules have precedence over rules in a specific Business Area.

For convenience, rules may be divided into blocks within separate tabs in the editor window below and are executed in the order of the blocks. Rules are only editable in the Full View block if you have not created your own blocks. When you have created your own blocks, the Full View block shows the consolidated set of rules. From the list, select the Business Area within which you want to define or update the rules.

Select Business Area: **Bugs**

Editor shortcuts:

Ctrl-F	Search for a string	Ctrl-G	Find next occurrence of a string
Ctrl-Shift-G	Find previous occurrence of a string	Ctrl-Shift-F	Find and replace occurrence of a string
Ctrl-Shift-R	Find and replace all occurrences of a string		

```

1  ## Link to Customers area
2  <== link customerLink ==> AREA='Customers', CUST_LIST=CUST_LIST
3
4  <== load ==>
5
6  ## Set the Screen name into the form for the add screen
7  if (SCREEN_NAME = 'ADD') {
8    SCREEN = 'ADD';
9  }
10
11 if (SCREEN_NAME = 'EDIT') {
12   SCREEN = 'EDIT';
13 }
14
15 ## Retrieve the customer details when loading an issue
16 if (SCREEN_NAME = 'EDIT') {

```

Editing the Business & Email Rules

The text within an editor panel is colored. Comments are displayed in red, quoted strings are in dark red and the directive names are in blue. Note there are also line numbers to assist in locating your position within an editor panel.

Within the editor, you can use several find / replace options:

Keystroke	Purpose	Keystroke	Purpose
Ctrl-F	Search for a string	Ctrl-G	Find the next occurrence of a string you previously searched for
Ctrl-Shift-G	Find the previous occurrence of a string you previously searched for	Ctrl-Shift-F	Find and replace a string you are searching for
Ctrl-Shift-R	Find and replace all occurrences of a string you search for		

The button at the right-hand edge of the editor panel opens new options on its toolbars. These allow you to maximize the size of the editor panel within your browser window, to enter the search function, or to enter the replace function.

The + **button** to the right of the **Full View** tab allows the creation of new tabs as described above. The **Full View** tab keeps a copy of the consolidated contents of all tabs, once you have created one or more tabs. Note that you can only edit contents in the **Full View** tab when there are no additional tabs. The background color of the editor contents is grey, when its contents are not editable.

When you create new tab it will be devoid of contents. You can only delete a tab when it is empty. You can alter the title of a tab by double-clicking on the existing title.

Internet browsers have a limitation of approximately 1.5MB of content within the area into which you enter your rules. Under normal circumstances, this limit should not pose any problem, but if you cannot update your rules because of this limit, you should make sure that you write your rules as efficiently as possible. Other hints to help are to keep comments brief and to not have a significant amount of white space.

Language Description

The language that creates Business Rules is straightforward and composed of two primary elements.

Element	Purpose
Directives	There are a small number of directives that create holders for statements. These directives dictate when a statement is executed, for example before an <i>add</i> or <i>edit</i> screen is displayed, or before or after an update to the database is performed. There are also a number of directives that help with other tasks such as mailing, linking items and debugging. All directives are contained within the characters <== and ==>. Each directive may be repeated any number of times within the rules, usually to maintain clarity and to group statements for a single business function together.
Statements	Statements are logical expressions that perform specific actions within each directive. For example a statement may be assigned a discrete value or assigned the value of another field. You may use logical "if" statements. There are a number of special values and special actions that may be used within statements.

Business rules are organized by Business Area, and you may also define global rules.

- [Add new comment](#)

Directives

Rule directives have one of the following forms:

```
<== directive ==>
```

```
<== directive ==> value(s)
```

```
<== directive name ==> value(s)
```

The same directive may be specified any number of times within the rules. This allows the grouping of rules for a specific function together, as opposed to grouping all the rules by directive type which may not be the logical way in which to peruse them. All rules after a type directive within the rules will be interpreted as belonging to that type until the next type directive is encountered.

CALENDAR

```
<== calendar calendar_name ==>
```

This directive is used to determine which business calendar is used in date computations.

If no calendar directive is present, the calendar specified in the behavior setting named RULES_DEFAULT_CALENDAR is used. If this is not set to a valid calendar name, the 24_BY_7 calendar is used for date computations.

CLONE

```
<== clone ==>
```

This directive is used to execute rules and assignments during the clone process.

Typically, you can set values, or reset values of fields before the newly cloned record is saved to the database

DEBUG

`<== debug ==>`

Logs rule activity and includes ExtraView internal values.

This directive is primarily for use by ExtraView support. All statements from the point where the directive is found, and forward from there, send additional debugging information to the application server log file.

END

`<== end ==>`

Stops parsing of the rule file. If this directive is encountered in the rules file, ExtraView stops further actions and ignores the remainder of the rules.

Only the rules in the current business area stop executing. If you have also have rules in the global area then they will also execute, unless an `<== end ==>` directive also exists within there.

This is useful in debugging your rules, as you can enter this directive at different points in your rules file as you test successive sections of rules.

INFO

`<== info ==>`

Causes log entries to verify that rules are being executed. Minimal details are listed.

LINK

`<== link link_name ==>`

Linking Issues between Business Areas

This directive is used to specify how to connect linked issues from one business area to a different one, thereby creating a relationship between two business areas.

For example, you can find one or more related issues in a different business area, from which a value is to be retrieved:

```
<== link customer ==> AREA='Customer', CUSTOMER=CUSTOMER
```

is interpreted that a rule action like:

```
ASSIGNED_TO=(customer).OWNER
```

which is used to set the Assigned To field in an Issue record to the OWNER field in a Customer record. If the link returns many records, and you only want to return a specific one, you can use a subscript as follows:

```
ASSIGNED_TO=(customer[nn]).OWNER
```

where `nn` is an integer which refers to the number of the record you want returned, starting with zero.

The more generalized description is that link rules have the form:

```
<== link link_name ==> link_condition1[, link_condition2]...[, link_conditionn]
```

The link_condition parameters may use the = operator to provide an exact match with the link, or may use one of the following operators:

- contains *value-list* or contains all *value-list*
- contains any *value-list*
- contains none *value-list*

where *value-list* is of the form:

```
value1[; value2] ... [;valuen]
```

Note: contains *value-list* and contains all *value-list* are equivalent, namely, *contains value-list* has the same meaning as contains all *value-list*.

Examples:

```
<== link AREA='Licenses', LICENSE_TYPE='License', COMPONENT='ABC' ==>
```

```
<== link AREA='Licenses', MULTI_VALUED_UDF contains 'MV1';'MV2' ==>
```

Linking Relationship Groups

The link directive can also be used to link related issue groups. For example:

```
<== link rglink ==> RG(RG_NAME = MY_RG, RG_TYPE = PARENTS)
```

where MY_RG is the name of an existing relationship group and RG_TYPE is one of PARENTS, CHILDREN, MEMBERS. If multiple records are referenced by the link, only the first one returned will be used for data assignments. For operations such as UPDATE all records will be processed. You may add an expression to the related issue link to form the link. For example:

```
<== link rglink ==> RG(RG_NAME = MY_RG, RG_TYPE = PARENTS), STATUS != Closed
```

will only form the relationship for issues that are not in the **Closed** status.

Relationship Group links are not order dependent; the type and name may appear in either order, and the RG_ may be omitted, so RG(TYPE=CHILDREN, NAME=xxxx) will work identically to RG(RG_NAME=xxx, RG_TYPE=CHILDREN). Also, the keywords may be eliminated entirely, giving RG(xxxx, CHILDREN) as a valid link. Note that GREATGRANDCHILDREN and GREAT-GRANDCHILDREN are only supported in links, and are not supported at this time by RelationshipGroup code.

{NULL} and {NOT NULL} may also be used within link conditions. For example:

```
<== link AREA='Licenses', LICENSE_TYPE='License', COMPONENT={NULL} ==>
```

You may also add the {EXISTS} as a qualifier to a clause in a link directive. This will check the link, before execution, to find whether the value is present, or is a null value. For example, consider:

```
<== link cousinLink ==>AREA='Functionality', BROTHER_ID = PARENT_ID.{EXISTS}
```

If the .{EXISTS} was not present, all records with no value for the BROTHER_ID will be selected if the PARENT_ID is null.

You may also add a parameter of DISABLE_LINK to a LINK directive. This has the effect of suppressing the drilldown into the issue on the link. For example, the following is correct syntax.

```
<LINK AREA='Bugs' DISABLE_LINK>
```

If the value of the behavior setting named ITEM_ID_DISPLAY is ID, then the link uses the ID field to connect the linked issues. If the value is ALT_ID, then the ALT_ID field value is used in the links.

Link directives may also utilise a contains clause on a multi-valued field filter. For example, a rule like:

```
<== link idTextFieldLink ==>ID != TEXTFIELD_1, TEXTFIELD_2 contains TEXTFIELD_2
```

will retrieve all the issues where all the values in the UDF field TEXTFIELD_2 exist in the issue's values for TEXTFIELD_2.

Linking with Wildcards

By default, reference to a link value returns the first value in the result list for an assignment statement. However, a subscripted value (such as (linkname[n]).ID may be specified, returning the nth value in the result list for an assignment statement. With this feature, all

values in the list can be returned by specifying a wildcard subscript such as `(linkname[*]).ID`. This convention will return all values in the result list separated by semicolons.

Link Rules with Multi-Valued Field Filters

Link rules may use a `contains` clause on multi-valued field filters.

Thus, a link rule like:

```
<== link idTextFieldLink ==> ID != MY_TEXTFIELD, MULTI_MAIN contains MULTI_MAIN
```

can be written to retrieve the items where any of the values in the `MULTI_MAIN` UDF exist in the issue's values for `MULTI_MAIN`.

You can use any of the following where `MVA` is a multi-valued field and `<values>` is a collection of potential values for `MVA`.

- `MVA.{contains any <values>}MVA.{contains all <values>}`
- `MVA.{contains none <values>}`
- `MVA.{contains <values>}`
- `MVA.{excludes <values>}`

The same operators also work with link rules as follows.

- `<== link mva1Link ==> AREA='Simpsons',MVA = MVA`
- `<== link mva2Link ==> AREA='Simpsons',MVA contains MVA`
- `<== link mva3Link ==> AREA='Simpsons',MVA excludes MVA`
- `<== link mva4Link ==> AREA='Simpsons',MVA contains any MVA`
- `<== link mva5Link ==> AREA='Simpsons',MVA contains all MVA`
- `<== link mva6Link ==> AREA='Simpsons',MVA contains none MVA`

Relationship Group Reference ID Feature

The RG link references currently permit the specification of `RG_NAME` and `RG_TYPE`. With this feature, you can specify `RG_REF_ID`, which specifies a field name containing the `ID` (or `ALT_ID`) of the relationship. For example, the following rules:

```
<== link rgParentIssueLink ==> RG(RG_NAME=MY_GROUP, RG_TYPE=PARENTS, RG_REF_ID=MY_TEXTFIELD)
<== load ==>
MY_TEXTFIELD = 12345;
MY_TEXTAREA = (rgParentIssueLink[*]).ID;
```

populate a semicolon-separated list of the parents of issue 12345 from `MY_GROUP` into the `MY_TEXTAREA` field.

Linking Issues using ID's Stored within a Text Field

It can be useful to link issues stored with a delimited list of ID's to the current issue. Let's say that you have a text field named `ISSUES_TO_LINK`. This may have a content such as `123;456;789`. You might want to perform an update operation on all issues linked together. The syntax of the link rule would be:

```
<== link linkFieldIDs ==> ID = RELATED_ISSUES_TO_LINK
ISSUES_TO_LINK = '123;456;789';
{UPDATE: linkFieldIDs STATUS='Approved'};
```

As a result of executing the link directive, the issues with IDs of 123, 456 and 789 will be updated with a `STATUS` of `Approved`.

LINKRR

```
<== linkrr link_name ==>
```

Linking Repeating Rows between Business Areas

This link rule is a variation on the `link` directive, in that it works with repeating rows. When an repeating row filter is specified, issues that have a repeating row that matches that filter are returned and linked. Note that it is issues that are linked, not repeating rows within issues.

This is consistent with ad hoc queries and other searches.

Example

For example, you can find one or more repeating rows in a different business area, from which a value is to be retrieved:

```
<== linkrr rr_link ==> AREA='Customer', CUSTOMER=CUSTOMER
if (CUSTOMER.{contains (rr_link).RR_CUST_NAME}) {
    CUST_NAME -= 'Customer Name'
}
```

Note that RR_CUST_NAME is a User Defined Field on the repeating row and CUST_NAME is a User Defined Field on the main issue.

If the directive does not include filters using repeating row fields, and may then return issues which contain the ID of the current issue, the current issue ID is not contained within the result set that is returned. If the directive contains a filter and the ID of the current issue is contained within the result set, then the current issue is contained within the result set.

LOAD

<== load ==>

Called before the *Add* or *Edit* screen is rendered. Rules following this directive are executed before the screen is displayed. This is most commonly used set values of fields within the screen before it loads.

Note that the load rules are only executed when the *Add* or *Edit* screen is first loaded. If the user changes the Business Area field or the Project field thereby generating a screen refresh, the load rules are not run again.

LOG

<== log ==>

From the point where the directive is encountered, information is inserted into the application server log, for administrators to verify rule execution. The log file shows conditional evaluations and assignments. The <== noLog ==> directive ends the logging.

MAIL / EMAIL

<== mail ==>

or

<== email ==>

Mail directives are used to notify users of updates using the standard notification layouts. They can either complement the existing inbuilt notification rules or replace the inbuilt rules, depending on the value of the behavior setting named SUPPRESS_STANDARD_EMAIL_LIST. The mail directive will always contain rules that generate the notification based on the notification layout for the issue being inserted or updated.

Note there is a key difference between the **mail** directive and the **MAIL** action rule which is typically used within the preupdate directive. The mail action is used to send an email based upon a template specified within the action.

NOLOG

<== noLog ==>

This is the counterpart of the log directive and ends the logging set in progress with the log directive.

OBJECT

`<== object object_name ==> [field1 operator value1] [field2 operator value2] ... [fieldn operator valuen]`

This directive is used to define an object to be used as a link between two fields of different types. The most common purpose for this directive is to use it to enter a value into a text field, and have this value added to an existing field with a display type of list or pop-up.

Use the object directive to use a value entered in a text field to be inserted as a new value in a list field.

The most common operator to use within the syntax for each expression is the equal sign (=), but others may be used according to this table:

Field Display Type	Multi-Value Field Support	Valid Operators
Enumerated list fields User Fields	Y	=, !=, <, contains, contains any, contains all, contains none, excludes
Enumerated list fields User Fields	N	=, !=, <
Text Fields Text Area Fields HTML Area Fields	N	=, !=, <
Numeric Fields	N	=, !=, <, >, <=, >=
Date & Day Fields		Not supported
Image & Document Fields		Not supported

The list of filters that you enter are all ANDed together to evaluate the expression

As an example, you may create directive rules similar to:

```
<== object cust ==> AREA='Customers', LINK=CUST_LIST, TITLE=SHORT_DESCR, PRIVACY=false
```

```
<== object cust.{guarantee} ==> AREA='Customers', LINK=CUST_LIST, TITLE=SHORT_DESCR, PRIVACY=false
```

```
<== object custpopup ==> AREA='Customers', PROJECT='Contacts', LINK=CUST_POPUP, TITLE=SHORT_DESCR, PRIVACY=false,  
DO_NOT_MIGRATE=true
```

This link may be used in a rule similar to:

```
if (CUST_LIST.{changed}) {  
    CUST_CONTACT = (cust).CUST_CONTACT;  
    EMAIL_ADDRESS = (cust).EMAIL_ADDRESS;  
}
```

A multi-valued expression filter may look like each of the two following examples:

```
MULTI_VALUE_FIELD contains x;y;z  
NUMERIC_VALUE_FIELD <= 1.9
```

When the directive is followed by one or more *name operator value* combinations, the object rule will only be triggered when all the filter expressions match the values.

This is a list of all the parameters that may be used with the object directive:

LINK=<LIST or POPUP field name>

Required - contains the name of the field with the list entry to be added, modified, or deleted

TITLE=<TEXTFIELD field name>

Required - contains the name of the field containing the title or text to be added to the list entry

PARENT=<field name>

Optional - contains the name of the parent field of the LINK field in an allowed value relationship

AREA=<area title>

Required - specifies the area of the issue where the object rule is executed

PROJECT=<project title>

Optional - specifies the project within the AREA where the object rule is executed. If this is not defined, then the object directive is executed for all PROJECTS within the defined AREA

RG_NAME=<relationship group name>

Unused at present

PRIVACY=TRUE | FALSE

Optional - the option to add `PRIVACY=true` will add the customer to a privacy group with the same title, and add the current user to that privacy group.

DO_NOT_MIGRATE=TRUE|FALSE

Optional - The default is **FALSE**, indicating that the values will be migrated with the XML Export / Import utility. If the value is provided and has a value of **TRUE**, then all User Defined Field values created with the OBJECT rule are not migrated from one ExtraView instance to another via the XML Export / XML Import utilities. This allows the addition of test data values within one instance using the OBJECT rule, but ensures the data is not migrated to the target instance. Note that the UDF list utility will show which values were added with this parameter.

Note: All object rules must reside in the global area, not in the rules sections within each business area

In summary, the link causes a value entered into the CUSTOMER field in the **Customers** business area to be automatically added to the list named CUST_LIST. This list is available in any other business area and is used in the rule to bring the values associated with the customer into the current screen, when a customer is chosen from its list.

The {guarantee} qualifier to the object rule allows an issue to be created when the rule is executed, but prevents the value to the title being added as a duplicate to the list. If the value does not exist, it will be created but if the value exists, that will be used.

ONCHANGE

<== onchange ==>

or

<== refresh ==>

When a field on your layout has a rule that references it, and that the user changes the value of that field, then an onchange rule is triggered. For example, you may have two fields on a layout, named **amount1** and **amount2**. You may have an onchange rule:

```
total = amount1 + amount2;
```

When the user changes either **amount1** or **amount2**, the **total** field on the layout will be updated via an Ajax call to the server.

POSTUPDATE

<== postupdate ==>

Postupdate rules are executed subsequent to a successful database update on the *add* or *edit* screen.

In regular use, you should not attempt to update the current issue that was just updated within a `postupdate` directive. In normal usage, you will use this directive to conduct updates to other issues following the conclusion of an *add* or *update* to an issue. For example, you might want to use an `ADD`, `COPY`, or an `UPDATE` action that links to other issues once you have successfully performed the update to the current issue.

Attempting to use this directive on the current issue will most often lead to a recursive update, where the `postupdate` will make a change to the current issue, and this will then lead to the same `postupdate` directive being executed, and this sequence being repeated an infinite number of times.

PREUPDATE

<== preupdate ==>

or

<== database ==>

Preupdate rules are executed prior to a database update. After you press the button to submit an issue to the database on the *add* screen, or you press the Update button on the *edit* screen, these rules are executed. The directives `preupdate` and `database` are synonymous. In the future, the term `database` may be deprecated as it is not fully descriptive of the purpose of the directive.

USER MAPPING

<== user mapping ==>

This directive allows business rules to be triggered when a user account is modified. This directive is often used as the companion to the action rules of `CREATE USER` and `UPDATE USER`. `CREATE USER` and `UPDATE USER` allow users to be managed from *add* and *edit* screens, while the `<== user mapping ==>` directive allows administrative changes to users to be reflected in updates to issues.

This is significantly different from other directives which are triggered when issues are inserted or updated. This directive is triggered when changes to user information are submitted.

As an example, the rules within this directive are triggered when an administrator goes to the User Account maintenance screen, and edits a user's account. When the administrator updates the user record, the changes to the account are made in the normal way and the rules in the `<== user mapping ==>` rules section are executed.

This rule provides a means to synchronize the values within a user's record to issues where the user's details are stored.

To facilitate the operation of this directive, there are two session variable fields defined in the Data Dictionary:

1. **RULES_MANAGED_USER** - this is the user field containing the User ID of the user that was created, modified or deleted by the user transaction that invoked the mapping rule
2. **RULES_TXN_NAME** - this is an option where a text field placed on the layout can contain either a value of *ADD*, *EDIT* or *DELETE*. This signifies which user transaction invoked the mapping rules. An example might be that with a value of *ADD* you can have further rules within this directive to execute a *ADD* action rule, or if there is a value of *EDIT* then you might execute an *UPDATE* action rule.

Note that there are action rules that permit a user's account details to be created or updated and synchronized in the opposite direction, i.e. from issues to user accounts. These actions are `CREATE USER` and `UPDATE USER`.

The *ADD/UPDATE* task must be running for this directive to be operable.

Example

```
<== link vendorContactLink ==> AREA=Vendors, PROJECT=Contacts, CONTACT.{is not null}, NEW_USER_ID.{is not null},  
CONTACT=RULES_MANAGED_USER, STATUS='Active'
```

```
<== user mapping ==>  
if ((vendorContactLink).ID.{is not null}) {  
{ UPDATE: vendorContactLink  
  VENDOR_FNAME = RULES_MANAGED_USER.{first name},  
  VENDOR_LNAME = RULES_MANAGED_USER.{last name},  
  VENDOR_PHONE = RULES_MANAGED_USER.{cell phone}  
};
```

- The link rule `vendorContactLink` searches for all issues where the *AREA* equals *Vendors*, the *PROJECT* equals *Contacts*, there is a value in the *CONTACT* field, there is a value in the *NEW_USER_ID* field, and the value of the *STATUS* field is *Active*. The value in the *CONTACT* field must be the User ID of the user that caused the rule to execute, i.e. the `RULES_MANAGED_USER`
- The rules within the `<== user mapping ==>` directive first check to see if the identified issue or issues exist. Note there may be more than one matching issue
- For the matching issues found with the link the current value from the user's account for the first name, last name and cell phone are then saved into the issue(s) in the *VENDOR_FNAME*, *VENDOR_LNAME* and *VENDOR_PHONE* fields.

Actions

Actions are rule statements that may be executed within directives. Not all actions may be included within all directives. For example, it is not valid to perform a REAUTHORIZATION rule within a `load` directive. This action is only valid within an `onchange` or `preupdate` directive. Note that the square brackets in the action definitions refer to optional syntax.

The following pages describe each of the valid actions in Business Rules

ADD

```
{ADD [AS role] [NOWAIT]: AREA = area_1, PROJECT = project_1, field_1 = value_1
    [, field_2 = value_2] ... ... [, ATTACHMENT[. {selected}]]}
```

This will add a new item to the ExtraView database, based upon a set of name value pairs, where the fields are the data dictionary names of the fields, and the values are valid for the display type of the field. This action only works within the `postupdate` directive, as it is essential to perform the underlying update before you initiate actions that are dependent. As an example, the following will add a new record when a button named `ADD_SERIAL_BUTTON` is pressed:

```
if (ADD_SERIAL_BTN. {changed} && UNIT_SERIAL. {not null}) {
    { ADD: AREA='Calibration',
      PROJECT='Unit',
      UNIT_SERIAL,
      COMPONENT,
      SITE,
      FACILITY};
  }
```

Note: You should always provide the parameters and values for the AREA and PROJECT fields with the ADD command. It is indeterminate as to which Business Area and Project into which the issue will be added without these.

The above example demonstrates the use of an implied assignment. When a field name is used in the rule like this:

```
UNIT_SERIAL,
```

it implies that the rule is executed as:

```
UNIT_SERIAL = UNIT_SERIAL,
```

If the field that provides the values for the ADD operation is of type Log Area (e.g. the COMMENTS field), then only the last entry from the source issue is added to the new issue.

The `as role` optional syntax allows the action to be implemented by altering the user's current role to the role, purely for the action. The role is the title of the role, not its name. This is useful when you need to add a record to a different Business Area or Project where the current user may not have sufficient permissions.

The optional `NOWAIT` keyword provides the facility to execute the ADD action as a background task, not waiting for the result of the action before returning control back to the user. This may be used if you have many ADD actions to perform, and you do not want the user to wait for these to complete before they may carry on working in the user interface. This keyword should be used with caution, as there are no indications to the user if there is a failure from the action. Any failures are reported in the application server log file. Also, note that if you place the action within an `onchange` directive, as opposed to within a `preupdate` or `postupdate` directive, then the values within the issue as they stand at that moment will be added to the new issue, as opposed to the final values when the user has submitted the issue for insertion or updating. The [ADD_UPDATE task](#) must be running for this option to work successfully.

The optional `ATTACHMENT` keyword allows all or selected attachments to be copied from the current issue to the new issue being created. If the `ATTACHMENT` keyword is further qualified with `{selected}`, then only attachments that the user has individually selected with the **Select?** checkbox will be copied. The **Select?** checkbox is enabled on the user interface with the security permission keys named `PR_ADD_PROBLEM.ATTACH_SELECT` and `PR_RESOLUTION.ATTACH_SELECT`.

The ADD action is not supported in these directives: `load`, `clone`, `mail`

ADD ROW

```
{ADD ROW: [TO layout_type_name] field_1 = value_1 [, field_2 = value_2] [, field3 = sourceField] }
```

This will add a new row to a repeating record, where the square braces indicate optional elements and the parameter lists are the standard, as in the ADD or UPDATE actions. All the destination fields must be defined in the data dictionary as repeating row fields. The values may not be repeating row fields, as there is no certainty which of many repeating rows the value will refer to.

In the same way as with the ADD action, you may make implied assignments.

If the optional TO: layout_type_name is included, then the repeating row with that name is targeted for the addition of the new row. The fields being set must be in the layout that is loaded from the specified layout type, area, project and role of the user that is executing the rule operation.

Occasionally you might want to add a number of blank repeating rows to an issue. However, it is not valid to add completely blank rows to a repeating row. You can, however, use an unused field that is not even on the layout in question. For example, to add three blank rows to a layout named MY_RR_LAYOUT, you could use this, utilizing the ALT_ID field which is not used on repeating rows and using a text field on the layout:

```
{ADD ROW: TO MY_RR_LAYOUT MY_TXT_FIELD = ALT_ID};
{ADD ROW: TO MY_RR_LAYOUT MY_TXT_FIELD = ALT_ID};
{ADD ROW: TO MY_RR_LAYOUT MY_TXT_FIELD = ALT_ID};
```

The ADD_ROW action is not supported in these directives: load, clone, mail

COPY

```
{COPY [AS role]: field_1 = value_1 [, field_2 = value_2] ... ... [, ATTACHMENT[. {selected}]]}
```

This action is similar to the ADD action, except it may be used entirely without the field/value list. Thus {COPY} by itself will create a new issue, with all the values from the original issue. Specifying a name and value allows that value to be used for that specific field name.

If you do not specify a parameter and value for the AREA and PROJECT fields, then the issue is copied to the AREA and PROJECT of the current issue. You should not specify the PROJECT field without also specifying a value for the AREA field.

In the same way as with the ADD action, you may make implied assignments.

The optional NOWAIT keyword provides the facility to execute the COPY action as a background task, not waiting for the result of the action before returning control back to the user. This may be used if you have many COPY actions to perform, and you do not want the user to wait for these to complete before they may carry on working in the user interface. This keyword should be used with caution, as there are no indications to the user if there is a failure from the action. Any failures are reported in the application server log file. Also, note that if you place the action within an onchange directive, as opposed to within a preupdate or postupdate directive, then the values within the issue as they stand at that moment will be copied to the new issue, as opposed to the final values when the user has submitted the issue for insertion or updating. It is usually most appropriate to use this action within a postupdate directive. The [ADD_UPDATE task](#) must be running for this option to work successfully.

The optional ATTACHMENT keyword allows all or selected attachments to be copied from the current issue to the new issue being created. If the ATTACHMENT keyword is further qualified with {selected}, then only attachments that the user has individually selected with the **Select?** checkbox will be copied. The **Select?** checkbox is enabled on the user interface with the security permission key named PR_ADD_PROBLEM.ATTACH_SELECT and PR_RESOLUTION.ATTACH_SELECT.

The COPY action is supported in these directives: onchange, preupdate, postupdate

CREATE USER

```
{CREATE USER: security user id = value1, security password = value2, first name = value3,
  last name = value4, email = value5, company name = value6
  [, company name = value7] [, work phone = value8]
  [, city = value9] [, state = value10] [, allow email dups = true | false]
  [, allow first last dups = true | false] [, other_fields = valuen] }
```

- A full list of the fields that may be used as parameters in the command is in the section at the end of this page titled **Full Field List**
- Field values from the current issue being inserted or updated can be substituted for any of the *valuen* entries. For example, first name = VENDOR_FIRST_NAME
- You can assign a field value from a linked record to the field on the account record. For example, company name = (parentRecordLink).VENDOR_NAME will assign the company name of the user being created to the vendor name in the link to the parent record named parentRecordLink

- You may assign a string value to a field. For example, `area = 'Customer Account'` sets the value for the user's area. Of course, the value for the field must exist
- Both the `roles` and `privacy_group` parameters may be multi-valued. In that case the values are separated by semi-colons. For example `user role = ENGINEERING; MARKETING; ACCOUNTING` will assign these 3 rules to the user being created
- It is recommended that this feature be used to create users in a guest role capacity, or more explicitly, to be in the role nominated in the behavior setting named `LIMITED_USER_ROLE`
- A further recommendation is that you use this command to create users who occupy concurrent licenses as opposed to named licenses. This avoids the potential to attempt to create a named user license when no more are available. If there is an attempt to create a new user account and no licenses are available, the account is created, but is disabled
- An error is generated if the user attempts to create a duplicate or invalid `security user id`
- `allow_email_dups` - When this is set to a value of `true`, then duplicate email addresses will be allowed across different users. The default is `false`. Care should be taken when assigning this to a value of `true`, as it will not be possible to determine which user is creating an issue via EVMail, as this is dependent upon the software finding a unique email address within the ExtraView application. The default value is `false`
- `allow_first_last_dups` - When this is set to a value of `true`, then duplicate combinations of first and last names are allowed with different users. The default value is `false`
- This action is often used as a companion to the `<== user mapping ==>` directive which allows administrative changes to users to be reflected in updates to issues which were originally used to create user information.

Note

It is recommended that you use a built-in JavaScript function to verify the password before the rule is invoked. To achieve this, configure the following:

- A text field to store the password. This field is passed to the server as part of the `CREATE USER` rule in the `security_password` parameter
- A text field to store the verify password field. This field is **not** passed to the server, but you should place a layout cell attribute of the type `HTML MODIFIER` on the field. The syntax of the value is:

```
onchange=checkPasswordRules(p_passwordfield.value, p_verifypassword.value, minCharacters, minNumeric, minUpperCase, minSpecialChars)
```

`passwordfield` - the name of the password field on the form
`verifypassword` - the name of the verify password field on the form
`minCharacters` - the minimum number of characters in the password
`minNumeric` - the minimum number of numeric characters in the password
`minUpperCase` - the minimum number of upper case characters in the password
`minSpecialChars` - the minimum number of special characters in the password

The 4 digits should be identical to those in the behavior setting named `PASSWORD_RULES`

- An example might be `onchange=checkPasswordRules(p_password.value, p_verifypass.value, 8, 1, 1, 1)`

Example

```
if (PROJECT= 'Contacts' && CREATE_USER_BTN.{changed} && NEW_USER_ID.{not null}) {
  CREATE USER:
    security user id      = NEW_USER_ID,
    security password    = 'Welcome',
    first name           = VENDOR_FNAME,
    last name            = VENDOR_LNAME,
    email                = VENDOR_EMAIL,
    company name         = (parentRecord).VENDOR_LIST,
    work phone           = VENDOR_PHONE,
    city                 = CITY,
    state                = STATE,
    postal code          = ZIP,
    area                 = 'Questionnaire Area',
    project               = 'Questionnaire Data',
    alpha timezone       = PST8PDT,
    user_role             = ENGINEERING; SALES,
    privacy group        = PRIVACY_GROUP_LIST,
    enabled user         = N,
    allow_email_dups     = true,
    allow_first_last_dups = false
}
## Not strictly part of the CREATE USER rule, but we might now want to assign
## the user just created to another field on the form - in this case the list
## field named CONTACT
if (PROJECT='Contacts' && CONTACT.{is null} && NEW_USER_ID.{is not null}) {
```

```

CONTACT = NEW_USER_ID;
}

```

Full Parameter Field List

Field	Required?	Notes
additional email		Must be a valid email address. This is optional and only used as an alternative to the EMAIL setting
additional email on		Y or N to turn additional email address on / off
address or address 1		
address 2		
alpha timezone		This defaults to the value in the behavior setting named DEFAULT_TIMEZONE
area		The ID of the default Business Area of the user
cell phone		
chart font		Must be a valid font name on your server. This defaults to the value in the behavior setting named CHART_FONT
city		
company name		
country		
date format		Must be a valid date format. See the Appendix named Date and Time Formats for a list. The default is taken from your behavior setting named DEFAULT_DATE_FORMAT
start page id		This defaults to the value in the behavior setting named DEFAULT_START_PAGE
email	Yes	Must be a valid email address
email charset		
email format		The default is HTML. The alternative is TEXT
email on		Y or N. This enables or disables email on the account
enabled user	Yes	Use Y to enable the user with a Concurrent license. Use N to enable the user with a Named license. Use D to disable the user. The default value is Y, which enables the user with a Concurrent license.
fax		
file attach charset		Typically UTF-8, which is the default
first name		
home phone		
job title		
language		Use the two character ISO 3166 code. The default is taken from your behavior setting named DEFAULT_LANGUAGE
last name	Yes	
login id		The alternative to SECURITY_USER_ID
mobile report id		Must be the Report ID of a valid report
password expiry date		
password interval		The number of days between each prompt for a user to update their password. The default is 0
privacy group		The name of a valid privacy group
postal code or zip		
project		The ID of a valid project within the Business Area being set for the user
region		This defaults to the value in the behavior setting named DEFAULT_REGION
report 1 id		A valid Report ID for the first report on a user's Home Page
report 2 id		A valid Report ID for the second report on a user's Home Page
report 3 id		A valid Report ID for the third report on a user's Home Page
security password	Yes	The unencrypted value for a user's password
security user id	Yes	The User's ID
state or province		
twenty four hour time		Use Y if the user is to use 24-hour time, else use N. The default is N
user defined 1		
user defined 2		
user defined 3		
user defined 4		
user defined 5		
user defined 6		
user defined 7		

user defined 8		
user defined 9		
user defined 10		
user role	Yes	A list of the names of user roles, delimited with semi-colons. The default is taken from the behavior setting named LIMITED_USER_ROLE
work phone		

ERROR

{ERROR: *Message*}

This is only valid in preupdate rules. It will prevent the update from going forward and return an alert to the user with the text *Message*. Note that several messages may be accumulated and returned in the alert to the user as all the rules are executed without updating the database. Contrast this with the {STOP: *Message*} action where execution is stopped immediately.

You may use the standard escape characters in the error message. The most common requirement is to use `\n` as a linefeed within your message.

ESTOP

```
{ESTOP: target_field_name,
  field_value = field_value
  [, field_display_value = field_display_value]
  [, page_title = message_to_display_to_user]
  [, button_yes = button_title]
  [, button_no = button_title]
  [, button_cancel = button_title]
  [, window_height = height]
  [, window_width = width]}
```

The ESTOP, or Extended Stop action allows the administrator to configure the STOP action by providing a configurable message and configurable buttons that appear to the user when the action is triggered. Note that the action rule must be used in conjunction with a "flag" field. The reason is that simply introducing a pause into the pre-update process means there is a likelihood that the rule will be executed again when the user clicks the continue button, and the ESTOP rule will then trigger again. View the example below on how to use a field, which may be hidden from view to the user, to avoid this problem.

- This action only works within a `<= preupdate ==>` rule directive
- The `target_field_name` must exist on the form and be writable. This parameter is required
- The `field_display_value` parameter is only used with fields that have a POPUP display type (only list and user fields may be configured with POPUP attributes)
- The `field_value` must be provided
- The `page_title` parameter is the message that will appear to the user within the popup dialog that is triggered with the action. This message may contain valid HTML
- The `button_yes`, `button_no` and `button_cancel` parameters allow you to display different labels on the Yes, No and Cancel buttons that appear on the popup dialog. These are optional. For example, you might only provide the `button_yes` and `button_no` buttons on the popup dialog
- The `window_height` and `window_width` parameters should be integer numbers, for the height and width of the popup dialog window, expressed in pixels.

Example

As a precursor to executing this example rule, the administrator will have placed the PRIORITY field on the layout, and there will be a text field named FLAG_FIELD on the layout. The flag field may be hidden.

```
<= preupdate ==>
if (PRIORITY!='High' && IS_HIGH_RISK = 'Yes' && RISK_FLAG_FIELD != 'Y') {
  {ESTOP: 'PRIORITY',
    FIELD_VALUE = 'Yes',
    BUTTON_YES = 'Yes, set the Priority to High',
    BUTTON_NO = 'No, leave Priority as is',
    PAGE_TITLE = '<b>This issue has been identified as High Risk, should the Priority be set to High?</b>',
    WINDOW_HEIGHT = 250,
    WINDOW_WIDTH = 500
  };
};
```

```
RISK_FLAG_FIELD='Y';  
}
```

This will result in a popup when the rule is triggered. This will have the message "**This issue has been identified as High Risk, should the Priority be set to High?**" There will be two buttons with the labels **Yes, set the Priority to High** and **No, leave Priority as is**. At the same time, the value of RISK_FLAG_FIELD is set to Y, which prevents the ESTOP rule from firing a second time.

Tip

It is not easy to enter more than simple HTML for the PAGE_TITLE parameter within the rules editor. You can consider entering the HTML into an HTML Area field, either hidden on the current form or held in a different Business Area / Project and accessed with a LINK directive rule. Then you can simply refer to a hidden field within the same Business Area / Project like so:

```
PAGE_TITLE = field_name;
```

LOCK_RIDS

```
{LOCK_RIDS: [on | off]}
```

This action enables or disables the saving of issues displayed on a screen and held within Related Issue Displays, for the current *add* or *edit* issue.

If LOCK_RIDS is set to on, then no issues contained within Related Issue Displays within the current *add* or *edit* session are saved to the database, when the parent issue is saved.

The LOCK_RIDS action can be invoked and set to on and or to off within within the LOAD, ONCHANGE and PREUPDATE rule directives.

LOG

```
{LOG: Message}
```

This writes the Message to the system log.

You may obtain the value of any field on the form and insert this into the message that is written to the log file. This is achieved by using the form \$\$FIELDNAME\$\$ into the message. \$\$FIELDNAME\$\$ is replaced with the current value of the field.

MAIL

```
{MAIL: 'template_name' [user_list | [FROM:user_list]  
[REPLY_TO:user_list] | [CC:user_list] |  
[BCC:user_list] | [SEND_ONE_EMAIL] | [INCLUDE:ATTACHMENTS]] }
```

The MAIL action provides the capability to email one or more users. The body of the email is defined within an email template designed by the administrator.

- You may use a space character or a comma as the delimiter between parameters
- user_list is a structure that defines a combination of USER ID's, Roles and email addresses. The syntax for a user_list is:

```
[field_name | [ROLE:]role | USER:user_id | email_address ]*
```

- The * indicates that you may repeat these parameters
 - The field_name is either a text field containing a user ID or email address or is a user field
 - The field_name contains one or more values which are USER ID's to be processed within the action. Only valid USER ID's stored within ExtraView are processed and if the installation uses an external directory such as LDAP, no check on the validity of the USER ID's are made
 - The field_name may alternatively or additionally contain one or email addresses to which the notification is sent
 - The optional ROLE:role parameter generates the notification to all active users who may assume the role
 - The optional USER:user_id parameter generates the email notification to a valid USER ID
 - The optional email_address parameter generates the email notification to the email address
- template_name is the name of a predefined email template to be used as the body of the email
 - The optional FROM:user_list parameter is used to provide an alternative user's primary email address as the sender of the mail. The default email address that is used as the sender is the value within the behavior setting named EMAIL_FROM_USER_ID. The

- user may be either the name of a user, or their user ID
- The optional `REPLY_TO:user_list` parameter is used to provide an alternative email address as the Reply To address of the mail. The default REPLY TO email address that is used as the sender is the value within the behavior setting named `EMAIL_FROM_USER_ID`
- The optional `CC:` parameter and associated list of users or email addresses are sent via the email CC line
- The optional `BCC:` parameter and associated list of users or email addresses are sent via the email BCC line
- The optional `SEND_ONE_EMAIL` parameter is used, a single email is generated and sent to all recipients, irrespective of their role and permissions. If this is not entered then a single email is generated and sent to each recipient, and that user's role and permissions are used for each email
- The optional `INCLUDE:ATTACHMENTS` parameter is used to add any selected attachments (via the **Select?** check boxes displayed by each attachment) into the outgoing email so that they will be delivered along with the email.

It is not valid to use this action within the mail directive. It is most typically used within the preupdate or postupdate directives.

Both HTML and text-based email templates may be sent with this action. This is controlled by the format of the template itself, and a simple naming convention for the template. The processing for this action requires either the `template_name` or the `template_title` to follow the MAIL: action. If this name or title has a suffix of `.txt`, then any email generated to a user whose personal email format is full, brief or very brief text will be generated in text. All other mails will be generated as HTML. This implies that if you want email templates where some users will receive HTML mail and others will receive text, you should create two templates. For example, you might have one template named **Customer_Response_Template** with the HTML and another named **Customer_Response_Template.txt** with the text.

When creating text-based email templates, make sure that you use the WYSIWYG (what-you-see-is-what-you-get) mode of the email template utility and be sure that the template does not contain any HTML tags.

In the email rule action, use the HTML template name or title, but without the `.txt` suffix.

If a text template does not exist, all users will receive the HTML template as a result of the action. If a text template exists, users with text email format preferences will receive the text email template. If an HTML template does not exist and a text template does exist, then all users will receive the text template.

Examples

1. {MAIL: 'Sales Response Template', BSMITH, GLONG }

This emails the Sales Response Template to the users BSMITH and GLONG

2. {MAIL: 'Contact Form', CONTACT_FIELD }

This example sends the template named Contact Form to the user whose email address appears within the CONTACT_FIELD on the form

3. {MAIL: 'Claim Form', USER_FIELD, FROM:ASSIGNED_TO, REPLY_TO:ASSIGNED_TO, INCLUDE:ATTACHMENTS }

This emails the Claim Form template to the user who is selected in USER_FIELD, with the mail from address being set as the value of the ASSIGNED_TO field, the reply to address being set as the value of the ASSIGNED_TO field and including the attachments to the issue

MEETING

```
{MEETING: TITLE = text_field, ORGANIZER = user_field, START_DATE_TIME = date_field,
SEQUENCE = number_field, ATTENDEES = user_field, MEETING_FIELD = document_field,
UID = text_field, DURATION = text_or_list_field, [CANCEL = CANCEL,]
[DESCRIPTION = text_or_text_area_field,] [LOCATION = text_field,]
[COMMENT = text field] }
```

Usage

The Meeting action business rule is used to generate a meeting request file (with a file name of **meeting.ics**) when a record is added or updated. When an email is sent following the invocation of the rule, the action generates new meeting requests, updates existing meeting requests and cancels meeting requests within user's online calendars such as Microsoft Outlook.

The rule should be configured within a preupdate directive. To complete the action of generating a meeting request, a MAIL action rule should be configured to communicate the request via email to the participants' calendars.

The fields referenced by the MEETING rule attributes must be configured within the issue, and the fields representing MEETING_FIELD, UID, and SEQUENCE attributes are updated and then saved within the issue when the MEETING rule executes. The UID value is generated the first time the MEETING rule executes and remains the same for the life of the issue, so it is recommended to make the UID field read-only and not visible to the user. The SEQUENCE value starts with 0 the first time the rule executes within an issue and is incremented by 1 every time the rule executes, thereby generating an updated meeting request file. It is also recommended to make the SEQUENCE field read-only and not visible to the user. The MEETING_FIELD field can also be configured as read-only and can be made invisible to the end user.

Required Attributes

The following are required attributes and are enforced at rule compilation and execution time; only their presence is enforced, not the field types specified in the syntax above:

Attribute	Field Type	Purpose
TITLE	Text	The title or subject of the meeting
ORGANIZER	User	The user that creates and hosts the meeting
START_DATE_TIME	Date	The date and time of the start of the meeting
SEQUENCE	Number	This is used to store an auto-generated value for each meeting request generated. This field must be within the issue, but does not need to be visible
ATTENDEES	User - single or multi-valued	A user, or a list of users who are invited to participate in the meeting
MEETING_FIELD	Document	This is used to store the auto-generated meeting request file within the issue. It does not need to be visible
UID	Text	This is an auto-generated value that uniquely identifies the meeting request. This is stored within the issue, but does not need to be visible
DURATION	Text or List	This is a value that specifies how long the meeting is being scheduled for. The value specifying the meeting duration needs to have the following format. A default of 1 hour duration is used if the value cannot be parsed: <i>X day(s) Y hour(s) Z minute(s)</i> Examples <i>30 minutes</i> <i>1 hour 30 minutes</i> <i>2 hours</i> <i>1 day</i> <i>3 days 14 hours 15 minutes</i>

Optional Attributes

Attribute	Field Type	Purpose
CANCEL		This is used to generate a cancellation notice for the meeting that is sent to all attendees. This is not a field, but should be set to a value of <i>CANCEL</i>
DESCRIPTION	Text or Text Area	This provides a description of the meeting that is being generated
LOCATION	Text or Text Area	This is information on the location of the meeting
COMMENT	Text or Text Area	This is a comment that is added to the meeting request

Note that HTML Area fields are not recommended for use as DESCRIPTION, LOCATION and COMMENT attributes.

Example

The following rule is used to generate a meeting request file stored in the MEETING_FILE field, based on the current issue:

```
<== preupdate ==>
if (STATUS = 'New') {
  {MEETING: TITLE           = SHORT_DESCR,
    DESCRIPTION             = DESCRIPTION,
    ORGANIZER               = MEETING_ORGANIZER,
    START_DATE_TIME        = MEETING_TIME,
    SEQUENCE                = MEETING_SEQUENCE,
    ATTENDEES              = MEETING_ATTENDEES,
    MEETING_FIELD          = MEETING_FILE,
    LOCATION                = MEETING_LOCATION,
```

```

        UID          = MEETING_UID,
        DURATION     = MEETING_DURATION
    };
}

```

This example show a rule which cancels a meeting based on the STATUS field:

```

<== preupdate ==>
if (STATUS = 'Cancel') {
    {MEETING: TITLE          = SHORT_DESCR,
      CANCEL                 = CANCEL,
      COMMENT                = COMMENTS,
      ORGANIZER              = MEETING_ORGANIZER,
      START_DATE_TIME        = MEETING_TIME,
      SEQUENCE                = MEETING_SEQUENCE,
      ATTENDEES              = MEETING_ATTENDEES,
      MEETING_FIELD          = MEETING_DOC,
      UID                    = MEETING_UID,
      DURATION                = MEETING_DURATION
    }
};
}

```

Sending the Meeting Request

A MAIL action business rule should be configured to send the meeting request to the participants. This is achieved via the following steps:

- Create an email template
- Within the body of the email, include the name of the document field that contains the meeting request. For example, if the field is named MEETING_FILE, you will include the text \$\$MEETING_FILE\$\$ within the body
- A useful hint is that you may want to hide the meeting request file from user's eyes, so the calendar associated with their email simply acts on the request. To achieve this, you can hide the file with this within the HTML of the body:

```
<div style="display:none">$$MEETING_FILE$$</div>
```

REAUTHORIZE

```
{REAUTHORIZE: user_field_name [NODISPLAY] 'message to display'}
```

- This action is only valid within the `onchange` and `preupdate` directive sections of the business rules. However, it is important to note that when used within an `onchange` directive, the issue being processed is updated immediately after successful reauthorization. This is to avoid confusion with the user, who might process the electronic signature and believe they have completed their update
- The administrator may set up the reauthentication of the current user at the time the issue is updated. If the re-authentication is successful, the issue is updated and the name of the current user is placed in the field `user_field_name`. The reauthentication or electronic signature mechanism demands that the user must enter their password before the transaction is allowed to continue. The application will continue to request the user's password until it is entered correctly. The user may cancel out of the signature request, but will not be able to update the record
- The field `user_field_name` must be placed on the *add* or *edit* screen. The field also requires read and write access for the user roles that will perform the re-authentication. If you want to hide the field from the user's view until the REAUTHORIZE action and associated rules provide values, set a layout cell attribute of the type `VISIBLE IF` and a value of `NOT NULL`
- Do not set the value of `user_field_name` within the rules that are part of the reauthorization code. The value is set automatically by the action and unpredictable behavior will result if you assign it any value. You can use the rules to set any other field values, such as the timestamp of the event. Of course, you can assign a value `user_field_name` by rules that are not triggered with the REAUTHORIZE REAUTHORIZE command
- The `NODISPLAY` option alters the display of the popup. This is an optional within the REAUTHORIZE action. When this is not present, the current user's name appears within the popup where the reauthentication is carried out, in read-only format. The user need only enter their password to complete the action. When this is present, the user must enter both their User ID and their password. It is not valid for any other user than the one who is currently signed onto the ExtraView session to complete the reauthentication.
- With most electronic signatures, you will want to record a timestamp of the event. You can set up a field with a display type of **day** or **date** and place it on the form in the same way as the `user_field_name`. It should also be given a similar layout cell attribute to the `user_field_name`, of `VISIBLE IF NOT NULL`
- As an example, create the following business rule in the `preupdate` directive section of the rules:

```

<== preupdate ==>
if (STATUS.{changed to: 'Approved'} && APPROVED_BY.{is null}) {
  {REAUTHORIZE: APPROVED_BY 'By clicking the Submit button you are approving the update of this issue. This is an
  electronic signature which is recorded in the database. <span style=color:#CC0000>Any appropriate text may be placed here as
  a warning.</span>'};
}
# if we get here, we have assented to the reauthorization, so set the trigger fields:
if (STATUS.{changed to: 'Approved'} && APPROVED_BY.{is not null}) {
  APPROVAL_DATE = SYSDAY;
}
# clear approval if reopened
if (STATUS.{changed from: 'Approved'} && STATUS != 'Closed') {
  APPROVAL_DATE = "";
  APPROVED_BY = {null};
}
if (STATUS.{changed from: 'Closed'} && STATUS != 'Approved') {
  APPROVAL_DATE = "";
  APPROVED_BY = {null};
}

```

Assign the APPROVAL_DATE to SYSDAY if the field is of type **day** as opposed to **date**. This will set the APPROVAL_DATE to the current date and time when the APPROVED_BY field is set, and set it to a null value if the APPROVED_BY field is set to null.

The key condition that triggers the reauthorization requires a little explanation. In the above example, the condition is:

```
if (STATUS.{changed to: 'Approved'} && APPROVED_BY.{is null})
```

The reauthorization is special, in that the user is not able to exit from the action, until they either successfully enter their password, or cancel the complete action. The first part of the trigger expression (STATUS.{changed to: 'Approved'}) is the change upon which you want to trigger the reauthorization. Once the user enters their password, ExtraView validates this, and then executes the expression again. This is where the APPROVED_BY.{is null} part of the expression comes into play. A successful reauthorization will have set the APPROVED_BY field to a value, usually the value of the current user. Therefore, the reauthorization is not reentered, as the evaluation of APPROVED_BY.{is null} now returns a *false* value

- As a second example, when you would like the REAUTHORIZATION rule to be triggered within an onchange directive, there is an alteration to be made so that the timestamp of the issue is not updated until the actual time that the issue is updated. onchange directives do not update any information within the current issue. This example show how to make this happen:

```

<== onchange ==>
if (STATUS.{changed to: 'Approved'} && APPROVED_BY.{is null}) {
  {REAUTHORIZE: APPROVED_BY 'By clicking the Submit button you are approving the update of this issue. This is an
  electronic signature which is recorded in the database. <span style=color:#CC0000>Any appropriate text may be placed here as
  a warning.</span>'};
<== preupdate ==>
if (STATUS.{changed to: 'Approved'} && APPROVED_BY.{is not null}) {
  APPROVAL_DATE = SYSDAY;
}
}

```

- The message to display in the REAUTHORIZE syntax allows the display of any text on the popup window where the electronic signature is provided. Many organizations have a message approved by their legal departments that is used here. Notice that the message to display may contain HTML, allowing you to format the message. A typical electronic signature popup window will look like the following:



Electronic signature display

- The administrator may set up any number of electronic signature requests, each with a different logical expression that triggers the requirement for the user to enter their signature
- If an issue is on a report and Quickedit is used to update the issue, then the electronic signature can only be triggered if the field containing the signature is placed on the report. No prompt for completion of the electronic signature is made without this
- If you implement the REAUTHORIZE rule within a repeating row, then the user field that contains the electronic signature must be a popup user field and the user must complete the electronic signatures in order, starting with the first repeating row
- As explained in the section on [Creating & Updating Layouts](#), you should be careful not to place the user_field_name and the **day** or **date** field on a row within the layout by themselves. With the VISIBLE IF NOT NULL layout cell attributes, the entire row would not be rendered within the browser's DOM, and therefore ExtraView could not alter their values with the REAUTHORIZE rule.

The REAUTHORIZE action is only supported in the `preupdate` directive. As stated above, users have the ability to alter field values within their issues after an `onchange` directive is processed, and the electronic signature would not reflect the values within the issue at the point in time the user provided their signature.

Note: If the site utilizes SAML as a SSO mechanism to authenticate user's sign on credentials, the user is redirected to the SAML sign on screen for the reauthentication. Due to limitations in third-party SAML providers' software, this authentication takes place in a separate browser window or tab. Once the user enters a valid User ID and password they are redirected back to the ExtraView screen to complete the update caused by the electronic signature REAUTHORIZE action.

SAVE

```
{SAVE: [CONTINUE_ACTION = PAGE | AJAX | DEFAULT]}
```

This rule is valid within `onchange` directives only.

If used on an *add* screen, it provides functionality equivalent to use of the **Insert and Continue** button. When the action is triggered, the issue is inserted with its current values, and the user is automatically directed to the *edit* screen to continue working. The behavior setting named `SAVE_AND_CONT_ACTION` must be set to a value of `PAGE` for this to work on an *add* screen, as ExtraView cannot perform an Ajax request to switch from the insert mode while adding an issue, to an *edit* screen which is what is displayed after the **Continue** action.

If used on an *edit* screen, it provides functionality equivalent to use of the **Save and Continue** button. When the action is triggered, the issue is saved with its current values, and the user continues working within the *edit* screen of the issue to make further changes. You may use a value of `AJAX` for the `SAVE_AND_CONT_ACTION` behavior setting.

The optional parameter `CONTINUE_ACTION` along with one of its three possible values define what happens following the successful completion of the `SAVE` rule.

- `PAGE` forces a full screen refresh of the current *edit* screen
- `AJAX` only performs an Ajax refresh of the screen and thereby only altered values (if any) are updated on the screen
- `DEFAULT` performs the default action following the `SAVE` action. The `DEFAULT` value is taken from the behavior setting named `SAVE_AND_CONT_ACTION`.

Example

The following example performs a save of the current issue on an *add* screen, when the user alters the value of the `PRIORITY` field:

```
<== onchange ==>
if (SCREEN_NAME = 'ADD' && PRIORITY.{changed}) {
  {SAVE:}
}
```

SAVE CHILDREN

SAVE_CHILDREN within Related Issue Layouts

```
{SAVE CHILDREN: layoutName}
```

This action allows the rules to save all child issues, without saving the parent issue. This action is typically used when *layoutName* is a layout type that is composed with `EDIT_RID_xxxx` as the type. These layouts often contain a series of questions held in child issues, which belong to a survey. This action allows all the related children to the parent (i.e. the questions within a survey) to be saved with a single action on the parent issue.

SAVE CHILDREN with EDIT_RID layouts

When a configuration utilizes `EDIT_RID` layouts, there is a use case where you might want to only save the current child issue, and not all the child issues which exist within the parent issue. There may potentially be hundreds of child issues, and it would take quite some time to save all these child issues. In this case, use the syntax:

```
{SAVE CHILDREN: EDIT_RID_CURR_ID}
```

where `EDIT_RID_CURR_ID` refers to only the ID of the current issue being edited within the `EDIT_RID` layout.

SAVE POINT

{SAVE POINT: }

This rule is valid within `onchange` directives only. It provides a temporary "checkpoint" save of an issue for the current user. Issues are only submitted for permanent saving to the database when the user subsequently clicks on the **Submit** button, or they are idle for a period that amounts to the value stored within the behavior setting named `SAVE_CONTINUE_TIMEOUT_SECS`. This command is typically used within sites with complex workflow, where users spend a large amount of time processing an issue, and where there is a concern that they may be interrupted by a system failure or that they may leave their computer screen open with unsaved work in progress. Once the `SAVE POINT` action has been triggered and before the **Submit** button has been clicked, other users may not update the same issue. If they attempt to do so, they will receive an error message.

The command is typically executed within the rules when the user completes a part of the screen and is about to move to a new section. For example:

```
<== onchange ==>
if (FOLD_PRE_DETAILS.{changed}) {
  {SAVE POINT: }
}
```

When the user clicks on the fold field named `FOLD_PRE_DETAILS`, the issue will be saved temporarily. Processing continues normally for the user, and they will need to click the **Submit** button in the normal way to permanently update the issue, or they leave their screen open for the amount of time specified in the behavior setting named `SAVE_CONTINUE_TIMEOUT_SECS`. However, if the user closes the screen or there is some failure, and they edit the issue again within the timeframe specified within `SAVE_CONTINUE_TIMEOUT_SECS`, they regain their place and all field values at the checkpoint where the issue was last saved.

During the time that the issue has been saved at a checkpoint, until the issue is **Submitted** or automatically saved, no other user can edit the issue.

STOP

{STOP: *Message*}

This action is only valid in `preupdate` rules. This will interrupt the processing of `preupdate` rules and returns to the user without executing further rules. This action works differently from the `ERROR` action in that the `ERROR` action continues execution and may accumulate more than one message.

You may use the standard escape characters in the error message. The most common requirement is to use `\n` as a linefeed within your message.

Also, you may obtain the value of any field on the form and insert this into the message. This is achieved by using the form `$$FIELDNAME$$` into the message. `$$FIELDNAME$$` is replaced with the current value of the field.

UPDATE

```
{UPDATE [AS role] [NOWAIT]: linkName field_1 = value_1 [, field_2 = value_2]
... ... [, ATTACHMENT[. {selected}]]}
```

This will update one or more records, based upon the definition of the link specification. If the link points to more than one record, all affected records will be updated. This action only works within the `postupdate` directive, as it is essential to perform the underlying update before you initiate actions that are dependent. As an example, the following will update all customer contact records, if the contact is changed:

```
<== link custCSRInfo ==> AREA='CSR Calls', CUST_LIST
if (AREA = 'Customers' && CUST_CONTACT_PHONE.{changed}) {
  {UPDATE: custCSRInfo CUST_CONTACT, CUST_CONTACT_PHONE}
}
```

If the field that provides the values for the `UPDATE` operation is of type Log Area (e.g. the `COMMENTS` field), then only the last entry from the source issue is added to the new issue.

In the same way as with the `ADD` action, you may make implied assignments.

The as role optional syntax allows the action to be implemented by altering the user's current role to the role, purely for the action. The role is the title of the role, not its name. This is useful when you need to update a record in a different Business Area or Project where the current user may not have sufficient permissions. The optional ATTACHMENT keyword allows all or selected attachments to be copied from the current issue to the new issue being created. If the ATTACHMENT keyword is further qualified with {selected}, then only attachments that the user has individually selected with the **Select?** checkbox will be copied. The **Select?** checkbox is enabled on the user interface with the security permission key named PR_ADD_PROBLEM.ATTACH_SELECT and PR_RESOLUTION.ATTACH_SELECT.

The optional NOWAIT keyword provides the facility to execute the UPDATE action as a background task, not waiting for the result of the action before returning control back to the user. This may be used if you have many UPDATE actions to perform, and you do not want the user to wait for these to complete before they may carry on working in the user interface. This keyword should be used with caution, as there are no indications to the user if there is a failure from the action. Any failures are reported in the application server log file. Also, note that if you place the action within an `onchange` directive, as opposed to within a `preupdate` or `postupdate` directive, then the values within the issue as they stand at that moment will be update to the issue, as opposed to the final values when the user has submitted the issue for insertion or updating. The [ADD_UPDATE task](#) must be running for this option to work successfully.

There is a 5,000 issue limit to the number of linked issues which will be updated with this action.

UPDATE USER

```
{UPDATE USER: security user id = value1, security password = value2,
  first name = value3, last name = value4, email = value5,
  company name = value6 [, login id = value8]
  [, work phone = value9] [, city = value10]
  [, state = value11] [, allow email dups = true | false]
  [, allow first last dups = true | false] [, other_fields = valuenn] }
```

- A full list of the fields that may be used as parameters in the command is in the section at the end of this page titled **Full Field List**
- The `security user id` is typically the name of the field that contains the existing User Id
- Field values from the current issue being inserted or updated can be substituted for any of the `valuen` entries. For example, `first name = VENDOR_FIRST_NAME`
- You can assign a field value from a linked record to the field on the account record. For example, `company name = (parentRecordLink).VENDOR_NAME` will assign the company name of the user being created to the vendor name in the link to the parent record named `parentRecordLink`
- You may assign a string value to a field. For example, `area = 'Customer Account'` sets the value for the user's area. Of course, the value for the field must exist
- Both the `roles` and `privacy_group` parameters may be multi-valued. In that case the values are separated by semi-colons. For example `user role = ENGINEERING; MARKETING; ACCOUNTING` will assign these 3 roles to the user being created
- It is recommended that this feature be used to create users in a guest role capacity, or more explicitly, to be in the role nominated in the behavior setting named `LIMITED_USER_ROLE`
- A further recommendation is that you use this command to create users who occupy concurrent licenses as opposed to named licenses. This avoids the potential to attempt to create a named user license when no more are available. An error is generated if there is an attempt to create a new license and none are available
- The `security user id = value1` parameter is required as this specifies the user record to be updated. You may map the `login id` to a new value as long as the `security user id` is provided
- `allow email dups` - When this is set to a value of `true`, then duplicate email addresses will be allowed across different users. The default is `false`. Care should be taken when assigning this to a value of `true`, as it will not be possible to determine which user is creating an issue via EVMail, as this is dependent upon the software finding a unique email address within the ExtraView application. The default value is `false`
- `allow first last dups` - When this is set to a value of `true`, then duplicate combinations of first and last names are allowed with different users. The default value is `false`
- This action is often used as a companion to the `<== user mapping ==>` directive which allows administrative changes to users to be reflected in updates to issues which were originally used to create user information.

Note

It is recommended that you use a built-in JavaScript function to verify the password before the rule is invoked. To achieve this, configure the following:

- A text field to store the password. This field is passed to the server as part of the CREATE USER rule in the `security_password` parameter
- A text field to store the verify password field. This field is **not** passed to the server, but you should place a layout cell attribute of the type HTML MODIFIER on the field. The syntax of the value is:

```
onchange=checkPasswordRules(p_passwordfield.value, p_verifypassword.value, minCharacters, minNumeric, minUpperCase, minSpecialChars)
```

passwordfield - the name of the password field on the form
 verifypassword - the name of the verify password field on the form
 minCharacters - the minimum number of characters in the password
 minNumeric - the minimum number of numeric characters in the password
 minUpperCase - the minimum number of upper case characters in the password
 minSpecialChars - the minimum number of special characters in the password

The 4 digits should be identical to those in the behavior setting named PASSWORD_RULES

- An example might be onchange=checkPasswordRules(p_password.value, p_verifypass.value, 8, 1, 1, 1)

Example

```
if (PROJECT=Contacts && CREATE_USER_BTN.{changed} && USER_ID.{not null}) {
  UPDATE USER:
    security user id      = USER_ID,
    security password    = 'Welcome',
    first name           = VENDOR_FNAME,
    last name            = VENDOR_LNAME,
    email                = VENDOR_EMAIL,
    company name         = (parentRecord).VENDOR_LIST,
    work phone           = VENDOR_PHONE,
    city                 = CITY,
    state                = STATE,
    zip                  = ZIP,
    area                 = 'Questionnaire Area',
    project              = 'Questionnaire Data',
    alphap timezone     = PST8PDT,
    user role            = ENGINEERING; SALES,
    privacy group        = PRIVACY_GROUP_LIST,
    enabled user         = N,
    allow email dups     = true,
    allow first last dups = false
}
```

Full Field List

Field	Required?	Notes
additional email		Must be a valid email address. This is optional and only used as an alternative to the EMAIL setting
additional email on		Y or N to turn additional email address on / off
address or address 1		
address 2		
alpha timezone		
area		The ID of the default Business Area of the user
cell phone		
chart font		Must be a valid font name on your server
city		
company name		
country		
date format		Must be a valid date format. See the Appendix named Date and Time Formats for a list
email		Must be a valid email address
email charset		
email format		The default is HTML. The alternative is TEXT
email on		Y or N. This enables or disables email on the account
enabled user		Use Y to enable the user with a Concurrent license. Use N to enable the user with a Named license. Use D to disable the user. The default value is Y, which enables the user with a Concurrent license.
fax		
file attach charset		Typically UTF-8, which is the default

first name		
home phone		
job title		
language		Use the two character ISO 3166 codes
last name		
login id		The alternative to SECURITY_USER_ID
mobile report id		Must be the Report ID of a valid report
password expiry date		
password interval		The number of days between each prompt for a user to update their password
privacy_group		The name of a valid privacy group
postal_code or zip		
project		The ID of a valid project within the Business Area being set for the user
report 1 id		A valid Report ID for the first report on a user's Home Page
report 2 id		A valid Report ID for the second report on a user's Home Page
report 3 id		A valid Report ID for the third report on a user's Home Page
security password		The unencrypted value for a user's password
security user id	Yes	The User's ID
state		
twenty four hour time		Use Y if the user is to use 24-hour time, else use N
user defined 1		
user defined 2		
user defined 3		
user defined 4		
user defined 5		
user defined 6		
user defined 7		
user defined 8		
user defined 9		
user defined 10		
user role		A list of the names of user roles, delimited with semi-colons
work phone		

Special Values

Special values are used within rules to reference values outside the issue, or to set specific values to aid in manipulating the issue.

EMAIL_IGNORE_GROUP	<p>This allows you to check or uncheck the checkbox that sends notification with the EMAIL_CUSTOMER field on the <i>add</i> and the <i>edit</i> screens. Normally this is the Guest or Customer Role. Set to a value of 'Y' to set the value to checked, or to a value of 'N' to set a value of unchecked. Use a preupdate rule such as:</p> <pre>if (SCREEN_NAME='ADD' && STATUS='Fixed') { EMAIL_IGNORE_GROUP = 'Y'; }</pre> <p>Valid values are 'Y' and 'N'. Note that the value may be in upper or lower case.</p>
EXT_SITE_URL	<p>This special value references and returns the value of the behavior setting named EXT_SITE_URL.</p>
GENERATE_EMAIL	<p>This allows you to check or uncheck the checkbox that governs notification on the <i>add</i> and the <i>edit</i> screens. Use a preupdate rule such as:</p>

	<pre>if (SCREEN_NAME='ADD' && CATEGORY='Undetermined') { GENERATE_EMAIL = 'N'; }</pre> <p>Valid values are 'Y' and 'N'. Note that the value may be in upper or lower case.</p>
<p>SCREEN_LOAD</p>	<p>There are several occasions when <code>load</code> directive rules are executed:</p> <ul style="list-style-type: none"> • When an <i>add</i> screen loads • When an <i>edit</i> screen loads • When the user clicks the Update & Continue button on the menubar of an <i>edit</i> screen. This operation is fulfilled via an Ajax request to the server so no screen refresh occurs. <p>There are times when you want different rules processing to happen, especially if the Update & Continue button is clicked from an <i>edit</i> screen. The <code>SCREEN_NAME</code> special value allows the rules programmer to differentiate between the <i>add</i> and the <i>edit</i> screens. The <code>SCREEN_LOAD</code> special value allows the rules programmer to differentiate when the Update & Continue button is causing the issue to be loaded. The <code>SCREEN_NAME</code> special value may have the value <code>FULL</code> or <code>AJAX</code>, with usage such as:</p> <pre>if (SCREEN_NAME='EDIT' && SCREEN_LOAD='FULL') { ... do something ... };</pre> <p>or</p> <pre>if (SCREEN_NAME='EDIT' && SCREEN_LOAD='AJAX') { ... do something else ... };</pre>
<p>SCREEN_NAME</p>	<p>This has two possible values, <code>ADD</code> or <code>EDIT</code>. This allows you to define a rule that will only be executed on the <i>Add</i> or <i>Edit</i> screens. For example:</p> <pre>if (SCREEN_NAME='ADD' && STATUS='OPEN') { }</pre> <p>will execute the rule, only if you are adding an issue and the status is <code>OPEN</code>.</p>
<p>SITE_URL</p>	<p>This special value references and returns the value of the behavior setting named <code>SITE_URL</code>.</p>
<p>SYSDATE</p>	<p>This provides a value of the current timestamp</p>
<p>SYSDAY</p>	<p>This provides the Date Value of the current time</p>
<p>USER</p>	<p>This references the current user</p>
<p>USER_ROLE</p>	<p>This references or sets the current user role. Setting the user role is only allowed under specific conditions:</p> <ol style="list-style-type: none"> This will only work on the <i>edit</i> screen, not the <i>add</i> screen To set a new role to the current user, the current user must be able to adopt the new role. I.e., their user account must specify that they are allowed to adopt the new role as part of the user configuration. If the rule attempts to set a role to a role to which the user does not have permission, the role will be changed to the role identified by the behavior setting named <code>LIMITED_USER_ROLE</code>. Thus, you may still affect a role change to a user who has a single role defined, but this will typically be the Guest or Customer role.

Rule Values

Value Identifiers are one of the following:

- A Data Dictionary Name, e.g. DESCRIPTION or DATE_CREATED
- A Data Dictionary Name, qualified with a Layout Name, e.g. ADD_PROBLEM.DESCRPTION
- A User ID, e.g. BILL.SMITH
- A User Role, e.g. ADMIN or QA
- A Special Value as defined on this [page](#).

These must be upper case, and must match the internal name of the respective value. Value Identifiers are interpreted first as a Data Dictionary Name, then User ID, and then User Role unless an IDENT: is specified. Rule values are expressions of the form:

- 'Value' – Values can be quoted or left unquoted if their interpretation is unambiguous – i.e. there are no embedded spaces, etc. If this is a lookup field (typically this is a field with a display type of LIST, TAB, or POPUP) this will be treated as the Display title and verified against the database
- Special values are what their name implies: a placeholder for a value the system will provide. These are values, such as USER or SYSDATE. See this [page](#) for a full list of special values
- DD_NAME – A Data Dictionary name may be used to reference the value associated with that data element, such as ASSIGNED_TO. Data Dictionary names may be used on either side of the operator. Data dictionary names should always be expressed in uppercase.
- (link name).DD_NAME – A link name may be specified before a DD_NAME to reference the value contained in a related issue. The link name must be specified in a Link Directive
- Qualifiers - Complex identifiers consist of an optional link expression, a DD_NAME followed by one or more qualifiers. Qualifiers are properties, such as {is external}, or conditions, such as {changed}. They may also be complex conditions, as {changed_from:'value'}, where 'value' is interpreted as a simple value. See this [page](#) for a list of qualifiers
- IDENT:'Value' – This is a special form, used to force evaluation of an identifier as a specific type. For example, this can be used to force evaluation of a value as a User ID if there happens to be a Data Dictionary entry with the same value. Use one of the following forms:
 - EMAIL to specify an email address
 - USER to specify a User ID
 - ROLE to specify a User Role

Comparison of Field Values

The internal and external representations of fields vary across their display type. When fields within rule expressions are compared (using relational operators such as "<", ">", "!=", or "="), the field values are coerced into objects that are appropriate or capable of comparison. The coercions used in rules are defined in the following:

- LIST – LIST : display titles in the default locale are compared as strings. Includes aliased lists
- LIST – TEXTFIELD: display title of list value in default locale is compared to the TEXTFIELD
- LIST – DATE: the display title of the list value is parsed as a date and compared to DATE field as Calendar object
- LIST – DAY: same as LIST – DATE
- LIST – NUMBER: the display title of the list value is parsed as a double (floating point) and compared to the NUMBER field as a Double object
- LIST – DECIMAL: the display title of the list value is parsed as a decimal and compared to DECIMAL field as a BigDecimal object
- LIST – CURRENCY: the display title of the list value is parsed as a currency and compared to CURRENCY field as a BigDecimal object
- LIST – USER: the display title of the list value is compared to the display name of the USER field as Strings
- TEXTFIELD – TEXTFIELD: the text field values are compared as Strings
- TEXTFIELD – DATE: the text field value is parsed as a date and compared to the DATE field as a Calendar object
- TEXTFIELD – DAY: same as TEXTFIELD – DATE
- TEXTFIELD – NUMBER: the text field value is parsed as a double and compared to the NUMBER field as a Double object
- TEXTFIELD – DECIMAL: the text field value is parsed as a decimal and compared to the DECIMAL field as a BigDecimal object
- TEXTFIELD – CURRENCY: the text field value is parsed as a currency and compared to the CURRENCY field as a BigDecimal object
- TEXTFIELD – USER: the text field value is compared to the display name of the USER field as Strings
- DATE – DATE: the DATE fields are compared as Calendar objects

- DATE – DAY: same as DATE – DATE
- DATE – NUMBER: unequal
- DATE – DECIMAL: unequal
- DATE – CURRENCY: unequal
- DATE – USER: unequal
- DAY – DAY: same as DATE – DATE
- DAY – NUMBER: unequal
- DAY – DECIMAL: unequal
- DAY – CURRENCY: unequal
- DAY – USER: unequal
- NUMBER – NUMBER: compared as double (floating point) numbers
- NUMBER – DECIMAL: the DECIMAL field value is converted to BigDecimal, and then Double, then the fields are compared as double (floating point) numbers
- NUMBER – CURRENCY: same as NUMBER-DECIMAL
- NUMBER – USER: unequal
- DECIMAL – DECIMAL: the DECIMAL field values are compared as BigDecimal objects
- DECIMAL – CURRENCY: same as DECIMAL-DECIMAL
- DECIMAL – USER: unequal
- CURRENCY – CURRENCY: same as DECIMAL-DECIMAL
- CURRENCY – USER: unequal
- USER – USER: the user display names are compared

Value Qualifiers

Qualifiers are applied to fields stored within the Data Dictionary or special values to return a condition or special value. You apply the value qualifier to the dictionary name of the field. They may be entered as lower or upper case. Some directives may only be used within specific directives. These constraints are listed below in the last column of the table.

General Value Qualifiers

Value Qualifier	Purpose	Used within Directives
{changed}	<p>This has two possible interpretations, both of which return true or false. First, this qualifies a change if a field value has been changed when the rule is triggered. For example, if you have a field named MY_FIELD and the user enters or selects a new value for the field, you can then trigger a rule such as:</p> <pre>if (MY_FIELD.{changed}) { ANOTHER_FIELD = 'value'; }</pre> <p>The second use is when the <i>Add another</i> button on a repeating row has been pressed, and you want to perform an action on the repeating row that is being added. This is a change action that allows you to manipulate fields, usually to set values in the repeating row being added. An example of this usage, where you have a repeating row named RR_LAYOUT and you want to alter the value of a repeating row field named FIELD_NAME is:</p> <pre>if (RR_LAYOUT.{changed} && RR_LAYOUT.{max_row_num} = 3) { FIELD_NAME[3] = 'value'; }</pre> <p>Note that the value of 3 in the above example means to change the values on the 4th row, as the first row is row zero, the second is row one, etc.</p>	onchange preupdate
{changed from: <i>value</i> }	This returns true if the last value of the field was ' <i>Value</i> ', else it returns false	onchange preupdate
{changed to: <i>value</i> }	This returns true if the field is changed to the new value ' <i>Value</i> ', else it returns false	onchange preupdate
{clear}	This clears the value in the field	any
{company name}	This may only be applied to a field with a display type of <i>user</i> and returns the company name of the user referred to	any
{contains <i>value1</i> [, <i>value2</i> , <i>valuen</i> , ...]}	Used to determine if one or more values are selected within a multi-valued list.	any

	If you use the syntax <code>MULTI_VALUE_LIST1.{contains MULTI_VALUE_LIST2}</code> the expression will return true if all the the checked values in <code>MULTI_VALUE_LIST2</code> are also checked in <code>MULTI_VALUE_LIST1</code> .	
{default}	This value qualifer is used to set a field to its default value from the data dictionary	any
{excludes <i>value1</i> [, <i>value2</i> , <i>valuen</i> , ...]}	Used to determine if one or more values are not selected within a multi-valued list. This qualifier is only used with multi-valued fields	any
{exists}	This qualifier is only used within a link directive to check whether a value is present or not present	any
{is active}	This may only be applied to a field with a display type of <i>user</i> and returns true if the User field references an active user	any
{is external}	This may only be applied to a field with a display type of <i>user</i> and returns true if the User's company name is different from the site company name, as defined by the behavior setting named <code>COMPANY_NAME</code>	any
{is guest}	This may only be applied to a field with a display type of <i>user</i> and returns true if the user's only role is the role defined by the behavior setting named <code>LIMITED_USER_ROLE</code>	any
{is inactive}	This may only be applied to a field with a display type of <i>user</i> and returns true if the User field references a deactivated user	any
{is internal}	This may only be applied to a field with a display type of <i>user</i> and returns true if the company name of the User field specified matches the site company name defined by the behavior setting named <code>COMPANY_NAME</code>	any
{like: <i>value</i> }	<p>This performs a like comparison on the value of text fields, text area fields and log area fields, providing a return of true or false. Use must use either an asterisk (*) or a question mark (?) as a wild card character in the value that you are evaluating. You must use one or more wildcard characters in a single rule. If the string you are searching to match on may be in the middle of a value found, then you should use a wildcard at the beginning as well as at the end of the string.</p> <p>For example <code>{like:nation*}</code> will find the word national but not the word international. However, <code>{like:*nation*}</code> will find both national and international. This value qualifier is case-sensitive.</p> <p>If you are using the qualifier on a log area display type field, then only the most current entry is used in the comparison.</p>	any
{lowercase}	This qualifier returns the value passed to it, after converting the text to lower case.	any
{match: <i>value</i> }	<p>This performs an exact match using a regular expression on the value of text fields, text area fields and log area fields, returning true or false. True is returned only if the entire value of the text matches the value in the rule. This value qualifier is case-sensitive.</p> <p>If you are using the qualifier on a log area display type field, then only the most current entry is used in the comparison.</p>	any
{max_row_num}	<p>This qualifier is used only with repeating row layouts and is used to provide an action on a row. For example, given a repeating row layout named <code>RR_LAYOUT</code>, and wanting to set the value of a field named <code>FIELD_NAME</code>, you can use the construct:</p> <pre>if(RR_LAYOUT.{max_row_num} = 3 && RR_LAYOUT.{changed}) { FIELD_NAME[3] = 'value'; }</pre> <p>This changes the value of the <code>FIELD_NAME</code> on the fourth row of the layout, when that row is added to screen through the use of the <i>Add another</i> button on the repeating row layout. If you reference a row number that does not exist, an error is generated, of the form Repeating row index too large: <code>FIELD_NAME</code>.</p> <p>This indicates that your rule will not ever execute properly, and you must change the rule to avoid the error. If you set the value of a field with such a rule, and any of the preceding repeating rows do not have a value set, then a null value is set into the value of the field on the preceding row.</p>	onchange preupdate
{not like: <i>value</i> }	This is used in the same manner as <code>{like:value}</code> but provides the negative result set to <code>{like:value}</code>	any
{not null}	This returns true if the field is not null	any

{null}	This is true if the field is null	any
{old value}	This returns the prior value of the field	onchange preupdate
{owner}	This qualifier is used to determine whether the field referred to has the same value as the value of the built-in OWNER field	any
{uppercase}	This qualifier returns the value passed to it, converting all the text to upper case.	any

Date / Time Value Qualifiers for Date Calculations

These may be used within any directive.

Value Qualifier	Purpose
{days}	This value qualifier is applied date calculations to determine the number of days between two dates. For example: <code>X_NUMBER = (X_DATE1 - X_DATE2).{days};</code> will return the number of days as an integer, between X_DATE1 and X_DATE2
{hours}	This value qualifier is applied date calculations to determine the number of hours between two dates. For example: <code>X_NUMBER = (X_DATE1 - X_DATE2).{hours};</code> will return the number of hours as an integer, between X_DATE1 and X_DATE2
{minutes}	This value qualifier is applied date calculations to determine the number of minutes between two dates. For example: <code>X_NUMBER = (X_DATE1 - X_DATE2).{minutes};</code> will return the number of minutes as an integer, between X_DATE1 and X_DATE2
{seconds}	This value qualifier is applied date calculations to determine the number of seconds between two dates. For example: <code>X_NUMBER = (X_DATE1 - X_DATE2).{seconds};</code> will return the number of seconds as an integer, between X_DATE1 and X_DATE2

Date / Time Value Qualifiers for Date Component Manipulations

These may be used within any directive. You may apply the qualifier to fields with a display type of DATE or DAY. In addition you may apply the qualifiers to the values of SYSDAY and SYSDATE .

Value Qualifier	Purpose
{day}	The day number of the current month
{day of week}	The day number of the current week
{day of year}	The day number within the current year
{hour}	The hour number of the morning or the afternoon
{hour of day}	The hour of the day
{minute}	The minute number within the current hour
{month}	The number of the current month
{second}	The second number within the current minute
{week of month}	The week number within the current month
{week of year}	The week number within the current year
{year}	The year as a number

Examples:

Set a text field on an *add* or an *edit* screen to the day number within the current month:

```
MY_TEXTFIELD = SYSDATE.{day};
```

Within an expression, if a date field shows that it is the 8th day of the month, set a text field to a string:

```
if (MY_DATEFIELD.{day} = 8) {MY_TEXTFIELD = 'Today is the 8th';}
```

User Field Qualifiers

These may be used within any directive. Each field in a user's record has a value qualifier that can be accessed with the syntax `USER.{userfield}`. For example, if you want to assign the value of a user's company name to the field name `COMP_NAME` on screen, you would use this:

```
COMP_NAME = USER.{company name};
```

This is a complete list of the user field qualifiers that may be used.

Value Qualifier	Purpose
{area}	The user's default Business Area
{address} {address 1}	The first line of the user's address
{address 2}	The second line of the user's address
{city}	The city within the user's address
{cell phone}	The user's cell phone number
{company name}	The user's company name
{country}	The user's country within their address
{email}	The user's email address
{fax}	The user's fax number
{home phone}	The user's home phone number
{image}	The user's image or photograph. Note that this can be assigned to an image field within an issue
{job title}	The user's job title
{first name}	The user's first name
{language}	The user's language - this is expressed as the two character abbreviation of the country code
{last name}	The user's last name
{pager}	The user's pager number
{project}	The user's default Project within their Business Area
{state} {province}	The user's State or Province
{region}	The user's Region
{signature}	The user's signature. Note that this can be assigned to an image field within an issue
{time zone}	The user's time zone
{user defined nn}	where nn is a number from 1 to 10. These correspond to the user defined fields within the user's record
{work phone}	The user's work phone number
{zip} {postal code}	The user's Zip Code or Postal Code

Document & Image Field Qualifiers

The metadata within Document and Image field display types can be accessed with the following qualifiers:

Value Qualifier	Purpose
{charset}	The character set of the document or image
{content type}	The content or mime type of the document or image
{created by user}	The user ID of the person who created the document or image
{external ident}	A string containing key information to identify the object externally; this is opaque to ExtraView base code. This is not normally used in rules

{file desc}	The description of the document or image
{file extension}	The extension of the document or image that was uploaded
{file format}	The format of the document or image that was uploaded. For example, this may be BINARY or TEXT
{file name}	The complete filename of the document or image that was uploaded
{file size}	The size in bytes of the document or image that was uploaded
{last updated by user}	The user ID of the person who uploaded the document or image
{mime type}	The mime type of the document or image
{thumbnail size}	The size in bytes of the thumbnail image of the document or image that was uploaded
{udf id}	The UDF_ID of the document or image that was uploaded

Permissions

Business Rules ignore security permissions for fields, for all roles. This is similar to developing user custom extensions to ExtraView using Java.

It is assumed that the developer of business rules understands that they have the ability to update the value of any field, without restriction, by using a business rule. Thus, a business rule may make an assignment to a field that is read-only to the user interface, or is not even placed on an *add* or *edit* screen layout.

Writing Rules

General Syntax

Rules consist of an action and an optional condition. If a Condition is omitted, the action will always occur; otherwise the action will be taken if all the conditions are true.

Rules will have one of the following syntaxes:

- <Rule Action>
- if (<Rule Condition >) { <Rule Action> ; <Rule Action> }
- if (<Rule Condition > && <Rule Condition> ...) {
 - <Rule Action> ; <Rule Action>;
 - <Rule Action> ; <Rule Action>;
 - <Rule Action> ; <Rule Action>;
 - <Rule Action> ; <Rule Action>;

There is also a special syntax for negative conditions:

if !(<Rule Condition >)

Rules also support the following conditional operators. These conditional operators will work with all numeric and date display field types. They also work as operators using a string compare operator when used with text and list display types.

Operator	Meaning
>	Greater than
<	Less than
<=	Less than or equal to
>=	Greater than or equal to

Note: The condition(s) may extend over multiple lines, and are controlled by the parentheses.

Note: You may not set the value of the fields AREA and PROJECT with a load, refresh or clone directive. Within the rules, all referenced fields must exist in the data dictionary, and must appear on the layout to which the rule applies. You cannot define variables or new fields "on-the-fly".

Assignment

By definition, all fields have a type, specified by its display type in the data dictionary. As with all other computer languages, assignments must be made between fields with the result being of the correct type. For example, you can assign a text field to another text field, but cannot assign a text field to a number field. However, you might assign the a value in a list field to a text field, as the individual values within the list field are of type text.

For the most part, automatic conversions are made between different data types. For example, if you assign a list type field to a text field, the display title of the list value is automatically provided and used. Similarly, if you assign a text field to a list value, then a reverse lookup is performed on the text value to populate the list field. Of course, if you make an assignment of this last type, then the value in the text field must correspond to an existing value of a list title else an error will be generated.

An important feature of rules within ExtraView is that you can only perform a single operation with a single rule. For example, to add two fields together (FLD_1 and FLD_2) and place the result in a third field (FLD_TOTAL) you must take two steps:

```
FLD_TOTAL = FLD_1;  
FLD_TOTAL += FLD_2;
```

You cannot and must not use the form:

```
FLD_TOTAL = FLD_1 + FLD_2;
```

When applied to a repeating row field, the above syntax updates the field value on all repeating row fields. The following syntax demonstrates how you make an assignment to a repeating row field on a single row. Note that the repeating rows are numbered from zero, not from one.

```
RR_FIELD[0] = 'value1';  
RR_FIELD[1] = 'value2';
```

Assignments within Search Layouts

There is a special form for assignment that is used within layouts of type SEARCH. Consider a SEARCH layout that is embedded within an ADD_PROBLEM or EDIT_PROBLEM layout, or a Screen usage layout embedded within one of these. This is the only occasion on which fields of the same name may reside within the same overall layout structure.

It can be useful to populate a field or fields within the SEARCH layout with the value of a field in one of the Screen usage layouts. To differentiate the field within the SEARCH layout, from a field in the other layouts, where the same field name may be in use, within an ONCHANGE directive use the form:

```
SEARCH_LAYOUT_NAME.FIELD_NAME = FIELD_NAME2;
```

When the FIELD_NAME2 embedded within one of the Screen layouts is set to a value, or its value is changed, the value of the field FIELD_NAME within the SEARCH_LAYOUT_NAME is set to the value of FIELD_NAME2.

"IF" statements

IF statements allow the conditional processing of statements. For example, consider the following rule:

```
if (PROJECT = 'Customer Tickets') {  
  ASSIGNED_TO = 'BSMITH';  
}
```

This will work equally well as a load rule, an onchange rule or a preupdate rule. It will not work as a postupdate rule, as no update will be made once the rule has been read and executed. Next, consider this rule:

```
if (PROJECT.{changed to:'Customer Tickets'}) {  
  ASSIGNED_TO = 'BSMITH';  
}
```

This will only work as an onchange or a preupdate rule, as it is during these times that changes can be detected.

Within an *if* statement you may use the conjunctions of AND and OR. These are written within rules with && representing AND and || representing OR. These conjunctions can be mixed within one *if* statement, and parentheses may be used to set the order of precedence of operations. Examples of valid *if* statements are:

```
if (PRIORITY = 'P 2' && ASSIGNED_TO = 'Fred Jones') {  
  MY_FIELD = 'Yes';  
}
```

```

if (PRIORITY = 'P 2' || ASSIGNED_TO = 'Fred Jones') {
  MY_FIELD = 'Yes';
}

if (PRIORITY = 'P 2' && ASSIGNED_TO = 'Fred Jones' || ORIGINATOR = 'Jill Fraser') {
  MY_FIELD = 'Yes';
}

if ((PRIORITY = 'P 2' && ASSIGNED_TO = 'Fred Jones') || (PRIORITY = 'P 1' && ORIGINATOR = 'Jill Fraser')) {
  MY_FIELD = 'Yes';
}

```

Nested *if* statements, *else / else if*, *()*, and *or* clauses are not supported at this time. However, you may write statements in a way that achieves your purpose. For example, a statement such as:

```

if (AREA = 'Customer Support') {
  if (STATUS='Submitted') {
    SUB_STATUS = 'Needs Review';
    OWNER = ASSIGNED_TO;
    DUE_BY_DATE = SYSDAY;
  }
} else if (AREA = 'Bugs') {
  STATUS = 'New';
} else {
  STATUS = 'Unassigned';
}

```

IS NOT SUPPORTED It should, and must be, written as:

```

if (AREA='Customer Support' && STATUS='Submitted') {
  SUB_STATUS='Needs Review';
  OWNER=ASSIGNED_TO;
  DUE_BY_DATE = SYSDAY;
}
if (AREA = 'Bugs') {
  STATUS = 'New';
}
if (AREA != 'Customer Support' && STATUS != 'Submitted' && AREA !='Bugs') {
  STATUS = 'Unassigned';
}

```

Recognizing a User's Changes within the ONCHANGE Directive

You must always write a rule that recognizes the changes a user makes when they alter a field value. This is achieved within the onchange directive, and you must consider and use one of three change events.

- changed
- changed from
- changed to

You must have one, and only one, of these qualifiers in a statement. For example, the following rule will work:

```
if(CATEGORY.{changed to:"Software"} && PRIORITY = "P 1") { IMPORTANCE = "High" }
```

whereas the following will not work:

```
if(CATEGORY.{changed to:"Software"} && PRIORITY.{changed}) { IMPORTANCE = "High" }
```

The reason is that a user implicitly changes only one item on the user interface at one moment. The rule will never trigger the change if it looks for two or more changes at the same moment.

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Quoting & Comments

Quoting

Literal values may be quoted with either single or double quotes. No escape mechanism is currently provided.

Comments

Comments are lines that begin with a # character. All characters following the # on the line are ignored.

Limitations

- Rules may only use fields that physically store their value in the database or use the special values as specified above. They will not work with computed fields from the data dictionary. For example, you cannot create a rule that uses these fields:
 - DATE_CLOSED_SINCE
 - DATE_CREATED_DAY
 - DATE_CREATED_MONTH
 - DATE_CREATED_WEEK
 - DATE_CREATED_TRUNC
 - DATE_CREATED_YEAR
 - DATE_LAST_STATUS_CHANGED_SINCE
 - DAYS_IN_STATUS
 - DAYS_OPEN
 - MONTHS_OPEN
 - WEEKS_OPEN
 - TIMESTAMP_MONTH
 - TIMESTAMP_SINCE
 - TIMESTAMP_TRUNC
 - TIMESTAMP_WEEK
 - TIMESTAMP_YEAR
 - WEEKS_IN_STATUS
 - WEEKS_OPEN
 - Any field with a display type of *Label*
 - Any field with a display type of *Custom*.

However, you can often provide your own expression in a rule to derive the same information. For example, to calculate the number of days since the creation of an issue you may create a field named **MY_DAYS_OPEN** with a display type of **Number** and then construct a rule such as:

```
MY_DAYS_OPEN = (SYSDATE - DATE_CREATED).{days};
```

- This version of the Rules Engine does not support multi-value UDF's on repeating rows.
- Rules cannot be localized with this version. All values should use the title or value of the field in the base locale, as opposed to a localized value.

Rule Parsing & Recursion

Rule Parsing

Directives are case insensitive.

Conditional statements are case insensitive.

VALUE_IDENTIFIERS are case sensitive, and generally expected to be uppercase.

Values are generally display titles, and are case sensitive. A reverse lookup is done on the value to determine it's internal value if it a lookup type (list, popup, etc.). An exception is for user fields, which are assumed to be ExtraView User Ids, and are case insensitive.

Implied Assignments

When a field name is used in an ADD, ADD_ROW, COPY or UPDATE action with an equal sign and a field name on the right-hand side of the statement, it implies that you want the value of the field from the current issue to be used to assign to the add, copy or update value. This is simply a shorthand convention to save time when developing your rules:

```
SERIAL_NUMBER
```

is equivalent to using:

```
SERIAL_NUMER = SERIAL_NUMBER
```

Recursion

Programmers will be familiar with the topic of recursion. With rules, it is possible to write a rule that causes an update to happen, and when an associated rule fires, it causes the same or a different rule to fire that then causes another update to occur. This can happen in a repeatable cycle with no way for ExtraView to recognize that this is happening. The rules may continue firing on the server with no indication to the user that an endless cycle has started. For this reason, your rules should be examined carefully, especially those which add or update issues with the postupdate directive. If you accidentally set an infinite loop running, you should immediately restart the application server and then change your rule to prevent this happening again.

Debugging Rules

There are a number of directives and techniques that help with the debugging of rules. These all rely on the placement of entries into the application server log. These entries may be viewed with the **Admin --> System Controls --> System Log --> View Application Server Log** utility. Note the ability of this screen to be able to refresh the most recent entries. You can leave this window open as a message area while you alter rules and test their results in a different window.

After debugging, it is strongly suggested that you remove, or comment, the debugging directives, as they have a small impact on performance.

Directive	Use
debug	Turns on the debugging. All messages from rules execution are written to the log, until the end of rules execution, or until an <code><== end ==></code> directive is encountered
end	Ends all processing of rules and stops debugging messages being sent to the log
info	Causes log entries to verify that rules are being executed. Minimal details are listed
log	Logs rule activity in enough detail for end users to verify rule execution. Shows condition evaluation and assignments until the end of the rules, or until a <code><== nolog ==></code> directive is encountered
nolog	Turns off the <code><== log ==></code> directive

For example, create these rules:

```
<== load ==>
<== nolog ==>
if (AREA.{is not null}) SHORT_DESCR = 'Set at NO logging';
<== info ==>
if (AREA.{is not null}) SHORT_DESCR = 'Set at INFO level of logging';
<== log ==>
if (AREA.{is not null}) SHORT_DESCR = 'Set at LOG level of logging';
<== debug ==>
if (AREA.{is not null}) SHORT_DESCR = 'Set at DEBUG level of logging';
<== info ==>
```

The results from this will look something like this:

```
2010-07-20 16:10:34 [ info ] ExtraView. TP-Processor7 ,122118,TP-Processor7,
>>>Entering service,Display.doAddDisplay,,sc,0,,uid,BSMITH,tmem,41,fmem,10,nid
,http://nerdvana.extraview.net/evj ON WS_A:
2010-07-20 16:10:35 [ info ] TP-Processor7 ** Rules60: * Executing:
# L0000
if (AREA.{is not null}{not null} ()) {
    SHORT_DESCR = Set at NO logging (Set at NO logging);
}
2010-07-20 16:10:35 [ info ] TP-Processor7 ** Rules60: * Executing:
# L0001
if (AREA.{is not null}{not null} ()) {
    SHORT_DESCR = Set at INFO level of logging (Set at INFO level of logging);
}
2010-07-20 16:10:35 [ info ] TP-Processor7 ** Rules60: * Executing:
# L0002
if (AREA.{is not null}{not null} ()) {
    SHORT_DESCR = Set at LOG level of logging (Set at LOG level of logging);
}
2010-07-20 16:10:35 [ info ] TP-Processor7 ** Rules60: * Executing:
# L0003
if (AREA.{is not null}{not null} ()) {
    SHORT_DESCR = Set at DEBUG level of logging (Set at DEBUG level of logging);
}
2010-07-20 16:10:35 [ info ] ExtraView. TP-Processor7 ,122118,TP-Processor7,
>>>Leaving service,Display.doAddDisplay,time,1357,sc,0,cc,46,mc,0,uid,BSMITH,tmem,41,
fmem,12,nid,,http://nerdvana.extraview.net/evj ON WS_A:
```

Note the effects of the different directives.

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Order of Operations

There are occasions when you need to be aware of the order of operations of the execution of rules.

The most sensitive of these operations is the use of the mail action to send an email template within the preupdate directive. If your preupdate directive also contains rules that modifies some of the values that are used within the template, then the modified values are used, irrespective of the order of the rules. This is because the email notification is handled as a background process, and all updates to the record are completed before the notification task sends the mail.

Rules & Accordion Folds

Accordion folds are described on the page [Adding Accordion Folds to Layouts](#). You may use rules to set the initial state of an accordion fold to be open or closed, and you may open or close folds using rules to determine the state of the fold..

Examples

- You have created two folds within the data dictionary, named Fold A and Fold B. This implies the fields named FOLD_PRE_A, FOLD_POST_A, FOLD_PRE_B and FOLD_POST_B all exist
- You have placed these fields onto an *add*, *edit* or embedded layout
- The default behavior is that both folds are initialized in a closed state
- The first example shows how you might use a load directive to open Fold A when the screen is first presented to the user

```
<== load ==>
FOLD_PRE_A = {open};
```

- At the point where the user has opened Fold A and has performed data entry within there, we want Fold B to open when they click on the fold, and we want Fold A to close

```
<== onchange ==>
if (FOLD_PRE_B.{changed to:{open}}) {
    FOLD_PRE_A = {closed};
}
```

- Whenever we click on Fold B, and no matter its state, we open another fold

```
<== onchange ==>
if (FOLD_PRE_B.{changed}) {
    FOLD_PRE_A = {open};
}
```

- In this case, we have a more complex if statement, and we both open and close other folds when we open Fold B. This example also presumes the existence of FOLD_PRE_C and FOLD_POST_C

```
<== onchange ==>
if (FOLD_PRE_B.{changed to:{open}} && STATUS = 'Fixed') {
    FOLD_PRE_A = {closed};
    FOLD_PRE_C = {open};
}
```

- This last example shows how you might preset a number of folds, based upon the value of another field being changed by the user

```
<== onchange ==>
if (STATUS.{changed}) {
    FOLD_PRE_A = {open};
    FOLD_PRE_B = {open};
    FOLD_PRE_C = {closed};
}
```

Rules & Checkbox Fields

By definition, checkbox fields have two values, *checked* and *unchecked*. However in reality database technology really has three values under the covers:

- *Not Set*
- *Checked*
- *Unchecked*

There are differences in the way that *Not Set* and *Unchecked* are handled internally, but if you adhere to the following way to set and to unset the values of a checkbox, ExtraView will handle the internal differences.

To set a value:

```
MY_CHECKBOX = 'Y';
```

To uncheck a value:

```
MY_CHECKBOX = 'N';
```

To check whether a checkbox is set:

```
if (MY_CHECKBOX = 'Y') { ..... };
```

To check whether a checkbox is not checked:

```
if (MY_CHECKBOX = 'N') { ..... };
```

You should not use, or test for the *Not Set* (sometimes known as the *null* value) within your rules.

Rules & Date Calculations

Date calculations where you want to compute the difference between two dates, giving a numeric result are an exception to the above syntax. This is because you desire a numeric result and you cannot assign a date to a number without causing an error. The correct syntax to calculate the difference between two dates (DAT_1 and DAT_2) and place the result in the field DIFF is:

```
DIFF = (DAT1 - DAT2);
```

Date differences in rules may specify qualifiers to get results computed in units other than days. The qualifiers are {seconds}, {minutes}, {hours}, and {days}. Each of these results in an integral value after the date difference is computed. The fractional part of the computation is truncated, not rounded. This implies that the meaning is "the integral number of between the two dates".

Example:

```
## compute number of seconds between two dates
X_NUMBER = (X_DATE1 - X_DATE2).{seconds};
## compute integral number of days between two dates
X_DECIMAL = (X_DATE1 - X_DATE2).{days};
## compute total (including fractional) days between two dates
X_DECIMAL_DAYS = (X_DATE1 - X_DATE2);
```

You can specify a specific business calendar to use with date calculations. This is done with the calendar directive. For example, if you use the WEEKDAY calendar provided with ExtraView, and you have a calculation such as:

```
<== calendar WEEKDAY ==>
DATE_RESULT = SYSDATE;
DATE_RESULT += 3;
```

where SYSDATE is a Thursday, the result will be Tuesday, i.e. it is 3 workdays, plus the 2 weekend days.

If you add 0 to a date using a business calendar, the result will skip to the first work day beyond that date if that date is not a work day.

Null date and day field values have special treatment. When a date or day field has a null value, and is being used in a calculation, it is assumed the null date is *January 1st, 1900*. This avoids errors and null results occurring. However, tests on date and day type fields

with value qualifiers such as `date_field.{is null}` and `date_field.{not null}` return true or false depending on whether there is a null value.

Date fields and Day Fields

Using a Day type field within a Business Rule is consistent when it is compared or combined in expressions with other Day type fields. When compared with Date fields, the Date is converted to a Day value using the user's time zone (to which the Date value is, by definition, relative) and the comparison is done with a Day field to Day field comparison or calculation.

Rules & List Fields

This page refers to all enumerated lists, with the exception of multi-valued lists.

Enumerated lists are fields with display types of *List*, *Popup*, *Radio Button*, *Checkbox*, *User* and *Tab*.

The three principal abilities of rules with enumerated lists are to set a value in the list, to change a value in the list and to remove the value from the list. Adding a value and changing the value in the list are accomplished with the same assignment:

```
MY_LIST = 'Valid value';
```

The value you assign within the rule must exist, else the rules will not compile.

If you want to remove the value in the list assign it a null value as follows:

```
MY_LIST = '{null}';
```

You may assign a text field value to a list field value, assuming the value exists within a list.

Rules & Multi-Valued List Fields

Rule that access multi-valued list fields have a number of specific points that you should understand. The examples in this section all assume you have a multi-valued list field with a name of `FRUITS`, and that valid values within the list are *apple*, *pear*, *orange*, *banana* and *raspberry*.

Setting Values in a Multi-Valued List Field

For each assignment you make of a value within a multi-valued field, you are selecting that value. For example, if you want to set both *apple* and *orange* you would use:

```
FRUITS = ['apple', 'orange'];
```

The quotes around the values are optional, unless you have a space character within the value. For example, this is a valid statement:

```
FRUITS = [apple, 'orange', 'honeydew melon'];
```

If you want to set a single value of *pear* within the list you use a simple assignment statement.

```
FRUITS = 'pear';
```

Note that when you assign one or more values to a multi-valued field with an assignment, you are **adding** to the existing list values. For example, if the list contains both *apple* and *orange* and you execute this:

```
FRUITS = ['orange', 'raspberry'];
```

the list will then contain *apple*, *orange* and *raspberry*.

Adding a Value to an Existing Multi-Valued List Field

```
FRUITS += 'strawberry';
```

Clearing All Values from a Multi-Valued List Field

Simply set the the list as follows:

```
FRUITS = '';
```

or

```
FRUITS.{clear};
```

Checking Values Exist within a List

This syntax will find whether the single value of *orange* is currently set within the multi-valued list:

```
if (FRUITS.{contains 'orange'}) { ... };
```

This syntax will find whether the values of *pear*, *orange* and *banana* are currently set within the multi-valued list:

```
if (FRUITS.{contains 'pear', 'orange', 'banana'}) { ... };
```

This syntax will find whether the values of *pear*, and *orange* are currently set within the multi-valued list, but the value of *banana* is not within the multi-valued list:

```
if (FRUITS.{contains 'pear', 'orange'} && FRUITS.{excludes 'banana'}) { ... };
```

Check Values in a Multi-Valued List Field are Contained Within a Different Multi-Valued List Field

The following syntax allows you to check whether all the selected values in one multi-value list field are selected and contained within a different multi-value list field. Say you have two multi-valued list fields, named `LIST_FIELD_1` and `LIST_FIELD_2`. When a user selects various fields in both these lists in an *add* or *edit* screen and then updates the issue, you might want to have a rule that checks whether all the selected values in `LIST_FIELD_2` are selected in `LIST_FIELD_1`. The rule may look like this:

```
<== preupdate ==>  
if (LIST_FIELD_2.{changed} && LIST_FIELD_1.{contains LIST_FIELD_2}) {  
    MY_TEXT_FIELD = 'LIST_FIELD_1 contains all the values in LIST_FIELD_2';  
}
```

Assignments with Multi-Valued Fields

You can assign the selected values in a multi-valued list field to a text, text area, print text, or an HTML Area field. When you make the assignment, the text, text area, print text, or HTML Area field will contain the entire list of selected values, delimited with semi-colons.

Rules & Numeric Fields

Numeric fields are fields with display types of *Number*, *Currency* and *Decimal*.

The following assignment operators are used with numeric fields.

Operator	Meaning
<code>+=</code>	Add
<code>-=</code>	Subtract
<code>*=</code>	Multiplication
<code>/=</code>	Division

Null numeric field values have special treatment. When a numeric field has a null value, and is being used in a calculation, it is assumed the value is zero. This avoids errors and null results occurring. However, tests on numeric type fields with value qualifiers such as `numeric_field.{is null}` and `numeric_field.{not null}` return true or false depending on whether there is a null value.

Rules & Repeating Rows

In general, rules are executed on repeating rows, just as they are executed on the main *Add* and *Edit* screens. However there are some important differences.

- The first significant difference is that a rule such as:


```
<== onchange ==>
RR_FIELD = 'value';
```

is executed for all repeating rows in existence at the time of the onchange event, in the order of the repeating rows. You can take advantage of this to perform an evaluation of all repeating rows in existence, and then set a value of a field in the main *Add* and *Edit* screen based upon what you find. An example of this is that you might have the repeating row field named `RELEASE_STATUS` with values of *New*, *Open* and *Closed*. There may be any number of repeating rows in existence with any one of these values in each repeating row. The task might be that you want to set the `STATUS` field on the main *Add* or *Edit* screen, to *New* if any repeating row has the value of *New*, then secondarily set the `STATUS` field value to *Open* if there is no *New* value on a repeating row, but at least one repeating row has the value of *Open*. Finally, you might then want to set the `STATUS` value to *Closed* when all the values of the repeating rows are *Closed*. The following rules will achieve this:

```
<== onchange ==>
# First, push our changed status to the STATUS field, so we can then trigger a reset
# based on all repeating row fields, not simply the one that changed
if (RELEASE_STATUS.{changed}) {
  STATUS = RELEASE_STATUS; }
# Now do the actual roll up by resetting the main status based on whether specific
# RELEASE_STATUS values exist. Note that the order of these rules is critical
if (RELEASE_STATUS = 'Closed') {
  STATUS = 'Closed'; }
if (RELEASE_STATUS = 'Open') {
  STATUS = 'Open'; }
if (RELEASE_STATUS = 'New') {
  STATUS = 'New'; }
```

The rules are executed in order for all rows in the repeating row set. Therefore the last rule will have the last effect, setting *New* for the `STATUS` field if any repeating row has the value of *New* in the `RELEASE_STATUS` field. This progresses back up the list, so that if all repeating rows have the value of *Closed*, then the `STATUS` value is set to *Closed*

- You can execute a rule when a new row is added via the *Add another* button. For example, the rule:

```
<== onchange ==>
if (RR_LAYOUT.{changed}) {
  RR_FIELD = 'value';
}
```

This has the effect of setting the value of the repeating row field named `RR_FIELD` on all new rows that are added

- You can have more finite control, and only execute rules on specific repeating rows through the use of a rule such as:

```
<== onchange ==>
if (RR_LAYOUT.{changed} && RR_LAYOUT.{max_row_num} = 2) {
  RR_FIELD[2] = 'value';
}
```

Note the use of `max_row_num` to determine that the rule is executed only for the row being added. In this example, the rule is only triggered when the third repeating row is added, and the value of `RR_FIELD` is only set on the third row. Remember, the rows are numbered starting at zero, therefore the number 2 represents the 3rd row

Rules & Text Type Fields

Text fields are fields with display types of Text Field, Text Area, HTML Area, and Print Text. The following table shows the operators that can be used when making assignments with text fields.

Operator	Meaning
<code>+=</code>	Prepends text. For "area" display type text fields, the text to be added includes a line feed before and after the text
<code>&=</code>	Postpends text. For "area" display type text fields, the text to be added includes a line feed before and after the text
<code>*=</code>	Prepends text. For "area" type text fields, the text to be added does not include a line feed before or after the text
<code>/=</code>	Postpends text. For "area" type text fields, the text to be added does not include a line feed before or after the text

For text fields (not of the "area" type), the operators do not include line feeds in the operation.

Business Rule How To Examples

- How do I set the **Assigned To** of the issue to the person updating the issue, if the current value is null?

```
if (ASSIGNED_TO={null} && USER.{is internal}) { ASSIGNED_TO = USER; }
```

- How do I set the value of a field on the *add* screen?

```
if (AREA=Issues && PROJECT=Issues && SCREEN_NAME='ADD')  
{FIELD_NAME=VALUE;}
```

- How do I set the value of a field on the *edit* screen?

```
if (AREA=Issues && PROJECT=Issues && SCREEN_NAME=EDIT)  
{FIELD_NAME=VALUE;}
```

- How do I set the value of a field without any conditions?

```
FIELD_NAME=VALUE;
```

Note that this construct does not work within an onchange rule

- How do I set the value of a field within an onchange rule?

```
if (FIELD_NAME.{changed}) {  
  OTHER_FIELD = FIELD_NAME;  
}
```

- How do I set the value of a user field such as ASSIGNED_TO to the current user's name?

```
if (AREA="Contracts" && SCREEN_NAME='ADD') {  
  ASSIGNED_TO=USER;  
}
```

- How do I check to see if the current user is the user assigned to the current issue?

```
if (AREA = 'Issues' && USER = ASSIGNED_TO) {  
  IS_MANAGER='Y';  
}
```

- How do I add multiple values with one rule to a multi-valued list field?

```
if (AREA = 'Requests' && BUS_UNIT.{CHANGED TO:'ABC'}){  
  ASSIGNED_USRS =[PCOLLINS,MGREEN];  
}
```

- How do I check to see if a value is selected in a multi-valued list?

```
if (MY_LIST.{contains 'Yellow'}) { COLOR = 'Yellow';}
```

- How do I check to see if several values are selected in a multi-valued list?

```
if (MY_LIST.{contains 'Yellow', 'Blue', 'Orange'}) {  
  COLOR = 'Yellow';  
}
```

- How do I check to see if a multi-valued list contains some values, but does not contain some other values?

```

if (MY_LIST.{contains 'Yellow', 'Green'} && MY_LIST.{excludes 'Blue', 'Red', 'Purple'}) {
    COLOR = 'Yellow';
}

```

- How do I set a field with a display type of checkbox to be checked?

```
checkboxbox_fld = 'Y';
```

- How do I set a field with a display type of checkbox to unchecked?

```
checkboxbox_fld = 'N';
```

- How do I check whether the current user has the *Administrator* role to allow an operation?

```

if (AREA='Bugs' && STATUS.{changed_to:'Closed'} && USER_ROLE='Administrator')
    {COMMENTS='OK!'};

```

- How do I alter a value, if another value has changed?

```
if (STATUS.{changed}) {FIELD_X='Changed'};
```

- How do I set the values of fields to values from the user's personal options?

```

if (AREA='Issues' && SCREEN_NAME='ADD'){
    PHS_COMPANY_NAME = USER.{company name};
    PHS_FIRST_NAME = USER.{first name};
    PHS_LAST_NAME = USER.{last name};
    PHS_JOB_TITLE = USER.{job title};
    PHS_ADDRESS = USER.{address};
    PHS_WORK_PHONE = USER.{work phone};
    PHS_EMAIL = USER.{email};
    PHS_USER_DEFINED_1 = USER.{user defined 1};
}

```

- When the **Status** field first changes its value from *Open* to *Fixed*, how do I set the UDF field titled **Date First Fixed** to the current date:

```

if (STATUS.{changed_to:Fixed} && STATUS.{changed_from:Open} && DATE_FIRST_FIXED.{is null} ) {
    DATE_FIRST_FIXED = SYSDATE;
}

```

- How do I add two values named **UNIT_PRICE** and **TAX** together and put the results in a field named **TOTAL_PRICE**?

```

if (AREA='Bug' && UNIT_PRICE.{not null} && TAX.{not null}){
    TOTAL_PRICE = UNIT_PRICE; TOTAL_PRICE += TAX;
}

```

- How do I add subtract a value named **DISCOUNT** from a field called PRICE and put the results in a field named **DISC_PRICE**?

```

if (AREA='Issues' && DISCOUNT.{not null} ){
    DISC_PRICE = PRICE; DISC_PRICE -= DISCOUNT;
}

```

- How do I multiply two values named **HOURS** and **AMOUNT** together and put the results in a field named **PRICE**?

```

if (AREA='Customer Issues' && HOURS.{not null} ){
    PRICE = AMOUNT; PRICE *= HOURS;
}

```

- How do I divide a value named **TOTAL_COST** by a value of **HOURS_WORKED** and put the results in a field named **PRICE_PER_HOUR**?

```
if (AREA='Issues' && HOURS_WORKED.{not null} ){
  PRICE_PER_HOUR = TOTAL_COST;
  PRICE_PER_HOUR /= HOURS_WORKED;
}
```

- How do I make the **Comments** field required, when the **Status** changes to *Fixed*? At the same time, inform the user of their error if they do not provide a Comment (database only rule):

```
if (STATUS.{changed_to:Fixed} && STATUS.{changed_from:Open} && COMMENTS.{is null} )
  {Error: Comments are required when an issue is marked fixed.};
```

- How do I build a text field from other text fields?

```
if (AREA="Customers" && SCREEN_NAME='ADD') {
  SHORT_DESCR="New Customer - ";
  SHORT_DESCR&=CUST_NAME;
  SHORT_DESCR&=" - ";
  SHORT_DESCR&=CUST_LEGAL_INDENTITY;
}
```

- How do I set the value of a date field to the current date?

```
if (AREA='Issues' && ACT_PERCENT_COMPLETE.{changed}) {
  COMPLETE_AS_OF_DATE = {SYSDATE};
}
```

- How do I increment a date field?

```
NEXT_MAINTENANCE_DATE = MAINTENANCE_COMPLETION_DATE;
NEXT_MAINTENANCE_DATE += MAINTENANCE_INTERVAL;
```

- How do I set the value of a field based upon a button being pressed?

```
if (AREA=Reviews && ADD_EXPENSE_BTN.{changed})
  {EXPENSE_ADD='Y';}
```

- How do I pop up an error message?

```
if (AREA=Issues && SEVERITY_LEVEL=1 && STATUS=Pending)
  {
  ERROR: Invalid status with this severity level
  }
```

- How do I pop up error messages in different languages?

```
if (AREA=Issues && SEVERITY_LEVEL=1 && STATUS=Pending && USER.{language}='fr')
  {
  ERROR: Statut invalide avec ce niveau de gravité
  }
if (AREA=Issues && SEVERITY_LEVEL=1 && STATUS=Pending && USER.{language}='en')
  {
  ERROR: Invalid status with this severity level
  }
```

- How do I set the value of a field to the value of a linked issue field?

```

if (AREA='Contracts' && CUST_LIST.{not null}) {
  RELATIONSHIP_GROUP_PARENT = (customerLink).ID;
}

```

- How do I set the value of the built-in field RELEASE_FOUND within a rule?

The important factor here is that the RELEASE_FOUND field is dependent upon its parent field, PRODUCT_NAME. Therefore you must set both values at one time. The RELEASE_FIXED field has the same dependency.

```

PRODUCT_NAME = 'My Product';
RELEASE_FOUND = 2.3.4;

```

- How do I "roll-up" the values in repeating rows, so that the main issue represents a consensus of all the repeating row values? A commonly-defined use case for this rule is a scenario where you have a STATUS field on the main issue, which represents the RELEASE_STATUS values held in multiple repeating rows where each row may have the same or different values.

For example, let's say that your STATUS and RELEASE_STATUS fields have four values, **New**, **Open**, **Fixed** and **Closed**. You want the STATUS field to show the value that corresponds to the earliest one in the list that is encountered across all the RELEASE_STATUS values. Thus, if there are three repeating rows, with values of **Open**, **Fixed** and **Fixed**, you want the STATUS field to indicate a "roll-up" value of **Open**. Likewise, if all three values of RELEASE_STATUS are **Open**, then you want the STATUS to also show **Open**. This is achieved with the following onchange rules:

```

# First, push our changed status to the STATUS field, so we can then trigger a reset
# based on all repeating row fields, not simply the one that changed
if (RELEASE_STATUS.{changed}) {
  STATUS = RELEASE_STATUS;
}
# Now do the actual roll up by resetting the main status based on whether specific
# RELEASE_STATUS values exist. Note that the order of these rules is critical
if (RELEASE_STATUS.{changed} && RELEASE_STATUS = 'Closed') {
  STATUS = 'Closed';
}
if (RELEASE_STATUS.{changed} && RELEASE_STATUS = 'Fixed') {
  STATUS = 'Fixed';
}
if (RELEASE_STATUS.{changed} && RELEASE_STATUS = 'Open') {
  STATUS = 'Open';
}
if (RELEASE_STATUS.{changed} && RELEASE_STATUS = 'New') {
  STATUS = 'New';
}
}

```

- How can I add a number of blank repeating rows when I first display an *add* screen? There is no rule action that allows the addition of a blank repeating row. However, you can use the following technique to simulate this, in the following way:
 - Say you want to add 3 blank rows to the repeating row named MY_REPEATING_ROW
 - Create a new text field that is not going to be used on the layout, say MY_HIDDEN_FIELD. This will not have any value associated with it
 - You will use a field on the repeating row layout to store the MY_HIDDEN_FIELD value - remember this is null. Let's say the field on the layout is a text field named MY_RR_FIELD
 - Now use the ADD ROW action to add 3 new rows:

```

if (SCREEN_NAME = 'ADD') {
  {ADD ROW TO MY_REPEATING_ROW MY_RR_FIELD = MY_HIDDEN_FIELD}
  {ADD ROW TO MY_REPEATING_ROW MY_RR_FIELD = MY_HIDDEN_FIELD}
  {ADD ROW TO MY_REPEATING_ROW MY_RR_FIELD = MY_HIDDEN_FIELD}
}

```

- How do I "roll-up" the values in sibling related issues, so that they update the status of their parent issue to **Closed**, when all the statuses of the child issues change to **Closed**. This is a common requirement, where a parent issue reflects the status of several or many child issues. The child issues are in a sibling relationship to the parent. The following example can be expanded to provide a roll-up over many different status values, and the same technique can be used to update any other field on the parent issue, using a common value over many child issues. To achieve this structure, consider the following postupdate directive rules:

```

# Define a link to the parent issue
<== link myParent ==>

```

```

RG(RG_NAME = relatedChildren, RG_TYPE = PARENTS)
# Now define a link for the child issues of the same parent - i.e. the SIBLINGS
<== link openChildren ==>
RG(RG_NAME = relatedChildren, RG_TYPE = SIBLINGS), STATUS != 'Closed'
<== postupdate ==>
# If we have a parent and all its children are Closed - i.e. there are no children that are not closed
if (STATUS.{changed to: 'Closed'} && (myParent).ID.{is not null} && (openChildren).ID.{is null}) {
  {UPDATE: myParent STATUS = 'Closed'};
}

```

- How do I add a value entered into one field to become a member of a list in another field?

First define the object to be used to move the value from a text field to a list field:

```
<== object cust ==> AREA='Customers', LINK=CUST_LIST, TITLE=CUSTOMER, PRIVACY=false
```

Now, use the rule in a way that is similar to:

```

if (CUST_LIST.{changed} && AREA='Issues') {
  CUST_CONTACT = (cust).CUST_CONTACT;
  EMAIL_ADDRESS = (cust).EMAIL_ADDRESS;
}

```

- How do I handle multi-valued fields?

```

if (AGENCY.{contains 'Federal'})
  {GROUP = 'Fed!'};

```

- How do I check if a field has a value of null?

```

if (AREA=Issues && THEME={null})
  { DRAFT=Y }

```

- How do I check if a field does not have a value of null?

```

if (AREA=Issues && THEME={not null})
  { DRAFT=N }

```

- How do I create an email action that sends a specific email template I have generated, to a user depending upon a condition when I update an issue?

```

<== preupdate ==>
if (AREA=Issues && STATUS.{changed to: Pending Approval}) {
  {MAIL:'Issue Approval Request', APPROVER } };

```

- How do I create an email directive to send the standard notification email to all the users in a role?

```

<== mail ==>
if (AREA="Contracts" && STATUS.{changed to: Finished}) {
  ROLE:MANAGER;
}

```

- How do I send standard notification email to the **ORIGINATOR**, all users in a role and to specific users?

```

<== mail ==>
if (AREA='Trouble Report' && SCREEN_NAME='ADD') {
  ROLE:CE;
  ORIGINATOR;
  JLACEY;
  KMORRIS;
  SCHRISTIANI;
}

```

```

PREEVES;
BKISER;
LMJAMES;
}

```

- How do I add a new record based upon a user pressing a button on a screen?

```

if (ADD_SERIAL_BTN. {changed} && UNIT_SERIAL. {not null}) {
  {ADD: AREA='Calibration',
    PROJECT='Unit',
    UNIT_SERIAL,
    COMPONENT,
    SITE,
    FACILITY
  };
}

```

- How do I update existing records based upon a field on the current screen changing?

```

if (CALIB_DATE. {changed} && CALIB_DATE > (unitLink).CALIB_DATE && AREA='Calibration') {
  {UPDATE: unitLink, CALIB_DATE, UNIT_CAL_EXPIRES };
}

```

- How do I add a related issue record to the database, following the creation of an issue? This example also shows some other useful techniques. This rule would be executed in the <== postupdate ==> section of the rules. Note the use of the “if” condition to prevent recursion after the new record is added and when the rule fires again for the record just added. Next note the technique where the **SHORT_DESCR** of the issue is modified before it is added to the new record. The relationship between the records is created by assigning the value of the ID of the current issue to the field named MY_PARENT_ID, which will exist within the *add* and *edit* screens of the destination Business Area / Project.

```

if (AREA='Helpdesk' && EMPLOYEE_NAME. {not null} && SCREEN_NAME='ADD' && STATUS='New') {
  SHORT_DESCR = 'Install new computer for - ';
  SHORT_DESCR &= EMPLOYEE_NAME;
  {ADD: AREA,
    PROJECT,
    MY_PARENT_ID = ID,
    ASSIGNED_TO = 'BSMITH',
    STATUS = 'Open',
    PRIORITY = 'P 3',
    IT_SELECT_TABS = 'New Employee',
    SHORT_DESCR,
    IT_DATE_REQUESTED,
    IT_APPROVED_BY,
    ORIGINATOR,
    EMPLOYEE_NAME,
    EMPLOYEE_DEPT,
    EMPLOYEE_START_DATE
  };
}

```

- How do I only allow the person in the **ASSIGNED_TO** field have update permission to an issue?

This is achieved by altering the current role of the user, if that user is not the **ASSIGNED_TO**. Given that the Guest user is typically not allowed to update issues, then changing the role to that of the Guest or the role identified by the behavior setting LIMITED_USER_ROLE, will cause the record to appear in read-only mode if the user is not the **ASSIGNED_TO**.

```

if (USER != ASSIGNED_TO) USER_ROLE = Guest;

```

- How can I use a link in a relationship group to detect no Open sub-issues?

```

<= link rgOpen ==> RG(RG_NAME=MY_GROUP, RG_TYPE=CHILDREN), STATUS != Closed
if (STATUS. {changed to: Closed} && (rgOpen).ID. {is not null} )

```

{ERROR: Cannot set the status to Closed when there are open child issues.};

- How can I calculate one number as a percentage of another, and display the result with two decimal points?

If you simply have two rules that state the following:

```
TOT_PERCENT_DEFECT = DEFECTS;  
TOT_PERCENT_DEFECT /= SAMPLE_SIZE;
```

where the value for DEFECTS is 25, and the value for SAMPLE_SIZE is 100, the result returned is .2, not .25. The reason for this result is that rules try to make sense of operations, especially division, and therefore avoids results like 1.33333333336, and returns 1.3 instead. The rules engine looks at the number of decimal places (the precision) of each of the values, and then limits the number of decimal places returned to no more than the number of decimal places used to express the value, plus the minimum additional needed to get a non-zero value. Generally this works well, but as seen in this case there can be display problems, not the least of which is that there is no way to guarantee that either of the numbers has a certain number of decimal places.

To avoid this, write the rules as follows:

```
TOT_PERCENT_DEFECT = DEFECTS;  
# multiply by 100 first to preserve accuracy  
TOT_PERCENT_DEFECT *=100;  
TOT_PERCENT_DEFECT /= SAMPLE_SIZE;  
# explicitly add '.00' to preserve 2 digits of precision in the result  
TOT_PERCENT_DEFECT /= 100.00;
```

By first multiplying by 100, you guarantee that there will be an integer value, and then by specifying the .00 when scaling it back causes the rules to keep at least two digits of precision

- How can I test an incoming email, uploaded with the EVMail utility to see if it is a new or an existing issue?

```
if (SHORT_DESCR. {like : 'RE: Extraview [*]*' }  
  { STATUS = "Response received"; }
```

This rule processes the issue and looks to see if the incoming issue matches the string 'RE: Extraview [*]*' (excluding the outermost quotations. The * is a wildcard. If the SHORT_DESCR field in the issue contains a value similar to 'RE: Extraview [#223456] This is a report of a problem.' then the STATUS of the issue is set to the value of 'Response received'

- How can I set the Assigned To field of an issue to the value of the owner of a specific user defined field?

```
if (CUST_LIST. {changed}) ASSIGNED_TO = CUST_LIST. {owner};
```

This onchange rule will look for the owner of the user defined field named CUST_LIST and set this user's ID into the issue as the Assigned To

- How can I ensure that a user enters a date that is in the future, not the past?

First, create a user defined field in the data dictionary. This is used to hold the number of days different between a date (or day) field, and the current date. The field does not need to be on any layout, but it should have read and write permission. For this example, the field is DIFF_DAYS. The following preupdate rule will check that the date is not in the past.

```
if (PROJECT = 'Action' && DATE_FOLLOW_UP. {not null}) {  
  DIFF_DAYS = (DATE_FOLLOW_UP - SYSDAY);  
}  
if (PROJECT = 'Action' && DATE_FOLLOW_UP. {not null} && DIFF_DAYS < 0)  
  { STOP: The Follow Up Date must be greater than today's date };
```

- How can I add new repeating rows and populate them with values?

The following onchange rule will populate the first blank repeating row, and add two new repeating rows, when the user clicks the button named GENERATE_PARTS_LIST_BTN and the value of the field named ASSEMBLY has a value of *Primary*.

```
if (GENERATE_PARTS_LIST_BTN. {changed} && ASSEMBLY='Primary') {  
  PARTS='Part 1';
```



```
{ ADD ROW: PARTS='Part 2'};  
{ ADD ROW: PARTS='Part 3'}; }
```

If you want to set additional values on the repeating rows, you can modify the above along these lines:

```
if (GENERATE_PARTS_LIST_BTN.{changed} && ASSEMBLY='Primary' ) {  
  PARTS='Part 1', RELEASE_STATUS='New';  
  { ADD ROW: PARTS='Part 2', RELEASE_STATUS='New'};  
  { ADD ROW: PARTS='Part 3', RELEASE_STATUS='New'};  
}
```

- How can I set field values, based on the user's choice, when clicking on a navigation bar item?

The following load rule will work on an **Add** screen only, and will set values on the screen as it is loaded.

```
if (SCREEN_NAME = 'ADD' && MY_ADD_NAV_BUTTON= 'Add Task' ) {  
  PRIORITY = 'P 2';  
  CATEGORY = 'Task';  
}
```

If the user chooses the Add Task navigation bar item, then the PRIORITY and CATEGORY fields are set as shown above.

- How can I add a number of blank repeating rows to an issue?

It is not valid to add completely blank rows to a repeating row. You can, however, use an unused field that is not even on the layout in question. For example, to add three blank rows to a layout named MY_RR_LAYOUT, you could use this, utilizing the ALT_ID field which is not used on repeating rows and using a text field on the layout:

```
{ADD ROW: TO MY_RR_LAYOUT MY_TXT_FIELD = ALT_ID};  
{ADD ROW: TO MY_RR_LAYOUT MY_TXT_FIELD = ALT_ID};  
{ADD ROW: TO MY_RR_LAYOUT MY_TXT_FIELD = ALT_ID};
```

- I want to add a user's personal signature to a letter or email I am going to send. How do I accomplish this?

Users may store their photograph and their signature within their account settings. A common requirement is to place the current user's signature within an HTML Area field, so it may be sent by email, or sent to a PDF to be used as an outgoing letter. This requires the following configuration:

- Have an HTML Area field within an *add* or *edit* screen
- Create an image field and place this on the same layout. This is used to hold the user's signature, so it remains as part of the record and part of the audit trail
- Create a rule similar to:

```
<== load ==>  
MY_IMAGE_FIELD = USER.{signature};
```

- Within the HTML Area field have text such as `$$MY_IMAGE_FIELD$$`. This provides the link from the field containing the signature into the body of the email or letter that you are composing.

- Setting a date field such as DUE_DATE will set the time of the entry to 12:00 AM unless the user explicitly sets the time. This means deadlines occur at the beginning rather than the end of the work day. How do I enforce setting the time to be at the end of the work day, rather than the beginning of the day?

- Create a rule similar to this:

```
<== preupdate ==>  
{  
  DUE_DATE = SYSDAY;  
  DUE_DATE += 0.75  
}
```

- Use the click of a menubar button placed on an *add* or *edit* screen to update values within the current issue. The following rule updates two field values when the button is clicked:

```
<== onchange ==>
```

```

if (MY_BUTTON.{changed}) {

    PRODUCT_NAME = 'Tracker';

    MODULE = 'API';

}

```

- Place a button on a Related Issue Display which executes an action to update the issue on the row of the Related Issue Display. For example, you might want an action button that, when pressed, alters the **STATUS** of the issue to **Closed**. Let's say the menubar button is named `MENU_UPDATE_STATUS`. The pressing of this button causes a business rule to trigger, thereby updating the issue:

```

window.doGridEditRIDRefresh('${LAYOUT_ID}');

```

When the user clicks the button, the action replaces `$$LAYOUT_ID$$` with the name of the current layout, and the business rule picks up the change. Your business rule might then be:

```

<== preupdate ==>
if (PROJECT = 'Actions' && MENU_UPDATE_STATUS.{changed}) {
    STATUS 'Closed';
}

```

Given this update is on a single row of the Related Issue Display, you might want to communicate this action to the parent record via a subsequent rule:

```

<== postupdate ==>
## use the childActions link to let the parent know that at least one child exists
if (PROJECT='Actions' && (childActions).ID.{is not null}) {
    {UPDATE: childActions CHILDREN_EXIST = 'YES'}
}
# Define the link for child actions to the parent record
<== link childActions ==> RG(RG_NAME = RELATED_RESULTS, RG_TYPE = PARENTS)

```

Security Permissions

Granting Security Permissions, controls each user role's access to all fields, buttons and features in ExtraView. In setting permissions, the System Administrator has the ability to make these kinds of items read only, write only, readable and writeable, or invisible.

The security system uses the concept of inheritance. Each Area and each Project can have different security permissions for each key. However, if no setting is made at the Area level, then the value of the key at the global level is used. In the same fashion, if no value is given at the Project level, then the key is set to the value at the Area level. This provides an economic means of administering ExtraView where you need only provide settings for security keys that differ from the global level.

When you update a security permission key, or a number of keys, the change in permissions is immediate for the administrative user who made the change. All other users will see the change when the time period defined by the behavior setting named `SECURITY_CACHE_MINUTES`, causes the security cache for each user to be refreshed. The default time period for this is 30 minutes, so any user signed on will see the change within this time period. Any user who signs on will see the newly updated permissions immediately.

The security permissions for individual fields may also be set within the data dictionary and within the layout editor. This provides a convenient means of setting the permissions while working on a field.

1. Click on **Grant Security Privileges** within administration.
2. The following screen appears:

Return Print Page Grant Security Privileges ?

Directions

Choose the security permissions you wish to alter. You can select multiple user roles and / or multiple security keys by holding down the CTRL key and clicking on your selections within the user role and security key lists.

Select one or more user roles: * All *
 Administrator
 Customer
 Customer Support
 Development Engineer

Select Business Area: * Global Area *

Select Project: * Master Project *

Select one of the general categories or one or more of the individual security keys

- * Permissions to a group of keys * Access control to Business Areas
- * Permissions to a group of keys * Access control to Projects within Business Areas
- * Permissions to a group of keys * Navigation bar buttons and other screen options
- * Permissions to a group of keys * Permission to individual administration menus
- * Permissions to a group of keys * Field permissions and other permissions used when adding issues
- * Permissions to a group of keys * Field permissions and other permissions used when editing issues and querying
- * Permissions to a group of keys * Access to query and report permission settings
- * Permissions to a group of keys * Security access controls
- * Permissions to a group of keys * Permissions to the values of the STATUS field
- * Permissions to a group of keys * Fields on the user's account record
- AREA.0 (* Global Area *)
- AREA.1 (Bugs)
- AREA.12 (Customers)
- AREA.27 (Test Case Management)
- CF_ADMIN_MENU (Edit the labels of the Administration tabs)
- CF_ALLOWEDLOCALES (Allowed Locales)
- CF_ALLOWEDVALUE_TYPE (Allowed Value Types and Combinations)
- CF_ALLOWED_FUNCTIONS_DISPLAY (View Allowed Functions)

Set Permissions for Selected Keys

Grant Security Privileges screen

3. This screen gives you access to alter the user role permissions for all of the System Security Keys. The options are as follows:
 - o Business Area access by user role
 - o Projects within Business Area for each user role
 - o Navigation bar buttons and other screen options
 - o The individual administration menus
 - o Fields and other permissions used when adding issues
 - o Fields and other permissions used when editing issues and querying/reporting
 - o Access to personal and shared report types
 - o Security features, roles, password and privacy settings
 - o Permissions to the values of the STATUS field
 - o Fields on users' account records
 - o Individual security keys, or a selection of individual security keys
4. The selection box accepts any characters, and will filter the list of settings displayed to match only those entries that contain the character string you enter. You can check the entries you want to edit. You can make a selection, then enter a different character string in the selection box and make further selections before you click the button to alter the settings for your entries
5. After selecting a user role (or all user roles) and a security key category or individual security key, click the **Set Permissions for Selected Keys** button. You can select multiple keys by using the standard combination of CTRL and SHIFT keys on your keyboard, with the mouse button.

Business Area: * Global Area * Project: * Master Project *		Administrator	Customer Support Manager	Customer Support	Customer Support	Customer	Development Engineer	Engineering Manager	IT Support Manager	IT Support	IT Support	Quality Assurance	
Add Issue	Set All Row:	Read	Write	Read	Write	Read	Write	Read	Write	Read	Write	Read	Write
MENU_ADD_PROBLEM	All to Y	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>
This setting controls access to the Add issue layout from the main navigation bar Add button. Write access is needed to control this													
All to N	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
ExtraView Administration	Set All Row:	Read	Write	Read	Write	Read	Write	Read	Write	Read	Write	Read	Write
MENU_ADMINISTRATION	All to Y	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>
This setting controls access to the Administration system from the main navigation bar Administration button. Write access is needed to control this													
All to N	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Home	Set All Row:	Read	Write	Read	Write	Read	Write	Read	Write	Read	Write	Read	Write
MENU_HOME	All to Y	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>
This key controls access to the Home button on the Navigation bar. Read access is needed to control this													
All to N	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Issue #	Set All Row:	Read	Write	Read	Write	Read	Write	Read	Write	Read	Write	Read	Write
MENU_DRILLDOWN_ON_NAV_BAR	All to Y	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>
This permission key controls the presence of the drilldown box on the navigation bar. Read access is needed to be able to access the drilldown box													
All to N	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Grant Security Privileges screen

If you want to modify permission keys at an inherited level, i.e. you have not selected the Global Area and Master Project, the screen is modified, allowing you to see where security permissions for an individual key are inherited, and where they are overwritten. The following screenshot has an example.

Area: Bugs Project: Bugs Defaults		Administrator	Customer Support Manager	Customer Support	Customer Support	Customer	Development Engineer	Engineering Manager	IT Support Manager	IT Support	IT Support	Quality Assurance	
Assigned To	Set All Row:	Read	Write	Read	Write	Read	Write	Read	Write	Read	Write	Read	Write
PR_ADD_PROBLEM.ASSIGNED_TO	All to Y	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>
Assigned To													
All to N	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
All to I	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Area: Bugs Project: Bugs Data	Set All Row:	Read	Write	Read	Write	Read	Write	Read	Write	Read	Write	Read	Write
PR_ADD_PROBLEM.ASSIGNED_TO	All to Y	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>
Assigned To													
All to N	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
All to I	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Setting permissions for an inherited field

Make a Field or Option Read Only

1. Identify the column head for the User Role whose privileges you would like to change.
2. Click the radio button in the **Read** box for that User Role only
3. Click the **Update** button.

Make a Field or Option Write Only

1. Identify the column head for the User Role whose privileges you would like to change
2. Put a check mark in the **Write** box, for that User Role only
3. Click the **Update** button.

Make a Field or Option Read and Write for a Particular User Role

1. Identify the column head for the User Role whose privileges you would like to change
2. Put check marks in both of the boxes, for that User Role only (Read and Write)
3. Click the **Update** button.

Make a Field Invisible to a Particular User Role

1. Identify the column head for the User Role whose privileges you would like to change
2. Remove the check marks from both of the boxes for that User Role (Read and Write)
3. Click the **Update** button.

Note that you may alter all the permissions for a single field or object, across all user roles, by using the radio buttons beneath **Set All Row**:. Use the buttons to set all read and/or write permissions to **Yes** or **No** for any row of settings.

Inheritance

Permissions set in the global area and master project are inherited and used by all other business areas and projects unless the inheritance is broken at an individual business area or project. By doing this, you can establish a different set of permissions for any field or object at any level within your installation. Setting a different permission for a field within a business area, causes that permission to be used for all the projects within that business area. Setting a different permission within a master project causes all the other projects within that business area to use these permissions. Setting different permissions within a project other than the master project causes these permissions only to be used within that single project.

This provides an economic means of setting permission through your system. You set them at the root level, i.e. the global business area and master project. These permissions are then used with all junior objects, unless you choose to override them.

You provide the override by editing the field or object within the business area and project where you want to provide the override. When you first look at the permissions within a specific business area and project, you will see that the permission is set to "I", for inherit. You simply set the read and write privileges to override the inheritance. You can always set the permission bak to the "I" value to restore the inheritance.

Allowed Values

[Click for end user documentation](#)

Allowed Value Lists give you the opportunity to have certain field lists and their values be dependent on other values in other list fields; for example, a list of specific *Platforms* may only be displayed if the connected parent *Product* is first selected. The following Parent ♦ Child relationships would be set up so that OS 9 or 10 platforms would only appear for Mac products, and Red Hat only appear for Linux.

Product	Platform
Macintosh Client	OS 9.x
Macintosh Client	OS 10.x
Linux Client	Red Hat
Windows Client	Windows 98
Windows Client	Windows XP

In the above example, when you select the product named Macintosh Client, the ExtraView Add Issue or Edit Issue screen will refresh, and the field titled *Platform* will have the two values OS 9.x and OS 10.x. This feature can be used both to ensure data entered is valid, and that data entry can be accomplished with a minimum of searching. Allowed Values can be “chained” together, providing a cascading set of values. Common examples of allowed values are:

1. *Product name* ♦ *Module*
2. *Module* ♦ *Owner*
3. *Category* ♦ *Module* ♦ *Release* (example of a cascading allowed value)
4. *Category* ♦ *Product name*

You may create chains of any length of allowed values; in concept, think of a grandfather ♦ father ♦ child ♦ grandchild type relationship. With some limitations it is also possible to build multiple allowed value relationships where the same child field has up to fiveparent fields in the allowed value relationship you are building. In this case, the child field is rendered using the intersection of the allowed values from each of the parents.

Not every combination of fields is allowable to be created as allowed values. For example, it is not possible to create an allowed value with a combination of MODULE_ID or MODULE_NAME and PRODUCT_NAME, as another inbuilt mechanism exists to handle this requirement.

Allowed Value Usages

These are typical usages for different configurations of allowed values, within different places in the ExtraView environment.

Both parent and child fields exist within an <i>Add</i> or <i>Edit</i> screen	This is the most common usage of allowed values. The child fields are simply filtered according to the parent value chosen. Before a parent field is chosen, the child field has no values
A parent and multiple child fields exist within an <i>Add</i> or <i>Edit</i> screen	In this instance, each child field is filtered according to the parent field that is chosen. Before a parent field is chosen, the child fields have no values
Both parent and child fields are configured to use the Reverse Allowed Value option	It is recommended that a parent only is configured to have unique children, as opposed to a child field being the child of more than one parent. Both parent and child fields are populated initially with all values. If the user selects a child value before selecting a parent, the parent list is filtered to only show the valid parent. If the user selects a parent before a child, the child list is filtered to only show valid children of the chosen parent
The parent field resides on an <i>Add</i> or <i>Edit</i> screen and the child field exists within a Search layout embedded within the <i>Add</i> or <i>Edit</i> screen	This allows a search field to be populated with a value dependent upon the selected parent field. The user may still choose a different value from the child list
The parent and child fields both reside within a Search layout embedded within the <i>Add</i> or <i>Edit</i> screen	Allowed values work in the expected way, where the child fields are simply filtered according to the parent value chosen.

[Click for end user documentation](#)

Creating Allowed Values

The administrator creates allowed value definition (the allowed value type) from the **Fields & Layouts** tab on the administration menu, click **Allowed Value Types and Combinations**. The administrator also creates the allowed value combinations from within the same utility. The administrator can configure list type fields such that end users may add new values to a list (the **ADD_NEW** layout cell attribute). [See the section at the end of this page](#) regarding the configuration of allowed values when an end user adds a value to a list field. The following screen appears when the administrator uses the **Allowed Value Types and Combinations** utility:

Allowed Values

Allowed values create parent-child relationships between two fields. You may chain allowed values together, as many levels deep as you require. One child field may optionally have two parent fields. Each allowed value type that you create may use a different method to refresh the child list, once a parent is chosen by the user. Most typically you will use **Ajax Refresh**, which provides a speedy method to update the child list on the screen. Use the **Page Refresh** type when the parent field is the AREA or PROJECT field, or you deliberately want to introduce a full page refresh after selecting the parent field. The JavaScript method is provided for legacy reasons and should not be used for newly created Allowed Value Types.

Add Add a new allowed value relationship to the database

	Title	Parent title	Child title	Refresh type	Enabled	Warn end users about stale values	Reverse Allowed Value
Edit List	area - assigned	Business Area Assigned To		Ajax	Y	Y	N
Edit List	area-category	Business Area Category		Page	Y	Y	N
Edit List	area-status	Business Area Status		Page	Y	Y	N
Edit List	building-floor	Building	Floor Number	Ajax	Y	Y	N
Edit List	Product - Module	Product	Module	Ajax	Y	Y	N
Edit List	project-status	Project	Status	Ajax	Y	Y	N
Edit List	screen - dev_select_tabs	Screen Name	Tabs	Page	Y	Y	N

Allowed Value Types screen

To create a parent-child dependency:

1. The Title can be any text that describes your Allowed Value Type. The title is not used in any processing and is purely a label
2. For the Parent field, select the field that is the parent in the relationship. This field is required
3. Select the Child field that is dependent on the parent value you selected. This field is required
4. You may enable and disable the allowed value using the checkbox with the title of **Enabled**
5. If you check the box against **Warn end users about stale values** then end users are warned when they edit a saved issue and a parent or child value in an allowed value relationship has been deactivated since the record was saved. The end user is informed that they can continue, but if they alter the saved value, they must choose a current valid value or leave the stale value. If this box is not checked, then the user is not issued the warning but the same rule applies. If the end user chooses a new value, it must be valid.
6. Reverse allowed values are a special case for allowed values. These allow the end user to not only choose a valid child after selecting a parent value but also allow the end user to choose a child value and to then see the valid parents. You will typically only use this in a scenario where each parent has unique children and the children are not shared across more than one parent. You must set the behavior setting named AV_NULL_PARENT_IS_NULL to a value of NO when using reverse allowed values
7. If you are creating an allowed value where the Parent field is either AREA or PROJECT, you should select **Page Refresh** as the refresh type. This is because a page refresh always occurs when a user changes the AREA or PROJECT field on an *Add* or *Edit* screen. If you select a different type of refresh when the parent is AREA or PROJECT, you are adding unnecessary overhead to the processing, which might degrade the performance of your system. Most allowed values should use the **Ajax Refresh**. When you choose a new parent value, the child list is refreshed via a call to the server from the user's browser. The Ajax refresh type also ensures that any business rule or user custom programming call is made when the parent value changes. This is fast and efficient
8. Click the **Add** button.

Note: On occasions, you might want to create an allowed value list where only a subset of the values in the list will appear. For example, you might have retired some of the values in the child list and only want current values to appear. You can achieve this by using the AREA field as the parent, and the list field as the child.

Add Cancel Print Page
Allowed Value Types and Combinations ?

Allowed Value Relationships

Allowed values set up parent - child relationships between fields. When a user chooses a value in the parent field, the child field list is automatically refreshed with the allowed children. Enabling Reverse allowed values allow the user to choose a child value and the parent list is refreshed with only the valid value. The lists may be refreshed in one of two ways:

- Ajax Refresh causes only the values in the child list to be regenerated by the server. This is the default behavior for most allowed value relationships.
- A Page Refresh causes the browser to return to the server where the screen is regenerated in entirety.

Title ?

Parent field ? * None *

Child field ? * None *

Enabled ?

Warn end users about stale values ?

Enable reverse allowed values ?

Refresh Type ? Ajax Refresh Page Refresh

Add Cancel Print Page

New Allowed Value Type

More about Refresh Methods for Allowed Values

There are three methods that can be used:

1. **Ajax Refresh.** When the parent value is selected, an Ajax call is made to the server to retrieve only the child values. The child list is refreshed, but the remainder of the screen is untouched. This provides a fast means of dealing with large lists, without the need to repaint the entire screen. For most purposes, this method should be used for maximum efficiency.
2. **Page Refresh.** On all changes of the parent value in the allowed value combination, the program returns to the server for the new data in the child list. This is primarily used when the parent field is either AREA or PROJECT. These fields, by definition, require a page refresh, therefore setting this refresh method minimizes the amount of work needed on the server, and delivers the smallest amount of code to the browser.
3. **JavaScript Refresh.** This is deprecated with ExtraView version 9.1, and new allowed value types can no longer be created that use this method, but its use is retained for existing allowed value relationships that had this set in previous versions. You should update the allowed value type to use **Ajax Refresh**. The JavaScript refresh method pre-calculates all the possible combinations of parent and child values and delivers these to the browser. For relatively small lists, this is very efficient. However, if either the parent or child value has a business rule that needs to be triggered when its value changes, then this type of refresh does not have the built-in intelligence to call back to the server to execute any business rule. Ajax Refresh allowed values have proved very efficient and have none of the drawbacks of JavaScript refresh, hence the reason for their deprecation.

The same field may be used as a parent to more than one child field by creating more than one allowed value type. Each of these allowed value types may have any one of three refresh types. When a parent field is changed by a user on an *add* or *edit* screen, only one of the above three methods can be used. Which method chosen is decided as follows:

1. If there are any JavaScript refresh types for the parent, then a JavaScript refresh is done for all child values
2. If there are any Page refresh types for the parent, then a Page refresh is done for all child values
3. If neither of the above was true, an Ajax refresh is performed.

Cascading Allowed Values

It is possible to construct allowed value relationships that “cascade”, i.e. you define a parent – child relationship for one pair of fields, and then define a second parent – child relationship where the parent is the child of the first relationship. This forms a grandparent – parent – child relationship between three fields. The data dictionary display type for all the fields must be **List**, **Popup** or **Tab**. Other display types will not work.

The child field select list will always show only *** None *** as a possible value, until both the grandparent value and the parent values have been selected. If you alter the metadata associating the allowed values, in such a way that editing a record causes a child record to

be invalid, a warning will be displayed by ExtraView, informing the user that the child value is no longer valid. The invalid value is still displayed at this time though. If the user alters the values of the grandparent or parent, the invalid value in the child field will no longer be displayed.

Reverse Allowed Values

It is strongly recommended that you only use this feature when there is a single parent to all the children within a list and the lists are not excessively large. You may use the feature with cascading allowed values, but all the individual allowed value relationships must set the **Enable reverse allowed values** checkbox. When reverse allowed values are enabled, ExtraView initially fills all the fields in the allowed value relationship with all the parent values and all the child values. When a user selects any value in any of the fields in the allowed value relationship, the remaining fields are all filtered, both parents of the selected value and children of the selected value.

For example, if you have an allowed value relationship with a parent and child field, the user may then select a child value and the appropriate parent is then selected. If there is a cascade of three fields, and the user chooses a value in the middle field list, then the value in the parent field is selected. The child values in the third field list are then filtered to only display the valid children for the second field.

When a user selects a parent, then all child fields are filtered as with regular allowed value lists.

If the user selects * **None** * in any list within the allowed value relationship and reverse allowed values are enabled, then all fields in the allowed value list are reset to their initial values.

For reverse allowed values to work, all the fields in the entire chain of allowed values must be on the layout, and must all have read and write permission. This includes using reverse allowed values on a report or Quicklist layout.

Allowed Value Parent Fields with Multiple Child Fields

One parent field may be the parent to multiple child fields. When you set up layouts with this scenario, you may also use JavaScript refresh to maintain the lists for users, provided that there are no more than 10 child fields for the parent. In the very rare and exceptional circumstance that you need more than 10 child fields to a single parent, then server-side refreshes will still work, and with no restriction on the number of child fields to a single parent.

Allowed Value Child Fields with Two or Three Parent Fields

You may create two or three allowed value relationships for the one child field, with different fields as the parent field. When you create this scenario you individually populate the allowed children for each of the parents in their respective allowed value lists. When you include the two or three parent fields and the one child field on the same *add* or *edit* screen, then the children that are visible will be those that have common parents. If a child value only has one of the parent fields as an allowed value, the child will not be displayed and it is not a valid selection. If only one parent and the child exists on the *add* or *edit* screen, then this combination will work correctly as the simpler single-parent allowed value combination. The parent and child fields used for this combination must all be enumerated lists with a display type of List, Popup, Tab, Checkbox, or Radio button. User display types are not supported at this time. Note that you should not use JavaScript refresh for an allowed value with multiple parents.

Allowed Value Additions by End Users

The **ADD_NEW** layout cell attribute controls the ability of an end user being able to add a new value to a list on the *add* or *edit* screens. If a field with this layout cell attribute is the child in an allowed value relationship, there is control over the behavior of adding the new field value as a child of the allowed value relationship. The control is achieved through a behavior setting named **AUTO_POPULATE_ALLOWED_VALUES**. When this setting is YES, then in a popup from an add or edit screen that adds a new value to a list, and that list is the child within an allowed value relationship, then the new value will be added to the list and will be automatically added to the currently selected parent(s). If the value is NO, then the user will be prompted to select the Business Area, Project and the specific parent values to which the newly created child value will be added within the allowed value relationship.

- If you are adding a child list value from the *add* or *edit* screens, you must have the parent field value accessible on the layout *add* or *edit* layout
- If the child field belongs to more than one parent, the value of **AUTO_POPULATE_ALLOWED_VALUES** is overridden and always behaves as if it is set to NO
- If the parent field is multi-valued, and multiple values are selected, ExtraView starts with all the selected parent values checked and the user can de-select or select additional values as they wish
- When selecting the business area and project field values, the process starts with the currently selected business area and project. There is a check to see if there are allowed values defined at that level. If not, the process moves up the layout inheritance tree until an allowed value is found. If none are defined, but the allowed value type exists, the allowed value is created in the global area and master project

- When allowed values are populated as children on an *add* or *edit* screen by an end user, all the possible allowed value parents automatically become parents to the new child value.

Entering Allowed Value Combinations

Once the allowed value type has been created, navigate to **Allowed Value Types** administration menu. The following screen with your metadata appears:

Allowed Value Types and Combinations [Return] [Print Page]

Add Add a new allowed value relationship to the database

	Title	Parent title	Child title	Refresh type
[Edit] [List]	area-category	Business Area	Category	Page
[Edit] [List]	building-floor	Building	Floor Number	Ajax

2 record(s) selected from a total of 2 record(s) [Return] [Print Page]

Allowed Value Types

Once you have created the dependency relation above, you can view or specify the details of the relationship. For example you can view or modify which values of *Owner* will appear in a list box based on a selected *Category*. To do this, click the **List** icon next to the applicable Allowed Value Title. Note that the prompts for the Business Area and Project are only displayed if these are enabled in your system.

Allowed value list
area-category [Return] [Print Page]

The allowed value list for the Business Area and Project selected is displayed below. Press the Edit button to modify the list.

[Edit] Modify the allowed value list

Select Business Area: Bugs [v]

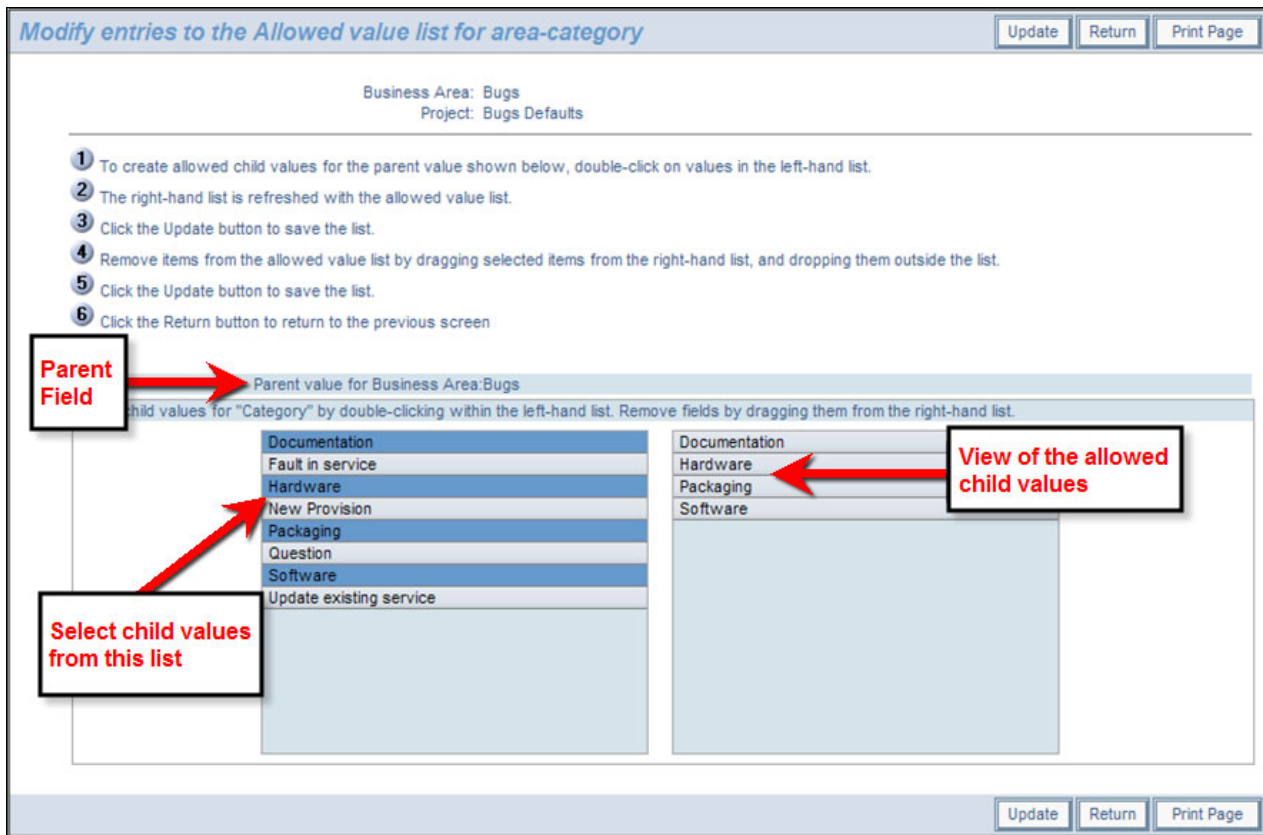
Select Project: Bugs Defaults [v]

	Business Area	Category	Sort sequence
[Edit]	Bugs	Documentation	
[Edit]	Bugs	Hardware	
[Edit]	Bugs	Packaging	
[Edit]	Bugs	Software	

4 record(s) selected from a total of 4 record(s) [Return] [Print Page]

Allowed Value List

If Business Areas and / or Projects are enabled, you can select any combination from the select lists to view the entire list of values defined for the allowed value relationship. To modify an allowed value list, click on the **Edit** button. If Business Areas and / or Projects are enabled, you can define the values for the global area and global project, or you can define the values such that they only exist within a selected Business Area and Project.



Managing the Allowed Value List

When you modify an allowed value list, the screen will look similar to the example above. You select the allowed child values from the left-hand list, by double-clicking with your mouse on each value you want to allow as a child. The value will then appear in the right-hand list. You remove allowed child values by holding your mouse button down on the list item in the right-hand list, and dragging the value out of the selection box. Note that if the parent field is AREA, then you cannot modify the parent list value from this screen, but you need to return to the previous screen to make a new selection. When you have selected the values as the valid list of children in the left-hand list, values are updated when you press the **Update** button. Note that the selected list displays the child values in the order they will appear in lists on other screens. This order is set in the list management screen for the value, unless you want to use the default alphanumeric order. When you have modified the list, you must press the **Update** button to make your changes in the database. You can select other parents and modify their children before pressing **Return** to return to the previous screen.

Note: If the parent value is either the AREA or PROJECT field, you can only select its value from the previous list of Allowed Values.

Note: You can also maintain the allowed values from the List maintenance screens. When a list field value is a child in an allowed value relationship, you can select the parents to which it belongs from the List maintenance screen. The two methods of maintaining allowed values are complementary. The method described here is more convenient to use if you want to make the entries from the parent field, while the method available from the List maintenance screen is more convenient if you want to make your modifications from the child field. You will typically place both the parent and child values in the allowed value relationship onto an *add*, *edit*, or *embedded* layout. If you place just one of them on a layout then the allowed values are not rendered; the field on the layout behaves as a normal list. You should always place the parent field on the layout before the child field, as there are occasions when the fields are processed in order, from left to right, top to bottom.

Auto-Population of Users

There is a special use of allowed values that is only relevant when the parent field is the field set in the behavior setting named COMPANY_NAME_LIST_UDF and the child field has a display type of User. In many circumstances, you only want the user to be associated with the value set in the COMPANY_NAME_LIST_UDF. As opposed to having to set this relationship manually on each occasion you create a user, this relationship can be built automatically for you.

First, within the screen that maintains the allowed value lists, choose the appropriate Business Area and Project. Assuming the parent field is that nominated in the COMPANY_NAME_LIST_UDF setting, and the child field is a User type field, you will see an additional prompt on the screen **Auto-populate child values?** If you check this and click Update, all existing values in the Allowed value relationship will be deleted and the allowed values are built for you. From this point onwards, each time to create a new user, the appropriate allowed value relationship is populated for you.

Allowed Value Considerations

Not all fields are valid combinations as parents and children in allowed value relationships. The following is a list of valid combinations:

Parent Display Type	Valid child display types
List	List Pop-up Tab Radio button User
Pop-up	List Pop-up Tab Radio button User
Tab	List Pop-up Tab Radio button User
Radio button	List Pop-up Tab Radio button User
User	List Pop-up Tab Radio button User

Note: Other display types (Date, Log Area, Print Text, Text Area, and Text Field) are not supported in Allowed Value relationships.

Allowed Values with Repeating Rows

There are some restrictions on the use of allowed value relationships with repeating row records. These are as follows –

- JavaScript refresh for the allowed value relationship must be used for the child values to be populated correctly in the child list
- Both the parent and child fields must be UDF's
- The mass update feature within repeating row fields with allowed values right is not supported at this time.

Allowed Values and the Radio Button Display Field Type

Due to limitations within browsers with HTML and JavaScript, it is only permitted to use server refresh on field combinations where the child field is a radio button.

Allowed Values and Different Refresh Types

Allowed values are applied upon each refresh, with the following priorities:

- **Page** refreshes have the highest priority
- **Ajax** refreshes have next highest priority
- **JavaScript** refreshes have lowest priority (these are deprecated with version 9.1)

These priorities are applied, irrespective of what has caused the refresh. The refresh cause can be triggered by the allowed value relationship, by a business rule being triggered, by a layout cell attribute, custom code or some other trigger. If any relationship causes a **Page** refresh, then everything is refreshed by the **Page** refresh. If you have a chain of allowed values, say **Field_A** ==> **Field_B** ==> **Field_C** and the refresh between the first and second pair of fields is of a different type, then only one refresh type is used during processing, according to which allowed value definition has the highest of the above priorities.

It is strongly recommended that you define and use **Ajax** refreshes as much as possible and that you do not mix the refresh types within a chain of allowed values. The exception to this is when the parent field in a relationship is either AREA or PROJECT. These fields always imply the use of a **Page** refresh. This will offer the highest performance, except in the case of simple allowed value relationships with a single parent and child where there are a relatively small number of combinations of allowed values. In this case, **JavaScript** refreshes are more efficient.

Allowed Values Types with the Same Parent and Child Fields

You may create multiple allowed value types with the same parent field and child field. However, if you do, only one of the allowed value types may be active at one time. All inactive allowed value types are ignored.

* Default * Parent Allowed Value

Each parent allowed value has an entry named * **Default** *. This allows you to set child allowed values to be used as a default, when the parent has no other allowed values set. This provides a means of economically setting up allowed values where you have a large number of parent values, with many requiring the same set of child values, and only a few parents needing their own specific set of child values.

Set up the allowed values for the parents where you need a specific set of values. Then set up the child values for the * **Default** * parent. All other parent values will now adopt the * **Default** * value children. Also, note that the * **None** * value on the *add* and *edit*

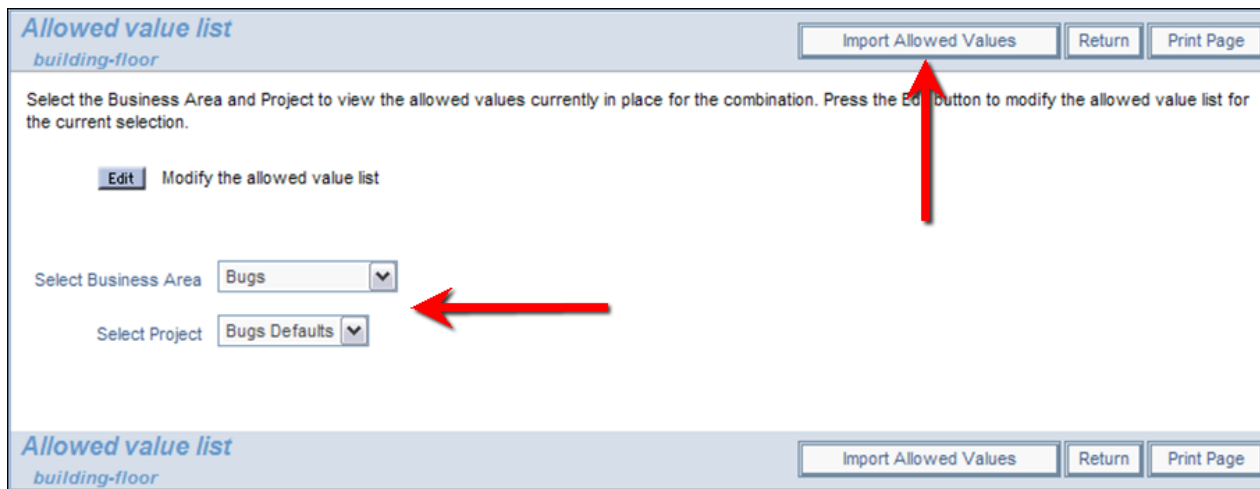
screens for a child field will adopt the default children.

Uploading from a File

Note: This option also allows you to create both the parent and the child list values at the same time that you create the allowed value relationships. Both the parent and child values should be user defined fields with a display type of a list form - i.e. List, Popup, Tab or Radio button. It is sometimes convenient to upload a set of allowed value relationships from an external file. The file to be uploaded is of the form

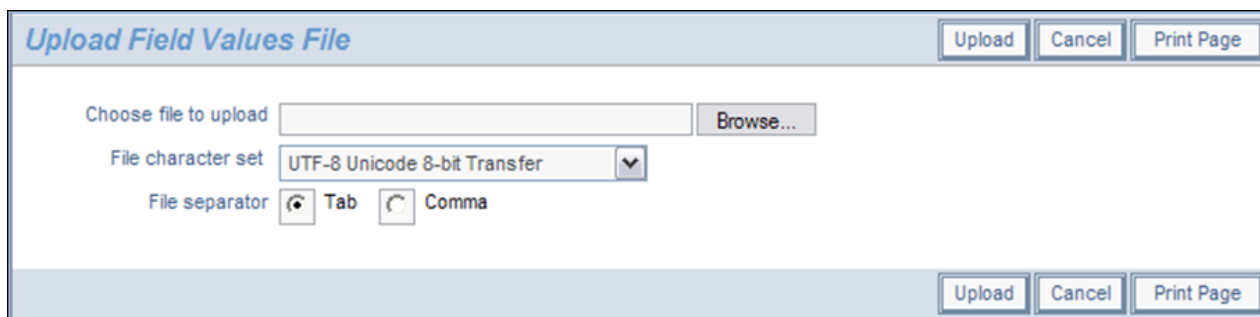
```
parent_value_1, child_value_1  
parent_value_1, child_value_2  
parent_value_2, child_value_3  
parent_value_2, child_value_4  
parent_value_2, child_value_5  
parent_value_3, child_value_6  
... ..
```

The file may be comma-delimited or tab-delimited. Each set of allowed values to be uploaded may only be uploaded into the Business Area and Project that is selected on the screen, shown in this screenshot:



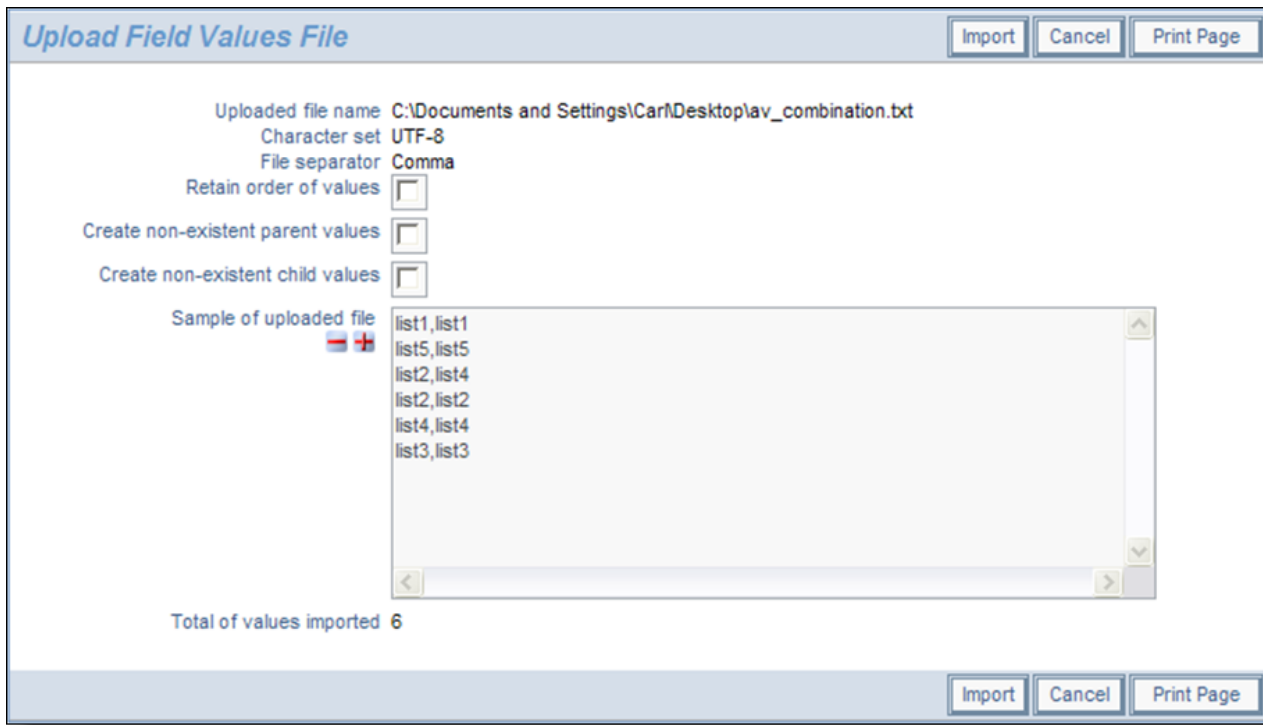
Selecting the Business Area & Project for the Upload

When you press the **Import Allowed Values** button, you see the following dialog:



Uploading the Allowed Value File

Note that you must select the delimiter you have used within the file you are importing. When the file has been successfully uploaded, you will see the following dialog:



Setting Options for the Upload of Allowed Values

As you can see from this screenshot, you can set the allowable parent and child allowed value relationships within the values in the file. At the same time, you may create parent or child values that do not exist. You may also use the sort order of the values as they exist in the file you are uploading, or you may let ExtraView sort the values alphanumerically.

Workflow Setup

In addition to user and security management, ExtraView allows the System Administrator to manage workflow and processes with many behavior settings, creating rules with a scripting capability and by creating and enforcing status change rules.

Business rules allow the administrator to configure ExtraView with field value assignments based upon the values of any other fields. In a similar way, email rules allow you to control the notification process with a set of rules, as opposed to using the defaults for notification.

Status change rules allow you to determine the valid transitions from status to status. This is completely under the control of the administrator, and can be set individually for each business area, project and user role.

You can also maintain relationship groups as part of your workflow. Relationship groups allow you to connect issues together. When linked, and you apply an update to one of the issues, you can automatically provide a status update and comments to the other issues in the relationship group.

Service Level Agreement management allows the administrator to set up the conditions to measure whether the handling of individual issues fall within predetermined conditions that you have set up to manage your customers. For example, you may have an obligation to respond to all customer issues within two hours, and an obligation to provide closure on an issue within two days. This utility allows you to set up these criteria. Under reporting, your users may use these criteria to prepare and run reports that show your organization's performance against these SLA's.

Status Change Rules

Status change rules allow the Administrator to control the process by which the status of issues can be altered. To conform to your company's workflow, ExtraView can create status change rules based on three different workflow formats:

1. **Default Format:** All users must follow the same rules for all different product, projects, categories, modules etc.
2. **User Role Format:** Different state change rules apply to different user roles within your company.
3. **Product Format:** Certain products can be changed to statuses that are different from those that apply to other products.

Status change rules can be switched off altogether, with the behavior setting named `ENFORCE_STATE_CHANGE_RULES`.

In addition, if you are using business areas and / or projects, the status change rules can be set independently for each combination. This gives the flexibility of setting status change rules for any combination of Area, Project and User Role, or any combination of Area, Project and Product. Thus the status change rules allow diverse tracking systems to be set up within a single database, each with their own process and workflow.

An important concept with status change rules is inheritance. When you have defined a combination of business areas and projects together with user roles or products, inheritance allows you to define a workflow at any point in the hierarchy, and have all the subordinate points inherit the same workflow. This provides an economic way of defining workflow, without having to provide a workflow for each and every combination of business area, project, user role and / or project that you define.

Note: If you provide even a single entry in the workflow matrix at any level in the hierarchy, then this is used as the workflow for the entire level.

Enabling Status Change Rules

1. From the Administration menu, under the **Workflow** tab, click on **Workflow Settings**.
2. Click the **Edit** button next to the default value entitled ENFORCE_STATE_CHANGE_RULES.
3. Change the value from NO to YES, and click the **Update** button (if the value is already YES then leave it so).

Interaction with the ADMIN_OVERRIDE_ROLE Behavior Setting

Status change rules are not obeyed by a user whose current role is that specified by the behavior setting named ADMIN_OVERRIDE_ROLE. Thus users whose current role is that of an administrator, typically have freedom to alter the status of an issue from any value, to any other value. The audit trail for the issue will still show the transition.

Choosing the Workflow Process

Note: For this next step, you have to decide which workflow is best for your company. You are able to choose between DEFAULT, PRODUCT and USERGROUP (as discussed above).

1. From the **Workflow** tab of Administration, click on **Workflow Settings**.
2. Click the **Edit** button next to the SEPARATE_WORK_FLOW default value.
3. Change the value to DEFAULT, USERGROUP or PRODUCT and press the **Update** button.

Building Status Change Rules

From the Administration menu, under the Site Configuration tab, click on **Status Change Rules**. Based on your choice of workflow format, one of the following three screens will appear (the screens may look slightly different than what is represented here, but the functionality is identical).

Note the use of * **None** * as a value in the To Status and From Status column and row of the table. As well as control the movement of issues between different values, you can also control whether * **None** * is an allowable value. * **None** * may be set as a default value for the status field in the data dictionary.

When accessing the matrix showing the valid status transitions, all checkboxes may appear “grayed-out”. This implies that the values shown for the combination of the user role or product, the business area and the project are being inherited and cannot be set explicitly for this combination. To break the inheritance and set explicit values for the combination, either press the Update button once, or use the Copy From option to select the values from another combination of user role or product, business area and project.

Status Change Rules Update Return Print Page

Status change rules can be defined for one Business Area by filling in the matrix. To fill out the matrix, check the boxes of the status changes you want to allow users to make.

Remember that the rules can be switched off or on altogether using the ENFORCE_STATE_CHANGE_RULES setting in the "Workflow Settings" administration screen. The current value of ENFORCE_STATE_CHANGE_RULES is YES.

Remember that the role set by ADMIN_OVERRIDE_ROLE bypasses the status change rules, and workflow is not enforced for this role.

View all ? View disallowed ? View unpermitted ?

		To Status						
		New	Open	Fixed/Pending	Closed	Duplicate	Not Found	* None *
From Status	New	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Open	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Fixed/Pending	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Closed	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Duplicate	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>
	Not Found	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>
	* None *	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

Update Return Print Page

Status change rules applied universally to all issues

Status Change Rules Update Return Print Page

- 1 Set the values for the status rules to be modified in the list following the 'Define Settings' radio button.
- 2 Status change rules can be defined for one user role, by selecting the 'Define Settings' radio button and filling in the matrix. To fill out the matrix, check the boxes of the status changes you want to allow users to make.
- 3 You may press the 'Copy From' radio button and then the Update button to copy from the user role to the current selection in the 'Define Settings' list.
- 4 Remember that the rules can be switched off or on altogether using the ENFORCE_STATE_CHANGE_RULES setting in the "Workflow Settings" administration screen. The current value of ENFORCE_STATE_CHANGE_RULES is YES.
- 5 Remember that the role set by ADMIN_OVERRIDE_ROLE bypasses the status change rules, and workflow is not enforced for this role.

Define Settings
 Copy From

User role: User role:

View all ? View disallowed ? View unpermitted ?

		To Status						
		New	Open	Fixed/Pending	Closed	Duplicate	Not Found	* None *
From Status	New	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Open	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Fixed/Pending	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Closed	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Duplicate	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>
	Not Found	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>
	* None *	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

Update Return Print Page

Status change rules applied to different user roles

Status Change Rules Update Return Print Page

- 1 Set the values for the status rules to be modified in the list following the 'Define Settings' radio button.
- 2 Status change rules can be defined for one Product, by selecting the 'Define Settings' radio button and filling in the matrix. To fill out the matrix, check the boxes of the status changes you want to allow users to make.
- 3 You may press the 'Copy From' radio button and then the Update button to copy from the Product selected, to the current selection in the 'Define Settings' list.
- 4 Remember that the rules can be switched off or on altogether using the ENFORCE_STATE_CHANGE_RULES setting in the "Workflow Settings" administration screen. The current value of ENFORCE_STATE_CHANGE_RULES is YES.
- 5 Remember that the role set by ADMIN_OVERRIDE_ROLE bypasses the status change rules, and workflow is not enforced for this role.

Define Settings Copy From

Product Product

View all View disallowed View unpermitted

		To Status						
		New	Open	Fixed/Pending	Closed	Duplicate	Not Found	* None *
From Status	New		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Open	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Fixed/Pending	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Closed	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Duplicate	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>
	Not Found	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>
	* None *	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Update Return Print Page

Status change rules applied to different products

Open-Ended Rules

Note: The fields **Status** and **Business Area** are subject to the allowed value relationship with a title of **area-status**.

The following table shows which statuses in this workflow do not have any predecessors and do not have any successors. This is displayed for information purposes only.

Values without predecessors	Values without successors
Not Yet Tested	New
Tested - Passed	Not Yet Tested
Tested - Failed	Tested - Passed
Fixed	Tested - Failed
Duplicate	Open
Not Found	
* None *	

Viewing allowed values and other information

Towards the bottom of the screen that manages the status change rules there are two optional sections. If the status change rules are subject to the STATUS field being the child of either AREA or the PROJECT field as a parent, this is displayed. The second piece of information is a table that shows which settings in the status change rules has no predecessors and which rules have no successors. The first group represents the statuses that will be start points in the workflow; the second group represents those that are end-points in the workflow.

Enforcing Status Change Rules

1. For Product or User Role workflows, select a Product or User Role from the dropdown list in the Define Settings list.
2. Start by clicking the check boxes for each *From Status* (left-hand side) to the *To Status* (top). Click on the box at the junction of the *From* and *To* statuses where you want to allow a status transition.
3. After you are satisfied with the *From* and *To* values, click the **Update** button.
4. Select another Product or User Role from the list, and follow steps 1 through 3. Do this for each Product or User Role.
5. Note that you may copy the settings for any Product or User Role from a different Product or User Role. To do this –
 1. Select the Product or User Role you want to define in the Define Settings List
 2. Choose the Product or User Role you want to copy the settings from in the Copy From List
 3. Click on the Copy From radio button

The screen will refresh with the copied values in place.

After your final update, your Status Change Rules are fully implemented. You can now test out the functionality by editing an issue and making status changes. Note that at any moment, you will only see the valid statuses in the list that you can move the status to, according to the present status of the issue.

Enforcing Status Change Rules with Areas and Projects

As discussed above, you are able to use the principle of inheritance to control status change rules over multiple user roles, multiple areas and multiple projects.

Status Change Rules [Update] [Return] [Print Page]

- 1 Set the values for the status rules to be modified in the list following the 'Define Settings' radio button.
- 2 Status change rules can be defined for one Product within an Business Area and Project, by selecting the 'Define Settings' radio button and filling in the matrix. To fill out the matrix, check the boxes of the status changes you want to allow users to make.
- 3 You may press the 'Inherit From' radio button and then the Update button, to inherit from the Product selected in the 'Inherit From' list.
- 4 You may press the 'Copy From' radio button and then the Update button to copy from the Product selected, to the current selection in the 'Define Settings' list.
- 5 Remember that the rules can be switched off or on altogether using the ENFORCE_STATE_CHANGE_RULES setting in the "Workflow Settings" administration screen. The current value of ENFORCE_STATE_CHANGE_RULES is YES.
- 6 Remember that the role set by ADMIN_OVERRIDE_ROLE bypasses the status change rules, and workflow is not enforced for this role.

Define Settings
 Inherit From
 Copy From

Product: Tracker Product: _MASTER Product: Tracker
 Business Area: Master Area Business Area: Master Area Business Area: Master Area
 Project: Master Project Project: Master Project Project: Master Project

View all
 View disallowed
 View unpermitted

From Status	To Status						
	New	Open	Fixed/Pending	Closed	Duplicate	Not Found	* None *
New	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Open	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Fixed/Pending	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Closed	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Duplicate	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Not Found	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
* None *	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

[Update] [Return] [Print Page]

Inheriting Status Rules from a different area or project

At any level in the hierarchy of user roles, areas and projects, the default is that the status change rules are inherited from the level above in the hierarchy. There is a fuller explanation of this in the section on inheritance in the Layout Editor section of this guide. The screenshot above shows the view at the global level. As you can see, you cannot inherit from any higher level. When you choose to Define Settings for a level beneath the global area and global project, the section of the form entitled Inherit From will show the available levels from which you can inherit the values and then alter them to suit your needs at the level in Define Settings. Note that you can also copy the settings from a different combination of user role or product, and area and project, to the location set in Define Settings.

Status Change Rule Views

It is possible to create an infinite number of statuses within an ExtraView installation. This can make it difficult to view and set the status change rules on a single screen, as the matrix displayed can grow very large, both horizontally and vertically. Commonly, business areas will use the AREA field as a parent in an allowed value relationship, and the STATUS field as the child in the same relationship.

The Status Change Rules screen will restrict the statuses shown to the statuses that are the children of the current business area. This makes the screen much more manageable.

At the same time, it is possible to use security permission keys in any valid combination of user roles and business areas to turn off the status.

A problem may arise, if you restrict a valid status change transition, then turn off the security permissions, or alter the allowed values for the allowed transition, in that you will no longer see the checkbox for the transition on the screen. To facilitate the management of your metadata under these conditions, the status change rule screen has three checkboxes, which will turn on hidden transitions, allowing you to check for incorrect settings.



View All – This will turn on all the checkboxes, irrespective of permissions, and allowed values

View Disallowed – This will turn on the checkboxes that were omitted due to the allowed value relationship

View Unpermitted – This will turn on the checkboxes that were omitted due to security permission settings.

Status Change Rules Example

This example shows the key elements of setting up the status change rules to form a workflow. This example shows the set up for two of the user roles, the *Development Engineers* and the *Quality Assurance* engineers. In most companies, there will be additional roles that will be configured, and the steps in the workflow (i.e. the statuses) can be composed of many additional steps.

The basic workflow tasks are centered on a defined set of statuses, as set up within the list manager **STATUS** field.

Task	Development Engineers	Quality Assurance Engineers
Create NEW issues	✘	✘
OPEN issues to work on them from the NEW status	✘	
Re- OPEN issues that were marked as Fixed	✘	✘
CLOSE issues that are marked as Fixed		
OPEN issues that were previously marked Duplicate	✘	✘
Re- OPEN an issue that was previously Closed		
Re- OPEN an issue marked as Duplicate	✘	✘

No user will be allowed to set the status of * **None** * within the **Status** list, therefore a layout cell attribute of FIELD REMOVE NONE will be set within the Status field on the *Add* and *Edit* Layouts.

Status Change Rules Update Return Print Page

- 1 Set the values for the status rules to be modified in the list following the 'Define Settings' radio button.
- 2 Status change rules can be defined for one user role, and an Business Area and Project by selecting the 'Define Settings' radio button and filling in the matrix. To fill out the matrix, check the boxes of the status changes you want to allow users to make.
- 3 You may press the 'inherit From' radio button and then the Update button, to inherit from the user role selected in the 'inherit From' list, to the user role selected in the 'Define Settings' list.
- 4 You may press the 'Copy From' radio button and then the Update button to copy from the user role to the current selection in the 'Define Settings' list.
- 5 Remember that the rules can be switched off or on altogether using the ENFORCE_STATE_CHANGE_RULES setting in the "Workflow Settings" administration screen. The current value of ENFORCE_STATE_CHANGE_RULES is YES.
- 6 Remember that the role set by ADMIN_OVERRIDE_ROLE bypasses the status change rules, and workflow is not enforced for this role.

Define Settings

User role:

Business Area:

Project:

Inherit From

User role:

Business Area:

Project:

Copy From

User role:

Business Area:

Project:

View all View disallowed View unpermitted

		To Status						
		New	Open	Fixed/Pending	Closed	Duplicate	Not Found	* None *
From Status	New		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Open	<input type="checkbox"/>		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
	Fixed/Pending	<input type="checkbox"/>	<input checked="" type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Closed	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Duplicate	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>
	Not Found	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>
	* None *	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

Update Return Print Page

Status Rules Example for Development Engineering role

Status Change Rules Update Return Print Page

- 1 Set the values for the status rules to be modified in the list following the 'Define Settings' radio button.
- 2 Status change rules can be defined for one user role, and an Business Area and Project by selecting the 'Define Settings' radio button and filling in the matrix. To fill out the matrix, check the boxes of the status changes you want to allow users to make.
- 3 You may press the 'Inherit From' radio button and then the Update button, to inherit from the user role selected in the 'Inherit From' list, to the user role selected in the 'Define Settings' list.
- 4 You may press the 'Copy From' radio button and then the Update button to copy from the user role to the current selection in the 'Define Settings' list.
- 5 Remember that the rules can be switched off or on altogether using the ENFORCE_STATE_CHANGE_RULES setting in the "Workflow Settings" administration screen. The current value of ENFORCE_STATE_CHANGE_RULES is YES.
- 6 Remember that the role set by ADMIN_OVERRIDE_ROLE bypasses the status change rules, and workflow is not enforced for this role.

Define Settings

User role: Quality Assurance

Business Area: Bugs

Project: Bugs Defaults

Inherit From

User role: Quality Assurance

Business Area: Master Area

Project: Master Project

Copy From

User role: Administrator

Business Area: Master Area

Project: Master Project

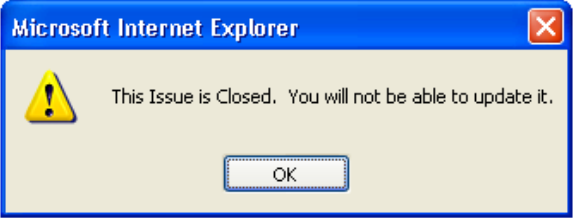
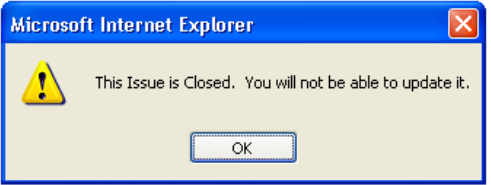
View all View disallowed View unpermitted

		To Status						
		New	Open	Fixed/Pending	Closed	Duplicate	Not Found	* None *
From Status	New		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Open	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Fixed/Pending	<input type="checkbox"/>	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Closed	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Duplicate	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>
	Not Found	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>
	* None *	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

Update Return Print Page

Status Rules Example for Quality Assurance role

With these two diagrams, the Status field will look as follows within the Edit Screen, dependent upon the value of Status as follows. Note that these examples display the status values using the STATUS_TRANSITION field. If you use the STATUS field on your edit screen layout, you will see the same values for each role in each status, but in a drop-down select list.

Status	Development Engineers see	Quality Assurance see
New	New — Open	New — Open
Open	Open — Fixed/Pending — Duplicate — Not Found	Open
Fixed/ Pending	Open — Fixed/Pending	Open — Fixed/Pending — Closed
Closed		
Duplicate	Open — Duplicate	Open — Duplicate
Not Found	Not Found	Not Found

Closing Issues

ExtraView maintains an accurate record of the date that each issue is closed. This is achieved by inserting the current system timestamp into the issue, when the issue is moved to the closed state. The closed state is defined by the behavior setting named STATUS_CLOSED_NAME. Its default value is CLOSED, but the administrator may change this. The value should only be changed during the implementation of a new system, as once data accumulates in a system, you will lose the historic references to when issues were closed, if you change this setting.

However, your workflow may (or may not) allow closed issues to be re-opened. The rules for setting the DATE_CLOSED date in the database are as follows:

1. The initial value for DATE_CLOSED is NULL. As long as the status of the issue is not set to the value of the STATUS_CLOSED_NAME behavior setting, DATE_CLOSED remains equal to NULL
2. If the Status is changed to STATUS_CLOSED_NAME, then DATE_CLOSED is assigned the value of the current date
3. If a user has write permissions the security permission key named PR_RESOLUTION.ALLOW_EDIT_CLOSED, and they change the status to a value other than STATUS_CLOSED_NAME, then DATE_CLOSED is reset back to NULL, until the issue is again changed to the status of STATUS_CLOSED_NAME.

Note: The field named DATE_LAST_STATUS_CHANGE always is initially set to the date that the issue is first created, and subsequently is only modified if the status changes value.

Reporting & Querying

This section provides information to the Administrator on reporting options that may, or may not, be granted to users of the system.

Counting Issue Records versus Counting Repeating Row Records

It can sometimes be important to understand the distinction that ExtraView makes between rows on a report and records on a report. This difference in semantics is used to distinguish between the times when ExtraView returns a precise number of *records* on a report and when it returns a set of *rows* that may or may not correspond exactly to the number of records.

The difference comes when a query may return a single record multiple times on a report, or count the same record multiple times on the same report. This happens when there are one-to-many relationships within your data. The two most common times this happens are:

- You prepare a report that uses repeating row records, then use a repeating row field to sort the report. When you use a field on a repeating row record to sort, it will generate a row on the report for each occurrence of the repeating row. Therefore, if you have 3 repeating rows within a single issue, it will generate 3 *rows* on the report for each *record*.
- You use reporting hierarchies. In a similar manner to the above bullet, one record at a level in the hierarchy may have multiple child records, and when you sort by a field at the child level, you will generate one *row* on the report for each *record*.

[Click for administrative information](#)

Report & Query Permissions

There are a variety of security permission keys that give a large degree of control over access to reports. There are two principal groups of permission keys, providing overall control, and then control over individual report types.

Permission Keys - Overall Control

Permission Key	Purpose
SR_ALLOW_ADVANCED_QUERIES	When this setting is YES, the user role can create, edit, save, delete and execute reports composed with the Advanced Query option. When this is set to NO, reports composed with Advanced Query may only be run, and only if the user role has permission to the appropriate SR_PUBLIC_REPORT, SR_PERSONAL_REPORT and SR_USERROLE permission keys
SR_ALLOW_EXPANDED_QUERIES	When the user role has read access to this key, the users can switch between condensed and expanded queries. When this key is set to no access, the users will only be able to create queries with the condensed mode and will not be able to switch into the expanded mode
SR_ALLOW_REPORTS_ACCESS	This is a master switch for access to the ability for a user role to either create new reports, or to run existing reports. Unless a user role has Read Access to this key, they

	are not permitted to undertake any reporting activity from the Reports screen
SR_ALLOW_HIERARCHY_REPORTS	Write permission to this key allows the user the ability to create reports that use hierarchical filters
SR_DASHBOARD_ON_HOME_PAGE	This permission key is controlled by user custom code. When this is set for Read permission for a role, then a dashboard report inserted by user custom code will appear on the Home page of the user
SR_FILTER_BUTTON	Grant access to the filter button used to change report filters.
SR_KB_ON_HOME_PAGE	Read permission to this key will allow the user role to view and use the knowledgebase search box on the Home Page
SR_MENUBAR_REPORTS	If the user has permission to this security key, then they will see and be able to run any report from the menubar at the top of the screen
SR_RELATIONSHIP_GROUP	This key controls access to allow the user to group issues on column and Quicklist reports with the Group Issues button. Write access is needed to control this.
SR_REPORT_GROUP	Write permission to this key allows the user role to share reports
SR_REPORT_REPOSITORY_ACCESS	The user role requires write access to write to the repository from the report scheduler. Read access is required to be able to view reports stored within the repository. Write access also provides the ability to view and use the Manage Repository Folders feature.
SR_REPORT_SCHEDULE	Write permission to this key allows the user role to use the report scheduler
SR_SET_HOME_PAGE_REPORTS	Read access to this key allows the user to select and set their Home Page reports

Permission Keys - Individual Report Control

Reports fall into two major categories, **Shared** reports and **Personal** reports.

Shared reports appear on the Query screen underneath the section entitled **Shared** reports while **Personal** reports appear in the **My Reports** section. There is a sub-division of **Shared** reports whereby reports can be shared across one or more user roles.

For each type of report, there are three separate security permission keys. In total, this allows each report type to have its security permissions set for each role. The keys are:

Personal Key	Shared Key	User Role Key
SR_PERSONAL_AGING	SR_PUBLIC_AGING	SR_USERROLE_AGING
SR_PERSONAL_CALENDAR	SR_PUBLIC_CALENDAR	SR_USERROLE_CALENDAR
SR_PERSONAL_CHART	SR_PUBLIC_CHART	SR_USERROLE_CHART
SR_PERSONAL_COLUMN_REPORT	SR_PUBLIC_COLUMN_REPORT	SR_USERROLE_COLUMN_REPORT
SR_PERSONAL_CONTAINER	SR_PUBLIC_CONTAINER	SR_USERROLE_CONTAINER
SR_PERSONAL_DASHBOARD_REPORT	SR_PUBLIC_DASHBOARD_REPORT	SR_USERROLE_DASHBOARD_REPORT
SR_PERSONAL_GEOSPATIAL	SR_PUBLIC_GEOSPATIAL	SR_USERROLE_GEOSPATIAL
SR_PERSONAL_LINKED_REPORT	SR_PUBLIC_LINKED_REPORT	SR_USERROLE_LINKED_REPORT
SR_PERSONAL_MATRIX	SR_PUBLIC_MATRIX	SR_USERROLE_MATRIX
SR_PERSONAL_PAGE_LAYOUT	SR_PUBLIC_PAGE_LAYOUT	SR_USERROLE_PAGE_LAYOUT
SR_PERSONAL_PLANNING	SR_PUBLIC_PLANNING	SR_USERROLE_PLANNING
SR_PERSONAL_SUMMARY_REPORT	SR_PUBLIC_SUMMARY_REPORT	SR_USERROLE_SUMMARY_REPORT
SR_PERSONAL_TASKBOARD	SR_PUBLIC_TASKBOARD	SR_USERROLE_TASKBOARD
SR_PERSONAL_TREEGRID	SR_PUBLIC_TREEGRID	SR_USERROLE-TREEGRID

If a user role has read permission, then the reports are visible on the query list, and the user role may run the report. If a user role has write permission, then the user role may save or overwrite reports of the type.

Saving Reports

The section of the window **Visibility of Report** is present if you can save the report for different roles, i.e. you have permission to the SR_USERROLE_XXX permission key. You can save the report for all user roles or you can select multiple roles from the list, and only these roles will have the ability to access the report.

Within the **Existing Folders** section, you can select the **My Reports** section to save the report for your personal use. This requires permission to the SR_PERSONAL_XXX permission key. If you want to save the report within an existing personal folder, select that folder.

Within the **Existing Folders** section, you can select the **Shared Reports** section to save the report for shared use or for use across one or more user roles. This requires permission to the SR_PUBLIC_XXX or SR_USERROLE_XXX permission key. If you want to save the report within an existing shared folder, select that folder.

To create a new subfolder within the **My Reports** section, select **My Reports** and then enter the name of the new folder in the bottom field. To create a new subfolder within the **Shared Reports** section, select **Shared Reports** and then enter the name of the new folder in the bottom field.

Quicklists & Detailed Reports

Quicklist layouts and only Detailed Report layouts can be defined for each Business Area in your system. These reports are defined within the layout editor, in exactly the same way that screen layouts are created and maintained. The Quicklist and Detailed Report that are created at run time are dependent upon the current Business Area and Project of the user. The following security permission key is useful to understand when creating and maintaining the Quicklist and Detailed Report.

Security Key	Purpose
PR_RESOLUTION.QUICKLIST	Controls access by user role to the Quicklist report. Most user roles should be given this privilege.

There are several points that you should be aware of when creating report layouts:

- There is a field in the layout list named VIEW_BUTTON. This allows you to place the drill down button to the detailed report on the screen. Most often used on the Quicklist, and never used on the detailed report itself.

- There is a field in the layout list named HISTORY_BUTTON. This allows you to place the drill down button to the history report on the screen. The user must have read permission for the PR_RESOLUTION.MENU_HISTORY security key in order to see the button on the screen.
- There is a field in the layout list named EDIT_BUTTON. This allows you to place the drill down button to the *edit* issue screen.
- There is a field in the layout list named DELETE_BUTTON. This allows you to place the delete issue function on a report. The user must also have privileges to the PR_RESOLUTION.DELETE_BUTTON security key in order to be able to delete issues.
- You may want to use the Highlight layout element attribute to alter the display color of some fields. For example, you may make critical issues appear in red. If you do this, then the color used is defined in the behavior setting named HIGHLIGHT_COLOR.
- If you have a dependency within one field of a layout with another field on the layout, such as Highlight, then both fields must be on the layout.

Formatting of Fields on the Output

If you specify a specific style or format with a layout cell attribute for a field on the layout or as a global attribute within the data dictionary, this will be utilized on the report output. In a similar fashion, you can hide field values on the output using the VISIBLE IF layout cell attribute. The STYLE layout cell attribute, or global attribute can be used to apply a style to the value on the output.

Quickedit Mode

The Quickedit mode allows the inline editing of fields within a row or issue of a report. You may place the QUICKEDIT button onto any Quicklist layout, any Detailed Report layout, onto column reports and onto taskboard reports. Quickedit provides a fast and efficient means of updating many records in succession. For example, if you have a weekly status meeting where you review many issues and make changes to details such as priorities and who an issue is assigned to, then the Quickedit mode is very useful.

The screenshot shows a web-based interface for managing issues. At the top, there is a menu bar with options: Refresh, Group Issues, Mass Update Issues, Gridedit, Return, Filters, and Print Page. A red arrow points to the 'Gridedit' button, which is labeled 'Gridedit Button'. Below the menu bar, it says 'Displaying records 1 to 14 of 14' and 'P 3 Bugs ? For testing'. The main content is a table of issues with columns: ID #, Priority, Product, Module, Status, and Title. The table contains 14 rows of data. A red arrow points to the 'Quickedit Row' for ID # 10792, which is highlighted. Below this row, there are 'Quickedit Buttons' for 'Update' and 'Cancel'. The 'Update' button is labeled 'Quickedit Buttons'. The 'Update' button has a dropdown menu for 'Priority' (set to P 3), a dropdown for 'Product' (set to Tracker), a dropdown for 'Module' (set to CLI), and a text input field for 'Title' containing 'The report screen contains a blank entry'. The 'Cancel' button is below the 'Update' button. The table also includes 'View', 'Edit', and 'Qedit' buttons for each row. At the bottom left, it says 'Count: 14 records'.

	ID # ▼	Priority ▾	Product ▾	Module ▾	Status ▾	Title ▾
View Edit Qedit	10817	P 3	Tracker		New	sdfsdfsdfsdf
View Edit Qedit	10800	P 3	Tracker	GUI	New	Misspelling on the title screen
View Edit Qedit	10794	P 3	Tracker Enterprise	Processor	New	Crack in circuit board
View Edit Qedit	10793	P 3	Tracker Lite	GUI	New	Box insert is 2mm short
Update Cancel	ID # 10792	Priority P 3	Product Tracker	Module CLI	Status	Title The report screen contains a blank entry
View Edit Qedit	10736	P 3	Tracker	GUI	Open	JavaScript error when you load the edit page
View Edit Qedit	10731	P 3	Tracker	Database	Open	Error when creating a record
View Edit Qedit	10730	P 3	Tracker	CLI	Open	Add Report Folders - Test Case Failure
View Edit Qedit	10950	P 3	Tracker	CLI	New	Test #1 for the CLI - Test Case Failure
View Edit Qedit	10548	P 3	Tracker	Processor	New	Test customer issue
View Edit Qedit	10233	P 3	Tracker	Database	New	The box is loose
View Edit Qedit	10222	P 3	Tracker Lite	GUI	New	This issue is entered by a customer role user
View Edit Qedit	10207	P 3	Tracker Enterprise	GUI	Open	Customer reports seeing duplicate messages after adding a new record
View Edit Qedit	10188	P 3	Tracker Lite	Database	Fixed	A single swallow does not a spring make

Column Report Quickedit mode

When a **Quickedit** button is configured on a Column report, a button with the title **Gridedit** is placed on the menubar of the window or panel. This allows the user to place all the issues on the report into Quickedit mode with a single click. The user can update any of the issues that are displayed, but they must update issues one at a time when the edits to an issue is complete. It is not practical to allow users to update all the records within a single button, as each update may have dependencies which result in a popup - e.g. to fill in required fields or to satisfy a validation requirement. This would have the potential to generate a huge number of popups which users could not manage easily.

	New	Open	Fixed	Closed
Bill Smith	10557 - There is a defect in the admin module when a user makes an error <input type="text"/> Date Created 4/17/09 Originator Bill Smith Priority P 3 Product Tracker Module Database Severity * None *	10552 - The box label may be off center <input type="text"/> Date Created 8/13/08 Originator Bill Smith Priority P 3 Product Tracker Module Database Severity Low	10514 - This is a Coca-Cola issue reported by the customer when they were performing research into aissue #23232 <input type="text"/> Date Created 4/12/07 Originator Bill Smith Priority P 2 Product Tracker Enterprise Module GUI Severity * None *	10476 - This is a Coca-Cola issue reported by the customer when they were performing research into aissue <input type="text"/> Date Created 3/5/07 Originator Bill Smith Priority P 2 Product Tracker Enterprise Module GUI Severity * None *
Chris Robinson	10620 - Software issue reported by Customer <input type="text"/> Date Created 5/1/12 Originator Bill Smith Priority P 3 Product Tracker Enterprise Module GUI Severity * None *		10480 - This issue shows how a customer issue may be turned into a bug for the engineering group <input type="text"/> Date Created 3/30/07 Originator Bill Smith Priority P 3 Product Tracker Module GUI Severity Medium	10334 - Here is the scoop on equipment <input type="text"/> Date Created 4/1/07 Originator Bill Smith Priority P 2 Product Tracker Module Data Severity Low
Daniel Borlean			10241 - This is a new job <input type="text"/> Date Created 2/3/05 Originator SCM Daemon Priority P 1 Product Tracker Module * None * Severity * None *	
George Mill		10475 - This is a Coca-Cola issue reported by the customer when they were performing research into aissue	10527 - Need to know how exclusive or	10199 - Have wings.will fly

Taskboard Quickedit mode

When you press the Quickedit button, you are able to edit the fields that appear on that row of the report. This is often much speedier than going into the edit mode of the issue. When you are in the Quickedit mode, you must exit by either updating the issue, or canceling the update. There are some caveats using the Quickedit function, as follows:

- The user must have write access to a field in order to update its value
- As the administrator, you must have placed the field on the edit layout for the appropriate business area and project in order to update its value. If the field is part of the issue and not on the layout, you may still see it in a read-only mode
- The – character will be displayed in a field, if the field is not an ExtraView built-in field and it has not been placed on the *edit* screen layout. This may happen if the user is sitting in one Business Area, but the record they are trying to edit resides in a different Business Area or Project, and does not have that field
- Calculated fields such as **Days Open** and **Days in Status** will be displayed as read-only
- If a field has a link using the “Display as URL” function, this link is not active when in Quickedit mode
- The user cannot ever edit the Business Area or Project fields in Quickedit mode
- If repeating rows are on the report or layout, the user may edit the existing values on a row, but cannot add a new row or delete an existing row
- All allowed value relationships are maintained. However, if the parent value is not on the report, the user may only select a new child value within the current parent value
- Quickedit mode does not operate within a report displaying the results of a hierarchical report. This is because these reports display multiple issues on a single row
- All business rules will be executed in the same way as if the user were using the full edit mode on the issue
- All issue notifications will be sent out as normal
- If an Alternate Title layout cell attribute is defined for a field on the *edit* layout used when performing a Quickedit, then this overrides the Alternate Title defined (if any) defined on the report

Any HTML modifier placed on a field that appears on a report in Quickedit mode will be ignored. Instead, there is a user custom JavaScript exit that will allow you to define any code required for functionality. This is named `ucHtmlModifierQuickEdit()` and if it

exists in the UserJavaScript.js file you may place code that emulates the HTML modifiers.

Quickedit on Detailed Report Layouts

There are the following restrictions in using Quickedit on Detailed Report layouts:

- Quickedit is not supported if the Detailed Report contains embedded layouts
- Quickedit is not supported on Detailed Reports if the behavior setting named REPORT_LABELS_POSITION has a value of LEFT. Only when the labels are rendered with REPORT_LABELS_POSITION equal to TOP is Quickedit supported

Keyword Queries & Quickfind

Keyword queries are enabled with the following actions:

- Place the inbuilt field named KEYWORD on a query filter layout
- This is subject to the normal PR_RESOLUTION.KEYWORD security permission key, allowing you to control which roles have access to the facility
- There is a further security permission key named PR_RESOLUTION.SEARCH_ATTACHMENTS. When this is enabled for a user role, they will see a checkbox appear beneath the keyword search. When the user checks this box, attachments to issues will also be searched for the keywords entered.
- ALLOWED_ATTACH_SEARCH_FILE_EXT – this behavior setting controls which file attachment types are searched. For example, you may have large image files within your database, through which there is no point searching for keywords
- ALLOW_SEARCH_TEXT_UDFS – When this is set to YES, all User Defined Fields with a display type of TEXT are included in the keyword query search
- SEARCH_ATTACH_THRESHOLD – This is another control to stop huge searches when using keyword queries on attachments. ExtraView will first calculate the total size of the attachments that are to be scanned for keywords. If the size (in bytes) is greater than the number in this setting, then ExtraView will ask the user to confirm that he wants to execute the search.

ExtraView composes SQL queries to search for keywords in its underlying database by default. However, the Administrator may turn an extremely fast, indexed search mechanism named Quickfind. Quickfind requires additional resources and storage to provide this performance boost, but for large sites with a significant amount of text and attachment files, it significantly improves performance.

Searching Microsoft Documents for Keywords

Microsoft documents, such as Word and Excel, are stored using a character set known as **UTF-16LE Unicode 16-bit LittleEndian**. If you want to search these documents for keywords, you should store the documents, when you upload them, using this as the character encoding. This is especially important for Asian languages. Many searches with Roman alphabets will work fine without correctly identifying the character set within the Microsoft document.

Quickfind

If ExtraView Corporation is hosting your installation, you do not have direct access to the file system of the server to configure, alter or use this feature without contacting ExtraView support.

Quickfind uses indexes built and maintained by ExtraView to speed up the search process for keywords. Understanding these indexes and constructing your search terms properly is critical in generating the expected results from your query. The feature is built upon the Apache Lucene technology.

To enable this feature, see the section on [Managing Quickfind](#) and the section on setting up the task that performs the indexing. This is managed in the [Manage Tasks and Threads](#) administration utility.

The indexes built are based on words extracted from the data being searched. The database automatically extracts words from your documents, ignoring most special characters.

Since only words are indexed by the database ExtraView will use a more complete, but slower method to search if the keywords that the user is searching for contain special characters. This search can be much slower, especially if the user is searching for attachments. Special characters are any characters other than alphanumeric characters, a-z, A-Z, and 0-9. For example, if the keyword search is for the character string **FIND_ME**, a slower search will be used to ensure that words containing the underscore are found. This is a limitation of the database operation underneath ExtraView, not a limitation of ExtraView.

One of the biggest implications of the word index is that searches for fragments of a word that do not start at the beginning of the word will not return that word. For example, a search for **FORM** can return results for **FORM**, but not **inFORMal**.

ExtraView extends the keyword search term entered to search for words that start with the same characters. For example, a search for **APPLE** can return results for **APPLE** as well as **APPLEs** and **APPLEsauce**.

The default installation of Quickfind into your database environment performs case insensitive matching. Any combination of upper and lower case characters will match the same list of characters with any other combination of capitalization. For example, the following list of words would all be found when searching for **apple**: **apple**, **ApPIE**.

You may configure which text fields and file attachments are indexed. The indexing happens as a background task run on a timer within ExtraView. This timer is controlled by a behavior setting on the management screen for Quickfind, with the default being every five minutes. This means that text entered or attachments uploaded are not immediately available for finding with the keyword search capability, but will be included in the results following the next completion of the Quickfind background task. To enter the settings, look at the [Managing Quickfind](#) section of the documentation.

Update Return Print Page Manage Quickfind Settings

Quickfind Settings

This is where you may manage the settings for Quickfind, an indexing mechanism that significantly speeds up keyword searching. You should carefully follow the instructions in the Installation Guide to set up Quickfind for the first time.

You will require a directory on you web server that can be read and written by the Quickfind process. If you are using multiple application servers, they must be able to share this directory.

The fields below control which data is seached when the 'KEYWORD' filter is used.

You must also go to the **Manage Tasks and Threads** administration utility to configure and start the FULL_TEXT_SYNCHRONIZE background task. This task should be run on only one of the application servers.

Enable Quickfind ? No

Lucene Index Location ?

Allow Quickfind on user defined text fields ? Yes

ExtraView data	Enabled for Keyword Search	
The short description for the issue	<input type="radio"/> Yes	<input checked="" type="radio"/> No
Text fields, such as comments, and other long text fields.	<input type="radio"/> Yes	<input checked="" type="radio"/> No
Attachment information including the file name, the file description, and the attachment content.	<input type="radio"/> Yes	<input checked="" type="radio"/> No
Image and document fields including the file name, the file description, and the document content.	<input type="radio"/> Yes	<input checked="" type="radio"/> No
All other user defined text fields	<input type="radio"/> Yes	<input checked="" type="radio"/> No

Manage Content Types Manage Character Set Mapping Estimate Storage Requirements

Update Return Print Page

Managing Quickfind settings

Note that in addition to the **Estimate Storage Requirements** button, the two other buttons at the bottom of the screen:

Manage Content Types – This allows you to manage the different content types that are indexed by Quickfind. It is not very likely that you will need to modify these settings as the default values provided are fairly extensive.

Manage Character Set Mapping – This utility is only used for Oracle databases. Again it is not likely that you will need to alter the settings provided.

Quickfind versus Standard Search

- Quickfind is faster searching for keywords, compared to the standard search mechanism.
- Quickfind requires significantly more database disk storage than the standard search mechanism
- Text indexed with Quickfind will not be found immediately it is inserted. There will be a delay, up to the time specified in the poll interval of the task, before the text may be found. In most circumstances this is not a significant issue
- The standard search mechanism will not find mixed case words

- All queries using Quickfind are case-insensitive and support the wildcard character (*)
- Quickfind ignores most non-alphabetic characters when indexing the content and your users can search for and retrieve these. The standard search mechanism does not attempt to retrieve words when performing a query, if they contain non-alphabetic characters
- Quickfind indexes numbers as well as alphabetic characters, therefore text fields that contain numbers are indexed. This is not true for standard search.

Reporting Hierarchies

Reporting hierarchies allow the administrator to set up relationships for reporting purposes. These relationships may be more than just a single level with a single parent and single child. You can set up reporting hierarchies of up to ten levels although it is unlikely that use cases go beyond three or four levels.

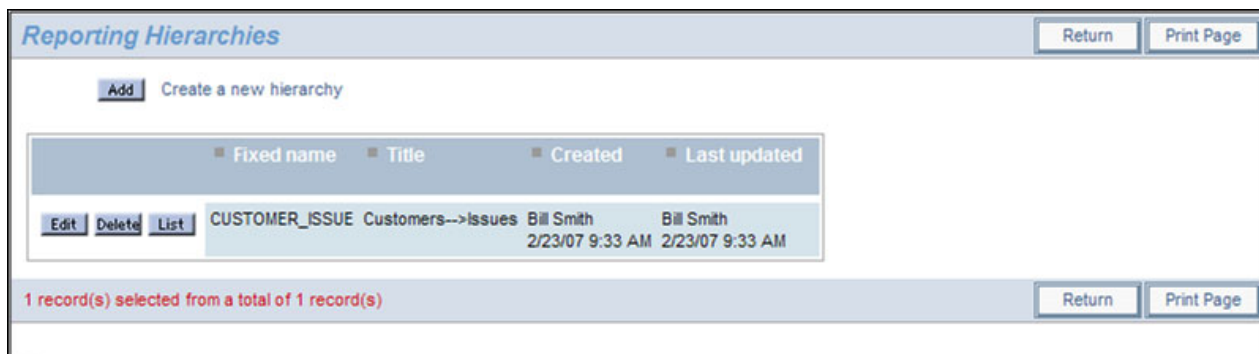
Some examples of reporting hierarchies may be:

<i>Customers</i> ♦ <i>Customer Issues</i>	A single customer may report many issues, and you may want to display customer information such as their name, contacts, and email addresses on a report along with the details of all the individual issues that were reported by the customer, such as the issue title, status and resolution.
<i>Requirements</i> ♦ <i>Engineering Orders</i>	You may want to set up a business area within ExtraView that has the high-level requirements to build new products. Each of these high-level requirements may be the parent of many individual engineering orders that build the component parts of the new product.
<i>Line of Business</i> ♦ <i>Action Plans</i> ♦ <i>Action Items</i>	A company may be split into many lines of business, and each of these lines of business may have a number of high-level action plans, which themselves are broken down into action items. This can be represented by a reporting hierarchy.

The relationships between the parent and child levels of the reporting hierarchies are represented by relationship groups within ExtraView. Please see the section of this guide on how to set up and maintain Relationship Groups, and to see how issues are placed within these relationship groups.

A reporting hierarchy is simply the definition of the structure that makes it possible to create and view reports based upon the relationship groups. For instructions on how to create a report that uses a reporting hierarchy, see the Column Report section in the ExtraView User Guide.

To create a report hierarchy, select the **Reporting Hierarchies** entry on the **Site Configuration** tab of the **Administration** section of ExtraView. This presence of this menu entry is controlled by the security permission keys named CF_HIERARCHY and CF_HIERARCHY_LEVEL. If you grant access to one of these permission keys, you should grant access to both in order to be able to set up the reporting hierarchies. The following screen is displayed when you select the **Reporting Hierarchies** option:



Reporting hierarchies management

From this screen you may use the **Add** button to create new hierarchies, use the **Edit** button to alter the title of an existing reporting hierarchy, use the **Delete** button to eliminate an existing reporting hierarchy, or use the **List** button to manage the hierarchy.

Adding a new reporting hierarchy offers you a simple screen where you enter the fixed name and the title of the hierarchy as seen below:

Adding a new reporting hierarchy

Once you have entered a fixed name and the title, click the **Add new hierarchy button**. To add a new hierarchy level to an existing hierarchy, click on the **List** button from the Reporting Hierarchies Management screen. You will see the existing levels of the hierarchy, and you can add additional levels to this. This screenshot shows an existing reporting hierarchy level of one level:

Hierarchy level fixed name	Hierarchy level title	Level	Created	Last updated
CUSTOMER_ISSUES	Issues	1	Bill Smith 2/23/07 9:35 AM	Bill Smith 3/5/07 1:53 PM

Single level reporting hierarchy

If you use the **Edit** button to alter the metadata at this level, it will look similar to this:

Editing a hierarchy level

Note from the screenshot that the level is **1** and this cannot be changed. As you add new levels to the hierarchy they will automatically be set at an incrementally higher level. So, the next level you add will be **2**, etc. When adding a new hierarchy level you must choose an existing relationship group to represent the relationship, and you will then choose the relationship type. This must be one of *Children, Parents, Related, Members, Linked or Siblings*. These are defined in the section on relationship groups. The selection for the Business Area and the Project on this screen should be set to those of the lowest level of the hierarchy. This is necessary to ensure that report results are filtered correctly. For example, if your relationship type is *Children*, then the Business Area and Project of the child level should be selected.

The above series of screenshots represent a reporting hierarchy of customer issues, where customers are the parents of issues.

The Business Area and Project in the last screen have special significance. If the behavior setting named `DISPLAY_ALL_FIELDS` is set to a value of `NO`, then the following behavior restricts the fields visible as filters:

- Set the behavior setting to a specific business area and project that represents an *edit* layout

- The normal rules of inheritance are obeyed if there is no *edit* layout at that business area and project level
- When you create or edit a report using the hierarchy, then only the fields on the *edit* layout and its sublayouts will be used to populate the field list for this level in the hierarchy. The normal security permission rules also apply.

This behavior helps provide clarity on the report editor screen. It is highly unlikely that a user will ever want to select a field at a hierarchy level that is not present on the *edit* screen and this behavior will most probably reduce the number of selectable fields at a level in the hierarchy from hundreds to tens.

Filtering the Number of Issues within the Levels of a Hierarchy

In the filter list for reports which support hierarchical filters, there is a field with the title of **Related Issue Count** (its name is `EV_HIERARCHY_LEVEL_COUNT`). This may be used as a filter on any level of the hierarchy, and will provide a count of the issues in the next level of the relationship. For example, you might want to display child records when there are more than or less than a number you provide.

You can also use this field as a sort field on report output by clicking on the title to the field. The field is a built-in field within the data dictionary and has the name `EV_HIERARCHY_LEVEL_COUNT`.

Report Expressions

Report expressions are used to calculate or derive new field values which are only placed on report output. For example, you may want to multiply the values held in two columns of a report to derive a new calculated value. Another example may be to subtract one date from another to calculate the number of days between two events. Report expressions are first defined by creating a field in the data dictionary that is placed on the report. The actual calculation or expression is defined in the default value of the field, or in an attribute that is stored with the field within a report. Using the default value allows you to define a calculated field that may be shared across many reports without further configuration. However, you can use a single Expression type field defined in the data dictionary and reuse this on many reports for many purposes. You achieve this by selecting the field for use on any report, then using its **Alternative Title** and **Expression** attributes to modify its purpose for that report.

Syntax for Report Expressions

The general syntax of an expression matches a subset of that in ANSI-99 SQL expressions, with arithmetic, string, and date data types. This includes infix and prefix operators, with standard precedence rules. Also, parentheses may be used to group sub-expressions.

Note that although the expressions utilize ANSI-99, the different databases upon which ExtraView may be installed do use different syntax for many operations, and the syntax you use within your expressions must be correct for the underlying database. To make matters even more complex, the syntax of some expressions varies across different versions of the same database.

Literals of each type are supported and although full ANSI syntax is not promised, it should be sufficient to allow specification of a specific value for each data type. Variable names may refer to fields in the database. Each variable is in the form `$$$DD_NAME$$` and may refer to a standard ExtraView field name or special variable. Usually, the specification of a variable name refers to its report value (viz., its title or rendered form). However, inside an expression, the **value** of the variable is used, not its rendered form. Also, see the note on enumerated types below.

Limitations

1. Expressions are not supported for use on repeating row fields within your data dictionary
2. Text Area, HTML Area, Print Text and Log Area fields are limited in that they can only display (approximately) the first 4,000 characters of any entry. In many circumstances this is sufficient, but if you have really long entries, they will be truncated with report expressions. This is because these field types are actually concatenated in 4,000 chunks in the database and special logic is used to handle word boundaries so that words are always searchable as keywords in the database.

Variable References to Enumerated Types

Enumerated types (fields with a display type of List, Popup, Checkbox, and Tab) may be referenced only as string variables, in which case their title is used in the expression. Only single-valued list type fields may be referenced.

Evaluation of Expressions

As much as possible, report expressions are evaluated by ExtraView by processing at two levels:

- Select list construction within the detail report query; and
- Retrieval of the detailed expression values for rendering in the report row

Syntax checking includes tests for single-quoted strings, double-quoted strings, parentheses and the “cast” function. Syntax checking is done before the attribute is entered and stored as part of the report.

Null Values

The existence of a null value in an expression renders the result of the entire expression value to be null.

Expression Error Handling

Each report expression is syntax-checked and variable references are validated before allowing the containing report to be updated or run. There may be opportunity for the user to create erroneous expressions, as not all expressions can be determined without reference to the values in the database.

Report Field Titles

To support report-specific titles on the expression fields, the **ALTERNATE FIELD TITLE** attribute is supported. This compensates for the difficulty for users to create column headings when they are sharing a data dictionary entry, such as the **EXPRESSION** type entries. The **ALTERNATE FIELD TITLE** attribute appears within the GUI of the report builder to allow the user to define a title for a report through a simple selection mechanism.

Use of Session Variables

Session variables defined in the data dictionary may be used as substitutable variables in a report expression. Each referenced session variable value must be set using a runtime filter for the report. Session variables may also be used within runtime filters to provide a mechanism to provide the same value for the occasions when the same field is used multiple times within filter queries. This can happen with advanced queries that use multiple **and** and **or** conjunctions. Date fields within the ExtraView database are stored as *timestamp* type fields, which is done for internal efficiency and to facilitate a wide number of internal computations. This does not make them very simple to work with in expressions, but the following examples should help significantly. The session variable must have been defined with a compatible display type, such as **DATE**, **DAY**, or **TEXTFIELD** for use within the expression.

Date Calculations

A frequently use of expressions is to calculate the difference between two date fields. The internal database representation of date fields use the **TIMESTAMP** data type. This data type does not lend itself to simple addition and subtraction to calculate differences between dated. The `date_diff` function is an ExtraView function that simplifies date calculations. It is used in this way:

```
NUM_DAYS = date_diff($$DATE_FIELD_1$$, $$DATE_FIELD_2$$)
```

This returns the difference as a whole number, between the two date fields.

Examples

1. Compute the elapsed time, in number of days, from when an issue was created, to when it was last updated, and place the result in a field named **DAYS_ELAPSED**:

```
DAYS_ELAPSED = date_diff($$TIMESTAMP$$, $$DATE_CREATED$$)
```

2. Compute a total sale value with sales tax based on a rate of 8%:

```
$$currency_field$$ * 1.08
```

3. Count the number of selections of a value in a field named **my_field** with a value of **Yes**, when another field named **other_field** has a specific value of **val**:

```
case when ($$my_field$$ = 'Yes' and $$other_field$$ = 'val') then 1 else null end
```

4. Add seven days to the current date:

```
Oracle and SQL Server - $$SYSDATE$$ + 7
```

```
MySQL - DATE_ADD($$SYSDATE$$, INTERVAL 7 DAY)
```


Derby - {fn TIMESTAMPADD(SQL_TSI_DAY,7,\$\$SYSDATE\$\$)}

5. This is a more complex example, which concatenates several fields together, and places the results in a single output column on a report. The example takes the fields SALUTATION_TITLE, FIRST_NAME, LAST_NAME as the first line of the output. The chr(10) provides a linefeed so that the field ADDRESS appears on the second line. The next line contains ADDRESS_2, then followed in the next line by ADDRESS_3. The next line contains a concatenation of the CITY, STATE and POSTAL_CODE. The final line contains the PHONE field. The decode statements are standard SQL that allow the suppression of the field, if there is no value returned from the query.

```
decode($$SALUTATION_TITLE$$, '', '', $$SALUTATION_TITLE$$ || ' ' ) ||  
decode($$FIRST_NAME$$, '', '', $$FIRST_NAME$$) || chr(10) ||  
decode($$LAST_NAME$$, '', '', $$LAST_NAME$$) || chr(10) ||  
decode($$ADDRESS$$, '', '', $$ADDRESS$$ || chr(10)) ||  
decode($$ADDRESS_2$$, '', '', $$ADDRESS_2$$ || chr(10)) ||  
decode($$ADDRESS_3$$, '', '', $$ADDRESS_3$$ || chr(10)) ||  
decode($$CITY$$, '', '', $$CITY$$ || ', ' ) ||  
decode($$STATE$$, '', '', $$STATE$$ || ' ' ) ||  
decode($$POSTAL_CODE$$, '', '', $$POSTAL_CODE$$) || chr(10) ||  
decode($$PHONE$$, '', '', $$PHONE$$)
```

The end result is that you have composed a single field that contains the address in the expected format, although the components were each stored as individual fields.

Remember Filter Values

In between sessions, ExtraView automatically remembers the filter values on advanced search screens. This is a time-saving device, as a user often wants to return to where they left off when returning to ExtraView. Further, it is only a single-click operation to clear the filters. However, there is one item to recognize with this, in that the administrator may alter the metadata supporting the filters, or may even remove access to a field for a user. To support this, all remembered filter values will be removed if the administrator alters metadata such as a search layout.

Complex Runtime Filters

There are occasions when you might want a user to run a report that has a complex set of advanced filters, including the use of several **and** and **or** conjunctions. For example, you might want to pose the following query filters (this is not a real query, but it is useful as an example):

```
(Customer = * Ask at runtime * AND Status = Open)  
OR (Customer = * Ask at runtime * AND Status = Fixed)  
OR (Customer = * Ask at runtime * AND Status = Duplicate)
```

This would be represented in the report editor like this:

Query Filters

	Select Field	Operator	Value
+ =	Customer(CUST_LIST)	equals	STH Computers Super Corp Trapeze Networks Westminster * Choose the Customer *
+ = and	Status(STATUS)	equals	Open Fixed Closed Duplicate Not Found
+ = or	Customer(CUST_LIST)	equals	STH Computers Super Corp Trapeze Networks Westminster * Choose the Customer *
+ = and	Status(STATUS)	equals	Fixed Closed Duplicate Not Found * Choose the Customer *
+ = or	Customer(CUST_LIST)	equals	STH Computers Super Corp Trapeze Networks Westminster * Choose the Customer *
+ = and	Status(STATUS)	equals	Fixed Closed Duplicate Not Found * Choose the Customer *

Setting up a complex query with runtime filters

When the report is run, the user will see the following screen:

Report that uses session variables

This report uses the value(s) you select for the following field(s), and will substitute the value(s) you select into all the runtime filter values below that use the filter field. This saves entering the same filter value several times.

Filter Field	Value to be used in substitution
Choose the Customer	* Any * * None * Bank of America Bear Inc. Chrysler

Provide values for the following filter(s) for the report

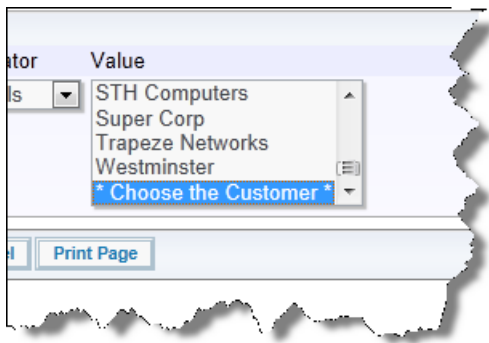
Field	Operator	Value
Customer	=	* Any * * None * Bank of America Bear Inc. Chrysler
AND Status	=	Open
OR Customer	=	* Any * * None * Bank of America Bear Inc. Chrysler
AND Status	=	Fixed
OR Customer	=	* Any * * None * Bank of America Bear Inc. Chrysler
AND Status	=	Duplicate

Running a complex query with runtime filters

When the user selects a customer from the top list, all the bottom filters that require a Customer will be set to use the value set from the top list. To accomplish this type of query with complex runtime filters, you set up Session Variable type fields in the Data Dictionary. Session Variable fields are created as follows:

- **Administration** menu
- **Site Configuration** tab
- **Data Dictionary** menu
- **Session Variables** tab
- **Add** button
- Provide a **Fixed Name** for the field
- Provide a **Title** for the field. It is helpful to use a title like *Choose the XXXXX* so that the runtime filter will show a useful title. Obviously, XXXXX represents the title of the filter field
- Choose the **Display Type** for the field. It is important to understand that you need a session variable field for every filter that you will use in your complex queries, and that the display type must match the display type of the filter field it is being used with
- **Add** the field to the data dictionary.

Once this has been done, you will see that the advanced filter lists look something like this to the end users:



Session Variable field to be used as a runtime filter

Note that the Session Variables appear at the bottom of list fields. If you are using the Session Variable as a filter within a text, date or number field, you should enter it as \$\$FIELD_NAME\$\$, substituting FIELD_NAME with the name of your Session Variable field.

Charts

There is overall control to access charting from within the Search / Report screens, as well as control over access to creating individual chart types. These are all controlled by security permission keys, as explained in the following table.

Security Key	Purpose
SR_PERSONAL_CHART	This security permission key allows access to produce charts and to save them for personal use. Read permission is needed.
SR_PUBLIC_CHART	This security permission key allows access to produce charts and to save them for shared use or to save them for use by an individual user role. Read permission is needed.

Aging Reports

When looking at the trends and movement of issues through a process as part of aging reports, it would be misleading to see only a partial view of an issue's movement through the workflow.

Therefore aging reports do not use the STATUS.xxxx permission keys and the user will see all the potential status values on the report. If this behavior is not desirable you should remove the user's access to all aging reports, using the SR_PUBLIC_AGING, SR_PERSONAL_AGING and SR_USERGROUP_AGING permission keys.

Custom URL Linked Reports

ExtraView reports has a feature that makes it possible to gain access to reports or pages generated outside the system, or reports generated internally (via the API) that involve custom code. The administrator can create these links, and then make the reports available to a general user community by saving the report as a Shared Report.

To use this feature, or to turn this off for your users, use the security permission keys named SR_PERSONAL_LINKED_REPORT and SR_PUBLIC_LINKED_REPORT, according to whether users should be able to create their own personal linked reports, or whether they should be able to create shared linked reports.

As custom URL linked reports can generate any type of output, and may not even output directly to a browser, you may not put a custom URL linked report on the Home Page. If you have a need for this, it is possible to use the user custom programming feature to place a similar report on the Home Page.

Link to a Report



From the **Report** screen, select the **Create New Custom URL Report** option from the list, and press the **Go** button.

The following screen appears:

Link to Report screen

- To link to custom reports created via the API, enter a report title, a report description, and then enter the URL in the field provided
- The URL can be an absolute path to a URL external to ExtraView. In this case, the URL must begin with **http://**. If you are pointing to a relative path within ExtraView, only enter the option and action you want to pass. For example, to set up a report on an absolute URL that exists at a different server, the URL address for the report may look like this – `http://www.myserver.com?param1=xxx¶m2=yyy` To set up a relative URL to produce a report within ExtraView itself, may look like this - `?p_option=search.SearchReportDetailDisplay&p_action=doRunDetailed&id=10200` This report actually runs a detailed report looking for the ID of 10200
- Note the Limitations at the bottom of this page, to decide whether you want to open the report within a new browser tab / window
- Select any desired filters, noting that these will only be available to reports generated internally within ExtraView, unless a user custom code exit is used to process these and pass them to an external URL
- Click the **Run Report** button, or **Save** the report

Note: ExtraView will not validate the URL that you enter at the time you create a Custom URL report. It is the user’s responsibility to check that valid URL’s are entered. It is exceedingly likely that you will generate a runtime programming exception error if you enter an invalid URL.

Notice that you can turn the filters on the screen off and on, with the  and  buttons.

Limitations

Different browsers and different web sites place different restrictions on how content is accessed. This constraint might be exacerbated by ExtraView, according to whether you are trying to open the Custom URL report within an browser Iframe. This happens when the report is on ExtraView's Home Page, or when the report is opened within a Workspace. Some web sites will deny access to reports opened in this way, either because of their concern for security, or simply because it is their policy to not allow this mode of operation.

Note the prompt on the screen, **Open in new tab?** You can choose this option for your Custom URL report, so that ExtraView opens the report within a new browser tab or window, thereby satisfying the conditions set by the external URL. If all the URLs used by your users are within the same domain as ExtraView, this constraint is not likely to affect them.

Admin Reports

At this point in time, there is a single admin report that can be accessed via the end-user **Report** screen.

The principal purpose of having reports from the administration section be available as end-user reports is so that they can take advantage of the report scheduler for automated delivery of the report output.

Permission Keys

It is strongly recommended that you only provide access to the Admin reports for true administrators in your installation.

Permission Key	Purpose
----------------	---------

SR_PERSONAL_ADMIN	This key controls access to Admin reports for personal use. Read access is required to run reports, while write access is required to save reports.
SR_PUBLIC_ADMIN	This key controls access to Admin reports for public use. Read access is required to run reports, while write access is required to save reports.
SR_USERROLE_ADMIN	This key controls access to Admin reports for role-based use. Read access is required to run reports, while write access is required to save reports.
SR_USERGROUP_ADMIN	This key controls access to Admin reports for use with user groups. Read access is required to run reports, while write access is required to save reports.

Usage

Please see the [section in the End User Guide](#) for instructions on how to create and use these reports from the **Report** screen.

Service Level Agreement Reporting

Service Level Agreement management allows the administrator to set up the conditions to measure whether the handling of individual issues fall within predetermined conditions that you have set up to manage your customers. For example, you may have an obligation to respond to all customer issues within two hours, and an obligation to provide closure on an issue within two days. This utility allows you to set up these criteria. Under reporting, your users may use these criteria to prepare and run reports that show your organization's performance against these SLA's.

SLA definitions for organizations can differ widely, and different parts of an organization may need to create their own SLA terms for their individual customers.

ExtraView provides a scalable method to provide many SLA's within the product, but for simplicity an example follows that builds a global set of SLA conditions that look like this:

	Status Transition		
Priority	New-Open	Open-Resolved	Resolved-Close
P1 Issues	< 2 hours	< 1 day	< 2 days
P2 Issues	< 4 hours	< 5 days	< 30 days
P3 Issues	< 1 day	No commitment	< 180 days

This implies that the STATUS field contains (at least) the values *New*, *Open*, *Resolved* and *Closed*. The PRIORITY field has the values P 1, P 2, and P 3.

Note: A key feature of measuring SLA's is that an issue may move between the different statuses many times, yet it is the total time in the status that is measured and reported. For example, a customer may report a P 2 issue via email, and it is initially created as an issue and placed in the *New* status via the EVMail capability. Your support technician moves the issue to an *Open* status in 3 hours, within the agreed time of 4 hours or less.

Three days later, the issue is moved from the *Open* to the *Resolved* status and handed back to the customer. This is within the agreed time for the SLA. However, some time later the customer reports back to your support technician that the resolution was not sufficient, and the issue is moved back to the *Open* status. In a further four days time the issue is handed back to the customer and the issue is once again moved to the *Resolve* status. The customer accepts this resolution.

The SLA that followed this workflow was not met, as the issue took a total of seven days to resolve, not just the three or four days for which the issue was *Open* on each occasion. The SLA measurement spans all the occasions the issue was in the *Open* status.

Following are instructions on how to set up this scenario to monitor all the conditions in the above table. The reporting tool allows end users to run reports that utilize SLA States defined by the administrator. The end user may not define their own SLA States.

From the **Site Configuration** menu in **Administration**, select **Service Level Agreement Management**. You will see a screen similar to:

Service Level Agreements Return Print Page

SLA Management
 If you define a Service Level Agreement definition in a specific Business Area and Project, it only affects issues in that Business Area and Project. There is no inheritance with Service Level Agreement definitions. You should therefore define multiple SLA's as required.

Add Add a new Service Level Agreement definition

Filter List
 Select the column to use as a filter for the list. You may click on a letter to produce a list of the items which begin with this character, or you may enter a search pattern, including wildcards (*). The Export button creates a CSV file of the results currently displayed on the screen.

Select filter column for report:

or click on a letter: |

or enter a search expression and click the Go button:

Name	Title	Business Area	Project	Sort Sequence	Created	Last updated
0 record(s) selected from a total of 0 record(s)						

Return Print Page

SLA Management screen

Click the **Add** button. First, we use the upper part of the screen to create and add the SLA. For our example we can use the values in this screenshot to create our first SLA named **NEW_ISSUE_SLA**.

Service Level Agreement Update Cancel Delete Print Page

Fixed name: NEW_ISSUE_SLA

Title:

Business Area:

Project:

Enabled:

Sort Sequence:

Notes:

Define SLA states SLA filters * SLA state list *

State fixed name:

State title:

Warning threshold (hours):

Drop-dead threshold (hours):

Calendar:

Select Field	Operator	Value
<input type="text" value="* Select *"/>		

Update Cancel Delete Print Page

The NEW_ISSUE_SLA

Looking at the table at the top of this page, we are going to create three SLA's, one for **New** Issues, one for **Open** issues and one for **Resolved** issues. The **New** SLA State will have three SLA States, one for **P 1** issues, one for **P 2** issues and one for **P 3** issues.

We create the SLA in the top-half of the screen, providing a Fixed Name, Title, Business Area (if any) and Project (if any) as the minimum. There is the capability to enable/disable the SLA, provide a sort sequence and notes.

To define the three SLA States, we use the bottom-half of the screen. For each SLA State, we provide a Fixed Name, and Title. The **Drop-dead threshold** is the time in the status you will provide in the filter below, for this SLA State. At the same time that we implement the requirements for the SLA's we will optionally add an additional value. This is the **Warning threshold**. After this time, and before the drop-dead date / time for the SLA, reports will display the fact that the deadline is approaching.

Use the section beneath the Define SLA States to provide the filters for the SLA State you are defining. Given we are defining the SLA for **New** issues, and the first SLA State we are defining is for **P 1** issues, the filters should be *Priority = P 1* and *Status = New*, as shown below:

Service Level Agreement

Update Cancel Delete Print Page

Fixed name NEW_ISSUE_SLA

Title New Issue SLA Localize

Area * Global Area *

Project * Master Project *

Enabled

Sort Sequence

Notes ? This SLA measures and reports on the amount of time that different priority issues spend in the New status

Define SLA states SLA filters

P 1 Issues Add to state list Delete from state list

State fixed name ? P1

State title ? P 1 Issues

Warning threshold (hours) ? 1.0

Drop-dead threshold (hours) ? 2.0

Calendar ? 24 x 7 x 365 Calendar

Select Field	Operator	Value
+ = Priority(PRIORITY)	equals	* Any * * None * P 1 P 2 P 3
+ = and		
Status(STATUS)	equals	* Any * * None * New Not Yet Tested Tested - Passed

Update Cancel Delete Print Page

Defining an SLA State

Each time we define an SLA State as exemplified by the above paragraphs, we use the **Add to state list** button to save the SLA state. When we have added all the individual SLA States, you must also use the **Add** or **Update** button at the top and bottom of the screen to save the entire set of metadata, i.e. you are saving the overall SLA information plus the individual conditions that make up the SLA's. We can create the SLA with the following values:

State fixed name	State title	Warning threshold (hours)	Drop-dead threshold (hours)	Filters
P1	P1 Issues	1	2	Priority = P1 Status = New
P2	P2 Issues	3	4	Priority = P2 Status = New
P3	P3 Issues	20	24	Priority = P3 Status = New

Next, to implement the requirement, we will create an **OPEN_ISSUE_SLA** with the following metadata:

Fixed name = **OPEN_ISSUE_SLA**
 Title = **Open Issue SLA**

State fixed name	State title	Warning threshold (hours)	Drop-dead threshold (hours)	Filters
P1	P1 Issues	18	24	Priority = P1 Status = Open
P2	P2 Issues	96	120	Priority = P2 Status = Open

Lastly, we implement the RESOLVE_ISSUE_SLA as follows:

Fixed name = **RESOLVED_ISSUE_SLA**
 Title = **Resolved Issue SLA**

State fixed name	State title	Warning threshold (hours)	Drop-dead threshold (hours)	Filters
P1	P1 Issues	40	48	Priority = P1 Status = Resolved
P2	P2 Issues	650	720	Priority = P2 Status = Resolved

P3	P3 Issues	4000	4320	Priority = P3 Status = Resolved
----	-----------	------	------	---------------------------------

When you have completed these additions, you have set up three SLA's to measure the conditions in the table at the beginning of this section, plus we have added warning times to aid users be aware of impending deadlines being exceeded.

Searching for Disabled Values

There are occasions when users may need to search for results, using disabled list values as filters. For example, the user may want to search for issues that are assigned to a user whose account is disabled.

This functionality is accessed from the advanced search mode. When in advanced search mode, and a list contains inactive or disabled entries, there will be an entry in the list of values, labeled * **Show disabled entries** *. When you select this entry, the screen is refreshed and you will see all the disabled as well as enabled values in the list. Note that you can remove the disabled values from the list by then pressing on the * **Do not show disabled entries** * list entry.

Record Selector

This feature allows a button to be placed on the menubar of a Quicklist or Column Report, and this button is used to select some arbitrary issues on the report, and to perform an operation on the selection. This screen shows the result of clicking the button **Turn On Record Selector** on the Quicklist report.

The screenshot shows the 'ExtraView Quicklist Report' interface. At the top, there is a menu bar with buttons: Refresh, Turn Off Record Selector, Detailed Report, Group Issues, Update Issues, Return, and Print Page. Below the menu bar, there is a status bar with 'Records 1 to 7 of 7'. The main content area displays a table of records with columns: ID #, Business Area, Title, Days Open, Priority, Customer, Status, Product, Module, and Assigned To. Each record has a checkbox in the left margin. A red arrow points to the 'Turn Off Record Selector' button in the menu bar. Another red arrow points to the checkbox for record 10300. Below the table, there is another status bar with 'Records 1 to 7 of 7' and a menu bar with buttons: Refresh, Turn Off Record Selector, Detailed Report, Group Issues, Update Issues, Return, and Print Page.

ID #	Business Area	Title	Days Open	Priority	Customer	Status	Product	Module	Assigned To
<input type="checkbox"/>	Bugs	This is a Coca-Cola issue reported by the customer when they were performing research into aissue #23232	1	P 2	Coca-Cola	Open	Tracker Enterprise	GUI	Bill Smith
<input checked="" type="checkbox"/>	Bugs	This is a Coca-Cola issue reported by the customer when they were performing research into aissue #23232	49	P 4	Coca-Cola	Open	Tracker Enterprise	GUI	Bill Smith
<input checked="" type="checkbox"/>	Customer Issues	Customer reports a problem with the widget	710						
	Trapeze Networks	Open	Tracker	GUI	Mary Brown				
<input checked="" type="checkbox"/>	Customer Issues	Customer needs help	731						
	Bank of America	Open	Tracker Enterprise	GUI	Greg Goldberg				
<input type="checkbox"/>	Bugs	This will be mapped to EV	754						
	P 1	SoftWorks	Open	Tracker	GUI	Mary Brown			
<input checked="" type="checkbox"/>	Bugs	New entry point to be created	754						
	P 2	Chrysler	Open	Tracker	GUI	Mary Brown			
<input type="checkbox"/>	Feature Requests	We need to add a new prompt to the screen to ask for the user name	812						
	Open	Tracker							Greg Goldberg

The record selector mechanism

The user may click on any of the checkboxes to select the records, or they may click on the **Click here to check or uncheck all the records on this page** checkbox. After checking the boxes, if the user selects the **Detailed Report** button or the **Group Issues** button then a Detailed Report appears with these issues, or the selected issues are used as input to an operation to group them together. If the user is within a Workspace, then the selected issues may be dragged to another report, where they may be dropped, to provide an action such as changing one or more values within the dragged issues to the filter values of the panel where they are being dropped.

The record selector option requires the following setup –

Data dictionary	The Label field named EV_REPORT_SELECTION must exist in the data dictionary. This is preset for you
Permissions	Set the Read permission to Yes for each role that you want to use this feature, for the permission key named PR_RESOLUTION.EV_REPORT_SELECTION.
Layouts	On each of the Quicklist layouts that you want to use the feature, place the field EV_REPORT_SELECTION in row 1, column 1.
Column Reports	Within the Column Report editor, the user chooses to display the available buttons, then selects the button with the check mark (✓) as the first column on the report output

Mass Updates of Issues

[Click for end user documentation](#)

It is not recommended that you give end users access to this facility, as it allows the mass update of issues. One wrong update could affect hundreds or thousands of issues and may be very difficult or impossible to undo. This function is most frequently used for tasks such as:



- Reassigning issues from one person to another
- Reassigning open issues from one release to the next
- Setting a field on many issues to a single specific value

Access to this feature is controlled by the security key named PR_RESOLUTION.MASS_UPDATE_ISSUES.

Assuming the permission is set to be able to use this feature, there will be a button labeled **Mass Update Issues** on Quicklist Reports, Detailed Reports and Custom Reports that you generate. This button allows the batch or mass update of a list of fields available to you.

Not all fields can be updated by this method. Only fields to which you have write access, and fields that are of display type List, Pop-up, Tab, Checkbox, Log Area, Text, HTML Area, Currency, Number, Decimal, Date, Day and User can be updated. The fields that are offered for update are those that exist on the *edit* layout in the current business area and project. You cannot update any field outside your current business area and project. However, if your query that selected the field to mass update contains records in other business areas and/or projects, then these will be updated, assuming the field is on the *edit* layout of the specific area / project.

The execution of mass updates is a background process within ExtraView. Once started, the process cannot be interrupted. This provides several advantages, in that ExtraView will prevent several mass update operations happening concurrently (which may lead to data integrity problems, and the corruption of data) and it gives a significant amount of insulation from problems such as a disruption of the communications network or the client computer crashing midway through the process. To use this feature:

- First, prepare a report
- Click on the **Mass Update Issues** button on the menu bar of the report
- You may update any number of fields with one pass of the mass update procedure. After you select a field, you can use the  button to add an additional field to the update process. If you want to remove a field, you can use the  button that appears on the second and subsequent fields
- For each field you add you will see a prompt asking for the new value for the field as well as the list of all the issues that are about to be updated. You can uncheck any issue from the list that you want to exempt from the update
- You will see a report with each issue to be updated once you select the fields to be updated. Each issue has a checkbox. You may deselect any issues you want to omit from the mass update operation
- In addition to the fields you select to be updated, you will see a number of other fields to assist in identifying the issues you are about to update. By default, these fields are:
 - ID
 - PRODUCT_NAME
 - MODULE_ID
 - STATUS
- If you want to display different fields to the user, you may create a layout named MASS_UPDATE_REPORT. As with other layouts, you can create multiple versions of this layout for different Business Areas, Projects and User Roles. The layout displayed to the user will be the one for their current Business Area, Project and User Role. [See this page for more details](#)
- You must check the button **Generate Email** button if you want the standard notification sent for each issue being updated. The default for mass update is not to send email, as you may be generating a very large list of updates and hence email notifications
- Click **Update all records**. Note that if you are updating a large number of issues, the process may take some time to complete, probably around one to three seconds for each issue.

Note the following when using Mass Update:

- If a field you are updating is a multi-valued field or part of a repeating record that can have many values, then the update will add the new value to the existing list of values for the field you are updating

- If you attempt to update a field to a value of * **None** *, ExtraView will perform a check to ensure this is a valid entry, dependent upon whether the field is required, or whether the field is subject to a FIELD/LAYOUT VISIBLE IF layout cell attribute. If the field is required, then the * **None** * entry will not appear in the list of values shown. If the field is subject to a FIELD/LAYOUT VISIBLE IF constraint, then an error will be returned if ExtraView attempts to update the field in a way that violates the FIELD/LAYOUT VISIBLE IF rule
- You may not be able to undo this mass update operation, so take care before pressing the **Update all records** button
- Mass update is not restricted by rules such as Visible If and Required If, etc. Issues will be updated and only enforced if you attempt to interactively update an individual record again. The principal reason for this is that mass update cannot stop during its execution to ask for additional input on an issue-by-issue basis. It is a background task. When you modify an individual record following the mass update, the rule will be enforced
- To conserve database resources, ExtraView limits this feature to updating a maximum of 5,000 issues in a single pass. If you need to update more than this number, simply run the selection multiple times and perform the update over again
- You may update issues across multiple business areas and projects provided the value to be updated does not violate the required and required if layout cell attributes of the current user role, current business area and current project of the user performing the operation. Also, you must not violate the allowed values relationship of the issue, within the current user role, current business area and current project of the user. If any of these conditions are encountered, you will see an error message stating why the issue cannot be updated
- If you include a field with a display type of Log Area in a mass update operation, the existing log area entries are untouched, and a new log area entry is added, corresponding to the text entered into the mass update field
- It is possible that you may update issues across multiple business areas and/or projects, and that in doing so you will attempt to mass update a field that does not exist on the *edit* layout for one or more areas / projects. When this happens, the value in that area / project will not be updated, and no error occurs
- The mass update function will not update all records if the query used to generate the list for updating used the advanced query interface, and used the or conjunction. There is a simple workaround, to create the list using each part of the filter without the or conjunction in turn, and perform the update
- Any user or administrator may only run one mass update operation at one time.

Example

This shows how you can reassign all open issues from one person to another, for a given product: Prepare a Quicklist report that uses Product, Assigned To and Status as filters. From the resulting report output, press the **Update** button. You will see a screen similar to:

Selecting a field to update

Select the Assigned To field from the list and the screen will redisplay, showing something similar to:

Update all records Cancel Print Page Mass Update ?

Directions

Select the fields to update. Use the + button to add additional fields to update, and use the - button to remove a field. For each field, select or enter the new value in the fields provided. When ready, press the **Update all records** button to process the mass update. If you are updating a significant number of fields, please wait for the screen to refresh to show you the current values of all the selected fields before you proceed. Note that business rules may not be checked or executed when you perform a mass update.

You can save the field lists and values, and recall these lists.

Saved Field Lists ? * Saved Field List * Save / Update Field List

Select field(s) to update

+ Assigned To (ASSIGNED_TO) George Miller

Generate Email ?

	Issue #	Product	Module	Status	Assigned To
<input checked="" type="checkbox"/>	10774	Tracker Enterprise	API	Open	Bill Smith
<input checked="" type="checkbox"/>	10736	Tracker	GUI	Open	Bill Smith
<input checked="" type="checkbox"/>	10731	Tracker	Database	Open	Bill Smith
<input checked="" type="checkbox"/>	10723	Tracker Lite	Installation	New	Bill Smith
<input checked="" type="checkbox"/>	10620	Tracker Enterprise	API	Closed	Bill Smith
<input checked="" type="checkbox"/>	10552	Tracker	Database	Fixed	Bill Smith
<input checked="" type="checkbox"/>	10545	Tracker	Database	Open	Bill Smith

Mass update screen

From the select list labeled for the Assigned To values, select the person you want to reassign the issues to. You can view any of the issues to check whether they should be part of the update, and you can uncheck any of the issues. You can also add one or more fields to the mass update by pressing the + button.

If the field you are trying to update is dependent upon another field (for example a *module* field may be dependent upon *product*), then you will be prompted for the parent field, then the child field, to ensure that the relationships between the values are kept intact and only valid combinations are stored.

If you try to update a parent field that would invalidate the child records, for example trying to set the product field to a value that is not appropriate for a given module, you will receive an error for that issue, or issues, and these issues will not be updated.

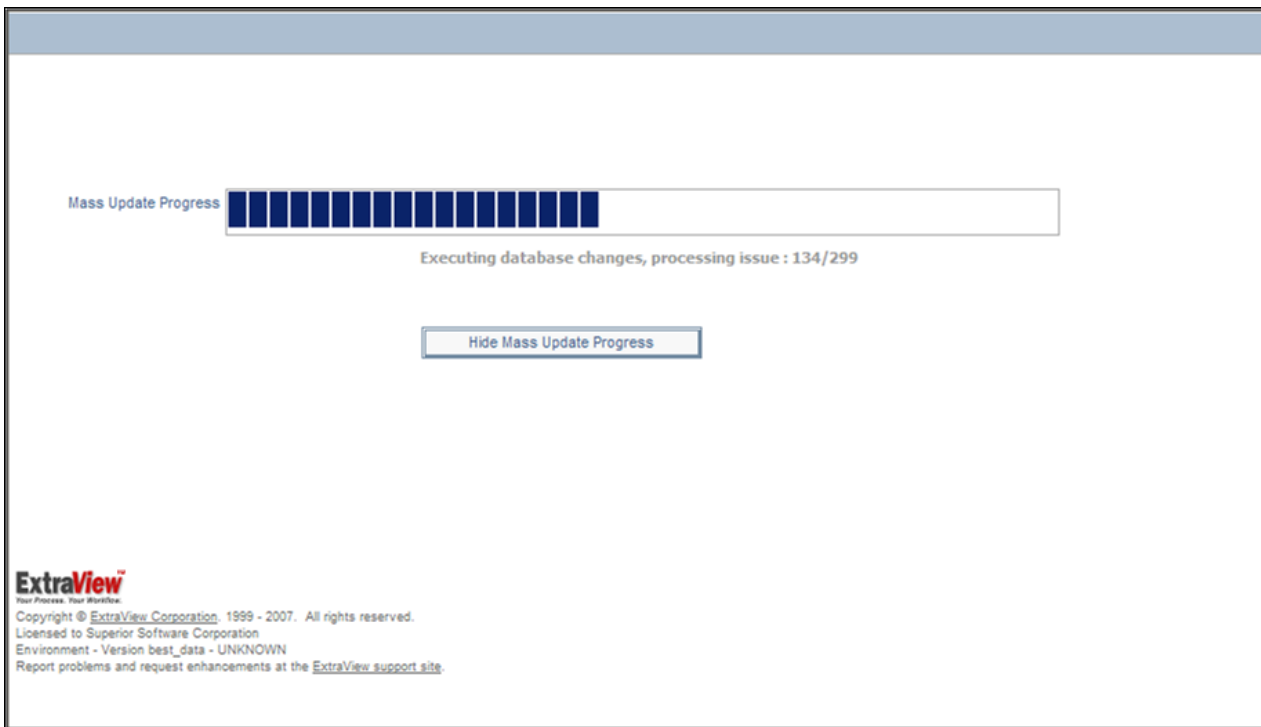
When ready, you can press the **Update all records** button.

You will be asked to confirm that you want to update the issues.

The default is that email notification is not sent when performing a mass update of issues. However, you can turn this on, by clicking the **Generate Email** checkbox to on.

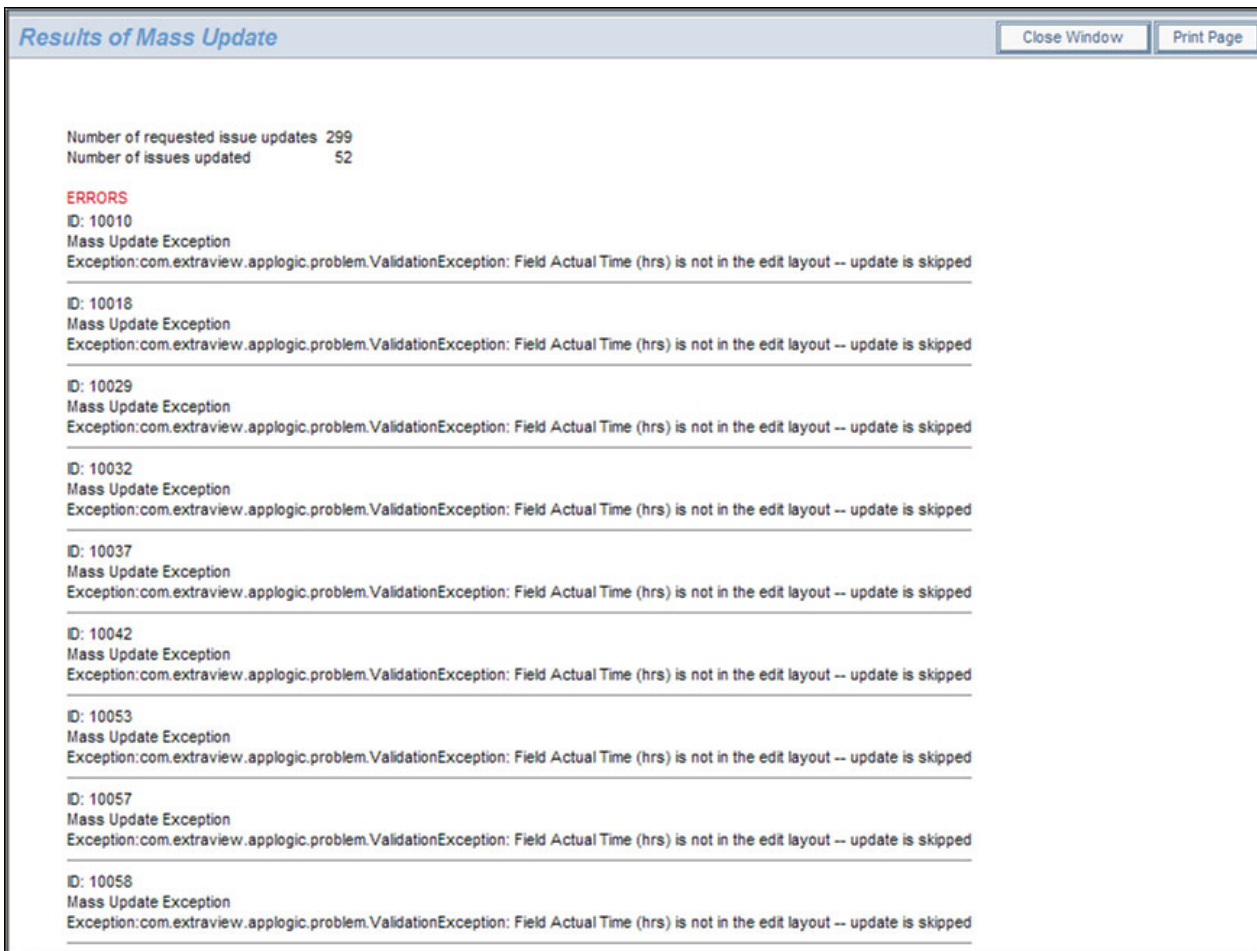
On the screen, there is a checkbox that allows you to alter the mass update capability to a mass clone utility. When you check this, you will see that you can select a new business area and a new project. When you perform the update, the issues are copied to the new project, rather than updated. When you undertake this function, you are asked to confirm the operation before it proceeds. See the next section of this guide for more details.

While the mass update is underway, you will see a progress window as follows:



Mass update progress bar

Note: Pressing the button to hide the progress bar, or closing the window has no effect on the execution of the mass update. As a background process, it will continue. The progress bar is purely for informative purposes. Once the mass update is complete, and assuming you have not closed the progress window, you will see a summary of the mass update, including any errors encountered. The most common error is trying to perform a global mass update across several business areas, when the field you are trying to update is not on the *edit* screen for the business area and project to which the issue belongs.



Results of a mass update, showing errors

Saving the Mass Update Settings for Future Use

Once you have selected the fields to update, you can click the **Save / Update Field List** button and provide a name for the list. In the future, any fields saved in the list may be selected to populate the screen with them to facilitate another similar mass update.

Special Use Case - Trigger Mass Update Without Updating Specific Fields

There are occasions when you want to be able to trigger mass updates over a range of issues, without updating specific fields selected on the Mass Update screen. This is usually done when you want to trigger some business rules within the PREUPDATE or POSTUPDATE directives, and these rules will make the updates to the issues. To achieve this, select the issues to be updated, then perform the mass update by selecting * **None** * as the field to update. ExtraView will then update all the selected issues, executing the business rules which will make the updates.

[Click for end user documentation](#)

Cloning Issues via Mass Update

This procedure only clones issues from one Project in your installation to another Project. The destination project may be within a different Business Area. The operation of this feature is from within the Mass Update facility described in the last section. The user role must have both read and write access to the PROJECT fields (PR_ADD_PROBLEM.PROJECT and PR_RESOLUTION.PROJECT) in order to be able to perform this function.

Follow the guide in the previous section and select the Project field from the list of available fields to update. Your administrator must have given you permission to write to this field within your current Business Area and Project. When you choose the Project field, you will see a screen similar to the following:

Mass Update Clone all records Cancel Print Page

Select up to five fields to update. Use the + button to add additional fields to update, and use the - button to remove a field. For each field, select or enter the new value in the fields provided. When ready, press the **Update all records** button to process the mass update. If you are updating a significant number of fields, please wait for the screen to refresh to show you the current values of all the selected fields before you proceed.

If you want to mass clone the selected issues to a different project, click here. This screen will then allow you to create copies of the issues and place them in the new project

Select field(s) to update

Business Area (AREA)

Project (PROJECT)

Provide the new value(s) for the field(s) you selected

Business Area Master Area

Project Master Project

[Check here to confirm the clone operation](#)

Generate Email

ID #	Title	Business Area	Project
<input type="button" value="View"/> <input checked="" type="checkbox"/> 10529	Authorization to provide a new computer for new employee - Tom Hogye	Helpdesk	Helpdesk Data
<input type="button" value="View"/> <input checked="" type="checkbox"/> 10475	This is a Coca-Cola issue reported by the customer when they were performing research into aissue #23232	Bugs	Bugs Data
<input type="button" value="View"/> <input checked="" type="checkbox"/> 10452	The pins on the CGB logic chip are 0.5 mm too long	Bugs	Bugs Data
<input type="button" value="View"/> <input checked="" type="checkbox"/> 10353	Need to know how exclusive or's are processed internally	Customer Issues	Customer Support Issues Data
<input type="button" value="View"/> <input checked="" type="checkbox"/> 10297	This is a fault with the Processor module	Bugs	Bugs Data
<input checked="" type="checkbox"/> Click here to check or uncheck all the issues in the list			

5 record(s) selected Clone all records Cancel Print Page

Mass cloning of issues from one Project to another

- You must give your consent to the cloning of the issues displayed before proceeding.
- Select the destination Business Area and Project in which to place the newly created issues
- If you choose Project, you cannot select any additional fields to update beyond the Area field
- Proceed by clicking on the **Clone all records** button
- No email notification is generated from the mass clone operation, even if the Generate Email checkbox is checked.

Configurable Buttons on Reports

ExtraView has the ability for administrators to configure buttons and to place these on the output of Column, Detailed, Quicklist and Treegrid reports.

Each button that you configure is placed on a single row of the report output, and be similarly visible to the View, Edit and Quickedit buttons. The buttons are visible within the report editors and Design Center so the end user can select and place the button on any of the supported report types.

The report buttons have the ability to perform a single action that is applied to the issue on the row of the report. This action will use the name of the button to execute one or more business rules. For example:

```
if (MY_BUTTON.{changed}) {
    STATUS = 'Open';
    ASSIGNED_TO = BSMITH;
}
```

All button actions imply an update (or attempted update) to the issue on that row of the report output.

Defining the Report Button

You define report buttons within the Data Dictionary tab named **Labels / Buttons**. On the *Add* or *Edit* screen for the button, select the **Allow selection on reports** option. This results in the button being available within report editors and within the Design Center for Quicklist and Detailed report layouts. Make sure you select an icon to display on the report output.

Defining the Business Rules

This example assumes you are going to immediately perform an update when clicking the action button on the report output. This example will alter the **Status** of the issue to **Open** and will assign the issue to a user with the user ID **BSMITH**.

```
if (MY_BUTTON.{changed}) {  
    STATUS = 'Open';  
    ASSIGNED_TO = BSMITH;  
}
```

The Report Editors

Column Reports and Treegrid reports are supported.

All report buttons that have been defined and to which the user's role has permission appear within the list of buttons in the field selector. The field's title will be used to identify each action button.

The Design Center

Report buttons are identified by being **Buttons** with a display type of **Report Button**. This will allow them to be placed on Detailed and Quicklist report layouts, and any layout that may be embedded within these.

User Interaction on the Report Output

After the user runs the report and clicks the button on the output, the rule block associated with the button is executed and the issue updated.

It is possible that there is a dependency on the update that prevents the update happening. For example, there may be a missing required field value as the results of a REQUIRED IF operation or some business rule that prevents the update from continuing. When this occurs, the user will see a popup seeking the required field to resolve the conflict. Assuming this is provided correctly, the update will continue.

Geospatial Setup

[Click here for end user documentation](#)

Geospatial reporting must understand which fields in your installation point to fields such as latitude and longitude. These fields are processed as a group so the link between which fields comprise addresses and the corresponding latitude and longitude must be defined. You may also have several fields that all have the same context, for example more than one field for latitude, or more than one field with the city name. Each field is defined with a global attribute which identifies the collection of fields that are used together. This is termed a GEO_GROUP and you may have any number of of these. Typically a GEO_GROUP will have most of these fields:

- Latitude
- Longitude
- Street Address
- City
- State and or County
- Zip or Postal Code
- Country
- Map Reliability Level - used to identify the lowest level at which an address is determined to be accurate
- Boundary Level - used to set a level for the address fields so that the correct order for data is known. E.g. Country --> State --> City --> Zip Code.

Any field with the correct display type may be used as part of your geospatial capture and reporting; your ExtraView installation is preconfigured with a set of suitable fields and values identified using the global attribute name of GEO_GROUP.

You can create additional sets of fields and group these with the global GEO_GROUP attribute and providing your own name for each group.

The ideal configuration is one where you use an address verification service to check addresses you enter. These services both validate an address and return the precise street-level geolocation of a verified address. Contact ExtraView Corp. for details if you require assistance configuring this feature - ExtraView Corp. can license this service on your behalf. Note it may not be available for all countries in the world.

Built into ExtraView is a more straightforward means of deriving the latitude and longitude of an address that does not require the use of an address verification service. This provides geocoordinates to the city level internationally, and to the zip code level within the

USA. Once configured, when you enter a complete or partial address into an issue, ExtraView can determine the closest latitude and longitude and automatically store these values within your issues, making them available for the generation of maps within reports.

Summary of Steps to Configure Geospatial Reporting

1. Load the geospatial data
 1. Load Shapefile data if you intend to produce Shaded and Heatmap output - users will primarily use these for scheduled reports
 2. Load geospatial coordinate data - this will be used to geocode address data entered. The data supplied will geocode US data to the closest Zip code. Users utilize this data for the production of interactive heat maps. This step is not required if you will use an address verification service which geocodes your data to the street level
2. Setup the Data Dictionary fields with their global attributes. This is a required step
3. Load list data - these lists are provided to reduce the effort of configuring data such as lists of Countries and Cities. This is an optional step
4. Configure your layouts - place the fields you have configured onto the appropriate *add* and *edit* screen layouts. This is a required step

Loading Geospatial Data

In order to set up geospatial reporting, two types of data are provided. You may load one or both of these dependent upon your requirements.

- **Shapefiles** - these files contain vector-based polygons that provide the outline of territories, such as the outline of Countries, States, Counties, etc. The shapefiles provided with ExtraView provide outlines of the Countries of the world, the States and Counties within the USA and the Provinces within Canada. Other shapefiles can be sourced and loaded. Shapefiles are used to generate shaded maps and heatmaps. These maps are ideal for reporting where the requirement is to generate Adobe PDFs which are distributed via the report scheduler. The maps may also be presented within user's browsers. If you only want to produce interactive maps, shapefiles do not need to be loaded
- **Geospatial Coordinates** - these files provide the latitude and longitude of locations. They are not required if you subscribe to an address verification service to validate addresses entered and to return the geocoordinates of the validated address. The files provided are used to return the geocoordinates of all major cities and major administrative areas within the world (States, Provinces or Countries), and the States, Cities and Zip Codes within the USA. When configured as described on this page, the geospatial coordinates provide the means to add the latitude and longitude to any issue from the address information that users enter. These coordinates are not accurate to the street level, but are accurate enough for most reporting purposes. Additional geospatial coordinate files may be sourced and loaded for other parts of the world.

Loading Shapefile Data

The shapefile data supplied with ExtraView is loaded as follows. Additional data sourced for other locations is loaded into your database in the same manner as described here. The shapefile data provided is:

- Country outlines for all countries in the world
- Outlines of all States within the USA and Provinces within Canada
- Outlines of all Counties within States within the USA

To load the data, a utility named `populateShapeFiles` is run externally to ExtraView as a Java application. This utility loads files that are contained in a subdirectory of the ExtraView directory named `WEB-INF/data`. All files within this directory with an extension of `.shp` are loaded. The data supplied with ExtraView is in the directory named `WEB-INF/data/geoshapefiles`. There are a series of files, with the extensions `.dbf`, `.prj`, `.shp` and `.shx`. Each set of 4 files comprise a single shapefile.

The `populateShapeFiles` utility takes these arguments:

- `JAVA_HOME`
- `TOMCAT_HOME`
- `EV_BASE`
- Optionally, the name of the directory under `WEB-INF/data` where the script files are stored if you do not intend to use `geoshapefiles`.

Any errors encountered while running the utility are communicated to the console as well as to the ExtraView application server log.

Windows Example

This example will load the data supplied with ExtraView and assumes that the environment variables `JAVA_HOME`, `TOMCAT_HOME` and `EV_BASE` have been set.

Change your working directory to `%EV_BASE%/data`

Enter the command:

```
populateShapeFiles.bat %JAVA_HOME% %TOMCAT_HOME% %EV_BASE%
```

Linux Example

This example will load the data supplied with ExtraView on a Linux server.

Change your working directory to `$EV_BASE/data`

Modify the script named `populateShapefiles.sh` and edit the `JAVA_HOME` and `TOMCAT_HOME` entries to point to the correct places on your server

Enter the command:

```
./populateShapeFiles.sh EV_BASE [geospatial directory name]
```

`EV_BASE` is the base location of ExtraView and `[geospatial directory name]` is the optional directory name for the files with geospatial information if the directory name is not `geoshapefiles`.

Loading Geospatial Coordinate Data

The geospatial coordinate data supplied with ExtraView is loaded as follows. Additional data sourced for other locations is loaded into your database in the same manner as described here. The geospatial data provided is:

- Country level data for all countries in the world
- Top administrative level within each country. For example the geolocations for States in the USA, Provinces in Canada, and Counties in the United Kingdom
- Within the USA, geospatial coordinates for each County within each State
- Within the USA, geospatial coordinates for each Zip Code

To load the data, a utility named `populateGeospatialTables` is run externally to ExtraView as a Java application. This utility executes scripts that are contained in a subdirectory of the ExtraView directory named `WEB-INF/data`. All scripts within this directory in files with an extension of `.sql` are executed. These scripts may all be contained within a single zipped file (with the extension of `.zip`). The data supplied with the installation is in the directory and file named `WEB-INF/data/geoscripts/geoscripts1.zip`.

The `populateGeospatialTables` utility takes these arguments:

- `JAVA_HOME`
- `TOMCAT_HOME`
- `EV_BASE`
- Optionally, the name of the directory under `WEB-INF/data` where the script files are stored if you do not intend to use `geoscripts`.

Any errors encountered while running the utility are communicated to the console as well as to the ExtraView application server log.

Windows Example

This example will load the data supplied with ExtraView and assumes that the environment variables `JAVA_HOME`, `TOMCAT_HOME` and `EV_BASE` have been set.

Change your working directory to `%EV_BASE%/data`

Enter the command:

```
populateGeospatialTables.bat %JAVA_HOME% %TOMCAT_HOME% %EV_BASE%
```

Linux Example

This example will load the data supplied with ExtraView on a Linux server.

Change your working directory to `$EV_BASE/data`

Modify the script named `populateGeospatialTables.sh` and edit the `JAVA_HOME` and `TOMCAT_HOME` entries to point to the correct places on your server

Enter the command:

```
./populateGeospatialTables.sh EV_BASE [geospatial directory name]
```

EV_BASE is the base location of ExtraView and [geospatial directory name] is the optional directory name for the files with geospatial information if the directory name is not geoscripts.

Geospatial Global Attribute Definitions

As stated above, your ExtraView configuration is preconfigured to work with geospatial reports. You may define additional groups of fields for geospatial working within your site or you may alter the default configuration provided. For example, you might define different GEO_GROUPS for different tracking applications in different Business Areas and Projects within your installation or you may want to alter the default GEO_GROUP name (which is GEO_GROUP).

Attribute	Field Type	Purpose
GEO_GROUP	--	The name of the group of attributes that collectively define the information required to save geocoded information. All attributes within a group must have the same name. This allows you to define any number of groups for different purposes, with each group pointing to different fields for latitude, longitude, etc. Examples of names are GEO_GROUP (the preconfigured group name), MY_GEO_GROUP, or NORTH_AMERICA_GEO_INFO. This attribute name is placed on all the fields that form a group.
GEO_LATITUDE	Decimal	This attribute is placed on the field that contains the latitude of the address for the GEO_GROUP
GEO_LONGITUDE	Decimal	This attribute is placed on the field that contains the longitude of the address for the GEO_GROUP
GEO_RELIABILITY_LEVEL	List or Text field	Depending on the source of the geocoding information (anywhere from manual entry to automated lookup of latitude and longitude) ExtraView may detect that the information entered is inaccurate. For example, you might try to enter a latitude and longitude for an address in the State of California and the geo coordinates you provide are obviously in a different part of the USA or different part of the world. ExtraView can determine the most reliable level of the data. For example, if the geo coordinates are in New York and the address entered states that it's in California, the reliability level will be the Country level of the USA. Similarly, if you enter an address which states that a City's name is in the state of California, but no such City name exists, the reliability level will be set to the State level.
GEO_ADMIN_BOUNDARY_LEVEL	--	This attribute provides the level of the data for the field within which it's defined. For example, the field which contains the values for the Country will most probably have a GEO_ADMIN_BOUNDARY_LEVEL of GEO_ADMIN_BOUNDARY_LEVEL1 and the field that contains the values for the State will have a GEO_ADMIN_BOUNDARY_LEVEL of GEO_ADMIN_BOUNDARY_LEVEL2

Optional List Values

Whilst any of the fields you use to hold address data may be text or list-based, it is common to use list type fields for shorter lists such as Country names or State names. ExtraView provides data for a number of lists and you may create user defined fields and load the data supplied into these fields. These lists are in the English language.

The step itemized above, to load geospatial coordinate data can be complemented by utilizing field lists within your ExtraView installation that contain data such as Country names and State names. To load any of these fields with data, create a list or pop-up list field within the data dictionary, and use the **Import Field Values** button within any of the fields to load one or more of the following lists. These lists may be loaded into separate fields, or combined together in any different combination of fields.

Location of Data	Purpose
WEB-INF/data/countries.txt	A list of the full names of the Countries in the World
WEB-INF/data/countries-iso-alpha-2.txt	A list of the ISO 3166-1 alpha-2 character abbreviations of the Countries in the World
WEB-INF/data/countries-iso-alpha-3.txt	A list of the ISO 3166-1 alpha-3 character abbreviations of the Countries in the World
WEB-INF/data/au-states.txt	A list of the States and Territories of Australia
WEB-INF/data/ca-provinces.txt	A list of the Provinces and Territories within Canada

WEB-INF/data/cn-divisions.txt	A list of the Divisions of China
WEB-INF/data/de-states.txt	A list of the States within Germany
WEB-INF/data/es-provinces.txt	A list of the Provinces and Municipalities in Spain
WEB-INF/data/fr-regions.txt	A list of the Regions of France
WEB-INF/data/it-regions.txt	A list of the Regions of Italy
WEB-INF/data/ja-prefectures.txt	A list of the Prefectures of Japan
WEB-INF/data/nz-regions.txt	A list of the Regions within New Zealand
WEB-INF/data/uk-counties.txt	A list of the Counties within the United Kingdom
WEB-INF/data/us-states.txt	A list of the 50 States plus the District of Columbia within the United States of America

Example Configuration

Step 1

Within the data dictionary search for and edit the field named MAP_RELIABILITY_LEVEL. This field should be configured as follows:

	Property	Value
	Multiple Value	No
	Allow selection on reports	Yes
	Filter Criteria	Yes
	Is sortable	Yes
	Add a Global Attribute of GEO_GROUP	GEO_GROUP
	Add the Global Attribute of GEO_RELIABILITY_LEVEL	--

The field list values should be examined, and if necessary the titles may be altered for your configuration. The predefined values are:

	Value	Sort Order
	Country	1
	State / Province	2
	County	3
	City	4
	Zip / Postal Code	5

Step 2

In the data dictionary edit the field named LATITUDE. It should be configured as follows:

	Property	Value
	Field Name	LATITUDE
	Field Title	Latitude
	Display Type	Decimal
	Allow selection on reports	Yes
	Filter Criteria	Yes
	Is sortable	Yes
	Global Attribute of GEO_GROUP	GEO_GROUP
	Global Attribute of GEO_LATITUDE	--

Step 3

In the data dictionary edit the field named LONGITUDE. It should be configured as follows:

	Property	Value
	Field Name	LONGITUDE
	Field Title	Longitude
	Display Type	Decimal
	Allow selection on reports	Yes
	Filter Criteria	Yes

	Is sortable	Yes
	Global Attribute of GEO_GROUP	GEO_GROUP
	Global Attribute of GEO_LONGITUDE	--

Step 4

If they do not already exist, create your own user defined fields in the data dictionary that hold data for the *Country*, *State/Province*, *County*, *City* and *Zip/Postal Code*. These correspond to the values created in Step 1. Frequently you will not require all of these fields. For example, it is common within the United States not to use *County* as part of the address. Configure the properties and permissions for these fields as necessary. The fields may be one of the following display types:

- Text
- List
- Pop-up

It is typically more convenient to configure fields with shorter amounts of text as List or Pop-up types and fields with more data as Text fields. For example, *Country* is often configured as a List field and an *Address* field is usually configured as a text field. You may use one or more of the optional sets of list values to pre-load values into List and Pop-up list fields.

Add a global attribute for the GEO_GROUP name, which in our example is GEO_GROUP. Add the GEO_ADMIN_BOUNDARY_LEVEL global attributes as follows:

	Example Field Name	GEO_GROUP	GEO_ADMIN_BOUNDARY_LEVEL	GEO_RELIABILITY_LEVEL
	COUNTRY_NAME	GEO_GROUP	2	Country
	STATE_NAME	GEO_GROUP	3	State / Province
	CITY_NAME	GEO_GROUP	4	City
	POST_CODE	GEO_GROUP	4	Zip / Postal Code

Note that the GEO_ADMIN_BOUNDARY_LEVEL values do not correspond to the sort order of the values for the MAP_RELIABILITY_LEVEL values. First, the GEO_ADMIN_BOUNDARY_LEVEL value of 1 is defined as the level for the World. Secondly, when generating shaded maps and heat maps, ExtraView is only prepopulated with maps for the countries of the world, states and provinces of the USA and Canada, and counties of the USA. An interactive map of the world allows users to zoom in to street level from a map of the entire globe.

When adding the global attribute for the GEO_ADMIN_BOUNDARY_LEVEL, you set the Field property to the name of the MAP_RELIABILITY_LEVEL field. In our example, this is also MAP_RELIABILITY_LEVEL. The field value is set to the value in the above table. Note that both the City name and the Post Code share the same GEO_ADMIN_BOUNDARY_LEVEL. This is because the shapefiles loaded with the above populateShapeFiles utility does not contain maps with City boundaries but contains maps at the Zip code level.

Step 5

Place the fields on the *add* or *edit* layout where you want the information to be geocoded. These fields will be:

- LATITUDE - you may hide this field on the layout, but this is where the latitude of the location you are geocoding will reside
- LONGITUDE - you may hide this field on the layout, but this is where the longitude of the location you are geocoding will reside
- MAP_RELIABILITY_LEVEL - you may hide this field on the layout, but this is where the map reliability level value of the location you are geocoding will reside
- According to your configuration, place the fields that define the following on your layout:
 - Country
 - State / Province
 - County
 - City
 - Zip / Postal Code
- An optional step that allows the user to view the location on an interactive map is to define and embed a Geospatial Report within the *add* or *edit* screen. Please view the instructions on embedded reports for this.

At the end of the day, the configuration may present similar to this to the end user:

Status	Priority	Assigned To
New	* None *	* None *
Customer		
Address		
City		
SCOTT'S VALLEY		
Zip / Post Code		
95066		
State		
California		
Country		
United States		
Country ISO 2 Code	Country ISO 3 Code	
US	USA	
Description		
test 4		

Location

Multiple GEO_GROUP Configuration

This allows you to defined multiple, independent groups of fields where each group has completely independent working within a single ExtraView installation. For example, you might have one group that is used to map customer issues, while a second group might map the location of all your organization's stores.

Each group must have its own set of fields as stated here. For the MAP_RELIABILITY_LEVEL, you may create an alias of the MAP_RELIABILITY_LEVEL field.

[Click here for end user documentation](#)

Mass Deleting of Issues

[Click for related information](#)

Extreme caution should be used with this utility. Only user roles who have the authority to make mass changes which cannot be undone should be granted access to this utility.

The primary use for this feature is to allow organizations who have record retention policies to be in compliance with these policies. For example some organizations may have a policy that states that records more than 7 years old should be deleted.

Access to this feature is granted with the security permission key named PR_RESOLUTION.MASS_DELETE_ISSUES. Again, it is strongly recommended that only user roles who have permission to make wholesale changes to your database should be given permission to this utility.

With permission, a button labeled **Mass Delete Issues** appears on the output of Quicklists and Column reports. This button invokes the utility and shows a screen similar to the following:

Delete Selected Records Cancel Print Page
Mass Delete ?

Directions

Use this utility with caution. Potentially there are irreversible effects on your data.

Select the issues you wish to delete from the list below, then click **Delete Selected Records**.

If you delete the history of the selected issues, the issues cannot be recovered.

If you do not delete the history of the selected issues, the issues may be recovered, but only with scripts applied directly to the database.

Delete All History ?
 Generate Email ?

		ID #	Title
<input checked="" type="checkbox"/>	View	10800	Misspelling on the title screen
<input checked="" type="checkbox"/>	View	10795	Monitoring status shows an error
<input checked="" type="checkbox"/>	View	10794	Crack in circuit board
<input checked="" type="checkbox"/>	View	10793	Box insert is 2mm short
<input checked="" type="checkbox"/>	View	10792	The report screen contains a blank entry
<input checked="" type="checkbox"/>	View	10774	The sample file has an error - cloned issue
<input checked="" type="checkbox"/>	View	10767	test

[Click here to check or uncheck all the issues in the list ?](#)

Delete Selected Records Cancel Print Page
7 record(s) selected

The same set of issues that were seen on the Quicklist or Column report are displayed, each with a checkbox allowing it to be selected or deselected for deletion. Note the checkbox at the bottom of the list at allows you to select or deselect all the issues with a single click of your mouse.

If you do not check the **Delete All History** box, the history of the issues will be retained within the database, and it may be possible, with the use of database scripts to recover the deleted issues. If you check this box, the issues cannot be recovered and are permanently deleted.

When you have made the appropriate selections for deletion, click the **Delete Selected Records** button on the menubar. You will be asked to confirm that it is OK to proceed. There will be a progress screen displayed. Once the deletion is complete, there will be a summary of the deletions made.

Configuring the Fields Displayed on the Screen

By default, the fields named VIEW_BUTTON, ID, AREA, PROJECT, and SHORT_DESCR appear on the review screen. These fields may be changed via the behavior setting named MASS_DELETE_TEMPLATE. This field contains a comma-delimited list of the fields that are displayed.

[Click for related information](#)

Scheduled Reports

With write permission to the key named SR_REPORT_SCHEDULE, members of user roles have the ability to generate reports on a timed, periodic basis. These reports are sent out via email and may also be added to the document repository for future reference. The [task](#) named SCHEDULED_REPORT_TASK must also be running.

Please view the end user documentation [here](#) for instructions on how to use the report scheduler, to send reports by email and to store

Document Repository

Reports that generate output that you send to the document repository are controlled with the following:

- The Report Scheduler Task must be running
- Users accessing the document repository must have permission to schedule reports via the role-based security permission key named SR_REPORT_SCHEDULE
- Users adding documents or deleting reports with the document repository must have write permission to the security permission key named SR_REPORT_REPOSITORY_ACCESS
- Users who view or download documents from the repository must have read permission to the security permission key named SR_REPORT_REPOSITORY_ACCESS
- Administrators who require access to the utility named **Document Repository Manager**, must have read and write permission to the security permission key named CF_REPORT_DOCUMENT

The Document Repository Manager

The utility resides within the **Operational Tasks** administration menu.

Document Repository Administrative Utility

The utility allows you to perform the following tasks:

- Filter the documents by:
 - Created on or before a date
 - Last updated on or before a date
 - Created on or after a date
 - Last updated on or after date
- Select any subset of documents, whether filtered or not and delete these documents, irrespective of the owner of the document.

Controlling Large Queries

With a very large database, you may want to control how large reports are run, restricting users from doing repeated queries which may each try to return hundreds of thousands or more records. Use these behavior settings to provide some sensible constraints:

- ALLOW_UNLIMITED_SEARCH – This behavior setting can be used to turn off the ability to perform unrestricted queries on the database. When this setting is set to NO, it is used in conjunction with the next setting, LIMIT_QUERY_ROWS
- LIMIT_QUERY_ROWS – This sets a numeric limit on the number of rows returned by a single user's query. This has no effect if ALLOWED_UNLIMITED_SEARCH is set to YES
- MINIMUM_SEARCH_FIELDS – This setting is used to force a user to select a number of filters before their queries will be executed. If you specify a single number, then this specifies the number of filters in addition to the KEYWORD filter that must be provided. If you provide two numbers, separated by a comma, then the first number specifies the number of filters in addition to the KEYWORD filter that must be provided and the second number specifies the number of filters that must be provided when no KEYWORD filter is provided. The default is 0,0. For large databases, a setting of 2 or 3 for each number typically provides sufficient control, to ensure that only a small section of the database is searched at one time, and that users do not attempt to download millions of records or perform complex queries across millions of records.

If the user has selected the advanced query mode, ExtraView only counts the conjunctions with an *and* conjunction. The other conjunctions do not restrict the query keyword query.

Updating Consecutive Issues from Reports

Some workflows find it useful to be able to edit a number of records in sequence. For example, a user may want to run a report of their open issues, then edit each record in turn, but without needing to return to the report to click on the **Edit** button for each issue. An alternative is to use the Quickedit feature within the report itself.

To set up this feature, there is a permission key named `PR_RESOLUTION.ALLOW_EDIT_NEXT_PREVIOUS`. This key is operable when write permission is available for the user's current role, and the user executes a Quicklist or column report. When the user drills down into any issue with the **Edit** button on any issue, the *edit* screen will have two additional buttons on the menu bar, titled **Update & Prev** and **Update & Next**. When the user clicks one of these buttons, they will be taken directly to the previous or next issue following a successful update.

Ranking Fields on Reports

This is documented in the section on special purpose fields. Click [here](#) to access the page.

Privacy Groups

Privacy groups are designations that limit the visibility of issues, except those users who are members of the privacy group to which the issue belongs.

For example, your company may have six divisions, each of whom report issues using ExtraView. You may want to set up a structure, whereby each of the divisions report issues that remain private to each division, and are not shared with other divisions. Layered on top of this is the ability for a management or supervisory function that has access to all the issues, irrespective of the division that originated the issue. This can be implemented within ExtraView by setting up individual privacy groups for each division, restricting each member of a division to only enter issues for their own division (i.e. privacy group), and giving the management function access to all privacy groups.

To turn on the privacy group feature in your instance of ExtraView, use the behavior setting named `ENABLE_PRIVACY_GROUPS`. This is found in the Users behavior settings menu.

Note: If `ENABLE_PRIVACY_GROUPS` is set to `NO`, then issues may only be marked as `PUBLIC` or `PRIVATE`. If `ENABLE_PRIVACY_GROUPS` is set to `YES`, then issues may be marked as `PUBLIC`, `PRIVATE` or a member of a privacy group that you create. With the latter option, you may also elect to remove either the `PUBLIC` and / or `PRIVATE` designation from the list, as explained in the section following.

Note: There is a behavior setting named `ENABLE_PRIVACY_GRP_OVERRIDE`. If the value is set to `YES`, then internal users can see all issues regardless of the value of the `PRIVACY` field. Internal users are defined by the user's personal Company Name being identical to the company name defined by the behavior setting named `COMPANY_NAME`. If the value is set to `NO`, users may only see issues when they are a member of the privacy group to which the issue is assigned.

The precise rules for how issues are handled with respect to privacy groups are as follows:

- **Private issues.** When an issue is marked as private, then only users whose Company name setting in their user account settings is identical to the behavior setting named `COMPANY_NAME` will be able to view and update the issue. If the Privacy field does not appear on the Add Issue screen, then ExtraView will automatically set the `PRIVACY` field with its default value as specified in the data dictionary (usually `PRIVATE`). If there is no default, ExtraView always sets the value to `PRIVATE`. Security permission settings for individual fields, screens and functions still apply. Note that there is a behavior setting named `ENABLE_COMPANY_NAME_ACCESS` that overrides this behavior for specific circumstances. Please refer to the section in this guide on Company Name Security for full details.
- **Public issues.** When an issue is marked as public, then any user with an active account can potentially view and / or update the issue. The specific permissions to view and update the entire record or individual fields are subject to the security permissions for each object.
- **Issues within a privacy group.** As a user, you must be a member of the specific privacy group to view and update the record. Once again, security permissions for all objects still apply.

PUBLIC and PRIVATE Visibility

When using privacy groups, it is sometimes useful to be able to control whether the entries for PUBLIC and PRIVATE also appear within the select list boxes on the *add*, *edit* and *search* screens.

For example, you may always want a privacy group to be selected for every issue without exception.

This can be achieved through the settings of the following security permission keys. These can be set for each user role within ExtraView, in the standard way of setting security permissions.

Security permission key	Purpose
PR_ADD_PROBLEM. SHOW_PRIVATE_IN_PRIVACY_LIST	Write permission to this security key is needed to place the entry for Private in the select list for the Privacy field on the add issue screen. If this key is set to N, then issues cannot be marked as private for the user role.
PR_ADD_PROBLEM. SHOW_PUBLIC_IN_PRIVACY_LIST	Write permission to this security key is needed to place the entry for Public in the select list for the Privacy field on the add issue screen. If this key is set to N, then issues cannot be marked as public for the user role.
PR_RESOLUTION. SHOW_PRIVATE_IN_PRIVACY_LIST	Write permission to this security key is needed to place the entry for Private in the select list for the Privacy field on the edit issue and query screens. If this key is set to N, then issues cannot be marked as private or searched for the user role.
PR_RESOLUTION. SHOW_PUBLIC_IN_PRIVACY_LIST	Write permission to this security key is needed to place the entry for Public in the select list for the Privacy field on the edit issue and query screens. If this key is set to N, then issues cannot be marked as public or searched for the user role.

Creating New Privacy Groups

From the Site Configuration administration menu, click the **Privacy Groups** button. A screen similar to the following appears:

Privacy Groups Return Print Page

Add Add a new privacy group

	Privacy group name	Title to display
Edit	818	Bank of America
Edit	853	Bear Inc.
Edit	793	Chrysler
Edit	1194	Cisco
Edit	798	Citibank
Edit	783	Corona
Edit	863	Evian
Edit	803	GE
Edit	828	Hewlett Packard
Edit	958	Liberty
Edit	813	NEC
Edit	858	NTT
Edit	788	Pfizerx
Edit	808	SoftWorks
Edit	823	Toyota
Edit	1033	Trapeze Networks

16 record(s) selected from a total of 16 record(s) Return Print Page

Privacy Groups screen

To create a new privacy group, click the **Add** button. The following screen appears:

Add New Groups screen

Enter a database name (no spaces or special characters) and a display name. If an interest list is allowed on the field, you can optionally create an interest list for this value and add a user. When ready, click the Add button to create your new value. Once the Privacy Group is created, the administrative user may assign individual users to the group by checking the appropriate check box on the Change a User's Details screen.

Change User's Details screen with Privacy Groups

User Roles

User Roles are the functional teams of your company or the external users that will be using ExtraView. User Roles are assigned specific privileges based on what you want each of them to be able to see and do. Example user roles may be:

- Administrator
- Customer

- Engineer
- QA
- Manager

There is no limit to the number of user roles that may exist within your ExtraView system. Additional user roles may be created at any time. Individual users may belong to any number of user roles. When a user is given the privilege of belonging to more than one user role, they are automatically given a link in the title bar of the screen that shows their current role. Following the link allows them to alter their role. A user may not change their role when in the add / edit issue process, or during the process of preparing a report as this change may significantly alter their permissions, and would lead to unpredictable behavior.

The ability to allow individual users to alter their role is controlled by the security permission setting named CF_ALLOW_CHANGE_ROLE. The select list with an available list of roles that they may select is only displayed if the user is granted more than one role within the installation.

Altering the Current User Role

Users have the ability to change their role as long as they belong to more than one. This allows each user to wear a “different hat”. By changing their role, they can perform different functions. For example, a user may be both an *Administrator* and a *QA Engineer*. The presentation of the list of user roles is dependent upon the configuration of the navigation bar and may look like one of the two options shown.

The screenshot displays the ExtraView software interface. At the top left is the 'LOGO'. A search bar is located next to it. On the top right, the user's account information is shown as 'Account: Bill Smith' with a dropdown menu currently set to 'Administrator'. Below this, another dropdown menu shows 'Bugs'. A navigation bar contains links for Home, Add, Query, Report, Workspace, Admin, Help, and Sign Off. A 'Print Page' button is on the left, and 'ExtraView Home' is on the right. The main content area features the 'ExtraView' logo and four links: Online Documentation, Free Training, Solutions & Configurations, and Contact ExtraView Corporation. Below this is the 'Home Page Dashboard' with four charts: 'Summary of Statuses' (table), 'My Team's Assigned Bugs' (bar chart), 'Key Statuses' (pie chart), and 'Open Issues by Priority' (bar chart). At the bottom is the 'Customer List new menu' table.

Status	Total	Percent
New	158	50.5%
Open	26	8.3%
Fixed	71	22.7%
Closed	40	12.8%
Duplicate	9	2.9%
Not Found	9	2.9%
Total	313	100.0%

Assigned To	Count
Bill Smith	10
Frank Gallagher	11
George Miller	9
Jimmy Duncan	8
Open New	2

Category	Count
New	158
Open	26
Fixed	71
Closed	40
Duplicate	9

Priority	Count
P 1	20
P 2	55
P 3	30
P 4	75

Customer Name	Contract Number	Customer Address	Customer City	Customer State	Country	Customer Zip Code	Phone Number
123	1234	325 Skyforest Way	SCOTTS VALLEY	California	United States of America	95066	(831) 555-5555
ABC	1234	490 Phelan Ave	SAN JOSE	California	United States of America	95112	(831) 222-2222

The screenshot shows the ExtraView application interface. The top navigation bar includes 'Menu', 'Home', 'Add', 'Query', 'Report', 'Workspace', 'Admin', 'Help', and 'Sign Off'. A sidebar on the left shows a 'Home Page' dropdown menu with 'Role' set to 'Administrator' and 'Business Area' set to 'Bugs'. A red arrow points to the 'Role' dropdown. The main content area displays the 'ExtraView' logo, navigation links for 'Free Training', 'Solutions & Configurations', and 'Contact ExtraView Corporation'. Below these are three charts: 'Assigned Bugs' (bar chart), 'Key Statuses' (pie chart), and 'Open Issues by Priority' (bar chart). At the bottom, there is a table titled 'All Issues Created in a Year' showing data for 2013 by category and quarter.

Category ▲	Qtr 1		Qtr 3		Qtr 4		Total
	Jan	Mar	Aug	Oct	Dec	Sub-Total	
Software Bug	3		3		1	2	5
Hardware Error	1		1		1	1	2

1. Click on the list of user roles in the navigation bar and observe a list of the roles that your user may adopt
2. Select the role you would like to adopt by clicking on its name. Your role is immediately changed and your permissions will reflect the change. You may find that access to certain buttons on the navigation bar disappear or appear, or that fields no longer show up in the add/edit screens, or that buttons are added and fields appear in some screens; this is a direct result of changing your role.
3. When you change the user role to which you currently belong, ExtraView automatically adapts and presents the various screens and reports that have been customized for that user role.

Adding New User Roles

Click the **User Roles** entry under the Site Configuration tab within administration. Click the **Add** button on the User Roles Screen.

User Roles Return Print Page

Add Add a new user role

	User role database name	Title to display on screens
Edit	ADMIN	Administrator
Edit	GUEST	Customer
Edit	CSR	Customer Support
Edit	CSR_MANAGER	Customer Support Manager
Edit	DEV_ENGINEER	Development Engineer
Edit	ENG_MANAGER	Engineering Manager
Edit	IT	IT Support
Edit	IT_MANAGER	IT Support Manager
Edit	DEV_QA	Quality Assurance

9 record(s) selected from a total of 9 record(s) Return Print Page

User Roles Summary screen

Add new User Roles Add Cancel Print Page

Fixed name

Title to display

Copy all security permissions from this role * create with no permissions *

Home Page report #1 * Select a report *

Home Page report #2 * Select a report *

Home Page report #3 * Select a report *

* Select a report *

Public Reports

Feature Requests

Bug Reports

Assigned to you

Bug Trend Report

Bugs

Bugs With No Reproducible State

Bugs by Priority by Status

Customer Issue Reports

Customer Issues

Customer Issues - Time Spent

Customers and their Issues

Dashboard Reports

Home Page Dashboard

Key Statuses

Bug Reports

List of Closed Issues

General Reports

My Open Issues

ExtraView
Your Process. Your Workflow.

Copyright © ExtraView Corporation. 1999 - 2010. All rights reserved.
Licensed to: EXTRAVIEW CORPORATION - EVID: 1000
Environment - extraview_go - Version best_data0211 - Release
Report problems and request enhancements at the [ExtraView](#)

Add Cancel Print Page

Add a User Role screen

- Click the **Update** button when done.

Multi-Language Setup

ExtraView allows each user to select their own language for the user interface of the product. In addition to localizing the system messages and prompts, the administrator may also localize their own metadata for the fields and layouts that they create. Note that no matter what languages you want to support on the user interface, ExtraView will handle any alphabet within the data that is entered within issues. Unicode is fully supported.

Setting up a multi-lingual setup requires a number of behavior settings to be set at their correct values. These settings may be found in the **Environment** behavior settings category.

Environment Settings	Purpose
DEFAULT_ATTACHMENT_CHARSET	The default character encoding for files being uploaded to ExtraView. This value is used to select the initial value presented to the administrator when creating a new user. UTF-8 is the default value and should be used for most installations. If the majority of your users use Japanese, you may consider an alternative such as Shift-JIS
DEFAULT_LANGUAGE	This is the default language for the installation and will be used as the default for new users. The value should be set to en for English. The two-character country codes are defined within ISO 3166-1. Enter the value in lower case
DEFAULT_REGION	This is the default region for the installation. Unless you are using multiple locales in your installation, and have created other locales, you should not alter this setting. A locale for the DEFAULT_REGION must exist before you alter this setting. Note that this setting is in upper case
DEFAULT_VARIANT	The default variant for the installation. This is not typically used
LOCALIZE_TITLES	This setting is used to turn off and on the localization buttons within administration. This is used when you are using ExtraView's multiple languages on the user interface. When this option is set to YES, a button with the title of Localize will appear beside all metadata titles and values that can be localized into different languages. Valid values are YES and NO
MULTI_LOCALE	ExtraView will behave as a single locale system, using the language specified in the behavior setting named DEFAULT_LANGUAGE when this value is NO. When it is set to YES, the administrator may add any number of additional language locales to the system, and provide localized messages and metadata for each locale. If you are only using a single language, do not set this value to YES, as there are performance impacts to running in a multi-locale mode

The following settings are sensitive if you are working within a language such as Japanese, where there are not necessarily any space characters between each word or character. Under these circumstances, the HTML language used in display browsers is not very forgiving and can give strange display results.

Display Settings	Purpose
FOLD_TEXT_POSITION	This specifies the character position at which to fold text lines in TEXT_AREA and LOG_AREA fields. You should not specify a number lower than 65. If you specify a high number, such as 99999, the text input will never be folded. This is important for double-byte languages where spaces may not appear between words, as it will force ExtraView to introduce line-breaks at appropriate intervals
FOLD_WORD_POSITION	This specifies the character position at which to break up a long word in TEXT_AREA and LOG_AREA fields. You should not specify a number lower than 65. If you specify a high number, such as 99999, the long word will never be broken up. This is important for double-byte languages where spaces may not appear between words, as it will force ExtraView to introduce line-breaks at appropriate intervals
REPORT_WITH_FIXED_WIDTH_FONT	This should always be set to NO when working with double-byte languages.

Home Page Shortcut Buttons

This feature allows any number of shortcut buttons to be placed on a layout that is part of the Home Page. The shortcuts either jump to an *add* screen or run a report.

Permissions to the shortcut buttons are controlled by the permission the user has to the underlying object. For example, if you are using a shortcut button to go to an *add* screen, then the user must have permission to go to the business area and project of the *add* screen. If you are using the shortcut button to run a report, then it is the permission the user has to that report that controls the visibility of the button.

Creating the Button Fields

Create a field in the data dictionary for each shortcut button that you require. To create a shortcut to an *add* screen, create a field where the fixed name has the form **BUTTON_ADD_name**. To create a shortcut to a report, the fixed name must have the form **BUTTON_RUN_name**. All fields should have a display type of **Custom**. The title of the button becomes the text that appears on the button. Make sure you provide security permissions for each role that you want to use each button. This is an example of a button in the data dictionary:

Shortcut Button in the Data Dictionary

Creating the Layout Type

Go to **Administration** ► **Fields & Layouts** ► **Create and Maintain Layout Types**. Add a new layout type. This layout type must have a fixed name of **HOME_PAGE**. The usage must be **Screen**.

Adding the Layout to the Home Page

Go to **Administration** ► **Fields & Layouts** ► **Design Center**. You may create a Home Page layout in the *** Global Area *** where it will be used across all business areas and projects, or using the standard inheritance mechanism, you can create different Home Page shortcut layouts in different business areas, projects or roles. Use the **Add a new layout for the entire system** select list to add the layout type you just created in the previous step.

After adding the layout, you are able to place the buttons onto the layout, similar to the screen shown here:

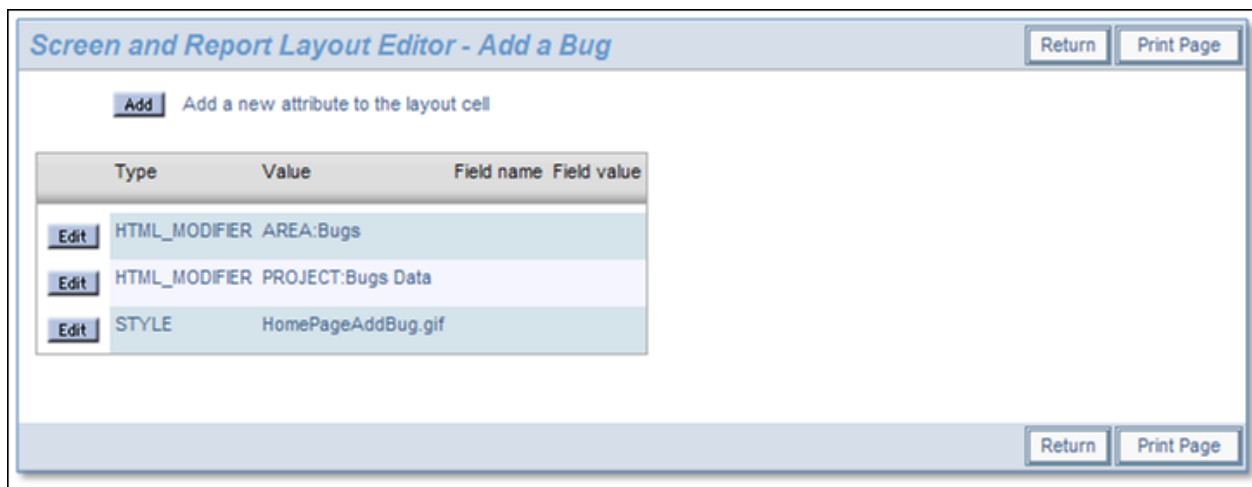
HOME_PAGE Layout

This screenshot creates a single row of shortcut buttons. You may create multiple rows of buttons. You must next add layout cell attributes to each button. These describe the action for the button as follows.

Shortcut Add Buttons

Attribute	Example	Purpose
FIELD HTML MODIFIER	AREA:BUGS	This points the button to add an issue in the BUG business area. The name of the business area provided must match the name of an existing business area to which the user has permission. To see the names of the business areas in your installation, go to Administration ♦ Lists ♦ Business Areas . This modifier is required.
FIELD HTML MODIFIER	PROJECT:BUGS_DATA	This points the button to add an issue in the BUGS_DATA project within the business area specified by the <i>AREA</i> : modifier above. This is required. Note that the Project fixed name must match the one into which you want to add data. Normally, this is not the Project with an ID of 0. If you are not certain of the Business Area and Project names, go to Administration ♦ Lists ♦ Project , select the Business Area and you will see a list of all the Projects within the Business Area.
FIELD STYLE	HomePageAddBug.gif	This is an optional attribute. If it is provided, the button will use this image for the button. The image is situated within the directory pointed to by the behavior setting named IMG_NAV_BAR_HOME. If you do not provide a STYLE attribute, then the button is rendered as a text style HTML button. Images for Home Page Shortcuts are not provided, but can easily be created with any button/image creation program. If ExtraView Corporation is hosting your installation, you do not have direct access to the file system of the server upload these images to the web server.
FIELD HTML MODIFIER	CSS:font-size:20pt;background-color:#FF8888	This is an optional attribute that overrides the built-in style of buttons, allowing you to set your own style. The style is expressed as CSS. Do not use this if you are using the STYLE attribute

Example of the attributes for an add shortcut button.



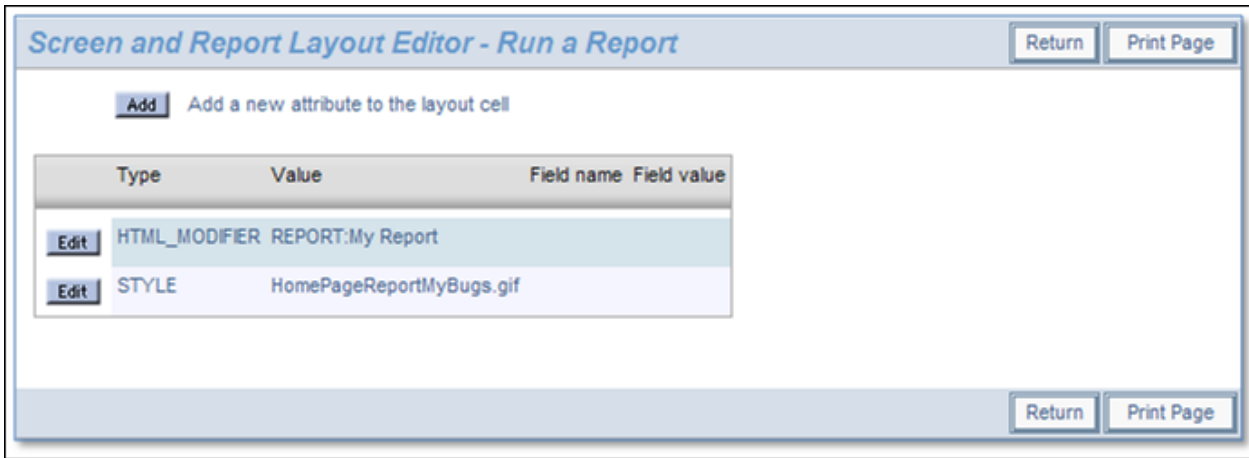
Shortcut Button Attributes

Shortcut Run Buttons

Attribute	Example	Purpose
FIELD HTML MODIFIER	REPORT:My Report	This points the button to run the report named My Report . The name must match the title of an existing report which the user has permission to run. This is required. Note that running Container reports and Custom URL reports from shortcut buttons is not supported.
FIELD STYLE	HomPageAddBug.gif	This is an optional attribute. If it is provided, the button will use this image for the button. The image is situated within the directory pointed to by the behavior setting named IMG_NAV_BAR_HOME. If you do not provide a STYLE attribute, then the button is rendered as a text style HTML button. Images for Home Page Shortcuts are not provided, but can easily be created with any button/image creation program.

		If ExtraView Corporation is hosting your installation, you do not have direct access to the file system of the server to upload these images to the web server.
FIELD HTML MODIFIER	CSS:font-size:20pt;background-color:#FF8888	This is an optional attribute that overrides the built-in style of buttons, allowing you to set your own style. The style is expressed as CSS. Do not use this if you are using the STYLE attribute

Example of the attributes for a run report shortcut button.



Shortcut Button Attributes

Customizing the Home Page

Different users may have different customized Home Pages. The Home Page is composed of the following sections:

- A navigation bar with the following features:
 - Key ExtraView functions available as buttons. There are Home Page Control (for access when multiple Home Pages are configured), Home, Add, Query, Admin, Help and Sign Off buttons. Depending on the security permissions, not all these buttons may be visible to all user roles
 - An input area offering quick access to any issue for which the user knows the ID
 - **Account details** – the user's account settings and options are available from a link on the user's name if the user has permission to the security permission key named CF_PERSONAL_OPTIONS
 - **User role** – a list allowing the user to alter their role. This only appears if the user has the ability to change their role and they have permission to the security permission key named CF_ALLOW_CHANGE_ROLE
 - **Business area and project** – offers a list where a new default area and / or project may be selected. Once again, this is only displayed if the user has permission to change their Business Area or Project. The appearance of this entry on the navigation bar is controlled by the security permission keys named CF_AREA and CF_PROJECT
 - A list of reports that the user can run by simply selecting a report from the list. Note that both shared reports and the user's personal reports are available. Some report types may not be run from this list. Access to this menu is controlled by the security permission key named SR_MENUBAR_REPORTS
- A sign on message, predefined by the system administrator
- An optional dashboard, created with user custom code, turned off and on for each user role with the security permission key named SR_DASHBOARD_ON_HOME_PAGE
- An optional search box for a knowledge base, turned off and on for each user role with the security permission key named SR_KB_ON_HOME_PAGE
- An optional set of shortcut buttons, created with a special layout type named HOME_PAGE.
- A list of up to three predefined reports
- A section that allows the user to choose which reports are seen on their Home Page. In addition, they can run any report they have permission to see. This report will appear in a separate window. This section will appear if the user has permission to use the Query screen and is controlled by the security permission screen named SR_SET_HOME_PAGE_REPORTS. You can use this facility to either allow a user to select their own Home Page reports, or to only allow the administrator to select the Home Page reports for any user.

Note: The Home Page will refresh automatically, according to the time (in seconds) set in the behavior setting named HOME_PAGE_REFRESH_SECONDS. This is found on the **Reporting & Query Settings** administration menu. Care should be taken by both the administrator and by users in composing their Home Page. Performance of the Home Page is essential in making sure users see good performance from the system. Suggestions for consideration are:

- If you or users have many reports (say more than a few hundred), then it is advised to turn access to the permission key named SR_SET_HOME_PAGE_REPORTS off
- Dashboard reports should only be configured that are extremely fast in execution
- Individual reports and charts should only be placed on the Home Page if they are also fairly fast. For example, summarizing a significant quantity of data in a chart on a daily basis over a year may take a lot longer and not offer much more information than the same chart displaying the data by month
- Keep the value of the behavior setting named LIMIT_HOMEPAGE_QUERY_ROWS to 20, thereby ensuring users do not repeatedly report hundreds or thousands of rows of data to their Home Page
- Set the value of MINIMUM_SEARCH_FIELDS to around 2 or 3, thereby ensuring that users must choose a number of filters in addition to keywords. This will help speed reports as filters provide indexes to the data tables, thus speeding the queries
- Consider setting the value of HOME_PAGE_REFRESH_SECONDS to more than 900, thus only refreshing the user's Home Pages on a less frequent basis.

LOGO
Navigation Bar
Bill Smith Administrator

Home Add Query Admin Help Sign Off
 Go
Reports

Print Page
ExtraView Home

Quick Start

- Add your users
- Populate your lists
- Start adding issues

Resources & Documentation

- Quick Start Guide to Administration
- Frequently asked questions
- Free daily training
- Documentation

Sign On Message

Need More?

- Sophisticated configurations
- Product Tour
- Personalized demonstration
- Pricing

Search the ExtraView Knowledge Base

Product: Any * Keywords: Knowledgebase Layout

Search Attachments?

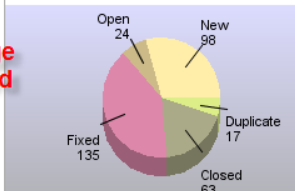
Shortcuts Shortcut Buttons

Home Page Dashboard

Summary of Statuses	
Status	Total
New	98
Open	24
Fixed	135
Closed	63
Duplicate	17
Not Found	19
Grand Total	356

Open Issues by Business Area		
Area	Total	
Bugs	98	
Test Cases	5	
Helpdesk	5	
Customer Issues	7	
Feature Requests	1	
Knowledge Base	1	
Grand Total	24	

Key Statuses



Open Issues by Priority	
Priority	Count
P 1	~40
P 2	~60
P 3	~160
P 4	~20

Home Page Dashboard Report

My Open Issues

	ID #	Area	Product	Module	Last Modified	Priority	Severity	Title
<input type="button" value="View"/> <input type="button" value="Edit"/>	10323	Bugs	Tracker	GUI	8/11/08 9:51 PM	P 1		new java file changes
<input type="button" value="View"/> <input type="button" value="Edit"/>	10226	Bugs	Tracker		8/11/08 9:51 PM	P 1	Low	Provision of TNCP problem
<input type="button" value="View"/> <input type="button" value="Edit"/>	10557	Bugs	Tracker	Database	4/17/09 9:08 PM	P 3		There is a defect in the admin module when a user makes an error
<input type="button" value="View"/> <input type="button" value="Edit"/>	10552	Bugs	Tracker	Database	8/14/08 9:51 PM	P 3	Low	The box label may be off center
<input type="button" value="View"/> <input type="button" value="Edit"/>	10526	Helpdesk	Tracker		8/11/08 1:03 PM	P 3		Authorization to provide a new telephone extension for new employee - Frank Bell
<input type="button" value="View"/> <input type="button" value="Edit"/>	10353	Customer Issues	Tracker	Processor	1/8/09 4:05 PM	P 3		Need to know how exclusive or's are processed internally
<input type="button" value="View"/> <input type="button" value="Edit"/>	10293	Customer Issues	Tracker		1/8/09 4:05 PM	P 3	Low	Customer reports a missing item in the most recent delivery
<input type="button" value="View"/> <input type="button" value="Edit"/>	10285	Customer Issues	Tracker	Enterprise	1/8/09 4:05 PM	P 3	Low	Customer called to say he did not receive the spare part sent on 4/3/05

Home Page Column Report

Count: 8 records Records 1 to 8 of 8

Bugs by Priority by Status

		Priority				Total
		P 1	P 2	P 3	P 4	
S t a t u s	New	4	5	13		22
	Not Yet Tested			1		1
	Open	4	2	2	1	9
	Fixed	11	21	23	6	61
	Closed	3	6	12	6	27
	Duplicate		3	3	1	7
	Not Found	1	2	4	1	8
	Total	23	39	58	15	135

Home Page Matrix Report

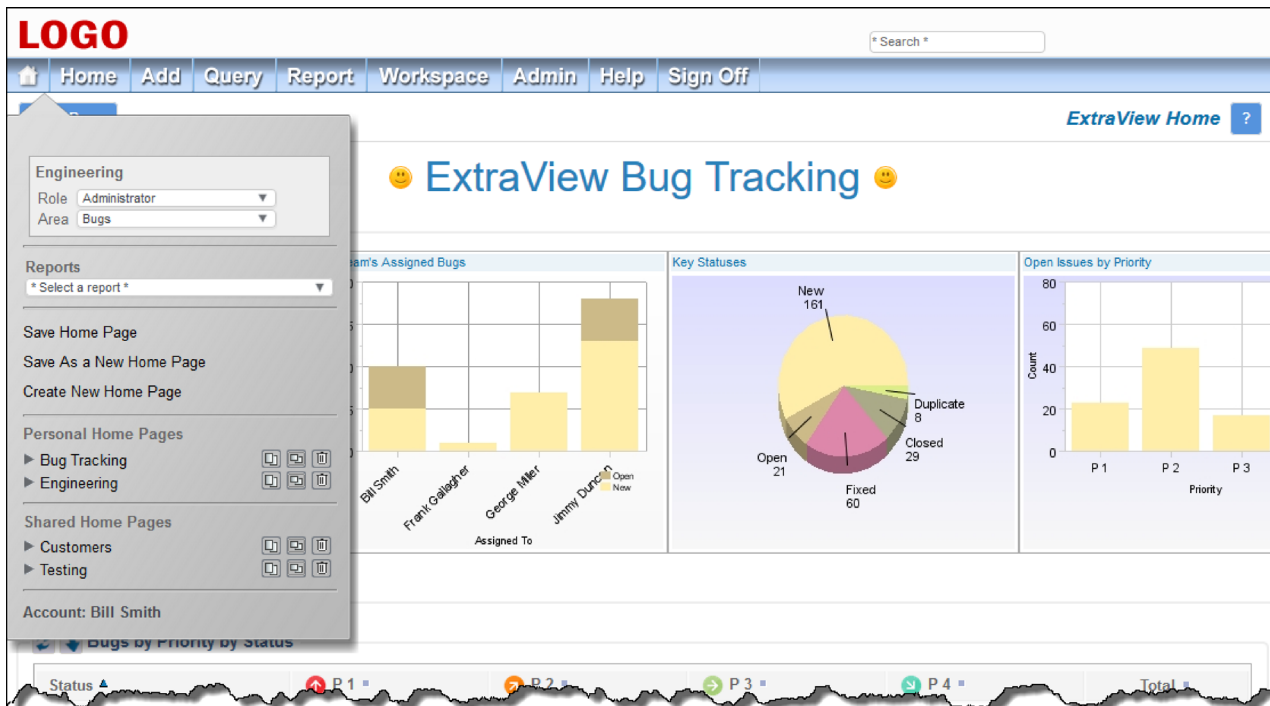
Select home page reports Home Page Report Selectors

Sample Home Page screen

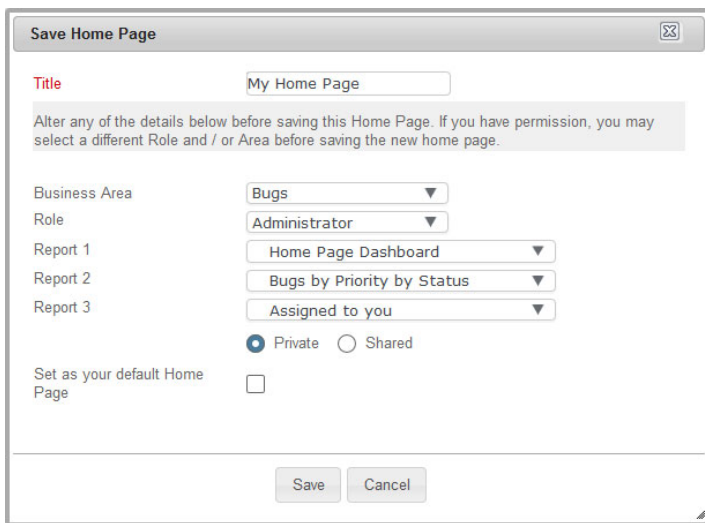
Configuring Multiple Home Pages

When multiple Home Pages are configured, each Home Page may point to a different combination of Business Area, Project, User Role and the selection of reports displayed on the Home Pages. This feature can be turned off and on for each user role. To differentiate between the different Home Pages, there is an additional button on the navigation bar. This button acts as a control to

access all available Home Pages. When this is configured, the prompts for the Business Area / Project and user roles are also moved under this button.



- ▶ The title of the current Home Page is displayed at the top of the control menu
- ▶ You may set your role, Business Area and Project from the top prompts on the menu
- ▶ If available to you, a list of reports that you can run on the current Home Page are displayed in a select list
- ▶ You may Save, Save As and Create a New Home Page from the next set of prompts. When you select one of these, a dialog similar to the following will appear, and you may alter any of the values displayed before saving your selection:



You may set the Home Page you are saving as the default, in which case this is the Home Page that will be displayed when you Sign On

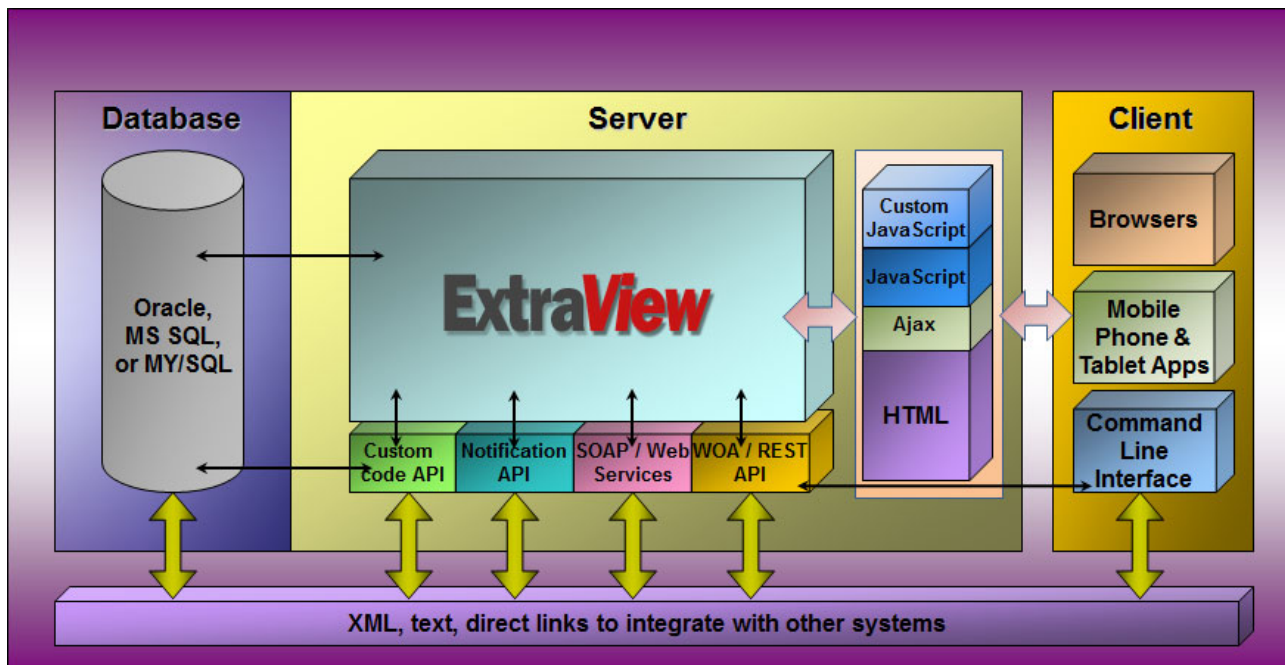
- ▶ There are options to access and store both Personal Home Pages and Shared Home Pages. Your administrator may or may not have given you permission to see and to create either of these. If they are not available to you then the section does not appear on the control menu. You may open any saved Home Page from the menu by clicking on it. The different icons let you open the Home Page in the current browser tab, a new browser tab and let you delete the current Home Page
- ▶ Lastly, there is an option to access your personal account details.

To configure multiple Home Pages, set the following permissions. Both permission keys should be turned on for roles that have access to the feature:

Permission Key	Purpose
MENU_MULTIPLE_HOME_PAGES	This is the master key that turns the multiple Home Page feature on and off. User roles that have access to this feature should be given read and write access to this feature
MENU.EV_NAV_BAR_BUTTON_HOME_CTRL	This key controls the presence of the Home Page Control button on the navigation bar
SR_PUBLIC_HOMEPAGE	This key provides access to allow users to create and to access shared Home Pages, as opposed to personal Home Pages. Note that when the multiple Home Page feature is turned on, users always have access to create and access personal Home Pages

Custom Coding Extensions

If ExtraView Corporation is hosting your installation, you do not have direct access to the file system of the server to configure, alter or use this feature without contacting ExtraView support. One of ExtraView's most powerful features is the ability to extend and alter its inbuilt functionality, by adding your own "user custom" code. This topic is covered in more detail in the [User Custom Guide](#). It is covered briefly within this document.



The ExtraView architecture

Java custom coding

Java custom coding supplements or alters the behavior of the standard ExtraView code. Within many of ExtraView's inbuilt functions, a code exit takes place to a method within a user custom module. If no user custom code exists within these methods, ExtraView continues its operation. If user custom code exists within the method, this will be executed. Within the UserCustom.java class provided within ExtraView, the programmer can inherit from this class and override the methods of interest. A sample of places where user custom coding can be inserted is:

- Before and after the display of an object, such as a screen
- Before and after the screen refresh of an object such as a screen
- To alter the contents of a list of data
- To alter the functionality when a button is pressed, such as the Relationship Group button, the Delete button or the Clone button
- To alter email notification functionality
- Before and after the updating of an issue
- Before the deletion of an issue
- In function calls made through the API

You will require a full Java development environment and JDK to create user custom Java code. It is also recommended that you use an IDE such as Borland's JBuilder or Eclipse.

Note: ExtraView strongly recommends that it be consulted about the user custom coding you wish to implement. ExtraView is a complex environment, and it takes both programming experience with the Java language as well as a thorough understanding of the internal structure of ExtraView to successfully design and build user custom extensions to ExtraView.

Note: If you are experiencing any errors in an ExtraView environment where you have installed user custom coding, we recommend that you check for the presence of the error with the user custom code removed, before you report the issue to ExtraView support.

JavaScript custom coding

JavaScript custom coding functions are typically called from an individual field of the *add* or *edit* screen. The JavaScript can perform many purposes, such as:

- Validation of the entry being made into the field by the user
- Complex validations that involve the comparison of many field values on the form
- Triggers to produce alerts to the user, by popping up messages according to the logic of the function

User custom JavaScript is placed in a single file named User.JavaScript.js. This file exists within your web server tree structure in a directory named /user_javascript.

JavaScript functions are downloaded into the client browser at the time the form is generated on the screen for the user. They are efficient, in that no call to the server is needed when you invoke a function. The code will execute within the browser.

Most JavaScript custom functions are defined within layout cell attributes for a field, using the FIELD HTML MODIFIER. The FIELD HTML MODIFIER calls the JavaScript function that you create in the specified place on the server. For example, if you want to check that an entry in a field named *product_code* on the *edit* screen is always sent to the server in upper case, you may do the following:

- On the field named *product_code* on the *edit* screen, define a layout cell attribute of type HTML Modifier and with a value of *onclick='checkUpperCase()'*;
- Create a user custom JavaScript function within the user_javascript file, similar to:

```
<script language=JavaScript>
function checkUpperCase() {
  var s = document.editForm.product_code.value;
  document.editForm.product_code.value = s.toUpperCase();
}
</script>
```

Email Notification

ExtraView offers a number of email notification features that are designed to facilitate maximum flexibility in managing inter-group, cross-functional, and business-to-customer communication. As a general default, ExtraView automatically sends email to the person who Originated an issue, the person who is Assigned to the issue, and the person who is selected as the Owner of the issue. These can be altered or replaced using Email Rules.

Creating a Mailing List for an Issue

There are four types of users for email notification. All these users go through the same validation process as explained in this section.

1. **Interest list users.** These are the users qualified to be in the mailing list based on interest list conditions and subscription. Note that if the interest list uses filters with operators such as *changed to* and *changed from* then users that are added to the interest list based upon the results of these filters, then the mailing list on the *add* and *edit* issue screens will not display these users. This is because these users cannot be evaluated until the issue is updated. Of course, they will receive the notification upon the insertion or update to the issue.
2. **CC Mail users.** These are USER IDs or Email addresses entered manually into CC Mailbox
3. **Business Rule users.** Business rules may add additional users to the email list before it is processed. These users will be added unconditionally to the email list.
4. **Built-in users.** The following users are built-in users and they are automatically qualified to be in the mail list. They are also called standard email recipients. You may suppress this list with the behavior setting named SUPPRESS_STANDARD_EMAIL_LIST by setting it to a value of YES.

Data Dictionary Field Name
OWNER
ASSIGNED_TO
CONTACT
ORIGINATOR
LAST_CHANGE_USER
Previous OWNER
Previous ASSIGNED_TO
Previous CONTACT
Previous ORIGINATOR
Release ASSIGNED_TO
Release OWNER
Module ASSIGNED_TO
UDF list OWNER
Module default OWNER if the behavior setting named EMAIL_MODULE_OWNER_ALWAYS = YES

An overall test is made to determine whether to send email notification in the following steps:

- The behavior setting named **EMAIL_NOTIFICATION** must have a value of YES
- The setting named **EMAIL_DIRECTORY** must have a valid path into which emails may be written, and the **BatchMail** task must be running
- Correct values must have been established for the settings named **EMAIL_FROM_USER_ID**, **EMAIL_FROM_USER_NAME**, **EMAIL_ADMINISTRATOR_ID** and **EMAIL_ADMINISTRATOR_USER_NAME**
- If the field named **NOTIFICATION_GENERATE_EMAIL** is not contained within the *add* or *edit* screen layout or the user role lacks permission to the field, then the value of the behavior setting named **GENERATE_EMAIL_BOX** is used to determine whether to generate the email notification. This setting must then have a value of CHECKED for notification to be sent.

When an issue is created or updated, ExtraView makes a determination of who is to be notified from the users in the above list, and the rules to process the mail notification are based on the following criteria.

- Check whether **EMAIL_CUSTOMER** = YES or NO. This comes from the check box on the *add* or *edit* screen. The value is always YES for Custom Email
- Check whether the behavior setting named **SUPPRESS_STANDARD_EMAIL_LIST** = YES or NO. Note that this setting has a default behavior setting value, but it may be controlled PROJECT by PROJECT on the List Management screen for each Project.
- Check whether each user's email address and alternative email address is valid – **VALID EMAIL ADDRESS** = YES or NO. The program checks whether each email address has @ sign within the address and has a "." at the 3rd or 4th position from the end. Examples of valid addresses are john@extraview.com and john@extraview.com.jp. If the address is not valid, processing does not halt, but the invalid address is dropped from the notification list
- A check is made to see whether the issue is available for viewing by each user. This is the **PRIVACY GROUP TEST** which will result in PASS or FAILED. This test is performed by ExtraView. The result is always PASS if the email being generated is an ad hoc email. The basic test results in PASS if the issues' privacy group is PUBLIC or PRIVATE or the user being tested is in the issue's privacy group
- The role of the user being tested is examined. The test results in PASS or FAILED. The result is always PASS if the behavior setting named **LIMITED_USER_ROLE** is not defined or is blank. The result is PASS if the user's current role is different from the value of the behavior setting **LIMITED_USER_ROLE**. The result is FAILED if the user's role is the same as that defined in **LIMITED_USER_ROLE**. If the result was FAILED, then by definition the user is a GUEST account and the following test is made – if the checkbox **EMAIL_CUSTOMER** on the *add* or *edit* screen is checked, then an email to the GUEST user is generated if one of the following conditions is true:
 - It is an ad-hoc mail that is being sent
 - The behavior setting named **ALLOW_GUEST_MAIL** is set to YES. Note that this behavior setting is not changeable by the administrator and is only available with a special license key from ExtraView. The reason for this is that access to this key could allow all users to bypass the ExtraView licensing scheme and have unlimited use of ExtraView.
- A check is made on whether the user is to **RECEIVE NOTIFICATION AT PRIMARY ADDRESS** = YES or NO. This comes from the user's personal options. This defines the initial address to which notification is sent
- A check is made on whether the user is to **RECEIVE NOTIFICATION AT ALTERNATE EMAIL ADDRESS** = YES or NO. This comes from the user's personal options. This defines the alternate address to which notification is sent
- Next, a check is made of the user's personal option **RECEIVE NOTIFICATION ON OWN UPDATES** = YES or NO. This checks whether the user who is inserting or updating the issue is to be removed from the notification list
- Lastly, a check of the behavior setting named **EMAIL_MODULE_OWNER_ALWAYS** = YES or NO is made. If the check returns YES, then the user ID who is attached to the field **MODULE_ID** is added to the notification list.

At the end of these checks, ExtraView has a list of the user's who are to be notified. The process then takes each of these users in turn and creates the outgoing email for the user, based upon their role and all security permissions.

Administrator-Controlled Email Features

- Turn system-wide email on or off
- Disable email generation control for user roles
- Control specific notification option for user roles while adding and updating issues. This may be controlled on a PROJECT by PROJECT basis
- Enable or disable email to external users
- Optionally assign a module owner who will automatically receive notification upon a new or updated issue
- Optionally set a product email address to notify a product manager upon a new or updated issue
- The administrator can set up conditions which, when met, will cause an action to occur. Most often, this is used to escalate issues when they have remained in a specific status for longer than your process requires
- The email subject line can be tailored to contain text or any fields within the current issue
- Optionally show the email recipient the CC list for the notification
- The administrator can define email templates as either text or HTML. These templates can contain as much or as little data as is required for the standard notification of issues to ExtraView users
- The administrator can optionally define a range of email templates that can be used to communicate with customers or users, merging data from the current issue with pre-defined text. These templates can be made available on a user role basis

See also the section on [Scheduled Reports](#) for information on how the administrator may control the email delivery of reports to users.

Email Options

Email addresses

Each user may have two email addresses within ExtraView, a primary email address and an alternative email address. The primary email address is maintained on the Personal Details tab of the user account maintenance screen. The alternative email address and the controls for receiving email are on the Notification Options tab of the user account maintenance screen.

The administrator or the end user can select options for the end user to receive email at their primary and alternative email addresses independently.

If the behavior setting named CHECK_EMAIL_ADDRESS_FORMAT has a value of YES, then the format of each email address is checked at the time it is entered or updated and an error message is returned if the format is not valid.

Turning System-Wide Email On or Off

1. From Administration menu, under the **Email Notification** tab, click on **Email Settings**.
2. Scroll down until you see EMAIL_NOTIFICATION.
3. Click **Edit** and change the value to YES, in order to turn on Email Notification, or set the value to NO to turn off Email Notification system-wide.
4. Click the **Update** button.

When EMAIL_NOTIFICATION is set to NO, no warnings are issued to users who enter or update issues, or generate emails in any way.

Disabling Access to the Email list for Specific User Roles

You can control access to the mailing list with the security permission keys named PR_ADD_PROBLEM.NOTIFICATION and PR_RESOLUTION.NOTIFICATION. If these keys are turned off for a combination of user role, business area and project, then the user will not have control over, or visibility of the email notification section of the *add / edit* screens.

Notification Permission Keys

These keys have both PR_ADD_PROBLEM and PR_RESOLUTION entries to control both the *add* and the *edit* screens.

Key	Purpose
NOTIFICATION	This is the master control for the display of the notification section on <i>add</i> and <i>edit</i> screens. You must have WRITE permission to these keys to observe the notification section on <i>add</i> and <i>edit</i> screens. Note that turning off this key is independent of the values of the fields and the security permission values of

	these keys. Just turning this display off does not alter the value of the EMAIL_SWITCH key. You can either set this key off as well, or use a business rule to inhibit the sending of email notifications from any screen within any Role / Business Area / Project combination.
CC_EMAIL	This key controls the visibility of the CC Email text entry box
CC_EMAIL_BUTTON	This permission key controls access to the CC Email button to the right of the CC Email text entry box
EMAIL_CUSTOMER	Giving permission to this key enables or disables access to the checkbox that turns notification on or off to users in the DEFAULT_USER_ROLE. Note that this checkbox may be set programatically using a business rule
EMAIL_SWITCH	This controls access to the checkbox that has the prompt Generate Email
INTEREST_LIST	With this key you control access to the ability to allow users to add users to an interest list for the issue they are adding or updating
MAILING_LIST	This is the control for the list of users who will be notified upon inserting or updating the issue

Assign Module Owners

The System Administrator may assign *Module Owners*, such that changes on issues with given modules produce automatic email notification to the designated owner.

In addition, the module owner may be used to automatically populate the *assigned_to* field on the Add Issue screen, if the behavior setting named **LINK_MODULE_OWNER_ASSIGNED_TO** on the Workflow Settings screen is set to a value of YES. This allows you to create the Add Issue screen in such a way that when a module is selected from a list, the Assigned To is automatically set to be the module owner.

1. From the Administration menu, under the **Lists** tab or from the Data Dictionary, click **Module Names**
2. Locate the *Module* to which you would like to assign an *Owner*, and click the associated **Edit** button

The screenshot shows a web form titled "Change an entry - Module names". It contains several input fields: "Product" with value "BBB", "Module Fixed Name" with value "PROCESSOR", "Module Title" with value "Processor", "Module Type" with a dropdown menu showing "* None *", "Owner" with a dropdown menu showing "Susan Green", and "Sort sequence" which is empty. A red arrow points to the "Owner" dropdown menu. At the top and bottom of the form are buttons for "Update", "Cancel", "Delete", and "Print Page".

Updating the module owner

- Scroll through the list of available users or else select the owner from the pop up text box
- Click the **Update** button.

Set Product Email Address

The Administrator may set an email address for specific *products*, so that ExtraView users associated with that *product* will receive automatic email notification about product-related issues. This is achieved from the Products list within the **Lists** tab of the administration menu.

The screenshot shows a web form titled "Change an entry to Products". It contains several input fields: "Fixed database name" with value "BBB", "Title to display" with value "Fracker Enterprise", "Sort sequence" which is empty, "Email address" which is empty, and "Active" with two radio buttons, "Yes" and "No". A red arrow points to the "Active" radio buttons. At the top and bottom of the form are buttons for "Update", "Cancel", "Delete", and "Print Page".

Setting the Product email address

Notification Subject Line

ExtraView gives the Administrator the ability to customize the subject line of emails that are automatically sent when inserting and updating issues.

1. From the Administration menu, click on the **Behavior Settings** entry and then choose the **Email Settings** category
2. Scroll down until you see the behavior setting named EMAIL_SUBJECT_TEMPLATE, and click the associated **Edit** button
3. Type in the names of the fields you would like to display. Your custom email subject line can include any field from your ExtraView installation. These values are generated dynamically, based on the particular issue
4. If you would like values in your email subject line you must surround them with “\$\$”. Normal static values can be typed in. See the example below:

Sample Text	Subject Line Output
\$\$ID\$\$ - \$\$SHORT_DESC\$\$	12345 – Problem with List Entries
\$\$ASSIGNED_TO\$\$ (\$\$PRODUCT_NAME\$\$; \$\$MODULE_ID\$\$) - This is an Email	rlloyd (Product X; Module Y) - This is an Email
Issue # \$\$ID\$\$ This is Assigned to \$\$ASSIGNED_TO\$\$	Issue # 12345 This is Assigned to rlloyd

Notification History

There is a special field named NOTIFICATION_HISTORY which can only be placed on layouts with a type of HISTORY. This displays a record of which users were notified when the update to the issue was made. However, if you are using the behavior setting named HISTORY_DISPLAY with values of ABBREVIATED and/or SIDE_BY_SIDE, then the notification history is still shown, as part of each history entry.

- [Add new comment](#)

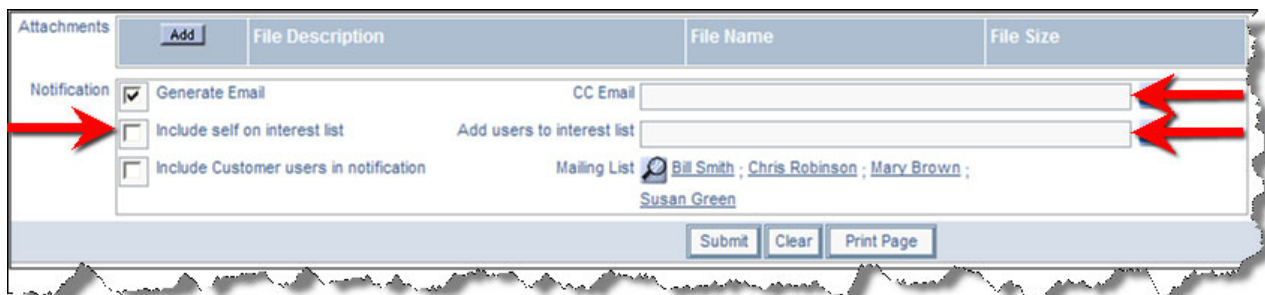
CC Email Capability

This feature gives users the opportunity to send a one-time email to people who are not directly associated with a particular issue.

This feature is controlled by the Security Privilege Settings as follows. A different setting can be used for each user role within the system.

Security Key Name	Purpose
PR_RESOLUTION.CC_EMAIL	This controls the appearance of the CC Email entry box on the Edit Issue screen
PR_ADD_PROBLEM.CC_EMAIL	This controls the appearance of the CC Email entry box on the Add Issue screen
PR_RESOLUTION.CC_EMAIL_BUTTON	This controls the presence of a user popup button on the Edit Issue screen. This button gives access to a list of users within ExtraView, who can be mailed
PR_ADD_PROBLEM.CC_EMAIL_BUTTON	This controls the presence of a user popup button on the Add Issue screen. This button gives access to a list of users within ExtraView, who can be mailed

To utilize the CC Email functionality, type email addresses (separated by commas or semi colons) into the CC Email field prior to updating the issue, or select named users from the list by first clicking the people icon. Unless you have a license from ExtraView that allows your installation to send email to non-ExtraView users, email addresses entered must belong to registered and activated ExtraView users. Also note that if there is a privacy group restriction on the issue, the user whose name, ID or email address is entered must have permission to view the issue.



Email notification on the Add or Edit screen

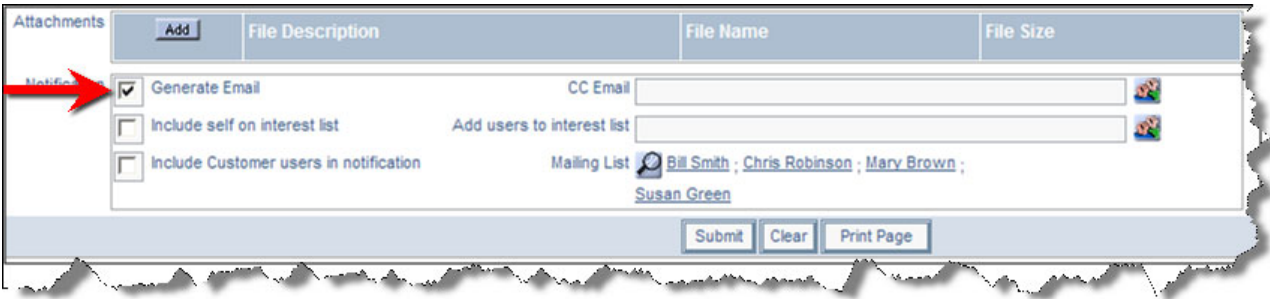
Disabling Email Generation

Disable Automatic Email Generation

Each time a user adds or edits an issue, he or she has the opportunity to halt all email generation by un-checking the **Generate Email** checkbox at the bottom of the Add and Edit screens.

This is controlled by the following security permission keys

Security Key Name	Purpose
PR_RESOLUTION.EMAIL_SWITCH	This controls the appearance of the Generate Email checkbox on the Edit Issue screen
PR_ADD_PROBLEM.EMAIL_SWITCH	This controls the appearance of the Generate Email checkbox on the Add Issue screen



The screenshot shows a web form with a table at the top for attachments. Below the table is a 'Notification' section. A red arrow points to the 'Generate Email' checkbox, which is checked. Other options include 'Include self on interest list' (unchecked), 'Include Customer users in notification' (unchecked), 'CC Email' (text input), 'Add users to interest list' (text input), and a 'Mailing List' section with a dropdown menu showing 'Bill Smith', 'Chris Robinson', 'Mary Brown', and 'Susan Green'. At the bottom are 'Submit', 'Clear', and 'Print Page' buttons.

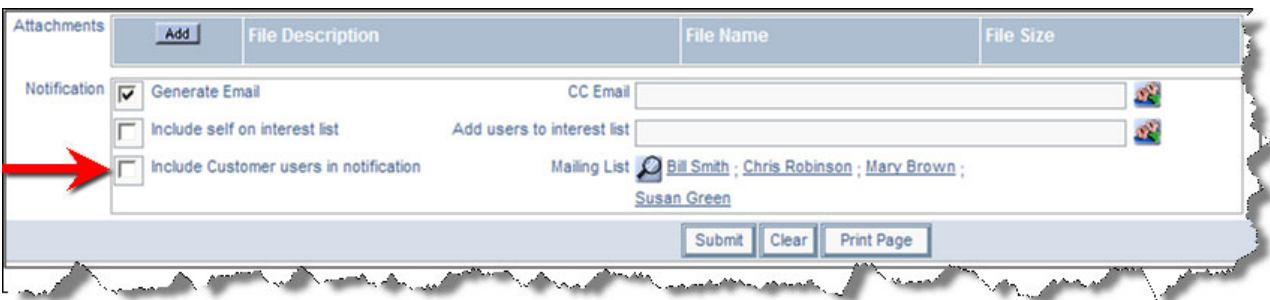
Email notification on the Add or Edit screen

Disable Generation of Email to External Users

Situations often arise where a customer may need to enter an issue, but you may not want the customer to see all of the different state changes that the issue goes through. When you add or update an issue, you have the option of halting email to external users. This is controlled by security permission keys for each user role as follows:

Security Key Name	Purpose
PR_RESOLUTION.EMAIL_CUSTOMER	This controls the appearance of the Include Guests checkbox on the Edit Issue screen
PR_ADD_PROBLEM.EMAIL_CUSTOMER	This controls the appearance of the Include Guests checkbox on the Add Issue screen

At the bottom of the Add and Edit screens you will see something similar to the screenshot below. The default setting is not to send email to external users. Note that the term “Customers” is replaced by your organizations own name for guests or customers.



The screenshot is identical to the one above, but a red arrow points to the 'Include Customer users in notification' checkbox, which is currently unchecked.

Email notification on the Add or Edit screen

If you would like your external users to receive an email, click the **Include Customer users in notification** check box and continue to update the issue.

BatchMail Task

If ExtraView Corporation is hosting your installation, you do not have direct access to the file system of the server to configure, alter or use this feature without contacting ExtraView support.

When a notification is generated by ExtraView, it is written to a directory on the filesystem of the server. The location of the directory is controlled by the behavior setting named EMAIL_DIRECTORY.

This directory is managed by the BatchMail task or process. With ExtraView 6.0 and beyond, this task may be managed within the ExtraView administration utility to [configure BatchMail](#). Previous to version 6.0, the BatchMail task was managed external to ExtraView.

For backwards compatibility, the task may still be operated externally. Please see this section in this guide for information on how this utility works.

Locale Handling

Notification and the User's Locale

When a user receives an email notification, they will receive it in their current locale irrespective of the locale of the person who updated the issue. For example, if you are on the interest list for an issue, and your locale is Japanese, you will receive the notification using Japanese as the language. If your locale is English, you will receive the notification in English.

User-Controlled Notification Features

- Turn on and off notification of user's own updates
- Select incoming email format to be text or HTML.
- Select from a fuller or briefer form of notification when receiving text
- Disable automatic email generation
- CC Email
- Send pre-formatted email, using templates set up by the administrator, to communicate information to customers or other users

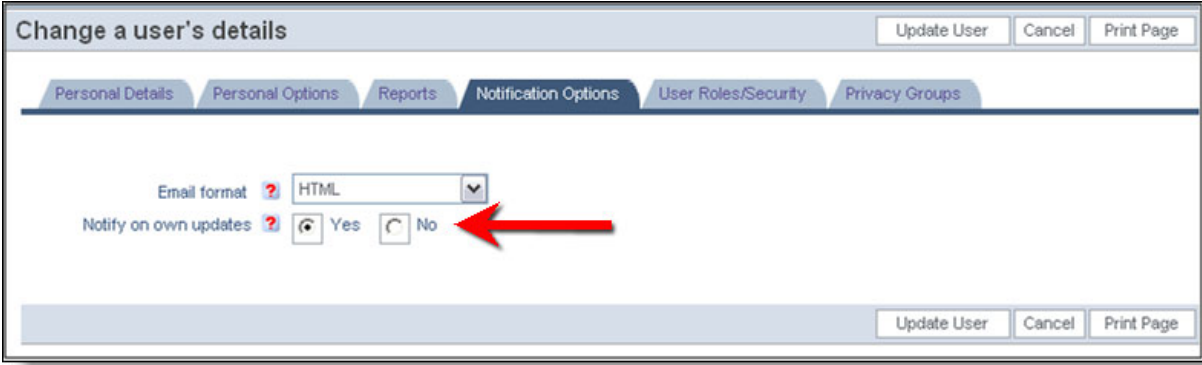
Note: This guide describes the user-controlled email features along with the administration features, as a review of this functionality here helps to provide a more complete overview of email functionality in ExtraView.

Notify of Own Updates

This feature gives an individual user the option to disable automatic email to their self on issues that they add or update. The administrator can also apply this option on behalf of any user.

- As an individual user, click on your account name in the title bar to edit your account details, or from the User tab on the Administration menu click on the **User Account Maintenance** option and edit the user whose account you want to modify. Click on the **Notification Options** tab.

A screen similar to the one below will appear:



The screenshot shows a web interface titled "Change a user's details". At the top right are buttons for "Update User", "Cancel", and "Print Page". Below the title is a navigation bar with tabs: "Personal Details", "Personal Options", "Reports", "Notification Options" (which is selected), "User Roles/Security", and "Privacy Groups". The main content area contains two settings: "Email format" with a dropdown menu currently showing "HTML", and "Notify on own updates" with two radio buttons, "Yes" and "No". A red arrow points to the "No" radio button, which is selected. At the bottom right of the form are buttons for "Update User", "Cancel", and "Print Page".

Change a User's Details screen

- Click on the radio buttons by **Notify on own updates** to toggle the option on and off.
- Click the **Update User** button.

Select Email Format

This feature gives an individual user the option to choose whether to receive notifications in text or HTML formatted email. The administrator can also apply this option on behalf of any user. The choices are to display incoming email in one of four formats: HTML, Plain Text (full) , Plain Text (brief) and Plain Text (very brief).

Type	Purpose
HTML	Notification is sent using the layout named EMAIL_FULL, and is delivered in an HTML format
Plain Text (full)	Notification is sent using the layout named EMAIL_FULL, and is delivered as plain text format
Plain Text (brief)	Notification is sent using the layout named EMAIL_BRIEF and is delivered in a plain text format
Plain Text (very brief)	No layout is used for the notification, but a plain text format email is delivered, only showing the fields that changed in the insert or update operation of the issue. If a field value was modified, it is preceded with a * character. If a field value is inserted, it is preceded with a + character.

- As an individual user, click on your account name in the title bar to edit your account details, or from the **User** tab on the Administration menu click on the **User Account Maintenance** option and edit the user whose account you want to modify. Click on the **Notification Options** tab.

A screen similar to the one below appears:

Change User Details screen

- The default email format is HTML. If you would like to see your email notifications in another format, select the desired format from the Email format list.
- Click the **Update User** button.

Below are examples of the different email formats:

Open [ExtraView-36474]-[P 3]-Execute notification using opt in/out rules, per new Interest List and E...

File Edit View Insert Format Tools Actions Help

Reply Reply to All Forward

From: ExtraView Support [support@extraview.com] Sent: Fri 2/24/2006 11:08 AM
 To: carl@sesame.com
 Cc:
 Subject: Open [ExtraView-36474]-[P 3]-Execute notification using opt in/out rules, per new Interest List and Escalation Rules

Edit	Issue #	Created	Last Modified
	36474	February 8, 2006 11:38:51 AM PST	February 24, 2006 11:07:28 AM PST
Area	Status	Days Open	Changed by
Defects	Open	16	Allan Rofer
Category	Cust. Sup. Issue ID #	Customer	
Feature Enhancement		Vodafone	
Title			
Execute notification using opt in/out rules, per new Interest List and Escalation Rules			
Product	Module	Originator	Assigned To
ExtraView	Administration	Dan Fineman	Ali Goksel
Found in Release	Severity	Browser	Priority
4.3.5		All Platforms	P 3
Found In Build #	Database	OS	Duplicate Bug ID
	All		
Requested Release	Committed Release	Branch Status	Fixed-in build #
4.3.6	5.0	Open	
Planned Time (days)	Planned due date	Phase	Spec. Ref #
	April 3, 2006	3	6.2
Description			
Execute notification under new paradigm, involving opt-in / opt-out by users for Escalation Rules and Interest Lists.			

cc: [Carl Koppel](#) ; [Allan Rofer](#) ; [Cindy Norman](#) ; [Ali Goksel](#) ; [Dan Fineman](#)

HTML Email in Microsoft Outlook

Subject: Open [#19419]: Category doesn't seem tied to Product anymore
Date: Wed, 2 May 2001 13:57:53 -0700 (PDT)
From: "ExtraView" <extraview-user@customer.com>
To: <support@sesame.com>

ExtraView Notification for Bug # 19419

*Synopsis: Category doesn't seem tied to Product anymore

Link: http://www.extraview.net/extraviewsql/SE_Signon.FrameSet?p_case_id=19419

*Product: Dev Tools
*Originator: rlloyd
*Owner: rlloyd
*Changed By: dwong
*Priority: 1
Severity:
*View: Private
*Last Modified: 02-MAY-2001 13:57
*Category: Software
Alt ID:
Created: 02-MAY-01

*Module: ExtraView
Component:
*Platform: all
OS:
Clarify ID:
Test Case ID:
Test Case Location:
Problem Reproducible in SQA:

*Version Open: 3.1.2.1
*Status: Open
Version Closed:
Disposition:

*Description:
If you select Product=EV, Category=Software, you will see two modules called "EV". Go into Admin...Modules and one is Hardware, one is Software.

Comments:

ExtraView - Copyright Sesame Technology 1999, 2000. All rights reserved.

Plain Text (Full)


```
Subject: Open [#19419]: Category doesn't seem tied to Product anymore
Date: Wed, 2 May 2001 13:57:53 -0700 (PDT)
From: "ExtraView" <extraview-user@customer.com>
To: <support@sesame.com>
```

ExtraView Notification for Bug # 19419

*Synopsis: Category doesn't seem tied to Product anymore

Link: http://www.extraview.net/extraviewsql/SE_Signon.FrameSet?p_case_id=19419

```
*Product: Dev Tools
*Originator: rlloyd
*Owner: rlloyd
*Priority: 1
Severity:
```

ExtraView - Copyright Sesame Technology 1999, 2000. All rights reserved.

Plain Text (Brief)

Note: These standard email formats can be modified using the layout editor and modifying the EMAIL_FULL or EMAIL_BRIEF layouts.

Adding Issues with EVMail

Many organizations want to use email to submit new issues to ExtraView, either from their own employees or from their customers. ExtraView enables this capability via a task named EVMail. This task may be configured to allow ExtraView to receive and process emails that both insert and update issues. See the section entitled Email Poller Task for instructions on how to configure the EVMail task. EVMail can perform the following tasks:

- Add new issues to your database
- Update existing issues

See the section entitled [Configuring EVMail](#) for instructions on how to setup and configure the EVMail task.

Workspace Configuration

Workspaces have several configuration points of which you should be aware.

Security Permissions

MENU_WORKSPACE	This key provide the overall control of access to workspaces, role by role. If the user role does not have write access to this key, the Workspace navigation bar entry does not appear, and there is no way for the user to access workspaces
CF_ALLOW_RETURN_FROM_WORKSPACE	Read access to this permission key places an entry in the workspace menu with the title Close Workspace . Without this permissoin, the user cannot return to the traditional ExtraView user interface. If the user's profile has selected their start page as Workspace and this permission is not provided, the user is locked into the workspace environment
SR_PUBLIC_WORKSPACE	If the user role has write permission to this key, they are allowed to save & delete public workspaces created by other users. Without this permission, the user may only delete workspaces that they have created.

Saving Workspaces

Each workspace is governed by three factors:

- Its user role for which it is created

- Its Business Area within which it is saved. This becomes the default Business Area for operations within the workspace
- Public or Private. If you create a shared workspace, other users may use this, and if they have write access to `SR_PUBLIC_WORKSPACE`, they may overwrite and/or delete it. If the workspace is private, only the owner has permission to access it.

There is no practical limit to the number of workspaces that can be configured, although it is recommended that you do not have too many shared workspaces, as users may be confused as to the different purpose of each saved workspace.

External Authentication - LDAP, SSO and SAML

If ExtraView Corporation is hosting your installation, you do not have direct access to the file system of the server to configure, alter or use this feature without contacting ExtraView support.

ExtraView may be configured to work with both Lightweight Directory Access Protocol (LDAP) and Single Sign On (SSO) servers. LDAP servers include Microsoft's implementation named Active Directory. It is not necessary to configure both LDAP and SSO at the same time, although this can be done. Security Assertion Markup Language (SAML) may be used in conjunction with SSO and LDAP to provide authentication.

We strongly recommend that you have access to a resource that is skilled in administering these technologies to set up these features.

You may connect directly to an LDAP server, or you may connect to an LDAP server via SSO. Typically, it is slightly easier to configure the combination of LDAP and SSO servers, as opposed to configuring only an LDAP server.

This section discusses connecting ExtraView with both SSO and LDAP first, and then discusses a direct connection to LDAP without SSO. Finally, SAML authentication is discussed.

LDAP, SSO and SAML are not part of the ExtraView product, but are separate thirdparty applications that ExtraView may integrate with. There are many “flavors” and implementations of both these technologies and they may be configured in many different ways by different organizations. While ExtraView may connect to and use these technologies, the configuration is often different from one installation to another. ExtraView’s professional services team can help with the integration, but this may not be part of the standard installation, and may be a separate, chargeable task.

Setting up LDAP, SSO or SAML implies that you will set up the configuration in both ExtraView behavior settings and within the `Configuration.properties` file external to ExtraView.

Note that there is also a hybrid authentication mode, where ExtraView can authenticate against an LDAP server and also use its own internal authentication mechanism. This is ideal in an environment where you want to use the LDAP server for internal users, but use ExtraView's authentication for your customer users.

LDAP Connections

When ExtraView is configured to work directly to an LDAP server, the following functions are enabled, all without any need for custom programming within ExtraView:

- Access to an unlimited number of LDAP fields
- Customized mapping of one or more fields in ExtraView to one or more fields LDAP fields
- Customized pre-population of mapped fields on the ExtraView *Add* and *Edit* Screens
- Customized pre-population of fields through a popup link
- The upsert of data to the ExtraView user table, based on a configuration value. Upsert is a combination of insert and update. If a record exists, it is updated, if it does not exist, it is inserted.

Setup Access Details to your LDAP Server

There are two background tasks that can be used to enhance the LDAP server performance. Only one of these should be configured at one time, and for most purposes, this should be the task titled [LDAP Background Task](#) and not the [LDAP Synchronization Task](#). Click on the links to see the documentation for each of these topics.

There are several behavior settings that control access to your LDAP server. These should be configured first, to provide the basic connection from ExtraView to your LDAP server. These settings are:

Setting	Purpose
<code>LDAP_USER_LOOKUP</code>	This is the basic on/off switch for LDAP. Set this to YES if you intend to use an LDAP server for user lookup

LDAP_DEFAULT_AREA	This is the ID of the business area to associate with a new user who is added to ExtraView via the LDAP server. To find this number, look at the data dictionary field AREA, and click the List button. By each business area you will see the ID. It is essential that you provide a valid entry for this setting.
LDAP_DEFAULT_PROJECT	This is the ID of the project within the business area to associate with a new user who is added to ExtraView via the LDAP server. To find this number, look at the data dictionary field PROJECT, and click the List button. Select the business area and you will see a list of the IDs associated with each project. Normally you will choose the <i>DATA</i> project within the business area. It is essential that you provide a valid entry for this setting.
LDAP_HOST	This is the URL to your LDAP server. It is essential that you provide a valid entry for this setting.
LDAP_MANAGER	The “Security Principal” or user accessing LDAP
LDAP_PSWRD	The password to the LDAP server
LDAP_ROOT	The root directory of the LDAP server or search base, e.g. ou=blahWorker, o=blah.com. It is essential that you provide a valid entry for this setting.
LDAP_ALLOWED_STALE_INTERVAL	The minimum number of minutes between LDAP upsert operations on a single user. This stops ExtraView accessing the LDAP server with every operation that requires user information in order to optimize performance. After this interval, a fresh check of the LDAP server is made. The LDAP Background Task should be running for this to work
LDAP_SEARCH_FILTER	LDAP filters may be defined in the behavior setting or may be defined in the Configuration.properties file. The behavior setting takes precedence over the Configuration.properties entry. LDAP filters are defined in RFC 2254. As an example, if you wanted to add a filter to only retrieve records with mycompany within the email address, you could set this as the filter: (mail=*mycompany*) The parentheses are essential.
LDAP_UPSERT	This setting controls upserting LDAP information to ExtraView. The possible values are YES or NO. When this value is NO, LDAP will not be used to add or update ExtraView user information. A valid LDAP user that is not already an ExtraView user will not be able to log in to ExtraView. If this setting is YES, then SSO_UPSERT should always be set to a value of NO.
LDAP_UPSERT_DEFAULT_USER_ROLE	If this setting contains a valid role, then this is the role a user is given when the LDAP upsert takes place. If this setting does not contain a value, then the role defined in the behavior setting named LIMITED_USER_ROLE is used instead.
LDAP_USER_LOOKUP	When this behavior setting is set to YES, whenever a user performs an operation to lookup the details of another user, ExtraView will ask the LDAP server for the information. At the same time this is done, the information for the user within ExtraView, will be synchronized with the information within the LDAP record

Setting LDAP Fields in the Configuration.properties File

In the configuration file of the application server (Configuration.properties), there is a parameter named LDAP_FIELDS. These are the meta-names of the mappings to be used with LDAP. These must be comma separated, listed on one line. The following fields are mandatory and must be provided as the fields for the upsert operation:

LDAP_FIELDS =	LDAP_PRIMARYKEY,
	LDAP_SURNAME,
	LDAP_GIVENNAME,
	LDAP_COMMONNAME,
	LDAP_EMAIL,
	LDAP_STREET,
	LDAP_CITY,
	LDAP_STATE,
	LDAP_POSTALCODE,
	LDAP_COUNTRY,
	LDAP_PHONE

Other fields may be added. They should follow the same naming convention. These represent the fields for which information will be retrieved. For example, you might add more fields such as:

LDAP_MOBILE,
LDAP_PAGER,
LDAP_COMPANYNAME,
LDAP_DEPARTMENT,
LDAP_TITLE
LDAP_ADDITIONAL_EMAIL
LDAP_ADDRESS_LINE2
LDAP_PHONE
LDAP_HOME_PHONE
LDAP_COMPANYNAME
LDAP_FAX
LDAP_USER_DEFINED_1
LDAP_USER_DEFINED_2
LDAP_USER_DEFINED_3
LDAP_USER_DEFINED_4
LDAP_USER_DEFINED_5
LDAP_USER_DEFINED_6
LDAP_USER_DEFINED_7
LDAP_USER_DEFINED_8
LDAP_USER_DEFINED_9
LDAP_USER_DEFINED_10

Map the Fields in LDAP_FIELDS to Values in the LDAP Directory

These fields are mapped with a 1:1 relationship, similar to the following example:

LDAP_PRIMARYKEY	=	employeenumber
LDAP_LOGINID	=	uid
LDAP_SURNAME	=	sn
LDAP_GIVENNAME	=	givenname
LDAP_COMMONNAME	=	cn
LDAP_EMAIL	=	mail
LDAP_STREET	=	street
LDAP_CITY	=	l
LDAP_STATE	=	st
LDAP_POSTALCODE	=	postalcode
LDAP_COUNTRY	=	postaladdress
LDAP_PHONE	=	telephonenumber
LDAP_MOBILE	=	mobile
LDAP_PAGER	=	pager
LDAP_COMPANYNAME	=	displayname
LDAP_DEPARTMENT	=	department
LDAP_TITLE	=	title

Map the Fields in LDAP_FIELDS to Values in ExtraView

There can be more than one ExtraView field mapped to an LDAP_FIELD. You must prefix the name of the LDAP field meta-name with the characters EV_. For example, LDAP_PRIMARYKEY becomes EV_LDAP_PRIMARYKEY. You should separate multiple values with a comma.

EV_LDAP_PRIMARYKEY	=	USR_ID
EV_LDAP_SURNAME	=	USR_LNAME
EV_LDAP_GIVENNAME	=	USR_FNAME

EV_LDAP_COMMONNAME	=	USR_NAME
EV_LDAP_EMAIL	=	USR_EMAIL
EV_LDAP_STREET	=	
EV_LDAP_CITY	=	USR_CITY
EV_LDAP_STATE	=	USR_STATE
EV_LDAP_POSTALCODE	=	
EV_LDAP_COUNTRY	=	
EV_LDAP_PHONE	=	USR_PHONE,USR_PHONE2
EV_LDAP_MOBILE	=	USR_MOBILE
EV_LDAP_PAGER	=	
EV_LDAP_COMPANYNAME	=	
EV_LDAP_DEPARTMENT	=	USR_DEPT
EV_LDAP_TITLE	=	

List Fields to be Pre-populated

Ensure each of these is placed on ONE line:

Add Screen

This is a comma-separated list of ExtraView field names that are to be filled in on *add* screens, from values in the LDAP, and based on a search for a user. Example:

```
ADD_SCREEN_LDAP_FIELDS = USR_NAME, USR_TITLE, USR_DEPT, USR_EMAIL, USR_PHONE, USR_PHONE2,
USR_MOBILE, USR_FAX, USR_CITY, USR_STATE, USR_BUILDING
```

Edit Screen

This is a comma-separated list of ExtraView field names that are to be filled in on *edit* screens, from values in the LDAP, and based on a search for a user. Example:

```
EDIT_SCREEN_LDAP_FIELDS = USR_NAME, USR_TITLE, USR_DEPT, USR_EMAIL, USR_PHONE, USR_PHONE2
```

Searching on the Add and Edit Screens

This is a comma-separated list of ExtraView field names whose values are to be used as the search key for filling the field values on the *add* or *edit* screens. Example:

```
LDAP_USER_FIELD_NAMES = USR_NAME, USR_TITLE
```

Specify if you want to Update ExtraView User Information with the Latest Information from the LDAP Server

If you specify YES, then when each user signs in to ExtraView, the code will upsert that user's information to the ExtraView user table, directly from the LDAP directory.

```
LDAP_UPSERT = YES
```

If LDAP_UPSERT is NO, a user will not be able to sign on to ExtraView if they have not already been added to the system. The default value for this behavior is YES, so new users will be upserted and will be signed on.

Extending the Query Capability

When you have configured your LDAP connection to ExtraView, and you click on the search icon by a user field, a popup allows you to search the LDAP directory for users and to return one or more user's details into the form on the screen. It is sometimes useful to configure the fields used for the query.

This is accomplished with the LDAP_SEARCH_FIELDS property within the Configuration.properties file. This is a comma-separated list of LDAP field names. The LDAP search may be filtered by these additional attributes.

For example, entering the following on a single line within the Configuration.properties file:

LDAP_SEARCH_FIELDS = SURNAME,
GIVENNAME,
PRIMARYKEY,
PHONE, COMPANYNAME

extends the search for users on user pop-ups to use the PHONE and the COMPANYNAME fields in addition to the standard fields.

User Name Lookup

There is an optional field within the Configuration.properties files named LDAP_EDIT_FIELDS_CHANGE_ON_REFRESH. When there is a parent user field mapped to an LDAP field and this is placed on an *edit* screen and this field is set to a value of NO, the child fields that are mapped are not altered when the parent field is changed. This allows the values of a record on the LDAP server to be placed on an *edit* screen and not be altered once they have been read from the LDAP server. The default value for this property is YES, allowing the child fields to be refreshed when the parent is altered.

When LDAP is configured for user lookup, and LDAP_LOGINID is configured to map to the same LDAP name as LDAP_PRIMARYKEY, the values returned for an LDAP search will contain the mapping: LDAP_PRIMARYKEY --> SECURITY_USER_ID and LDAP_LOGINID_KEY --> LOGIN_ID for the user. The primary effect of this is on user custom code that expects the LOGIN_ID to be the value returned for LDAP_LOGINID. Note that this is not the result.

User ID's

Some LDAP installations are configured to support User ID's that contain space characters. ExtraView does not support space characters within a User ID. It is considered bad practice to use User ID's that contain space characters. User ID's that contain space characters on the LDAP server cannot be mapped to User ID's in ExtraView.

Upsert of Users

If the Configuration.properties file contains the entry LDAP_UPSERT = YES, then you may specify which fields within ExtraView are updated with the upsert operation. The entry LDAP_UPSERT should be followed with an entry named UPSERT_LDAP_FIELDS. This will include all or a subset of the fields in the following list:

UPSERT_LDAP_FIELDS = LDAP_COMMONNAME, LDAP_GIVENNAME, LDAP_SURNAME, LDAP_EMAIL,
LDAP_ADDITIONAL_EMAIL, LDAP_STREET, LDAP_ADDRESS_LINE2, LDAP_PHONE, LDAP_HOME_PHONE,
LDAP_MOBILE, LDAP_PAGER, LDAP_COMPANYNAME, LDAP_POSTALCODE, LDAP_STATE, LDAP_CITY,
LDAP_COUNTRY, LDAP_FAX, LDAP_USER_DEFINED_1, LDAP_USER_DEFINED_2, LDAP_USER_DEFINED_3,
LDAP_USER_DEFINED_4, LDAP_USER_DEFINED_5, LDAP_TITLE

If the UPSERT_LDAP_FIELDS statement is not included then all the fields are assumed to be updated upon the upsert operation.

Timeouts

It is important that the connection from ExtraView to the LDAP server is extremely fast. A poor LDAP connection will introduce unacceptable performance problems into the environment. To guard against LDAP connections that do not return information in a timely manner, there are two timeouts:

TCP connection timeout. If there is general network slowness, there is a two-minute timeout period.

LDAP read timeout. This is set to one minute, and guards against a response not being received from the LDAP server. Note that Java 1.6 (or greater) is required for this timeout to work.

Pre-population of Fields from the LDAP Server

Assuming that you have set up the above configuration parameters, when you load the ExtraView *add* screen, the fields you selected for ADD_SCREEN_LDAP_FIELDS in Configuration.properties will pre-populate with values from the LDAP directory, according to the LDAP mappings configured in the Configuration.properties file.

In the example below, the circled fields are all pre-populated from the LDAP entry based on the current user (Campbell, Rob).

Extraview Add Issue


Title

Product Originator

Module Assigned To Company Name

Category Status

Priority Severity


Display Name  User Title Department

Email Phone Phone2

Mobile Fax City

State Building

Generate Email CC Email

Include Guest Mailing List 

Popup Link

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 Licensed to Sesame Technology
 Environment - Version evbugtracker - UNKNOWN
 Report problems and request enhancements at the [ExtraView support site](#).

Example of fields pre-populated from an LDAP server

Popup Link Configuration

After you have decided which fields to put on your *Add* and *Edit* screen layouts, you can pick one (usually a primary identifier such as the user's name) to have a URL link popup window beside it. This popup window will allow for dynamic searching of the LDAP directory. It will also populate multiple fields on the *Add* or *Edit* screen with the values for the primary identifier. ExtraView fields will be populated from the LDAP directory based on the mappings you set up in Configuration.properties.

First, configure the link with the appropriate URL, within the Data Dictionary. Full instructions for this are in the Data Dictionary section of this administration guide.

Update Delete Cancel Print Page
Change a Data Dictionary Entry

Fixed name SPELL_CHECK

Title to display Localize

Type of field User defined field

Field belongs to Issue records

Display type

Field Properties
Optional Attributes
Permissions
Where Used

Select Area

Select Project

Allow selection on reports Yes No

Remember last value Yes No

Filter criteria Yes No

Is sortable Yes No

Display as URL Yes No

Image for Display as URL

URL Localize

Default value

Help text Localize

Help URL

Update Delete Cancel Print Page

Data Dictionary entry where the popup link is configured

- Set Display as URL to Yes.
- Enter the first part of the URL, exactly as shown. Do not complete the field entry yet

?p_action=doDisplay&p_option=security.SearchLDAPDisplay

- Append to the URL the list of fields you want populated in the following pattern, but using the fields for your installation:

&FIELD=USR_NAME&FIELD=USR_TITLE&FIELD=USR_DEPT &FIELD=USR_EMAIL&FIELD=USR_PHONE
 &FIELD=USR_PHONE2&FIELD=USR_MOBILE &FIELD=USR_FAX&FIELD=USR_CITY&FIELD=USR_STATE
 &FIELD=USR_BUILDING

where the pattern for each field is *&FIELD=DataDictionaryName*

The final URL will look something like this:

?p_action=doDisplay&p_option=security.SearchLDAPDisplay
 &FIELD=USR_NAME&FIELD=USR_TITLE&FIELD=USR_DEPT &FIELD=USR_EMAIL&FIELD=USR_PHONE
 &FIELD=USR_PHONE2&FIELD=USR_MOBILE &FIELD=USR_FAX&FIELD=USR_CITY&FIELD=USR_STATE
 &FIELD=USR_BUILDING

Popup Link Usage

When you click on the popup link beside the primary identifier, ExtraView will open a new window, where you can search for users by typing in search criteria. This is shown in the following screen shot.

ExtraView Add Issue

Bugs Test Cases Helpdesk Assets Customer Issues Customers Feature Requests Knowledge Base

Bug Details

Category * None * Status New Priority * None * Severity * None *

Title

Product * None * Module * None * Platform * None * Customer * None *

Release Found Originator Bill Smith Assigned To Owner * None *

Details

Description

Description

Spell Check

Attachments

Add File

Notification

Generate Email Include self or Include Customer

Submit Clear

ExtraView
Your Process. Your Workflow.
Copyright © ExtraView Corp.

Search for Account Clear Form Cancel Print Page **Lookup User Account Directory**

Use this form to search the directory for users. Enter information you know about the user. The more information you enter, the more likely you are to find the user you are looking for.

In the fields, you can enter as much of the name as you know. For example, 'Smi' entered in the last name field will match 'Smith', 'Smile', etc. You can use an '*' as a wildcard pattern in your search. Searching is not case sensitive.

Directory Search

Last name *s*

First name

User ID

Sort By Last name

Search Results - Click on the User ID that you want to select

User ID	Name	Phone	Email	Company	Pager	Mobile	Login ID
MARY	Mary Dickens	(831) 461-7100	mary@ssc.com	Superior Software Corp	(831) 461-7100	(831) 461-7100	MARY
CSR	Chris Robinson	(831) 461-7100	csr@xxx.com	Superior Software Corp	(831) 461-7100	(831) 461-7100	CSR
BSMITH	Bill Smith	(831) 461-7100	bsmith@x.com	Superior Software Corp	(831) 461-7100	(831) 461-7100	BSMITI

Search for Account Clear Form Cancel Print Page

Searching for users in the LDAP directory

After using the search criteria, click on one of the results in the ID field. The fields on the parent *add* or *edit* screen will be populated with all the fields you requested.

LDAPS Connections

LDAPS Connections (LDAP over SSL)

The objective of configuring ExtraView for LDAPS is to install the LDAP server SSL certificate into the JVM that is used by the application server hosting the ExtraView web application in order for the client (ExtraView webapp) to be able to authenticate directly to the LDAP server.

Before starting the process to configure ExtraView to work in this mode, ensure the LDAP server has already been configured for secure LDAP with a SSL certificate, and the secure LDAP port has been confirmed to be active. Consult your LDAP server documentation for configuring your LDAP server for secure LDAP with a SSL certificate.

It is beyond the scope of this document and beyond the scope of your ExtraView support team to explain this further, as much depends on your underlying environment. There is good online help available within Oracle's web site.

Java Configuration

1. Download the InstallCert.java file and compile it with your JDK
2. Run the InstallCert program as follows:

```
java InstallCert <host>:<port>
```

where <host> is the hostname of your LDAP server, and <port> is the LDAPS port (e.g., 636) configured on your LDAP server

3. You will see some Java error text:

```
javax.net.ssl.SSLHandshakeException: sun.security.validator.ValidatorException: PKIX path building failed:  
sun.security.provider.certpath.SunCertPathBuilderException: unable to find valid certification path to requested target
```

and be prompted to select a certificate to add to the trusted keystore

4. Select the certificate to add to the keystore and the InstallCert program will display the entire certificate. Also, be aware that the InstallCert program creates the file `jssecacerts` in the current directory
5. To verify that the certificate has been added, re-run the InstallCert program as in step 2, and instead of the Java error text you should see the following message:

```
No errors, certificate is already trusted
```

6. Lastly, you need to add the `jssecacerts` file to your JDK by copying it to the `JAVA_HOME/jre/lib/security/` directory.

SSO Connections

The Single Sign On facility allows another application to control user access to ExtraView. When this is enabled through ExtraView's behavior settings (see above), the SSO application is entirely responsible for the authentication of each user. Once the authentication is complete, the SSO application forwards the authenticated information to ExtraView, and ExtraView automatically signs on the user. If necessary, and subject to any licensing restrictions, a new user will be created within ExtraView.

When ExtraView is configured to use SSO as the user authentication mechanism, the user points their browser to the SSO sign on page. ExtraView extracts the user ID and other pertinent data from the HTTP request header and automatically logs the user into ExtraView – no ExtraView sign on page is displayed. During the sign on process, ExtraView will access all of the user's information in the LDAP Server, assuming this is configured. A new ExtraView user will be created, if the user does not exist. If the user exists in the ExtraView database, their record is updated to ensure synchronization with the LDAP server.

SSO Header Mapping

The "login" HTTP header from SSO contains the authenticated user's information. ExtraView administrative data held in the `security_user` table defines the headers that are used by ExtraView and where in ExtraView each field is stored. All of these fields map to the individual fields that contain user data. This mapping is used in conjunction with the LDAP user data, bypassing the need for an administrator to add a new user specifying this information.

In the ExtraView configuration file (`Configuration.properties`), these fields are mapped to match the host header data as shown in the following example:

```
#####  
## SSO HEADER MAPPING  ##  
#####  
SSO_PRIMARYKEY = USER_NAME  
SSO_SURNAME    = SURNAME  
SSO_GIVENNAME  = GIVEN_NAME  
SSO_EMAIL      = EMAIL_ADDRESS  
SSO_STREET     = STREET  
SSO_CITY       = CITY  
SSO_STATE      = STATE  
SSO_POSTALCODE = POSTALCODE  
SSO_COUNTRY    = COUNTRY  
SSO_PHONE      = TELEPHONE_NUMBER  
SSO_MOBILE     = MOBILE_NUMBER  
SSO_PAGER      = PAGER_NUMBER  
SSO_COMPANYNAME = COMPANYNAME
```

As well as the fields such as `USER_NAME` and `CITY` in the example above, you can also map the user defined fields in the ExtraView `security_user` table. There are five of those, named `USER_FIELD_1` through `USER_FIELD_5`.

Notes:

1. If `SSO_COMPANYNAME` is configured AND it has a non-blank value in the header, it will always use that in creating/updating the user

2. If SSO_COMPANYNAME is not configured or it has a null/blank value in the header, the app default COMPANY_NAME will be used to create/update the user
3. The user's company name is not used to compare the existing user with the request to sign on a user
4. If the SSO_UPSERT behavior setting is set to a value of YES, then the setting LDAP_UPSERT should always be set to a value of NO

The SSO_DN_USER_ID_ATTRIBUTE

SSO_DN_USER_ID_ATTRIBUTE - short for Distinguished Name User ID Attribute - indicates two behaviors:

1. The SSO header is in Distinguished Name format, e.g., cn=abc,dn=def,ou=ghi
2. The attribute of the user ID within the DN is the value of the SSO_DN_USER_ID_ATTRIBUTE followed by an optional instance number.. For example, if SSO_DN_USER_ID_ATTRIBUTE=cn, then the user ID would be abc based on the example in the previous point.

Another example is:

cn=2055092,cn=Users,dc=dsd,dc=fmcna,dc=com

In this case, SSO_DN_USER_ID_ATTRIBUTE=cn would still work to establish 2055092 as the user_id.

If the DN is:

cn=Users,cn= 2055092,dc=dsd,dc=fmcna,dc=com

then the SSO_DN_USER_ID_ATTRIBUTE=cn#2 would establish the 2055092 as the user_id (the #2 indicates that the second instance of the attribute should be used). Note that cn#1 and cn act the same when used as configuration values for SSO_DN_USER_ID_ATTRIBUTE.

LDAP Connections with SSO

ExtraView can be configured to use an LDAP directory for details of users. This is optional, and is controlled by the same behavior setting that signifies whether SSO is turned off or on (SSO_STATE). See the section on Single Sign On within this guide for more information.

LDAP Server Information

Once again, see above for the ExtraView behavior settings that control the connection. In addition, the ExtraView configuration file Configuration.properties specifies the parameters required to access the LDAP server.

There is an assumption that only a single LDAP server will be configured. The following information also assumes that the administrator is familiar with the configuration of LDAP servers.

In the ExtraView configuration file, the following fields will be mapped to matched the host LDAP data structures:

```
#####
## LDAP SEARCH MAPPING ##
#####
LDAP_PRIMARYKEY = primary_key
LDAP_SURNAME = surname
LDAP_GIVENNAME = given_name
LDAP_COMMONNAME = common_name
LDAP_DISTINGUISHEDNAME = distinguishedname
LDAP_EMAIL = email_address
LDAP_STREET = street_address
LDAP_CITY = city
LDAP_STATE = state
LDAP_POSTALCODE = postal_code
LDAP_COUNTRY = country_name
LDAP_PHONE = telephone_number
LDAP_MOBILE = mobile_number
LDAP_PAGER = pager_number
LDAP_COMPANYNAME = your_companyname
```

ExtraView maps the following LDAP fields, if they are configured for use and if they are accessible in LDAP by ExtraView.

ExtraView Field	LDAP Field	Mapped	Comments
User ID	LDAP_PRIMARYKEY	Yes	Used for login and user authentication
First name	LDAP_GIVENNAME	Yes	
Last name	LDAP_SURNAME	Yes	
Password	LDAP_PSWRD	Yes	Used for login and user authentication. Note that the password is used only when inserting a new user via LDAP connection, and only if the CUSTOM_AUTHENTICATION behavior setting is set to NO.
Expire password	NA	No	
User Roles	NA	Optional	May use rule mapping to map this field
Privacy Groups	NA	Optional	May use rule mapping to map this field
Set Default Area	NA	Optional	May use rule mapping to map this field
Set Default Project	NA	Optional	May use rule mapping to map this field
Email address	LDAP_EMAIL	Yes	
Date Format	NA	No	
Time in 24 Hour Format	NA	No	
Drilldown Report format	NA	No	
Time zone	NA	Yes	
Notify on own updates	NA	No	
Job title	NA	Yes	
Company name	LDAP_COMPANYNAME	Yes	This is not used in the mapping
Address	LDAP_STREET	Yes	
City	LDAP_CITY	Yes	
State / Province	LDAP_STATE	Yes	
Zip / Postal Code	LDAP_POSTALCODE	Yes	
Country	LDAP_COUNTRY	Yes	
Work phone	LDAP_PHONE	Yes	
Home phone	NA	Yes	
Cell phone	LDAP_MOBILE	Yes	
Fax	LDAP_FAX	Yes	
Pager	LDAP_PAGER	Yes	
Any UDF field	A distinguished Name	Yes	
User Expired	NA	Yes	Value is used but not saved locally within ExtraView
Session expiration limit	NA	No	

It is supported to map the same LDAP schema name to multiple ExtraView configuration properties, for example:

LDAP_PRIMARYKEY = uid LDAP_EMAIL = uid

Note: The fields in bold in the above table are typically mandatory in ExtraView.

Note: Most of the ExtraView fields are accessible through the user administration screens.

Note: ExtraView user role information is not stored in the LDAP server.

LDAP and SSO Example

The following is an excerpt from a Configuration.properties file showing the entries to connect to both an LDAP and SSO server.

```
... ..
#####
## SSO HEADER MAPPING ##
#####
SSO_PRIMARYKEY = SM_USER
SSO_SURNAME = SSO_SURNAME
SSO_GIVENNAME = SSO_GIVENNAME
SSO_EMAIL = SSO_MAIL
SSO_STREET = SSO_STREET
SSO_CITY = SSO_CITY
SSO_STATE = SSO_STATE
SSO_POSTALCODE = SSO_POSTALCODE
SSO_COUNTRY = SSO_COUNTRY
SSO_PHONE = SSO_TELEPHONENUMBER
SSO_MOBILE = SSO_MOBILE
SSO_PAGER = SSO_PAGER
LDAP_FIELDS =
LDAP_PRIMARYKEY,LDAP_SURNAME,LDAP_GIVENNAME,LDAP_COMMONNAME,LDAP_EMAIL,LDAP_STREET,
LDAP_CITY,LDAP_STATE,LDAP_POSTALCODE,LDAP_COUNTRY,LDAP_PHONE,LDAP_MOBILE,LDAP_PAGER,
LDAP_COMPANYNAME,LDAP_DEPARTMENT,LDAP_TITLE
#####
## LDAP SEARCH MAPPING ##
#####
LDAP_PRIMARYKEY = employeenumber
LDAP_SURNAME = sn
LDAP_GIVENNAME = givenname
LDAP_COMMONNAME = cn
LDAP_EMAIL = mail
LDAP_STREET = street
LDAP_CITY = 1
LDAP_STATE = st
LDAP_POSTALCODE = postalcode
LDAP_COUNTRY = postaladdress
LDAP_PHONE = telephonenumber
LDAP_MOBILE = mobile
LDAP_PAGER = pager
LDAP_COMPANYNAME = displayname
LDAP_DEPARTMENT = department
LDAP_TITLE = title

EV_LDAP_PRIMARYKEY = USR_ID
EV_LDAP_SURNAME = USR_LNAME
EV_LDAP_GIVENNAME = USR_FNAME
EV_LDAP_COMMONNAME = USR_NAME
EV_LDAP_EMAIL = USR_EMAIL
EV_LDAP_STREET =
EV_LDAP_CITY = USR_CITY
EV_LDAP_STATE = USR_STATE
EV_LDAP_POSTALCODE =
EV_LDAP_COUNTRY =
EV_LDAP_PHONE = USR_PHONE,USR_PHONE2
EV_LDAP_MOBILE = USR_MOBILE
EV_LDAP_PAGER =
EV_LDAP_COMPANYNAME =
EV_LDAP_DEPARTMENT = USR_DEPT
EV_LDAP_TITLE =
```

Updating ExtraView User Information

When the LDAP_UPSERT = YES functionality is set in Configuration.properties, a user's information will be updated in ExtraView with the latest information found in the LDAP directory. This occurs when the user signs into ExtraView, and without any action on the user's part.

With this feature, the ExtraView administrator needs only to create the account for a new user, using the SAME unique id as the LDAP_PRIMARYKEY in the LDAP directory. Then upon sign on, these users have their account information in ExtraView updated. All fields that are mapped are updated, and kept up to date automatically.

Note: This feature should only be used if you have licensed ExtraView with concurrent license usage, as users can continually add new licenses to the user table.

SAML Authentication

Security Assertion Markup Language (SAML) is an open standard that allows an identity provider (IDP) to pass authorization credentials to a service provider (SP). SAML is the link between the authentication of users' identities and the authorization to use a service from the provider. ExtraView relies on the use of a third party IDP.

SAML is used in conjunction with SSO and often with LDAP. With an operational ExtraView installation, the configuration of SAML requires these three steps:

- a. The configuration of a working SSO external to ExtraView, in the ExtraView behavior settings and Configuration.properties file
- b. The configuration of the third party Identity Provider (IDP)
- c. The configuration of ExtraView SAML behavior settings and the storage of the certificate used by the IDP

LDAP Configuration

See the previous pages on [External Authentication - LDAP, SSO and SAML](#).

SSO Configuration

See the previous page on [LDAP Connections with SSO](#).

Identity Provider (IDP) Configuration

The components of the IDP configuration depend on the provider itself, but it is expected that the most relevant points are:

- The specification of the URL to which authentication responses are directed
- The assertion key-value mapping for SSO keys; the SSO_PRIMARY_KEY must have an assertion in the authentication message to identify the ExtraView user.

ExtraView Configuration

The following behavior settings should be configured as appropriate for your installation. You should determine the parameter values for all the settings below to be used in the authentication response before starting the configuration.

ExtraView Setting	Explanation
SSO_STATE	This behavior setting must be set to SAML
SAML_ASSERTION_CONSUMER_URL	This behavior setting is the URL of the consumer service that receives the authentication response from the SAML IDP. This is the URL that invokes the Consumer Servlet when the behavior setting SSO_STATE has a value of SAML. Typically this will have a value that looks similar to <code>https://myserver.mydomain.com/Consumer</code> . This is the application URL registered with the IDP.
SAML_SSO_SERVICE	This behavior setting provides the URL of the SSO service to which the SAML SP sends an authentication request. This URL points to a target in the IDP
SAML_SSO_SP_ENTITY_ID	The SP Entity ID behavior setting is a URL or other identifier given by the Service Provider (SP) that uniquely identifies it to the IDP. This is derived from the metadata

	for the SP. A typical value is an XML fragment and will look similar to: <pre><md:entitydescriptor entityid= "http://www.okta.com/exki3aihaifAHCbex0h7" xmlns:md="urn:oasis:names:tc:SAML:2.0:metadata"> </md:entitydescriptor></pre>
SSO_DO_UPSERT	This is set within the Configuration.properties file if it the values from the authentication are to be updated within the ExtraView database with each authentication
SSO_PRIMARYKEY	This is the mapping for the user name that is set within the Configuration.properties file. This parameter must include the expected ExtraView User ID
SSO_SURNAME	This is the mapping for the user's last name that is set within the Configuration.properties file
SSO_GIVENNAME	This is the mapping for the user's given name that is set within the Configuration.properties file
SSO_EMAIL	This is the mapping for the user's email address that is set within the Configuration.properties file

The IDP will typically require a valid security certificate to validate the encrypted signature in the authentication response from the IDP. This certificate is stored securely within ExtraView within the Key Manager administration utility. This is located at Admin --> Advanced --> [Encryption Key Management](#). The format for the certificate is known as PEM (Privacy Enhanced Mail). The name is somewhat of a misnomer as the certificates for SAML have no connection with email. The format is a Base 64 encoded string of characters which is pasted into the **Enter certificate PEM** field within the Encryption Key Manager. If there is no entry in this field, the new entry you create for the key is added as a secret key only and is not used for SAML authentication.

The entry in the key manager should look like this:

- Name for the key - this must be **SPKey**
- Key password - this must be **password**
- Certificate PEM - this is the field where you paste the contents of the certificate

The action to save a certificate in this field builds the appropriate credentials for the SAML certificate.

SAML Logging Configuration

When first establishing a connection to an IDP to perform SAML authentication it can be useful to add additional logging to view the precise details of the transactions. This configuration is achieved within the ExtraView WEB-INF/configuration/Configuration.properties file.

Any property name within the Configuration.properties file that begins with LOGBACK is treated as a replaceable variable for the logback.template file. The logback.template file is part of the third-party SAML installation.

The replaceable variable modifies the logback.template file that creates the logback.xml configuration file that is then passed to the loggers for SAML.

For example, LOGBACK_FILE_PATH_NAME_ABSOLUTE is a replaceable variable that may have the value /tmp/logs.

The Configuration.properties file will contain the line:

```
LOGBACK_FILE_PATH_NAME_ABSOLUTE=/tmp/logs
```

The logback.xml will contain the line:

```
<file>__LOGBACK_FILE_PATH_NAME_ABSOLUTE__/SAML.log</file>
```

This will result in a log file named /tmp/logs/SAML.log.

There are two configurable files:

1. Configuration.properties, which defines the LOGBACK... properties
2. logback.template, which has replaceable variables surrounded by "__".

The following are the replaceable variables and the values specified in the delivered Configuration.properties:

```
LOGBACK_FILE_PATH_NAME_ABSOLUTE=  
LOGBACK_MAX_FILE_SIZE=10mb  
LOGBACK_LOG_LEVEL=INFO
```

The value of the LOGBACK_LOG_LEVEL attribute may be one of the case-insensitive string values TRACE, DEBUG, INFO, WARN, ERROR, ALL or OFF.

Bypassing SAML Authentication

There are some circumstances where you might want to bypass the SAML authentication, for example if the IDP service is not operable, or you need to access the ExtraView ADMIN account directly. To achieve this, include the parameter EV_BYPASS_SSO=YES on the URL, following the ExtraView address. This will produce the standard built-in ExtraView login screen for authorization. For example, your address might look like:

```
http://myserver.mycompany.com/evj/ExtraView?EV_BYPASS_SSO=YES
```

SAML Authentication Via the CLI

CLI calls, by their very nature, cannot support SAML authentication, so the EV_BYPASS_SSO option is used to overcome this limitation. A -B true option on the CLI command line allows the user to enter a valid user ID and password for authentication.

SAML Certificate

If there is a SAML certificate, place the name of the certificate in the behavior setting named KEY_ENTRY_ID and place the certificate in the key store. The default certificate name is SPKey.

ExtraView API in a SSO Environment

When you require accessing the ExtraView API, and a Single Sign On server is in place, special needs exist to ensure that all API calls are correctly authenticated, and that every access is from an authorized source. ExtraView uses the following logic to establish whether a call to the API is authentic, when a Single Sign On server is in place:

1. The API call is examined and if the parameters user_id and password exist, these are used to authenticate the user
2. If the first step does not result in a valid user, the headers returned from a SSO connection are examined. If these contain a valid user ID and password, these are used to authenticate the user
3. If there is still no authenticated user, and if the behavior setting ALLOW_ANONYMOUS_API_ACCESS is set to YES, then an anonymous connection is established, using the permissions of the role of the user that is set in the behavior setting ANONYMOUS_API_USER_ID.

ExtraView Help

Navigation Bar Help

The ExtraView application includes a comprehensive HTML-based help system that you can access at any time by clicking the **Help** button on the navigator frame. In addition, many tool tips and context-sensitive links are defined throughout the application.

When you place the mouse cursor over a screen label that has a tool tip, a small window will appear next to your mouse cursor with a definition of what this label does. These labels allow you to define help tips for your users. If you press the mouse button over a label, you will be taken to a specific page within the help system. If you do not have a specific page defined within the screen name Administrative section, you will be taken to the Help Index page. This page consists of links to detailed information about the system.

ExtraView End-User Help Index

Version 10.1

This is the end-user Help Index for the ExtraView issue tracking and workflow management system. Use these links to navigate to topics in the help system. Topics may also be accessed by clicking on field name links as found throughout ExtraView's various interface screens.

Note that while the features and functions described here are generic, the "look and feel" of the screens may not match your installation's specific configuration. Please contact your System Administrator with questions.

For complete end-user and administrative documentation on ExtraView, please visit the [ExtraView Documentation](#) center.

Help Topic List

- [Before You Get Started](#)
- [User Sign On](#)
- [User Interfaces](#)
 - [Standard Interface](#)
 - [Home Page and Navigation](#)
 - [Changing your Personal Options](#)
 - [Workspace Interface](#)
 - [Workspace Menu](#)
 - [Panels](#)
- [Adding a New Issue](#)
- [Editing an Existing Issue](#)
- [Queries](#)
 - [Expanded Queries](#)
 - [Advanced Queries](#)
- [Reports](#)
 - [Column Reports](#)
 - [Summary Reports](#)
 - [Matrix Reports](#)
 - [Aging Reports](#)
 - [Calendar Reports](#)
 - [Taskboard Reports](#)
 - [Planning Reports](#)
 - [Charts](#)
 - [Dashboard Reports](#)
 - [Custom URL Reports](#)
 - [Container Reports / Layouts](#)
- [Email Notification Features](#)
- [Field-Type Behaviors](#)
- [Glossary](#)
- [ExtraView Corporation, the Author of ExtraView](#)

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ExtraView Help screen

Defining Your Own Help System

It is straightforward to develop your own help system within ExtraView. This can be completely separate from ExtraView's inbuilt system, or it can completely replace the inbuilt system.

Default Help System Paths

The standard Help system HTML files are stored in a directory with the path of en_US/help, within the installation directory where your ExtraView installation resides. The images embedded within the Help system are stored by default in the path en_US/images. Note that the menu buttons for the Help system are stored in the standard images directory for the system.

Defining the Path to your own Help System

If you develop a complete help system, it is recommended that you set the behavior setting named HELP_HOME in the Installation Defaults menu within the ExtraView Configuration menu within Administration.

You can then set a regular index.html file within this directory, and set up a complete system from there.

When you press the **Help** button on the main menu, this page is accessed, in a new window.

Accessing your own Help System

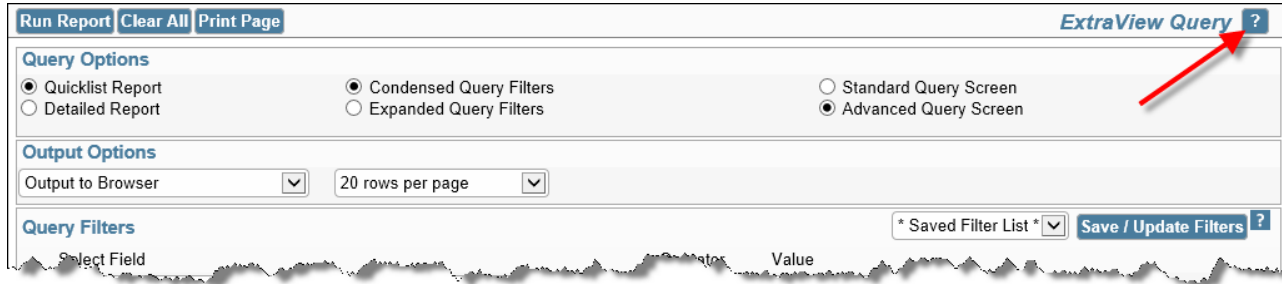
You can obviously build the help file with internal links to navigate around the pages. You can also use the Help URL within each field of the Data Dictionary to provide context sensitive help on each field that appears on each screen such as the *Add Issue* and *Edit Issue* screens. You can also use the standard html bookmark convention to provide a drilldown from the Data Dictionary to a place within a help page.

Field-Level Help

The behavior setting named ALLOW_HELP controls the link that is placed on field labels on the *add* and *edit* screens. When this is set to YES, then when a user clicks on the field label, they are taken to the help system and to the page specified in the **Help URL** of the field in the data dictionary. If there is no value in the **Help URL**, the user is taken to the index page of the help system.

Menubar Help

All menubars may have a context sensitive help button which takes the user to the appropriate documentation page within this site. **Help URL**, then the user is taken to the index page of the help system.



Whilst this button always appears within Administration screens, the behavior setting named ALLOW_HELP can be set to NO to remove the button from end-user accessible screens.

Adobe PDF Report Templates & Mapping

You may configure one or more buttons on an *edit* screen to merge data with an Adobe PDF document, using any field data from the current issue (and related issues) that are displayed on the *edit* screen. The Adobe PDF document is created outside ExtraView using tools from Adobe. It is possible to further customize the contents of PDF document using custom code techniques - see the User Custom Guide. You will require access to, and a good working knowledge of Adobe Acrobat and/or Adobe LiveCycle Designer to create PDF forms that can be utilized with ExtraView.

The setup involves three basic steps:

- Create a template by uploading a PDF file, and mapping fields within the PDF file to fields within ExtraView. Note that fields that have the same name within ExtraView and within the PDF document are mapped automatically. Also note, from the example at the bottom of the page that Adobe forms use a particularly verbose means of identifying a field. The Adobe tools show the definitions of the fields which include their position within the document. The appearance of a typical field is something like:

```
topmostSubform[0].BodyPage[0].Page1[0].BIRTH[0]
```

Consult the Adobe documentation for more information.

- The PDF document file uses forms with fields, in a similar manner to which ExtraView uses layouts with fields
- Create and configure a button field to trigger the creation of the merged PDF document
- Place the button field on an *edit* screen layout.

The resulting Adobe PDF document is added into the ExtraView issue as an attachment or into the contents of a document type field.

Creating the Template

The template is created with the administration utility named **Adobe PDF Report Mapping**, found on the **Operational Tasks** administration menu. Within the utility, press the **Add** button to begin the process.

Creating the PDF template

Simply provide the title to the template, and browse to and select your PDF document. Then click on the **Create Template & Upload File** button. You are then taken to the following screen:

Mapping fields with the PDF template

Options

- **Save Mappings / Upload New File** - This allows you to select a new file from your local computer and replace it the PDF stored on the server. Use the **Browse** button to select the file then press this button
- **Delete Template** - Delete the template and all related PDF files
- **View Original PDF File** - This allows you to view the original PDF that was uploaded. You may save this file for any purpose
- **Preview PDF Document** - Preview the mapped document.

General Points about Entering Properties

- You use the Properties box to provide the mappings
- All comments are on lines that begin with a # character. These lines are ignored when processing the mappings
- Fields that have the same name within ExtraView as within the PDF document are mapped automatically for you. There is no need to include these in the mappings, unless you want to map them to different fields
- Use a \ character to escape a space character which follows
- The two rows on the screen labelled **PDF Fields & Values** and **ExtraView Fields & Values** are "helper" fields. They display the fields and their values that can be mapped. A button allows you to copy these fields and values to the computer clipboard so that you can paste them into the Properties. Of course, you can simply type the fields and values as appropriate into the Properties
- For multi-valued list fields, repeating row fields, and related record fields mapped to PDF text fields, the multiple values are concatenated with commas
- Multi-valued list fields can be mapped to multiple PDF checkbox or radio fields
- The properties file is checked for syntax & content errors when the **Save Mappings / Upload New File** button is clicked. Errors are listed on the screen, and the mapping template is not saved to the database when there are any errors.

Property Mapping

There are several key sections to the properties. You will see some examples as comments within the properties.

- **Field name mapping**

This is the primary method to map fields from ExtraView into a PDF document. Fields that have the same names in ExtraView and in the PDF document are mapped automatically. The basic construct of a mapping entry is:

```
ev_field|<ExtraView_field> = pdf_field|<PDF_field>
```

For example, if you want to map the ExtraView named **SHORT_DESCR** to a PDF field named **TITLE** you would use: ev_field|SHORT_DESCR = pdf_field|TITLE If you want to map a single ExtraView field to multiple fields within a PDF document, use a the label parameter as shown here:

```
ev_field|<ExtraView_field>|<label_1> = pdf_field|<PDF_field_1> ev_field|<ExtraView_field>|<label_2> = pdf_field|<PDF_field_2>
```

The <label_n> is any string that makes the left-hand side of the expression unique. For example, if you have the **SHORT_DESCR** field in ExtraView and you want to use that as a heading on a PDF with two pages with a heading field of **hdr1** on page 1 and **hdr2** on page 2, you would use:

```
ev_field|SHORT_DESCR|1 = pdf_field|hdr1 ev_field|SHORT_DESCR|2 = pdf_field|hdr2
```

In addition to ExtraView's fields, you may also map the following:

- SYSDATE - The current date and time
 - SYSDAY - The current date
 - USER - The current user preparing the report
 - **Field value mapping**
- This section maps the values of fields in ExtraView to the values of fields in the PDF document. Once again, if the value of the field is identical in both ExtraView and the PDF document, then there is no need to provide a mapping. Further, mappings are typically provided only for enumerated list type fields, with display types such as List, Popup, Checkbox, Radio Button, Tab, etc. Value mappings for text, date and numeric type fields are not required. The syntax to map a value is as follows:

```
ev_value|<ExtraView_field>|<value> = pdf_value|<PDF_field>|<value>
```

For example, we might want to map the value of **Not Fixed** as a value in the ExtraView field named **STATUS** to a checkbox field in a PDF document, where the checkbox field is named **Not finished_checkbox**:

```
ev_value|STATUS|Not\ Fixed = pdf_field|Not\ Finished_checkbox|On
```

Note the use of the \ character to escape the space character. It is possible to map the one ExtraView field value to multiple fields within the PDF form. The syntax is as follows:

```
ev_value|<ExtraView_field>|<value>|<label> = pdf_value|<PDF_field>|<value>
```

- **Filtered field name mapping**

Defining filtered field mapping entries is similar to field name mapping entries. They provide a mechanism to use repeating rows and related issues for a specific issue that you are using to prepare a PDF document. The filter itself is defined in the section **Filter definition for repeating rows and/or related records**. You must define an entry in that section for every filter you use in this section. The syntax for a filtered field mapping is as follows:

```
filter_ev_field|<Filter>|<ExtraView_field> = pdf_field|<PDF_field>
```

Use either of the above two forms, depending on whether you are mapping to a single or to multiple fields in the PDF document. For example, to apply a filter named **myProjectFilter** which refers to a field named **ADDRESS** within a related issue you might have this entry for the mapping:

```
filter_ev_field|myProjectFilter|ADDRESS = pdf_field|Address
```

- **Filtered field value mapping**

This provides a means to map ExtraView field values where the field is on a repeating row or a related issue. The filter itself is defined in the section **Filter definition for repeating rows and/or related records**. You must define an entry in that section for every filter you use in this section. The syntax for a filtered field value mapping is as follows:

```
filter_ev_value|<Filter>|<ExtraView_field>|<value> = pdf_value|<PDF_field>|<value>
```

For example, we might want to map the value of **Not Fixed** as a value in the ExtraView field named **STATUS** of a related issue to a checkbox field in a PDF document, where the checkbox field is named **Not finished_checkbox**. We want to use the relationship defined by the filter named **myProjectFilter**:

```
ev_value|myProjectFilter|STATUS|Not\ Fixed = pdf_field|Not\ Finished_checkbox|On
```

It is possible to map the one ExtraView filtered field value to multiple fields within the PDF form. The syntax is as follows:

```
filter_ev_value|<Filter>|<ExtraView_field>|<value>|<label> = pdf_value|<PDF_field>|<value>
```

- **Default date format**

This section defines a default date format to be used to place all ExtraView *date* and *day* display type fields on the PDF document. The format used is known as the Java Simple Date Format. You can see a definition of the date formatting [here](#). An example of using the default date format is:

```
DEFAULT_DATE_FORMAT = MM/dd/yyyy
```

- **Date format for specific fields**

This section defines a date format to be use for a specific PDF document field that contains a date. The format used is known as the Java Simple Date Format. You can see a definition of the date formatting [here](#). An example of using the default date format is:

```
DEFAULT_DATE_FORMAT = MM/dd/yyyy
```

- **Document, image fields and file attachment mapping**

You are able to map document field, image field display types as well as issue attachments from ExtraView issues to PDF documents. The syntax to map fields from the current record is:

```
ev_doc_img|<ExtraView_field>|<label> = pdf_page|<page_number> ev_attachments|<label> = pdf_page|<page_number>
```

The **pdf_page|<page_number>** parameters indicate where in the PDF document that the document or image will be inserted. As well as mapping these fields from the current issue, you can map them from repeating records and related issues, using the filtered field mechanism. The syntax is:

```
filter_ev_doc_img|<Filter>|<ExtraView_field>|<label> = pdf_page|<page_number> filter_ev_attachments|<Filter>|<label> = pdf_page|<page_number>
```

An example might be to map the same image in an ExtraView image field named **LOGO_IMAGE** at the beginning and end of a document:

ev_doc_img|LOGO_IMAGE|start= pdf_page|0 ev_doc_img|LOGO_IMAGE|finish = pdf_page|10

• **Filter definition for repeating rows and/or related records**

The filter expressions that you can build are similar to the links you build with the **LINK** directive in [Business Rules](#). Filter expressions are additive as they are defined, and separated by commas. The basic syntax is:

FILTER|<Filter_name> = <expression>

This example shows how two filters can be used:

FILTER|personFilter = AREA = Legal, PROJECT = Personnel, PERSON = USER

You may use the special variables **\$\$\$SYSDATE\$\$**, **\$\$\$SYSDAY\$\$**, **\$\$\$USER\$\$**, and **\$\$\$ID\$\$** to match the current date, current day, current user, and the ID of the current issue respectively. Similar to the **LINK** business rule directive, you use the **RG_NAME** and **RG_TYPE** attributes to define filters for related issues. The syntax is:

FILTER|<Filter_name>|RG_NAME = <relationship group name> FILTER|<Filter_name>|RG_TYPE = <relationship type>

The **RG_NAME** is the name of an existing relationship group. The **RG_TYPE** may be one of **CHILDREN**, **GRANDCHILDREN**, **GRANDPARENTS**, **PARENTS**, **RELATED**, **MEMBERS**, **LINKED**, or **SIBLINGS**. If you do not specify **RG_NAME** or **RG_TYPE** for a filter, the default relationship group is used, with an **RG_TYPE** of **LINKED**. The filter can be used to define how to display the results, when many records are returned by the filter. Typically, you will want to display the results horizontally or vertically. The syntax for the filter is:

FILTER|<Filter_name>|DELIMITER = delim

where delim is the string used to delimit the records. The default delimiter is a comma. If you want to display the results vertically you will use the delimiter \n to introduce a newline character between each result. The typical entries you will define for related issues that are to be mapped to a PDF document are:

FILTER|<Filter_name> = <expression> FILTER|<Filter_name>|RG_NAME = <relationship group name> FILTER|<Filter_name>|RG_TYPE = <relationship type>

An example of a filter definition for use within related issue mappings might be:

FILTER|myProjectFilter = AREA = Customers, PROJECT = Customer Data FILTER|myProjectFilter|RG_NAME = CUSTOMER_ISSUES FILTER|myProjectFilter|RG_TYPE = CHILDREN

When handling repeating rows, you can use the **ROW_NUM** attribute to match a specific row. The syntax is:

FILTER|<Filter_name>|ROW_NUM = <integer>

Creating the Button Field

The button field is created within the data dictionary as a User Defined Field with the following properties:

Property	Purpose
Fixed Name	The name you use to create the field must begin with GENPDF_ and end with _BTN . For example, a valid name is GENPDF_SALESREPORT_BTN
Title	You normally will not want to see a title with the button field you are generating, therefore use a space character for the title. It is not recommended to use a hard space - - as a space character, as browsers generate this with a full height character, leading to empty space above the button
Display Type	This must be Custom
Default Value	This is the name of the template you created in the first step. It is important to use the exact name you created
Help Text	This is text that will be placed on the button and will be visible to the user. For example, you might put Generate PDF as the text

Help
URL

This entry should either be the word **ATTACHMENT** to store the generated PDF document as an attachment, or the data dictionary name of a document field to store the generated PDF document in a document field.

Configuring the Layout

Simply place the field you created in the previous step on the edit screen layout where you want to see the button. You may apply the usual layout cell attributes such as FIELD VISIBLE IF to the field on the layout.

Sample Configuration

```
ev_field|MANUFACTURER_REPORT_NUMBER = pdf_field|topmostSubform[0].BodyPage[0].Page1[0].Mfr_Report[0]
ev_field|UF_IMPORTER_REPORT_NUM = pdf_field|topmostSubform[0].BodyPage[0].Page1[0].UF_Importer_Report[0]
#
# Section A
#
ev_field|PATIENT_IDENTIFIER = pdf_field|topmostSubform[0].BodyPage[0].Page1[0].Patient_Identifier[0]
ev_field|PATIENT_AGE = pdf_field|topmostSubform[0].BodyPage[0].Page1[0].AGE[0]
ev_field|PATIENT_DOB = pdf_field|topmostSubform[0].BodyPage[0].Page1[0].BIRTH[0]
ev_field|PATIENT_WEIGHT = pdf_field|topmostSubform[0].BodyPage[0].Page1[0].Weight_lbs[0]
ev_field|PATIENT_GENDER|1 = pdf_field|topmostSubform[0].BodyPage[0].Page1[0].Male[0]
ev_field|PATIENT_GENDER|2 = pdf_field|topmostSubform[0].BodyPage[0].Page1[0].Female[0]
#
# Section B
#
ev_field|ADVERSE = pdf_field|topmostSubform[0].BodyPage[0].Page1[0].ADVERSE[0]
ev_field|PRODUCT_PROBLEM = pdf_field|topmostSubform[0].BodyPage[0].Page1[0].PRODUCT[0]
ev_field|OUTCOME|1 = pdf_field|topmostSubform[0].BodyPage[0].Page1[0].Death[0]
ev_field|OUTCOME|2 = pdf_field|topmostSubform[0].BodyPage[0].Page1[0].DISABILITY[0]
ev_field|OUTCOME|3 = pdf_field|topmostSubform[0].BodyPage[0].Page1[0].LIFE_THREATENING[0]
ev_field|OUTCOME|4 = pdf_field|topmostSubform[0].BodyPage[0].Page1[0].CONGENITAL[0]
ev_field|OUTCOME|5 = pdf_field|topmostSubform[0].BodyPage[0].Page1[0].HOSPITAL[0]
ev_field|OUTCOME|6 = pdf_field|topmostSubform[0].BodyPage[0].Page1[0].Other_Event[0]
ev_field|OUTCOME|7 = pdf_field|topmostSubform[0].BodyPage[0].Page1[0].REQUIRED[0]
ev_field|PATIENT_DOD = pdf_field|topmostSubform[0].BodyPage[0].Page1[0].Death_Date[0]
ev_field|EVENT_DATE = pdf_field|topmostSubform[0].BodyPage[0].Page1[0].EVENT[0]
ev_field|DATE_REPORT = pdf_field|topmostSubform[0].BodyPage[0].Page1[0].REPORT[0]
ev_field|DESCRIPTION = pdf_field|topmostSubform[0].BodyPage[0].Page1[0].DESCRIBE[0]
ev_field|RELEVANT_TESTS = pdf_field|topmostSubform[0].BodyPage[0].Page1[0].RELEVANT[0]
ev_field|OTHER_RELEVANT_HISTORY = pdf_field|topmostSubform[0].BodyPage[0].Page1[0].OTHER_RELEVANT[0]
ev_field|OTHER_REMARKS = pdf_field|topmostSubform[0].BodyPage[0].Page3Cont[0].concomitant[0]
#
```

Creating Alternative Navigation Bars

Standard Navigation Bar Configuration

ExtraView comes with a built-in navigation bar which is used for both the standard and workspace interfaces. The theme of the navigation bar is selectable, allowing you to change the graphical style and color of the buttons. Although you may change the theme of the built-in navigation bar, you may not change its functionality. Using the utility described on this page, you may create additional navigation bars for any or all user roles that the administrator has defined and use these to override the built-in navigation bar.

The buttons on the navigation bar are composed with either STYLES or IMAGES. The global behavior setting named NAV_BAR_STYLE is set to a value of STYLE or IMAGE

Sample built-in navigation bars appear in the following screen shots, when you have selected a blue theme:

Example Navigation Bar using STYLE Setting



Example Navigation Bar using IMAGE Setting



Example Workspace Navigation Bar

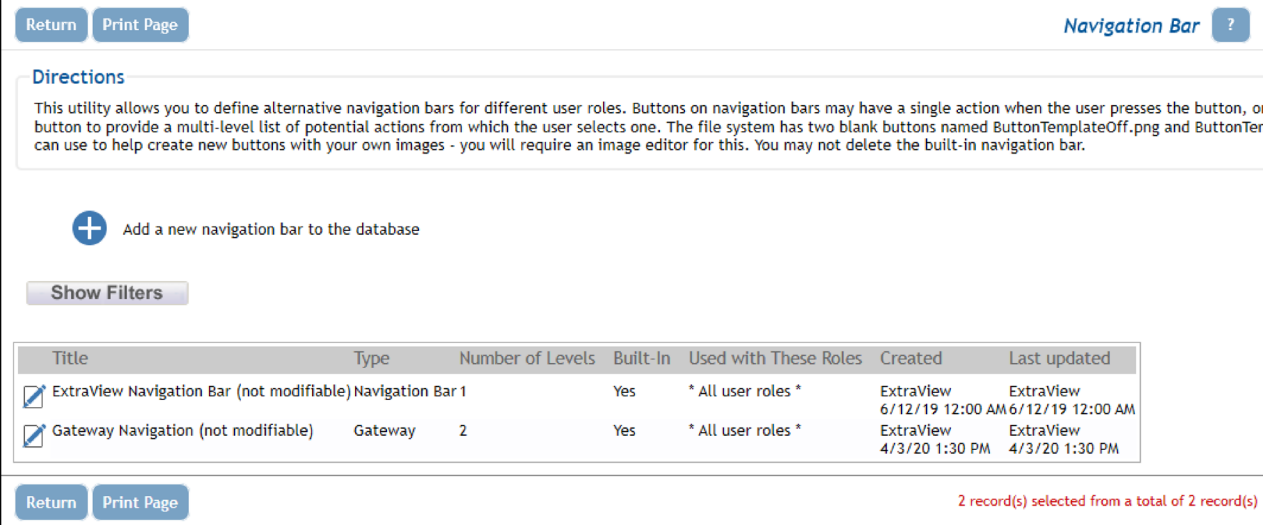
These are independent of the navigation bars in the standard interface. A sample is:

Modifying the Navigation Bar Buttons

New navigation bars are able to be created for use by one or more user roles in your system. You may define navigation bars that have significantly more entries than the built-in navigation bar, with purpose-built buttons that control access to most ExtraView functions and with access to web pages outside of Extraview. You may also define hierarchical-style navigation bars with sub-menus being available in a traditional menu-style form.

Access to the administration utility is provided with the security permission key named CF_NAV_BAR. Note that the ADMIN user account always uses the inbuilt navigation bar, and never uses a navigation bar that you define. This prevents a situation where you design a navigation bar that inhibits access to the administrative functions, and effectively locks all users out of administration.

The administration utility that allows the definition and modification of different navigation bars is accessed through **Admin --> System Configuration --> Navigation Bar**. This initially takes you to a screen like this:



The screenshot shows the 'Navigation Bar' administration page. At the top, there are 'Return' and 'Print Page' buttons on the left, and a 'Navigation Bar ?' button on the right. Below this is a 'Directions' section with a text box explaining the utility's purpose. A '+ Add a new navigation bar to the database' button is prominently displayed. Below that is a 'Show Filters' button. The main content is a table listing existing navigation bars.

Title	Type	Number of Levels	Built-In	Used with These Roles	Created	Last updated
<input checked="" type="checkbox"/> ExtraView Navigation Bar (not modifiable)	Navigation Bar 1		Yes	* All user roles *	ExtraView 6/12/19 12:00 AM	ExtraView 6/12/19 12:00 AM
<input checked="" type="checkbox"/> Gateway Navigation (not modifiable)	Gateway	2	Yes	* All user roles *	ExtraView 4/3/20 1:30 PM	ExtraView 4/3/20 1:30 PM

At the bottom of the table, it indicates '2 record(s) selected from a total of 2 record(s)'. There are also 'Return' and 'Print Page' buttons at the bottom left of the interface.

Navigation Bar Administration

The options that build a navigation bar are slightly different, according to whether you are using STYLEs or IMAGEs for your installation. The differences are:

- For the STYLE interface, there are options with each button definition to set the colors and CSS styles that compose each button. These settings all have defaults set up with behavior settings. Each of these settings can be overridden within the button definition so that any button can adopt a different style from the remainder of the buttons. Leave the settings blank to continue the defaults
- For the IMAGE interface, the main options allow you to set the names of the image files used to compose the "on" and "off" states of the navigation bar button.

Note that for both interfaces, you will select the same image file for the workspace images for the buttons.

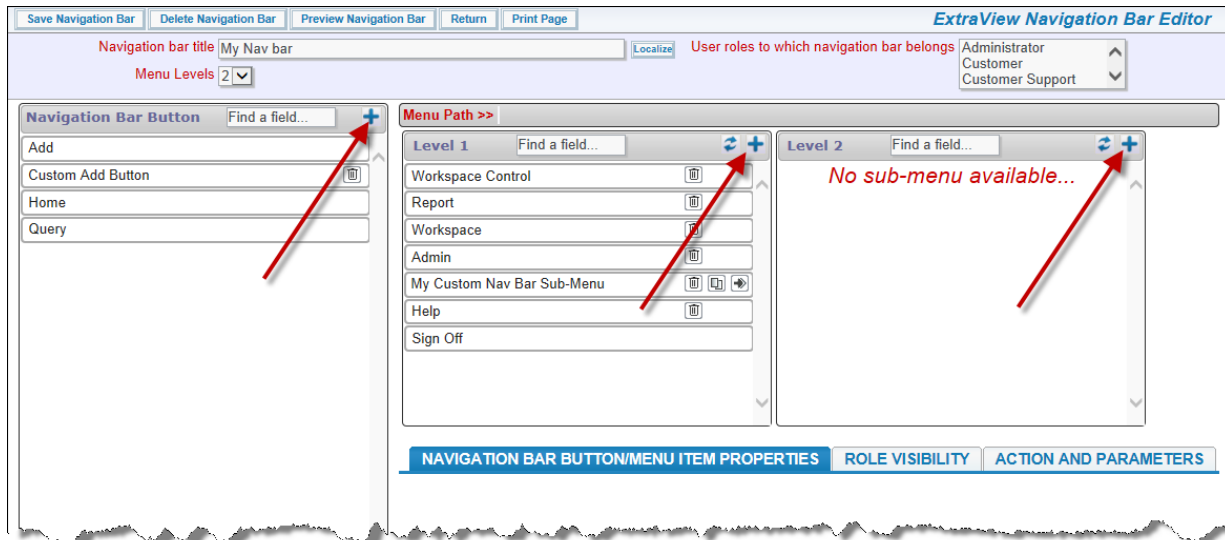
The key attributes about designing your own navigation bar are as follows:

- The default standard navigation bar is named ExtraView Navigation Bar (not modifiable). On most occasions you will create a new navigation bar, of the type **Navigation**
- You may define up to seven sub-menu levels for any navigation bar button, but for usability it is suggested that you do not go to more than three levels deep.
- Any button on the navigation bar may access a function when it is clicked on by the user, or it may provide a sub-menu when it is clicked. If a sub-menu is selected, the user can click on any entry in that sub-menu to execute a function, or to open up another sub-menu at a lower level.



Customized Navigation Bar with Sub-Menu

- Use the **NAVIGATION BAR BUTTON/MENU ITEM PROPERTIES** tab to define the properties for each navigation button, or each drop-down menu item placed within the individual navigation bar button
- You can create new navigation buttons using the appropriate icon on the user interface:



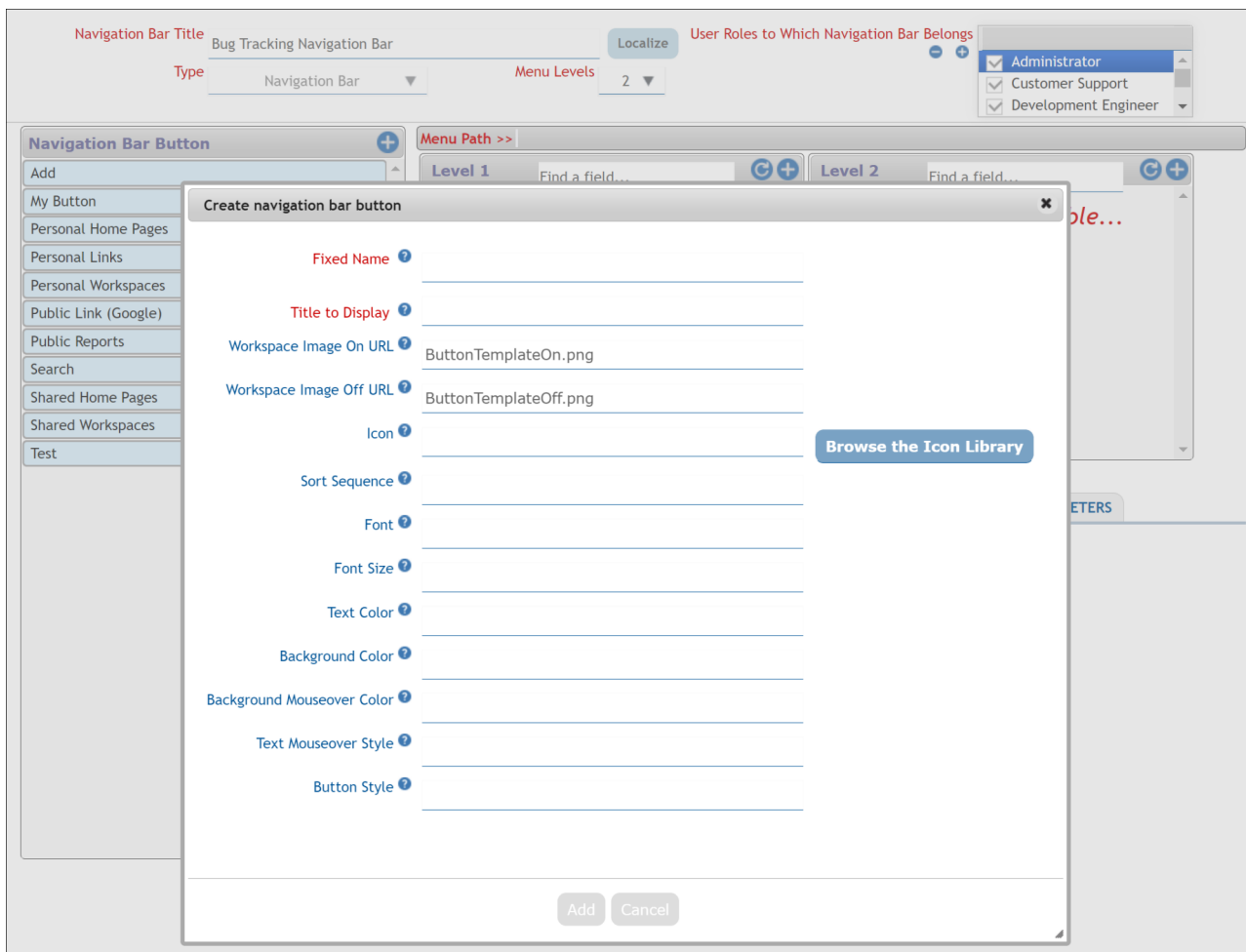
Navigation Buttons using STYLES

Composing a navigation bar button pops up a dialog, with the following fields available for input:

Setting	Purpose
Fixed Name	The fixed name for the navigation bar button, so it can be referenced
Title to Display	The title to display on the button. This title is localizable
Workspace Image On URL	The name of the workspace image for the "on" state of the button when the user places their mouse over the button
Workspace Image Off URL	The name of the workspace image for the "off" state of the button
Icon	This field allows you to popup a window where you can choose the icon you wish to display on the navigation bar button. Leave this blank if you do not wish to see an icon on the button
Sort Sequence	The sort sequence within all the buttons on the navigation bar
Font	If set, this overrides the value in the behavior setting named NAV_BAR_FONT. You should select a web-safe font to ensure the font exists on the target end-user computers. This is the font used to display the text on the navigation bar button
Font Size	If set, this overrides the value in the behavior setting named NAV_BAR_FONT_SIZE. You may set this with pt for measuring in points, or px to measure in pixels. If you set a number without pt or px, points are assumed as the measurement. This is the size of the font for the text and icon on the button
Text Color	If set, this overrides the value in the behavior setting named NAV_BAR_TEXT_COLOR. Enter the value as an HTML color or with a hexadecimal value. This is the color of the text and icon on the button
Background Color	If set, this overrides the value in the behavior setting named NAV_BAR_BG_COLOR. Enter the value as an HTML color or with a hexadecimal value. This is the color of the background to the button, in the "off" state
Background Mouseover Color	If set, this overrides the value in the behavior setting named NAV_BAR_HOVER_COLOR. Enter the value as an HTML color or with a hexadecimal value. This is the color of the background to the button in the "on" state when the user places their mouse over the button
Text Mouseover Style	If set, this overrides the value of the behavior setting NAV_BAR_TEXT_HOVER_STYLE. This is entered as a CSS value. The value is applied as a <i>hover</i> style to the text on the button when the user places their mouse over the button

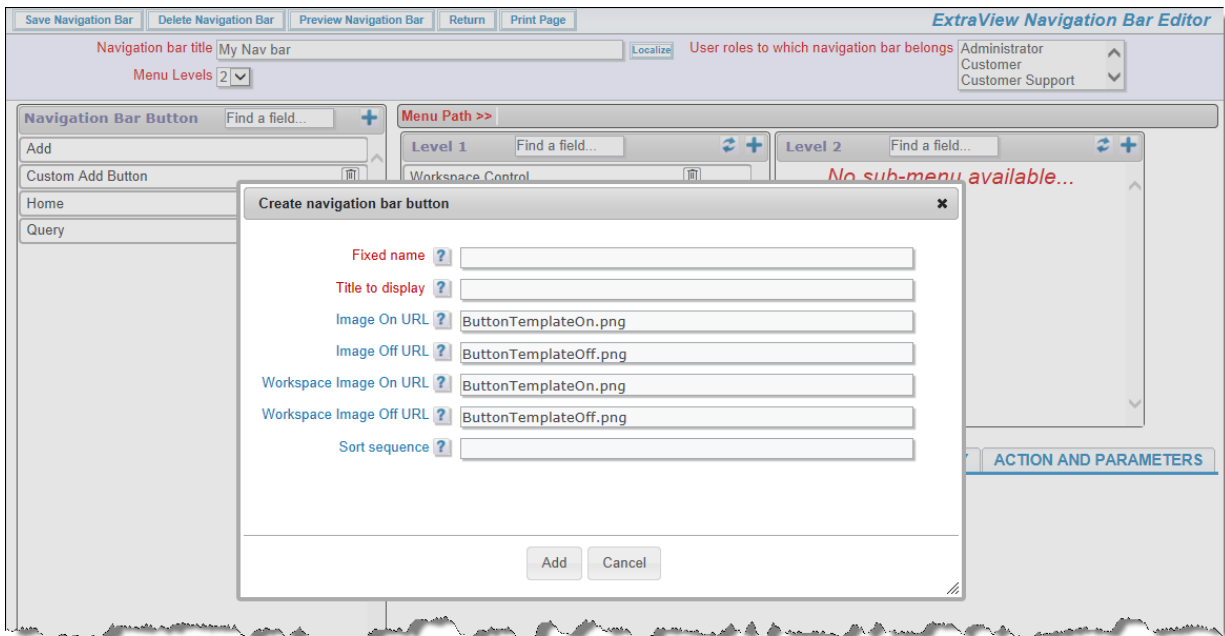
Button Style

If set, this overrides the value in the behavior setting named NAV_BAR_BUTTON+STYLE. This is entered as a CSS value. This style is used to place a border around the text and icon on a button. The background color is only applied to the content within the border, behind the text and icon. Use this setting to create a traditional looking rectangular button



Navigation Buttons using IMAGES

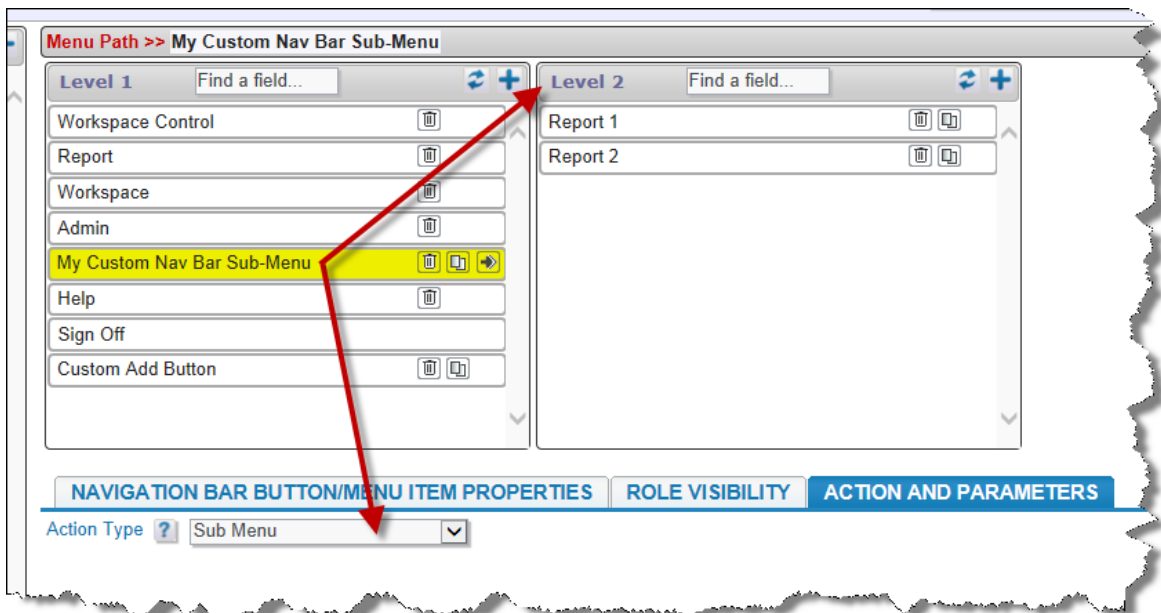
- Two blank images are provided within the directory structure of the existing buttons, named ButtonTemplateOff.png and ButtonTemplateOn.png. These may be used as placeholders while you are designing your own buttons for the top level of the navigation bar. They are used as the default names for the buttons you create, but you can change these defaults to any name you use for buttons you create.
- The original Adobe Photoshop files used to create the buttons are provided within the installed directory structure at *extraview_installed_directory/locales/en_US/images_nav_bar*. You can use Photoshop with the file for your theme, to create matching buttons for each of the themes provided. You can also create your own navigation bar theme from scratch (see [here](#)). Note that the navigation bar buttons for all workspace themes are contained in a single file, named *nav_bar_workspace.psd*.
- Any button may be designed with any text or graphic on the button itself. The button also has a title which is used when the user places their mouse over the button.
- Any button you create may be made visible on the standard interface alone, the workspace interface alone, or on both interfaces.



- There are four possible images for each navigation bar button. Two are used on the standard interface, two on the workspace interface. Only two images are needed if you are only using the button on one interface. The buttons are of the "rollover" type, with one image being used when the button is visible, but no mouse over it, and one image being used when the mouse is over the button.

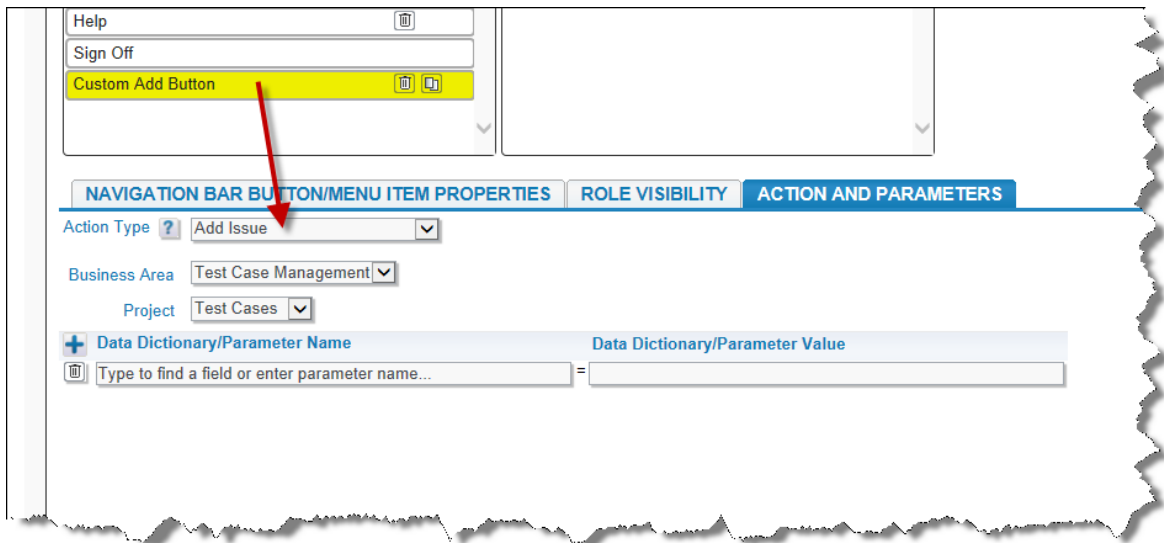
Common Settings for All Buttons

- The navigation bar buttons and sub-menu items may be made visible or invisible for any of the roles to which a navigation bar belongs. You use the **ROLE VISIBILITY** tab for this
- Each navigation bar button or sub-menu item has an action type that defines what happens when you click on the button or sub-menu item. The available actions on the **ACTION AND PARAMETERS** tab are:
 - **Sub-Menu**: This entry creates a sub-menu where additional actions are defined. Sub-menus may point to further sub-menus, nesting to a maximum of seven levels



Custom Sub-Menu

- **Open URL**: This action allows you to enter any valid URL. A new browser window or tab with the contents of the URL will be opened when the user selects a menu entry with this action
- **Add Issue**: This action opens an *Add Issue* screen or panel within the ExtraView window or workspace. In addition to opening the *Add Issue* screen, you must select a Business Area and Project for the screen. You also have the ability to choose any number of field names and initial values which will be used to populate the *Add Issue* screen. As you start to type a name, the utility will pop up a small window with matches for the name you are entering. Typically, you will provide a field name and a value, and these will be used to populate the *Add Issue* screen when the user presses the button



Custom Add Button

- o Not all field display types are supported for use with fields that can be used to populate values onto the *Add* screen. Valid field display types are: Checkbox, Currency, Date, Day, Decimal, List, Number, Pop-up, Radio button, Tab, Text Area, Text Field, and User. There are also restrictions in that the following fields may not be used to populate the screen: ID, PARENT_ID, AREA, PROJECT, ITEM_ID, EV_REPORT_SELECTION, RELATIONSHIP_GROUP_TXNS, NOTIFICATION_HISTORY, ALT_ID, all ATTACHMENT fields, ITEM_ID, MINI_HISTORY, HIST_RANGE_START, and HIST_RANGE_END. In addition to using the fields in your database as actions, you may also use the parameters that are passed to the screen form. In practice, the parameter that may be of most use is to define the name of **add_confirm_page** with a value of no. This will inhibit the screen from moving to the **Add Confirmation** screen after adding the issue
- o **Run Report:** You can select a shared report for the menu, to run when the menu entry is chosen. Note that only shared reports are available for placement on a navigation bar. In addition to the report, you can select the output type and the page size
- o **Custom Action:** A custom action allows the definition of a user custom JavaScript method to call when the button is pressed by the user. As you would expect, this action must be supported by JavaScript code in the UserCustomJavaScript.js file
- o **ExtraView Home:** This action purposes the button to open the standard interface Home Page screen when the button is pressed by the user. This action only operates in the standard interface. It has no effect within a workspace interface
- o **ExtraView Add:** This action opens an *Add Issue* screen or panel. Unlike the **Add Issue** action, the screen is opened to the user's current Business Area and Project. This provides the functionality of the standard, in-built *Add* button
- o **ExtraView Query:** This action opens the standard, in-built ExtraView Query screen
- o **ExtraView Report:** This action opens the standard, in-built ExtraView Report screen
- o **Open in Edit.** ExtraView supports a mode where new issues are created and inserted into the database before presenting the input screen to the user. The issue thus has an ID (and perhaps an ALT_ID) before the user sees the screen. This action allows a new issue to be created and for the screen to be opened to the user in edit mode
- o **ExtraView Workspace:** This action opens the default standard, in-built Workspace for the user. This action is only operable on the standard interface
- o **ExtraView Admin:** This action places the button that accesses the standard, in-built Administration screens on the navigation bar
- o **ExtraView Help:** This action places the button that accesses the standard, in-built Help screen on the navigation bar
- o **ExtraView Sign Off:** This action places the button that operates the standard, in-built Sign Off button on the navigation bar. You should always place this button on the top-level menu
- o **ExtraView Workspace Menu:** This action is only operable within a workspace. It places the standard, in-built Workspace menu on the navigation bar.
- You should always place a Sign Off button on navigation bars that you design. It is also recommended that you place a Home Page button on the standard interface navigation bar and a Workspace menu button on the workspace navigation bar

Triggering Rules from a Navigation Bar

This technique only works with **Add** buttons on navigation bars. You can trigger a rule action using a business rule similar to this:

```
if (SCREEN_NAME = 'ADD' && MY_ADD_NAV_BUTTON = 'Add Task') {
  PRIORITY = 'P 2'; CATEGORY = 'Task';
}
```

If the user chooses the **Add Task** navigation bar item, then the PRIORITY and CATEGORY fields are set as shown above.

Tips to Create a Navigation Bar

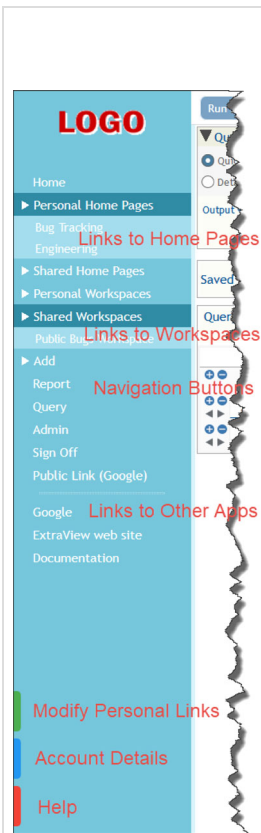
- When you first create a new navigation bar, use the multi-select list with the title **User roles to which navigation bar belongs** to select all the user roles with which you want to use the navigation bar
- You have control over which buttons within the navigation bar appear for each of the selected user roles selected using the **Role Visibility** tab within each entry on the menu. Thus, you can define a navigation bar for all or many roles, with all the buttons you require, and then use the **Role Visibility** checkboxes to turn individual entries off and on for each role
- You also have control over which buttons appear within the standard user interface and within the workspace interface using the **Display mode** selector within the properties
- The built-in ExtraView navigation bar uses the MENU_XXX security permission keys to control visibility. For example, MENU_ADD_PROBLEM controls the **Add** button on the built-in navigation bar
- When you create your own navigation bar, the MENU_XXX permission keys are used for built-in buttons and permission keys named MENU.XXX are made available for your own user-defined buttons. For example, when you add built-in buttons named MY_REPORT_NAV, MY_QUERY_NAV, and MY_ADMIN_NAV to your navigation bar, you will have the following permission keys available, to control the button role visibility: You can control the permission to your buttons either through the utility documented on this page, or via the **Grant Security Privileges** administration utility.
 - MENU.MY_REPORT_NAV
 - MENU.MY_QUERY_NAV
 - MENU.MY_ADMIN_NAV
- If you use the **Sort sequence** to reorder a list, use the **Refresh** button to re-display the menu
- Plan your new navigation bar from the top level downwards.

[Click here for end user documentation](#)

Creating a Gateway Navigation Bar

Gateway navigation bars offer an alternative to the standard navigation bars. They have some alternative and additional features. First they are vertical on the screen, as opposed to horizontal. Secondly, you can set up entry points into any stored personal or shared Home Page, or personal or shared Workspace.

In addition, the user (as well as the administrator) has control of being able to set up additional links, either to other sites within their organization, or other ExtraView sites. They may also add reports to their Gateway navigation bar.



The Gateway navigation bar configuration is very similar to configuring the standard navigation bar.

To configure the Gateway navigation bar, undertake these steps, and refer to the above section on how to add and remove links from the navigation bar.

1. It is recommended to be a user with full administrative access before configuring this feature and to make sure your user is residing in the admin role
2. The feature is initially disabled. You must turn on the security permission key named MENU_GATEWAY for the user roles who will have permission to use the feature
3. If you want to use the default Gateway navigation buttons named **Gateway Navigation (not modifiable)**, this step is not required. To create your own Gateway navigation bar, click the Add button and ensure you select the navigation bar type of **Gateway**
4. Add the appropriate buttons to your navigation bar. These buttons are different from the standard navigation bar:

Button name	Security Permission Key	Purpose
Personal Home Pages	EV_PRIVATE_HOMEPAGE_BTN	This button allows access to all the personal Home Pages you have saved
Personal Workspaces	EV_PRIVATE_WORKSPACE_BTN	This button allows access to all the personal Workspaces you have saved
Shared Home Pages	EV_PUBLIC_HOMEPAGE_BTN	This button allows access to all the shared Home Pages you have saved
Shared Workspaces	EV_PUBLIC_WORKSPACE_BTN	This button allows access to all the shared Home Pages you have saved
Search	MENU_EV_SEARCH_BTN MENU.EV_SEARCH_BTN	Provides a search field on the Gateway navigation bar

5. The default for the permission keys is that the buttons will be visible when they are placed on the Gateway navigation bar. You may turn any of these off, if they are not required in your installation, for any role
6. If you want to make the Gateway navigation the default for all new users you create, alter the value of the behavior setting named DEFAULT_START_PAGE to **Gateway**

7. Within each user's account screen they may alter their **Start Page** to a value of **Gateway** if they wish to use the Gateway as their primary interface
8. You may enable a search box on the Gateway navigation bar. This search box requires read and write permission to the security keys named MENU.EV_SEARCH_BTN and MENU_EV_SEARCH_BTN and you must place the Search button on the layout for the Gateway Navigation Bar

Note that if an end user creates a Personal Link to a second ExtraView installation, then an access token is granted to the user for a period of time. Upon setting up the link the user is asked to authenticate their access credentials on the second site. This provides the link with a token using the OAuth2 protocol, so that the user's password does not need to be passed between sites for an unexpired token.

One point to be aware of is that the OAuth2 protocol is only specified to work with https connections, not with http. However, if you or your users want to take advantage of a redirect configured within the web server, from http to https, then this is allowable, as long as the remainder of the address is the same. For security reasons, ExtraView will not allow a redirect from an address on one domain to a different domain.

The time for which the token is valid is defined in the behavior setting named OAUTH2_TOKEN_LIFETIME_SECONDS.

Import / Export

This section of administration deals with the import and export of data and metadata with ExtraView. The available functions are:

- Metadata export - Exports the configuration, or part of the configuration of the installation to a local file
- Metadata import - Imports a previously exported file into an installation
- File Import - Issue Data - Imports issue data from a CSV or TSV file
- File Import - User Information - Imports and creates users from a CSV or TSV file
- File Import - Data Dictionary - Imports and create new user defined fields in the data dictionary from a tab-delimited or comma-delimited file

Note: It is strongly recommend that you backup your entire database using its standard features, before you use the import facility. Importing metadata, layouts, reports and user data is irreversible, and it is possible that failures can occur during the process.

Note that exporting metadata is different from backing up your entire database. This should be performed with the tools that are provided by your database vendor, or third party tools that are specifically developed for the task.

Data within ExtraView is split into two parts, metadata and item data. Metadata is the supporting data for the application, such as information supplied as part of the product, data you supply such as the entire list of available product names, the entire list of possible status values, and the screen layouts you design. Item, or issue, data is the physical data relating to the items being tracked. This will contain the attributes of a specific issue such as its ID, its specific product name, specific status currently assigned, and all the history information relating to the issue.

There are several reasons to export and import just the metadata, within an ExtraView instance:

- To produce a backup of all or part of the metadata in a form that can be restored. This is separate from performing a backup of the database instance itself, as the metadata is exported in XML format.
- To transfer the metadata from a test or staging environment to a production database. Upon transfer, operations such as update or update and merge can be selected.
- To obtain the data in a standardized format (XML) that can be used to interface to other systems.

When exporting the metadata, there is an import overall option to understand. You may check the option box titled **Minimize the user information exported**. Doing so serves the purpose of leaving the data associated with users undisturbed on the production server. User data such as passwords and each user's personal options is dynamic and you most often want to leave the production version of the user information alone.

It helps, but is not essential, to have an understanding of the ExtraView schema when using the metadata transfer utility. When you export information, all the tables that are associated with the family are also exported, including subordinate information. When you import information, there are three modes, as follows:

- **Update** – modify existing objects of same name and type from the export image
- **Update / Merge** – this is a combination of update plus a merging of new data items in the export file.

- **Localization Merge** – import only the messages for all languages, which were exported as a family

Note: For most common import purposes, you should use the Update / Merge facility, as this is most likely to produce the desired results of adding new data, whilst updating existing data.

When an object is loaded from the saved disk image to the instance, all necessary referential integrity and uniqueness constraints are maintained. Maintaining uniqueness constraints necessarily involves incrementing or modifying the sequence values for specific objects in the instance appropriately. Maintaining referential integrity constraints implies that multiple tables may be updated, because rows on which the new values depend must be added, if they are not already there.

When deleting objects in the target database, all referential integrity constraints are maintained, using a cascade deletion policy. That is, if an import results in the removal of an object, the metadata object references to that object must be removed as well. This strategy is designed to ensure information is unlikely to be lost, since dependent objects are likely to be restored during the import.

When adding new metadata, additional rules may be imposed on the data relationships for user problem data. In these cases, all existing issue data is checked against the new relationships.

When you move the business rules from one instance to another as part of the export / import process, the rules are never merged with the existing rules in the target database. The old rules are always overwritten with the new rules.

Export Family Information

Family	Tables exported	
All Metadata	ALLOWED_FUNCTIONS	LAYOUT_TYPE
	ALLOWED_VALUE_TYPE	MODULE
	ALLOWED_VALUES	MODULE_TYPE
	APPLICATION_DEFAULT	OUTPUT_TYPE
	AREA	PRIORITY
	CATEGORY	PRIVACY_GROUP
	CHART_TYPE	PRIVACY_GROUP_USER
	CUSTOMER	PRODUCT
	DATA_DICTIONARY	PRODUCT_LINE
	ESCALATION_RULE	PRODUCT_PRODUCT_LINE
	ESCALATION_RULE_ACTION	PRODUCT_RELEASE
	ESCALATION_RULE_ELEMENT	PROJECT
	ESCALATION_RULE_USER	RELATIONSHIP_GROUP
	EV_FILE_IMPORT	RESOLUTION
	EV_HIERARCHY	SECURITY_GROUP
	EV_HIERARCHY_LEVEL	SECURITY_GROUP_USER
	EV_LIST_MAP	SECURITY_MODULE
	EV_RULE_TEXT	SECURITY_PERMISSION
	EV_TEMPLATE	SECURITY_USER
	EV_TEXT_LOOKUP	SEVERITY_LEVEL
	INTEREST_LIST	START_PAGE
	INTEREST_LIST_ELEMENT	STATUS
	INTEREST_LIST_USER	STATUS_RULE
	ITEM_GROUP_TYPE	TITLE_MAP
	ITEM_TYPE	UDF
	LAYOUT	UDF_LIST
	LAYOUT_ELEMENT	
LAYOUT_ELEMENT_ATTRIBUTE		
All metadata minus reports	ALLOWED_FUNCTIONS	LAYOUT_TYPE
	ALLOWED_VALUE_TYPE	MODULE
	ALLOWED_VALUES	MODULE_TYPE
	APPLICATION_DEFAULT	OUTPUT_TYPE
	AREA	PRIORITY
	CATEGORY	PRIVACY_GROUP

CHART_TYPE	PRIVACY_GROUP_USER
CUSTOMER	PRODUCT
DATA_DICTIONARY	PRODUCT_LINE
ESCALATION_RULE	PRODUCT_PRODUCT_LINE
ESCALATION_RULE_ACTION	PRODUCT_RELEASE
ESCALATION_RULE_ELEMENT	PROJECT
ESCALATION_RULE_USER	RELATIONSHIP_GROUP
EV_FILE_IMPORT	RESOLUTION
EV_HIERARCHY	SECURITY_GROUP
EV_HIERARCHY_LEVEL	SECURITY_GROUP_USER
EV_LIST_MAP	SECURITY_MODULE
EV_RULE_TEXT	SECURITY_PERMISSION
EV_TEMPLATE	SECURITY_USER
EV_TEXT_LOOKUP	SEVERITY_LEVEL
INTEREST_LIST	START_PAGE
INTEREST_LIST_ELEMENT	STATUS
INTEREST_LIST_USER	STATUS_RULE
ITEM_GROUP_TYPE	TITLE_MAP
ITEM_TYPE	UDF
LAYOUT	UDF_LIST
LAYOUT_ELEMENT	
LAYOUT_ELEMENT_ATTRIBUTE	

Layout	AREA	PROJECT
	DATA_DICTIONARY	SECURITY_GROUP
	LAYOUT	SECURITY_MODULE
	LAYOUT_ELEMENT	SECURITY_PERMISSION
	LAYOUT_ELEMENT_ATTRIBUTE	TITLE_MAP
	LAYOUT_TYPE	UDF
	MODULE	UDF_LIST
	PRODUCT	

Report	AREA	PROJECT
	CALCULATED_FIELD	RELATIONSHIP_GROUP
	CATEGORY	REPORT
	CHART	REPORT_ATTRIBUTE
	CHART_PROPERTY_GROUP	REPORT_GROUP
	CHART_TYPE	REPORT_LAYOUT
	DATA_DICTIONARY	REPORT_SECURITY_GROUP
	EV_HIERARCHY	RESOLUTION
	EV_HIERARCHY_LEVEL	SECURITY_GROUP
	FILTER	SECURITY_MODULE
	FILTER_CRITERIA	SECURITY_PERMISSION
	FILTER_GROUP	SECURITY_USER
	ITEM_TYPE	SEVERITY_LEVEL
	LAYOUT	SORT_ORDER
	LAYOUT_ELEMENT	SORT_ORDER_FIELD
	LAYOUT_ELEMENT_ATTRIBUTE	START_PAGE
	LAYOUT_TYPE	STATUS
	MODULE	SUBREPORT
	OUTPUT_TYPE	TITLE_MAP
	PRIORITY	UDF
	PRIVACY_GROUP	UDF_LIST
	PRODUCT	

User	AREA	START_PAGE
------	------	------------

	PROJECT	TITLE_MAP
	SECURITY_USER	
Text Messages	EV_TEXT_LOOKUP	TITLE_MAP

List Value Migration

The default export and import of list fields and their values moves all values in all lists from the source to the target instances. There are some circumstances where you do not want to migrate any or all of the list values within fields. For example, if you are creating field list values through the use of the OBJECT business rule, this might be test data and not data that you want to replicate in the target system. To accommodate this requirement, two features are available.

First you may use the `DO_NOT_MIGRATE=true` parameter within an OBJECT rule. This flags the values created for special treatment with the XML Export / Import process. Second, the **Manage List Values** utility accessible through the administration utility, the data dictionary and the design center allows you to set any list value with a flag so that it will not be migrated.

Because values being migrated may have dependencies, such as being used in interest lists and escalations, the flagged items are first migrated to the target system, and are then deleted, with the deletion also removing the dependencies.

Import of Item Data

There are three modes of importing item data from an XML format.

- **Batch Mode.** In this mode, an XML formatted input file is processed sequentially, creating new issues in the ExtraView database. This is driven from an administration screen.
- **API Command.** In this mode, an API command is executed, passing a single issue to ExtraView as part of the HTTP data stream. This issue is processed and with success is added to the database. The API command returns a success message or a failure error message.
- **API Command with Input File.** In this mode, an API command is executed. The command references an input file with one or more issues to be imported to ExtraView. The file is processed and results are passed back to the calling command.

The XML data to be imported must adhere to the Document Type Definition (DTD) detailed below. This is supplied with ExtraView, in the `WEB-INF/data/xml_dtd` directory of your installation, and can be directly referenced from your XML import file or data stream. The file name supplied is `extraview_item.dtd`.

```
<?xml version="1.0" encoding="UTF-8" ?>

<!ELEMENT locale (EMPTY) >
<!ATTLIST locale region CDATA "US">
<!ATTLIST locale language CDATA "en">
<!ATTLIST locale variant CDATA " ">

<!ELEMENT item_list (item*) >
<!ELEMENT item (short_descr , severity_level , priority , status , product_name , date_created , owner , timestamp , assigned_to ,
privacy , last_change_user , alt_id , area , project , category , resolution , product_line , date_last_status_change , date_closed ,
release_found , release_fixed , contact , originator , item_id, item_udf*, item_release*, item_module*, item_attachment* )>

<!ELEMENT item_udf (title_specifier?, name_specifier?, CDATA*)>

<!ELEMENT item_release (title_specifier?, name_specifier?, short_descr , severity_level , priority , status , product_name ,
date_created , owner , timestamp , assigned_to , privacy , last_change_user , alt_id , area , project , category , resolution ,
product_line , date_last_status_change , date_closed , release_found , release_fixed , contact , originator , item_id, item_udf*)>

<!ELEMENT item_module (title_specifier?, name_specifier?, assigned_to ,status ,timestamp , rc_version ,last_change_user
,item_module_id )>

<!ELEMENT title_specifier (CDATA)>

<!ELEMENT name_specifier (#PCDATA)>

<!ELEMENT short_descr (CDATA) >

<!ELEMENT severity_level (CDATA) >
```

```
<!ELEMENT priority (CDATA) >
<!ELEMENT status (CDATA) >
<!ELEMENT product_name (CDATA) >
<!ELEMENT date_created (CDATA) >
<!ELEMENT owner (CDATA) >
<!ELEMENT timestamp (CDATA) >
<!ELEMENT assigned_to (CDATA) >
<!ELEMENT privacy (CDATA) >
<!ELEMENT last_change_user (CDATA) >
<!ELEMENT alt_id (CDATA) >
<!ELEMENT area (CDATA) >
<!ELEMENT project (CDATA) >
<!ELEMENT category (CDATA) >
<!ELEMENT resolution (CDATA) >
<!ELEMENT product_line (CDATA) >
<!ELEMENT date_last_status_change (CDATA) >
<!ELEMENT date_closed (CDATA) >
<!ELEMENT release_found (CDATA) >
<!ELEMENT release_fixed (CDATA) >
<!ELEMENT contact (CDATA) >
<!ELEMENT originator (CDATA) >
<!ELEMENT item_id (CDATA) >
<!ELEMENT rc_version (CDATA) >
<!ELEMENT item_module_id (CDATA) >
<!ELEMENT item_attachment (CDATA)>
<!ATTLIST item_attachment file_desc CDATA #IMPLIED >
<!ATTLIST item_attachment file_name CDATA #IMPLIED >
<!ATTLIST item_attachment path CDATA #IMPLIED >
<!ATTLIST item_attachment content_type CDATA #IMPLIED >
<!ATTLIST item_attachment file_size CDATA #IMPLIED >
<!ATTLIST item_attachment date_created CDATA #IMPLIED >
<!ATTLIST item_attachment created_by_user CDATA #IMPLIED >
```

Note that all data related to items, including repeating records, UDF's, and attachments are described with the DTD and can all be imported by ExtraView. A portion of a sample XML file is shown below, with two issues to be imported. This references the above DTD. Note that the attachment within the example import file is shortened, for brevity. The following points should be noted about the import of items:

- The DOCTYPE refers to the DTD and the path should correspond to the path where it is stored on your server.
- UDF's can be referred to by NAME or by TITLE. We recommend that you use the NAME wherever possible, as the TITLE field may not be unique across your installation. Furthermore, the TITLE may vary with the locale specified in the DTD. You may create different DTD's for each locale, and use the localized TITLE within the XML files being imported.
- We recommend that all character data is embedded within CDATA tags.
- Certain constructs are required in the XML, following the web interface rules. For example, a file-name-attribute should always appear in the item-attachment-attributes list.
- UserCustom methods prAddPreInsert and prAddPostInsert are executed on each item insert.
- Allowed values between fields are ignored when you import a record via this interface. If you mistakenly create an invalid parent – child relationship, this will be indicated when you try to update the record via the web interface.
- The ITEM_ID is allocated to the new issue at the time the ExtraView code validates the issue being read from the XML input. If the record is rejected for any reason, the ITEM_ID is discarded, and an issue with this ID will never be created. The next record to be imported will be allocated the next number in the sequence.
- If a field is read-only, on the add screen layout (as defined by the user role, business area and project of the issue), then this will be respected with the item import function. Further, if this field has a default value defined in the data dictionary, this value will be inserted.
- Attachments must be encoded using the Base64 algorithm.
- Values in other CDATA sections may be encoded in Base64 if desired or required. Whether or not the string is encoded is signaled by a sentinel (“%25S”) in the front of the CDATA string. Encoding is required if any of the following arise:
 - a. The string value starts with the sentinel value (“%25S”), or
 - b. The string value contains the CDATA end marker (“]”>”), or
 - c. The string value contains any non-CDATA-permissible characters. CDATA-permissible characters are defined using the following production with Unicode character values as derived from the web page at <http://www.w3.org/TR/REC-xml-NT-Char>

Char ::= #x9 | #xA | #xD | [#x20-#xD7FF] | [#xE000-#xFFFFD] | [#x10000-#x10FFFF]

```

<?xml version="1.0" encoding="UTF-8"?>
<!DOCTYPE extraview_item SYSTEM "file:///C:/path_to_my_dtd/extraview_item.dtd"> <ITEM_LIST>
<ITEM>
<AREA><![CDATA[Bugs]]></AREA>
<PROJECT><![CDATA[&Bugs Data&]]></PROJECT>
<CATEGORY><![CDATA[Software]]> </CATEGORY>
<PRODUCT_NAME><![CDATA[ExtraView]]></PRODUCT_NAME>
<ITEM_UDF>
<TITLE_SPECIFIER><![CDATA[OS]]></TITLE_SPECIFIER>
</ITEM_UDF>
<ITEM_RELEASE>
<RELEASE_FOUND><![CDATA[1.2.3.4]]></RELEASE_FOUND> </ITEM_RELEASE>
<ITEM_RELEASE>
<ITEM_UDF>
<TITLE_SPECIFIER>
<![CDATA[This is text in a field]]>
</TITLE_SPECIFIER>
<![CDATA[BILL.SMITH]]>
</ITEM_UDF>
</ITEM_RELEASE>
</ITEM>
<ITEM>
<CATEGORY>
<![CDATA[Software]]>
</CATEGORY>
<PRODUCT_NAME>
<![CDATA[ExtraView]]>
</PRODUCT_NAME>
<ITEM_UDF>
<NAME_SPECIFIER>OP_SYS</NAME_SPECIFIER>
<![CDATA[Solaris]]>
</ITEM_UDF>
<ITEM_RELEASE>
<RELEASE_FOUND>
<![CDATA[2.3.4.5]]>
</RELEASE_FOUND>
</ITEM_RELEASE>
<ITEM_RELEASE>
<ITEM_UDF>

```

```
<NAME_SPECIFIER>RELEASE_COMMITTED_RELEASE
</NAME_SPECIFIER>
<![CDATA[5.2.2.1]]>
</ITEM_UDF>
<RELEASE_FOUND>
<![CDATA[2.5.6]]>
</RELEASE_FOUND>
</ITEM_RELEASE>
<ITEM_ATTACHMENT FILE_DESC='Current log file' FILE_NAME='EVJ.log' PATH='C:/t/' CONTENT_TYPE='text/plain' >
<ATA[VEhJUyBJUyBBIEZJTEU=]]>
</ITEM_ATTACHMENT>
</ITEM>
</ITEM_LIST>
```

Export of Item Data

To achieve the export of data from ExtraView, the user should use the Command Line Interface (CLI) commands, evhist, evget and evsearch. These commands are covered in depth in the Command Line Interface Guide.

Note: For this version of ExtraView, the above import and export functions use different DTD's. Thus, records exported from ExtraView cannot be imported with the functions documented here directly. A future version will offer compatibility of import and export XML data, by changing the CLI commands.

Metadata Export

The export creates a flat file containing the metadata in an XML format that can be read by the Metadata Import administration utility. This file can be moved between different platforms and different instances of ExtraView. The order of objects in the file is defined by the requirements of ExtraView, not by the user. The data export is defined satisfying the requirements of being able to perform an import of the data, to build new objects. In short, all dependent data must follow the data upon which it is dependent.

There are a wide range of options, allowing you to perform exports of all or subsections of the metadata within an ExtraView installation.

Each option that defines a subset of the database is termed a family. This option is available from the **Import/Export** tab of administration.

Note: If you are using ExtraView with the Apache Derby database, the metadata export feature is significantly limited. You may only perform a metadata export of the complete database, and cannot use the features described below to constrain the export to small parts of the database.

Load / Manage Export Profiles Continue with Export Return Print Page **Metadata Export**

Directions

The metadata export utility creates a file on your computer that contains all the metadata required for one of the following purposes:

- To import into another ExtraView database
- To use as a backup of your metadata
- To use the data as an interface and source of data to another system

You may save the current setup, or restore a saved setup with the **Load / Manage Export Profiles** button. Make your selection(s) below, then please press the **Continue with Export** button.

Select Metadata Families to Export

Metadata is exported in families. Each family contains all of the data needed to reconstruct the family in another ExtraView database. From the list of families below, please select the set you wish to export.

Select 'Export all metadata' or at least one family

- Export all metadata
- Export all metadata tables except reports
- Export layouts and supporting information
- Export reports and associated data
- Export business rules
- Export user profile information
- Export text messages
- Export a solution

Filter Options

You can filter the output by Area or by Project or by the date the metadata was last updated.

Area:

Project:

Updated Since:

Minimize the user information exported

Load / Manage Export Profiles Continue with Export Return Print Page

Exporting ExtraView Families

The following are the metadata families that may be exported. Note that any filters you set will also apply to the export file you create:

- Export all metadata - a complete export is created of all the metadata
- Export all metadata tables except reports - a complete export less the reports within the source system is created. Your target production system may have reports which differ from your source system, and you may not want to touch the reports on the production system. An exception to this is that reports associated with any navigation bars within your installation are exported as these are likely to be global and required within the target database. These will be imported into the target database unless a new report replaces them
- Export layouts and supporting information - this will provide the layouts within the filters you apply, along with all supporting information such as the data dictionary fields
- Export reports and associated data - this option only exports the reports and their supporting information, such as the fields in the source system
- Export business rules - only the business rules in the source system will be exported
- Export user profile information- only the user information in the source system will be exported
- Export text messages - this will export all the message tables for one or more locales. If you are working within a system with the behavior setting MULTI_LOCALE set to YES, a select list showing all the allowed locales will appear on the administration screen. The default is that all locales will be exported, but you can use the multi-select list to export just one or any selection of the allowed locales. The typical use of this feature allows the administrator to migrate the messages for just a single locale when upgrading a system and several language translations are happening in parallel. Only one or more languages may be ready to migrate so you may control which locales are migrated. Note that the base locale of the system is always exported in addition to the selected locales. Once exported, you can use the generated file to import a new language set into a target system.

Note that when exporting text messages different handling is applied to User Defined Fields which have values flagged with the **Do Not Migrate** checkbox. This flag is ignored for the export so that all values for all fields are exported. If the User Defined Field and/or the value in the export file does not exist in the target environment, they are then ignored when the import takes place. This allows for the migration of localized values if and only if the value for the base language exists in the target environment.

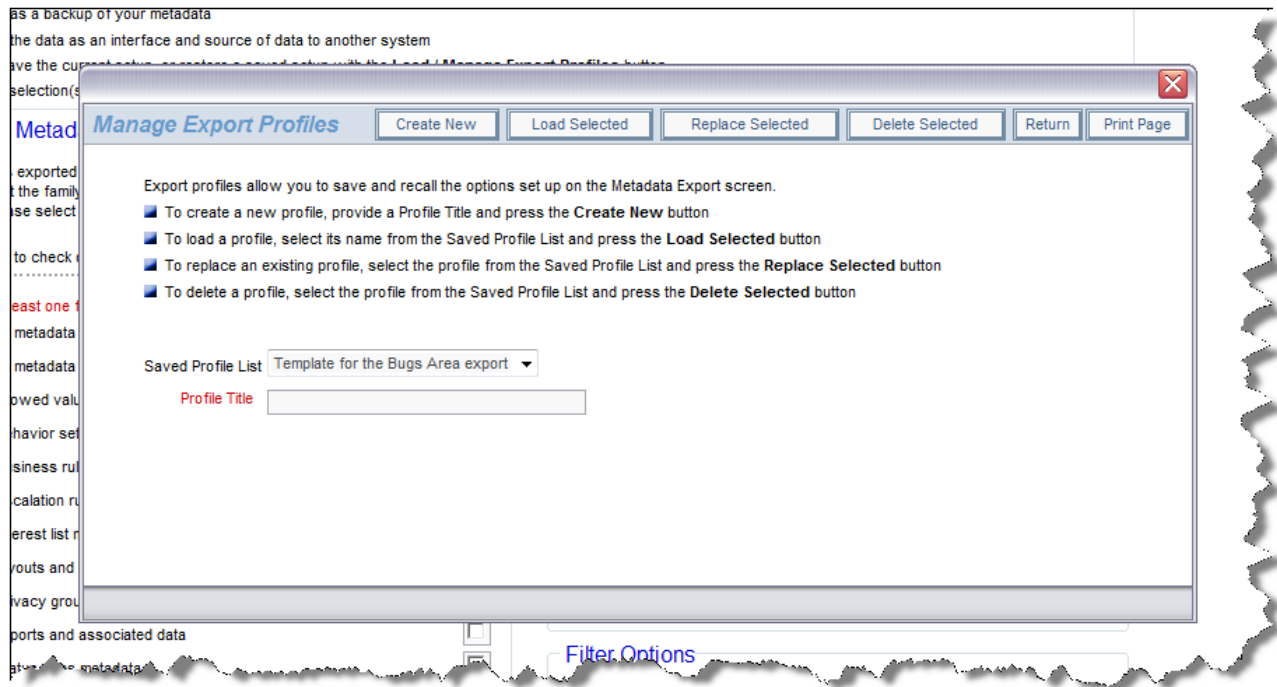
- Export a solution - this option allows the preparation of an export file which will be used to migrate an ExtraView solution to one or more remote systems. The option minimizes information outside of your solution from the source database. What will be exported is confined to the following:

- Only the layouts within the source system that are within the Business Area(s) you select as filters. Layouts in the global area will not be exported
- Only the fields and their permissions that are used by layouts within the source system will be exported
- Allowed values for any fields within the layouts will be exported
- Relationships used by the layouts will be exported
- Only reports within any folders you select will be exported

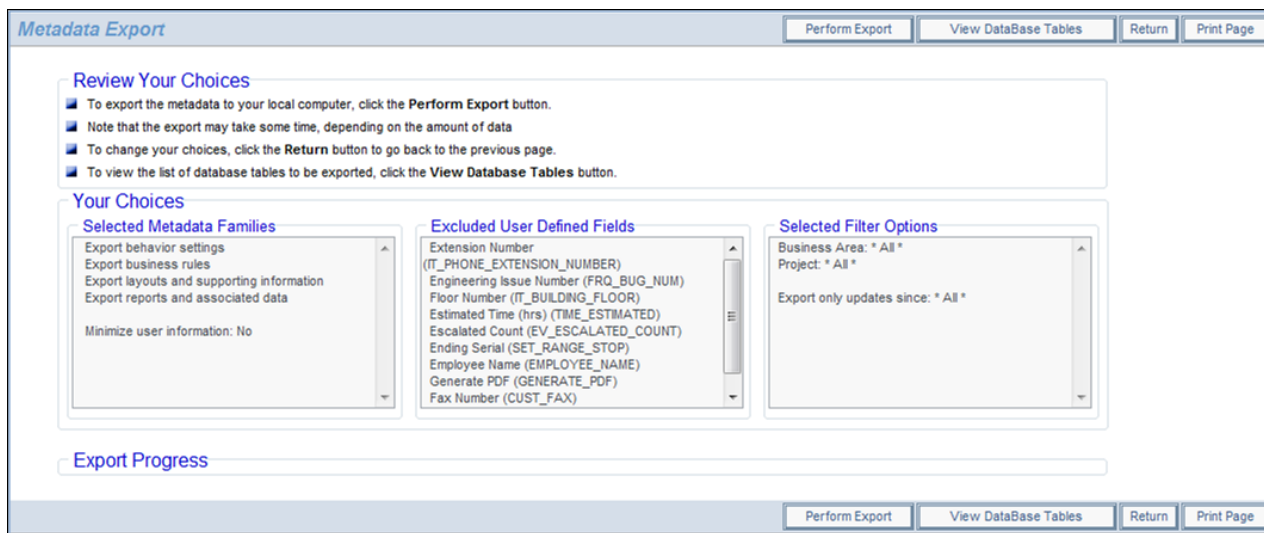
If you click the option **Minimize the user information exported**, then only the essential user information to export the metadata is written to the export file. This may solve a number of issues. For example, user information is often dynamic, and users may frequently change passwords, or administrators may activate and deactivate accounts on a production system or the references to the user information must always be taken from an LDAP or Active Directory server. While you may want the metadata from a development system to be migrated to a production system, you often may want to leave the production data related to users in place. That being said, users who are referred to within metadata such as filter values, interest lists, escalation rules, etc. are exported, so the information can be reproduced in the target system when the import occurs. Users only referred to within metadata such as the date created and date last modified fields are not exported when the user information is minimized.

You may choose some overriding filters for the export. As opposed to exporting the data across all Business Areas and Projects, you may select a single Business Area and Project to export. You may also choose to only export data updated since a specific date and time.

Once you have set up an export profile, you may decide to save the combination for future use. This is accomplished through the **Load / Manage Export Profiles** button on the menu bar. This will display a popup as follows:



You may create new profiles and save them, load an existing template, replace an existing template or delete an existing template from the popup window. Once you have set up the profile to export, click the **Continue with Export** button. You are taken to a screen similar to this:



Continuing with the metadata export process

Confirm your choices on this screen, before clicking the **Perform Export** button.

You will be prompted to enter a file name for the export. This file will be saved on your local file system of your client computer.

An export can take some time, based upon the amount of metadata in your system. Files generated vary in size from a few to more than 50MB in size, dependent on the amount of metadata. As the export starts, one of the first steps is to compare the database against a known reference set of data that describes what the database should look like. In a perfect world, this step would not be needed, but databases can accumulate defects caused by any one of a number of factors. A previous update script might have failed, but the error not being noticed by the administrator; there might have been an incorrect command executed by a database administrator. There are other potential sources of failure as well. The metadata export process examines the database to ascertain if there is any obvious problem that will interfere with the process. The most typical problem encountered is that there is a missing database constraint. When a problem such as this is found, you will see an alert message warning of the event. You will be able to elect to continue, or to stop the process. It is recommended that you do not continue if you are not sure of the ramifications of the error.

An export file can be imported into the same or a different instance of ExtraView. The file can also be used to integrate with other applications.

Migrating Text Messages

It is worth discussing how text is migrated from one instance to another and how it is handled in a multi-lingual system. There are several options that can be used, but are dependent upon how you export the metadata.

There are two principal options available when you want to migrate messages from one instance to another.

- Use the **Export system messages** family option to prepare the XML file. This results in a format which can be imported into the target installation without regard to the context of metadata messages. For example, if you have a single term in your base locale (usually English) that occurs more than once within different metadata items such as list or field titles and the translator used different terminology to localize the term for each occurrence, then the import process ignores this, and the target instance will have the same localized term wherever it occurs. The advantage is that this is a relatively fast migration path
- Use the **Export all metadata** family option to prepare the XML file. This results in a format which retains the context of each and every term. For example, if you have used different terms in a language that all correspond to the same term within the base locale (usually English), then the target system will retain the separate values. When importing the metadata file, you may choose the **Localization Update/Merge** option to migrate only the text messages from the export file. The disadvantage is that this migration may take longer to execute than the first option. You may still perform a full **Update/Merge** or **Merge** when importing the metadata into the target instance.

Items that are Not Exported

There are a number of behavior settings that are not exported with this utility. This is deliberate, as it is most likely that these settings are specific to the target environment and may be different from those in the source environment. The list of settings that are not migrated is:

- APP_HOME
- ATTACHMENT_REPOSITORY_OPT

- ATTACHMENT_REPOSITORY_ROOT
- CSS_HOME
- DEBUG_MODE
- DEFAULT_LANGUAGE
- DEFAULT_REGION
- DEFAULT_VARIANT
- EMAIL_DIRECTORY
- ENVIRONMENT
- HELP_HOME
- HTTP_CHARSET
- IMG_HOME
- LOG_DIR
- NOSPELL_SESSION_COUNT
- SCHEMA_VERSION
- SITE_URL
- URL_PATH
- USER_ACCEPTS_LICENSE

Metadata Import

Note: Again, we strongly recommend that you backup your data before you use the import facility, using your database's standard facilities. Importing metadata, layouts, reports and user data is irreversible, and it is possible that a failure can occur during the process.

The import menu is situated within the Import/Export tab of the administration menu, and allows the administrator to specify the file to load.

The import function reads a flat image file (which is in XML format) and updates the tables as required by the administrator's selection of objects to load. The utility takes into account the relational dependencies and all internal sequence renumbering as needed, ensuring consistent and correct instance updates.

Validity checking for data adherence to new rules is performed as early as possible, thereby minimizing the impact of some validity failure that may cause termination of the import.

Most imports will utilize the Update / Merge operation. This will update records that exist, and merge into the database the new records that were part of the file being imported.

Although it is possible to create your own file to be used as an import file to ExtraView, extreme care should be taken before attempting to do this, and it is essential that you have a complete and thorough knowledge of the ExtraView schema. Often, it may appear straightforward to compose an XML file, or to edit an existing file that was created by ExtraView's own Export feature, but there are many relationships described in the file that are not obvious and that must be maintained for an import to be successful. We suggest that before attempting to create your own import file by modifying an existing file or creating it from scratch, that you consult with ExtraView support. In any case, **always back up your target database before performing any import.**

Metadata Import

Upload file Return Print Page

Directions

- 1 Make sure you have a fresh backup of your database before beginning the import
- 2 Press the **Browse** button and select the metadata file or ExtraView solution to upload
- 3 Select an action to either **Update/Merge** or **Merge** the import file into the database
- 4 To remap titles for lists that are not matched between the import file and the current destination database, check the box to "Map unmatched titles". If you choose to remap titles, ExtraView will preprocess the uploaded file, before importing
- 5 Press the **Upload File** button and wait for ExtraView to upload the file. It may take some time to upload the file to the server and to begin the import, according to the size of the import file

Actions

Choose file to upload:

Browse...

Update/Merge: Update existing records in your database, and insert new records from the import file.

Merge: Leave existing records without change, and only add new records from the import file

Localization Update/Merge: Update existing titles in the non-default locale that match titles in the import file. Leave all other records untouched.

Map unmatched titles between the uploaded file and the destination database

Upload file Return Print Page

Starting the importing process

Follow the instructions on the screen. As displayed, the principal import methods are:

Update / Merge	This combines operations of update and merge, Records that already exist in the target schema are updated, and a new record is inserted if record being imported does not exist.
Merge	This leaves existing records in the target schema alone, and adds new ones from the file that is being imported. ExtraView will use new sequence numbers for the operation within the database.
Localization Update/Merge	This mode only imports the localized messages from the import file, and does not touch the remainder of the metadata. This is typically used to move localized messages from one installation to another, providing just the updated localized messages to the target installation.

If you have altered metadata such as the titles of objects in lists, within the destination database, and these same modifications to the data were not made in the source database from which the export was taken, ExtraView gives you an opportunity to remap the fields, as opposed to creating new fields from the import file, and inserting these into the destination database. To perform this check, make sure the **Map unmatched titles** prompt is checked.

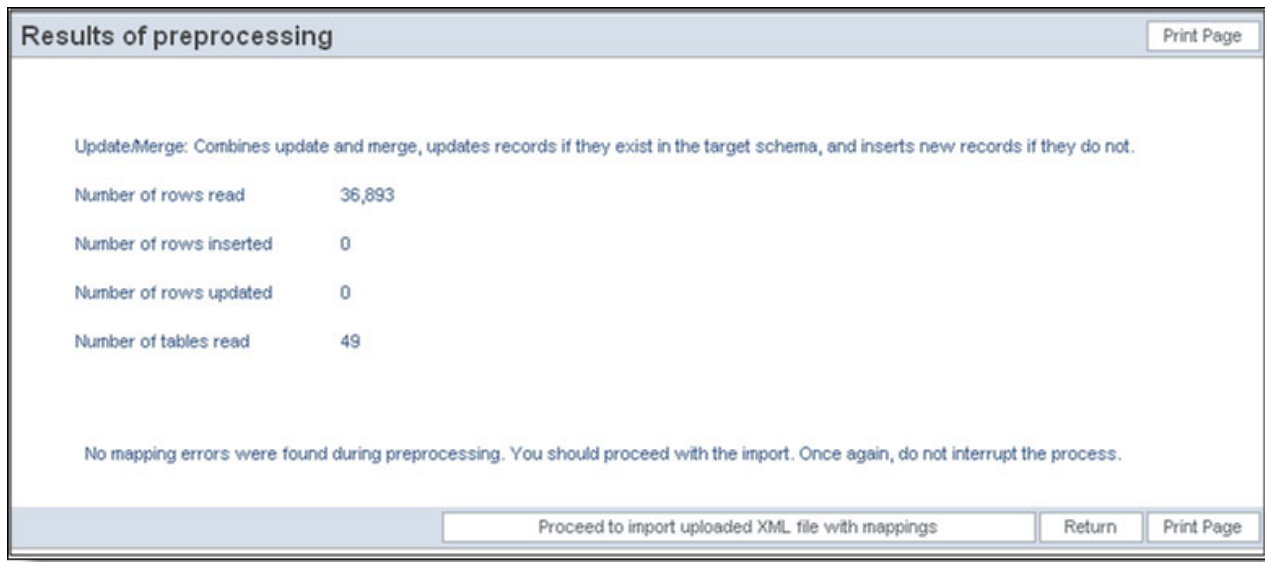
When you perform the check, the import is split into two parts. First the uploaded file is preprocessed, and each list value in the import is checked against the target destination database. If there are any values in the import file that do not exist in the destination database, then you will be shown the values from the import file that do not have a matching value, and you will be able to select from the values in the target database that do not have a value specified in the import file. After selecting the values to map, if there are discrepancies, you then proceed to the second part of the import. The file is processed again, the destination database is updated, and the mappings you selected are applied.

When importing data into a business area, if the import process is able to create a project with an ID numbered 0, and the project ID in the import file is 0, then a project ID of 0 is used and mapped into the target database. If a project ID of 0 already exists in the target business area, the project ID of 0 in the import file is mapped to a new non-zero project ID. In any case, the matching project title within the business area and the mapped project overrides these decisions.

This is important, as a project ID of 0 is used for inheritance of layouts, permissions and other objects for the non-zero project ID's within the business area, and ExtraView is trying to ensure that a project ID of 0 always exists for the inheritance to be allowed to work.

There is one circumstance in which the import process may have difficulty in resolving all the data from the export file. If you are not importing user data, and the information in the import file contains references to users that do not exist in the target database, then import errors may result. This is especially noticed if the missing user was the person who created or last updated items such as layouts. These will not be imported, as ExtraView must maintain referential integrity of the users who are connected to its internal objects.

In general, allowed value lists that have an invalid current value in parent or child will cause an import error and will not be imported. This may result in incomplete allowed value lists.



The screenshot shows a window titled "Results of preprocessing" with a "Print Page" button in the top right. The main content area contains the following text:

Update/Merge: Combines update and merge, updates records if they exist in the target schema, and inserts new records if they do not.

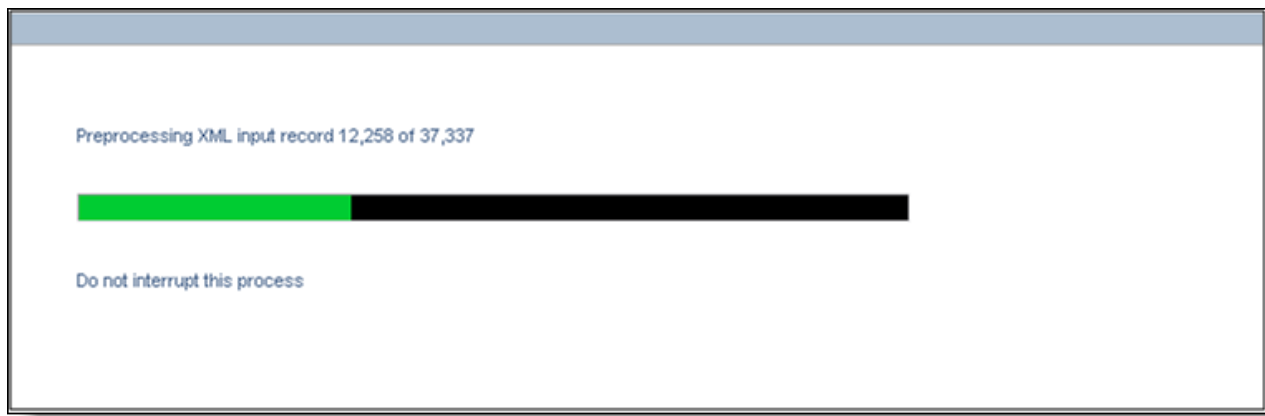
Number of rows read	36,893
Number of rows inserted	0
Number of rows updated	0
Number of tables read	49

No mapping errors were found during preprocessing. You should proceed with the import. Once again, do not interrupt the process.

At the bottom, there are three buttons: "Proceed to import uploaded XML file with mappings", "Return", and "Print Page".

Results from preprocessing the import file

While data is being preprocessed or imported, a status bar is shown as follows:



The screenshot shows a status bar with the text "Preprocessing XML input record 12,258 of 37,337" and a progress bar below it. The progress bar is partially filled with green, indicating the current progress. Below the progress bar, the text "Do not interrupt this process" is displayed.

Progress bar during the importing process

Note: Importing the data can take some time, from ten minutes in smaller installations, to thirty minutes or more in larger installations. It is dependent upon the size of the file being processed, factors such as the number of fields, layouts and permissions, and the speed of the server loading the data. Due to the inherent limitations of browsers, there is little feedback during the initial part of the process, when the browser is uploading the import file from the client machine to the server. It is recommended that you prohibit users from using ExtraView during this time, especially if you are importing layouts. You can do this by locking users out of the system while you are importing the data. You can achieve this with the **Disable and Enable User Access** on the **Users** tab of the administration menu.

Note: You can improve the time to execute the import operation, by zipping the import file. Exported files compress significantly (perhaps to less than 10% of their original size). ExtraView will look for the XML file contained within a zip file as long as the name of the zip file and the name of the import file are the same.

Note: Once the import operation is started, you must not interrupt it. Once the actual import has begun, ExtraView will not cancel the server operation, even if you close your browser.

Note: When your file is imported, there is additional information within the file, termed a manifest. This manifest is used as a check against the data that you import, and provides a report if there are any unanticipated differences between the imported information and

the database into which it is being imported.

After the import is complete, you will see a summary screen that shows the number of records imported into each database table. Any errors encountered will be displayed here. Note that the results of the import vary according to the exact tables imported from the file you uploaded. There may be anything from a few to more than one hundred tables displayed in the results.

Metadata XML Reader & Updater Account: Carl Koppel | Role: Admin, Level 1 | Area: Defects | Interest list

Results of update

Update/Merge: Combines update and merge, updates records if they exist in the target schema, and inserts new records if they do not.

Number of rows read 5,733

Number of rows inserted 1

Number of rows updated 5,732

Number of tables read 4

Table PROJECT	Updates 3	Inserts 0	Errors 0
Table AREA	Updates 3	Inserts 0	Errors 0
Table TITLE_MAP	Updates 5,568	Inserts 1	Errors 0
Table SECURITY_USER	Updates 158	Inserts 0	Errors 0

Return

Summary screen of the imported data

Handling User Data

Users frequently change their personal settings when using ExtraView. For example, users may change their Home Page reports, their display format for the timestamp, their password, or one of many other attributes. If you export the metadata from a development system, wait some time and then import this metadata to a production system, you may overwrite recent changes made by users in their personal data. A behavior setting named OMITTED_IMPORT_USER_COLUMNS allows the administrator to set up specific columns that will be ignored upon the import of the metadata. The value of this field is a comma-separated list of column names. Note that you set this in the target system, not the system from which you are exporting the data. The possible values you can add to this list are as follows:

Column Name	Meaning	Notes
ADDITIONAL_EMAIL	The user's secondary email address	Recommend this field's omission
ADDITIONAL_EMAIL_ON	Switch to indicate whether the user's secondary email address is turned on or off	Recommend this field's omission
ADDRESS_LINE1	Address line 1	Recommend this field's omission
ADDRESS_LINE2	Address line 2	Recommend this field's omission
CELL_PHONE	Cell phone number	Recommend this field's omission
CHART_FONT	Chart font	Recommend this field's omission
CITY	City	Recommend this field's omission
COMPANY_NAME	Company name	Recommend this field's omission
COUNTRY	Country	Recommend this field's omission

CREATED_BY_USER	The user ID of the person who created this user's account	
DATE_CREATED	The date the user's account was created	
DATE_FORMAT	Format to display dates	Recommend this field's omission
DRILLDOWN_REPORT	Where does the user drill down to for reports?	Recommend this field's omission
EMAIL	The user's email address	Recommend this field's omission
EMAIL_CHARSET	The character set of the email	Recommend this field's omission
EMAIL_FORMAT	Format for received email	Recommend this field's omission
EMAIL_ON	Switch to indicate whether a user's email is turned on or off	Recommend this fields omission
ENABLED_USER	Indicates whether the user is enabled or disabled	Recommend this field's omission
FAX	Fax number	Recommend this field's omission
FILE_ATTACH_CHARSET	The user's default character set for their attachments	Recommend this field's omission
FIRST_NAME	User's first name	Recommend this field's omission
HOME_TELEPHONE	Home telephone number	Recommend this field's omission
HTTP_CHARSET	Browser character set	Recommend this field's omission
JOB_TITLE	User's job title	Recommend this field's omission
LANGUAGE	Display language	Recommend this field's omission
LAST_ACCESS_DATE	Timestamp the user last accessed ExtraView	Recommend this field's omission
LAST_DATE_UPDATED	The date of the last update to the user's record	Recommend this field's omission
LAST_NAME	User's last name	Recommend this field's omission
LAST_UPDATED_BY_USER	The user ID of the person who last updated the record	Recommend this field's omission
LDAP_UPSERT_TIME	The last date / time the user's account was synchronized with a LDAP server	Recommend this field's omission
LOGIN_ID	The alternative user ID	Recommend this field's omission
LOGIN_MSG_DT	Not used	Recommend this field's omission
MS_OFFICE_CHARSET	Character set output to MS Office applications	Recommend this field's omission
NEW_PANELS	Selects whether user created a new workspace panel or uses the same panel for each new Quicklist report when drilling down from queries and reports	Recommend this fields omission
NOTIFY_ON_OWN_UPDATES	User notification when making an update	Recommend this field's omission
PAGER	Pager number	Recommend this field's omission
PANEL_AUTOSCROLL	User auto-scrolls to workspace panels when they click on them	Recommend this field's omission
PASSWORD_EXPIRY_DATE	Password expiry date	Recommend this field's omission
PASSWORD_INTERVAL	The interval between password expiries	Recommend this field's omission

PASSWORD2	The current, encrypted password of the user. All password changes use this field. There is a field named SECURITY_PASSWORD which contains the legacy password, if it has not been updated since version 7.0	Recommend this field's omission
POSTAL_CODE	Postal code or Zip code	Recommend this field's omission
RECORDS_PER_PAGE	The default number of records on each report output page	Recommend this field's omission
REGION	Locale region	Recommend this field's omission
REPORT_1_ID	Home page report 1	Recommend this field's omission
REPORT_2_ID	Home page report 2	Recommend this field's omission
REPORT_3_ID	Home page report 3	Recommend this field's omission
SCROLL_PANELS	Allows the user to scroll the workspace canvas or any workspace panel or element within that panel when the mouse pointer is over the respective area	Recommend this field's omission
SECURITY_PASSWORD	User's password. Note that since version 7.0, the field PASSWORD2 is used for the purpose of holding the encrypted password	Recommend this field's omission
SECURITY_USER_ID	The User's ID	
SOUNDEX_LAST_NAME	The soundex code for the user's last name	Recommend this field's omission
START_PAGE_ID	The ID of the start page the user is using	Recommend this field's omission
STATE	State	Recommend this field's omission
STYLESHEET	Size of text in browser	Recommend this field's omission
TIMEZONE	User's time zone	Recommend this field's omission
TWENTY_FOUR_HOUR_TIME	Display of times in 12 or 24 hour format	Recommend this field's omission
USER_FIELD_1 to USER_FIELD_10	The user defined fields	Recommend these fields omission
USER_ROLE	User's current role	Recommend this field's omission
VARIANT	Locale variant	Recommend this field's omission
WORK_TELEPHONE	Work telephone number	Recommend this field's omission
WORKSPACE_1_ID	The ID of the default workspace of the user	Recommend this field's omission

Allowed Value Conflicts

Importing allowed values presents some challenges, when the data in the target database has changed significantly from the data in the source database. An entry in allowed values is unique for a given Title, Parent and Child value.

- For any given combination of a Parent and Child, only 0 or 1 entry can be set to be *Enabled*
- For any given Parent and Child there can be any number of entries set to *Disabled*
- For each allowed value, there can be entries in the Allowed Values database table with allowed values for that type

The points to observe during an import of allowed values are:

- Making sure that only one entry for a given Parent and Child is set to enabled. This means importing an enabled row requires a check that there is no other entry enabled. If there is another entry enabled for the given Parent and Child combination, then the import entry is set to disabled and imported
- Matching imported allowed value entries to existing allowed value entries. The Title, Parent and Child are used to find a matching row. If none is found, the imported entry is inserted. If a matching row is found, it is updated and the value lists are

- merged
- The allowed value lists for allowed value types are only added to; they are never reduced
- Given the import of an enabled allowed value type is not allowed if another allowed value type is enabled in the database, if the import wants to change which entry is enabled, it must first disable the currently enabled entry and then import the enabled entry from the import file. This implies that the export process should export its disabled entries before exporting its enabled entry. When imported they will then be in the correct order. The values list is merged in either case

		Imported Value of Allowed Value Type <i>Enabled</i>	
		Disabled	Enabled
Current Value of Allowed Value Type <i>Enabled</i>	Disabled	OK	OK only if enabled count = 0
	Enabled	OK – AVT will become disabled	OK

Importing List fields with Aliases

If an existing list field is not an alias of another list field, the import logic maintains this, and keeps the list field non-aliased in the target database. The import cannot make a non-aliased list field an aliased field during the import because it cannot guarantee that the lists are intended to be the same. For this same reason, the import will not change an aliased list field to be the alias of a different list field. In normal operation, ExtraView checks these conditions and only allows valid operations, therefore the import must also make the same checks. In the context of this section, list fields include all fields with a display type of list, popup, tab, and radio button.

The import rules for the *Alias of* field values are as follows:

- If the list field entry being imported is not an aliased field, it is imported and the list remains non-aliased after import. The imported list values are merged for these fields
- If the list field entry being imported is an aliased field, it is imported only if the imported aliased field definition is the same in both the file being imported and in the target database. The imported list values are merged
- A non-aliased list cannot be aliased by the import process
- The values within an aliased list cannot be changed by the import process

		Imported Alias Field Name	
		None	<i>List A</i>
Current Alias Field Name	None	OK	No
	<i>List A</i>	OK	OK
	<i>List B</i>	OK	No

Error Logging During Import

A text log of errors is created on the server, as the XML updater executes. Each error entry will contain as much useful information as possible, including the table, row number, the data being used at the time, and the exception message, if any. This error log is echoed to the summary screen in the browser.

The error file is stored in the system temp directory under the name: <time_in_ms>_<user_id>_XML_ERRORS.txt

for example:

1026520070671_JEFF.SYKES_XML_ERRORS.txt

All error messages begin with

::XML_UPDATE_ERROR::

plus a new line, and end with ::END_XML_UPDATE_ERROR:: followed by two new line characters.

Here is an example of an error:

```
::XML_UPDATE_ERROR::
An error occurred updating row 125 of ITEM_MODULE with this data: {blah = blah, this = that, you = them}

Exception: java.sql.SQLException: ORA-00904: invalid column name
::END_XML_UPDATE_ERROR::
```

```
::XML_UPDATE_ERROR::
```

```
An error occurred updating row 126 of ITEM_MODULE with this data: {blah = blah, this = those, you = me} Exception:
```

```
java.sql.SQLException: ORA-00904: invalid column name
```

```
::END_XML_UPDATE_ERROR::
```

In order to be able to store multi-byte characters within the error file, note that the error file is not created as standard text. If you open the file in a standard editor, you will notice that what looking at most of the metadata in the file, every second character is null.

Handling rejected records during the import of metadata

As ExtraView processes the XML import file and fires the updating routines, if errors prevent an update are generated, the problematic XML nodes' data is captured, and used to generate a new XML file. This file is of the same structure as the original file, but only includes those items that could not be properly updated. If there are no errors generated during the upload process, this file is deleted at the end of the update process, as it is empty.

This file is saved under the system temp directory under the name:

```
<time_in_ms>_<user_id>_XML_REJECTS.xml
```

for example

```
1026520070671_JEFF.SYKES_XML_REJECTS.xml
```

- [Add new comment](#)

Using Export and Import to Update Instances

The Metadata Export and Metadata Import procedures are designed to make it straightforward to update your production instance of ExtraView. The update may be required for a number of reasons –

- You are developing new functionality in the form of business areas, projects, layouts, logic, reports, etc. and do not want to do this in your production, live instance of ExtraView
- You have a new release of ExtraView software and want to upgrade your production system, after testing the new release with your application

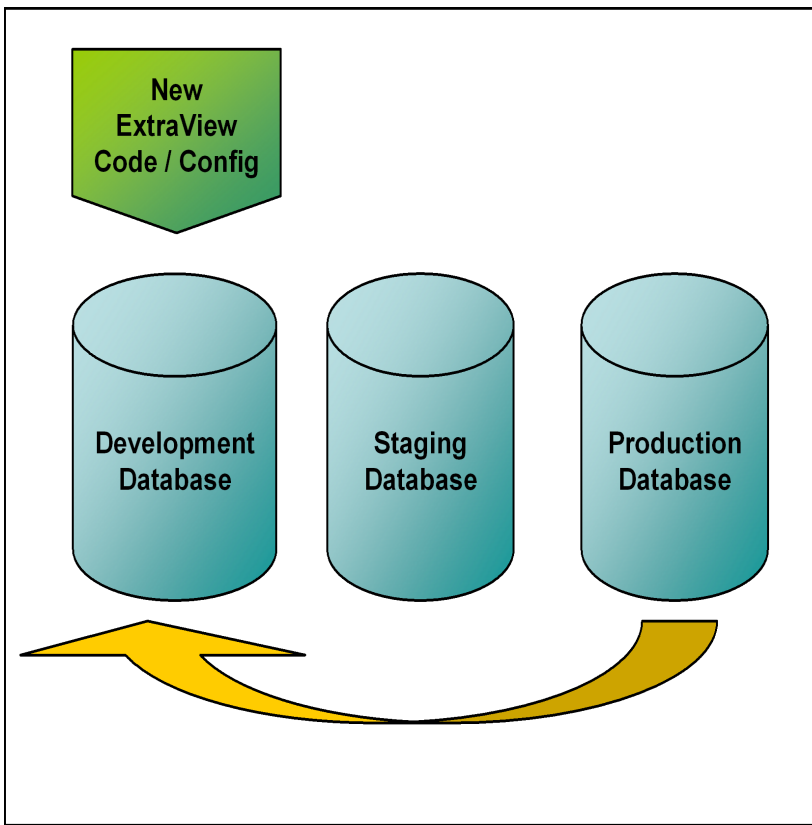
It is important to have a repeatable, recoverable process to perform these tasks, and the following recommendations should give you a robust method to fulfill these tasks. The recommendations below can be simplified somewhat, according to your circumstances and the level of risk you are willing to carry. If you want to simplify these steps, you may move your development instance directly to the production instance, without going through the staging instance.

The instances

- **Production environment** – this is the server instance of ExtraView that is used for the live processing of your issues
- **Staging environment** – this is an intermediate server which will have a copy of production data and a copy of the development ExtraView system. No changes should be made to ExtraView metadata on this instance. It is purely used to check and test the functionality of ExtraView before applying the changes to the production environment
- **Development environment** – this is the instance of ExtraView where you will carry out all changes to the configuration before applying the changes to the staging environment

Step 1 – Create a development instance

- Use your database backup procedures to take a dump of the production database and create the database schema in a new development database
- If you are upgrading ExtraView and there is a database upgrade script to run, do this now against the development database
- Install the ExtraView application code, configuring it to connect to the new development database and start the application server



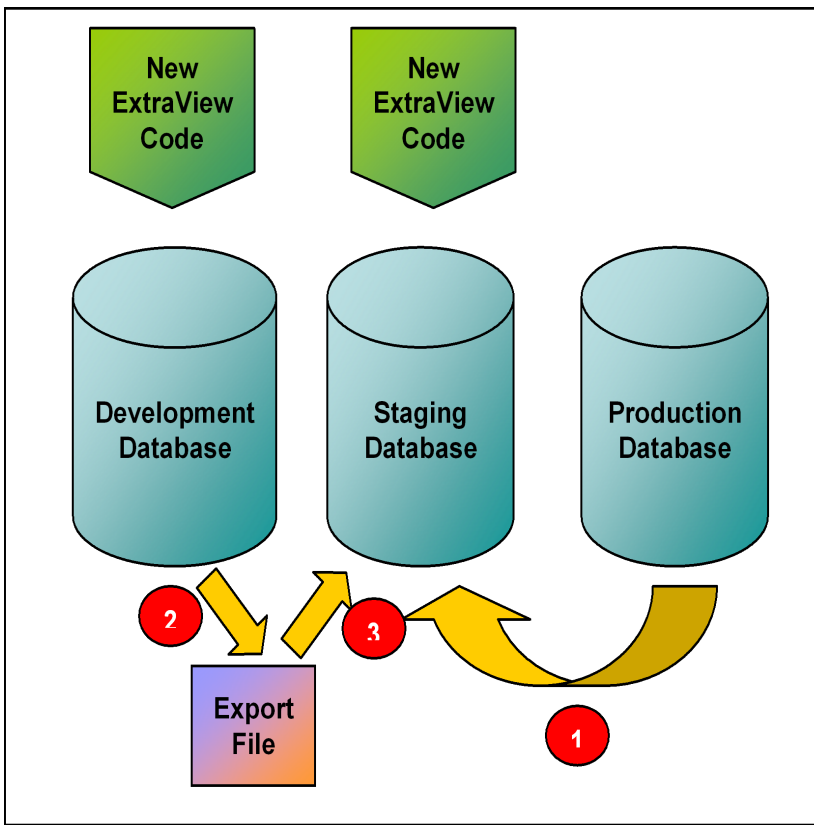
Step 2 – Perform the configuration work

Within the development environment, perform all your configuration and testing, to develop the completed system you intend to deploy

Step 3 – Move the development environment to the staging environment

The purpose of this step is to obtain a full working system on which you can perform all your quality assurance and final testing.

- Take another backup copy of the production database
- Create a new staging database, and import the production data into this new database
- If you are upgrading ExtraView and there is a database upgrade script to run, do this now against the staging database. **It is critically important that the version number of the ExtraView database in the staging environment be the identical version number you are about to import from the development environment**
- Use the Metadata Export feature to export the ExtraView metadata
- Use the Metadata Import feature to import the ExtraView metadata into the staging database
- If you are upgrading the ExtraView code, install this now and restart the application server



Moving the development instance to the staging instance

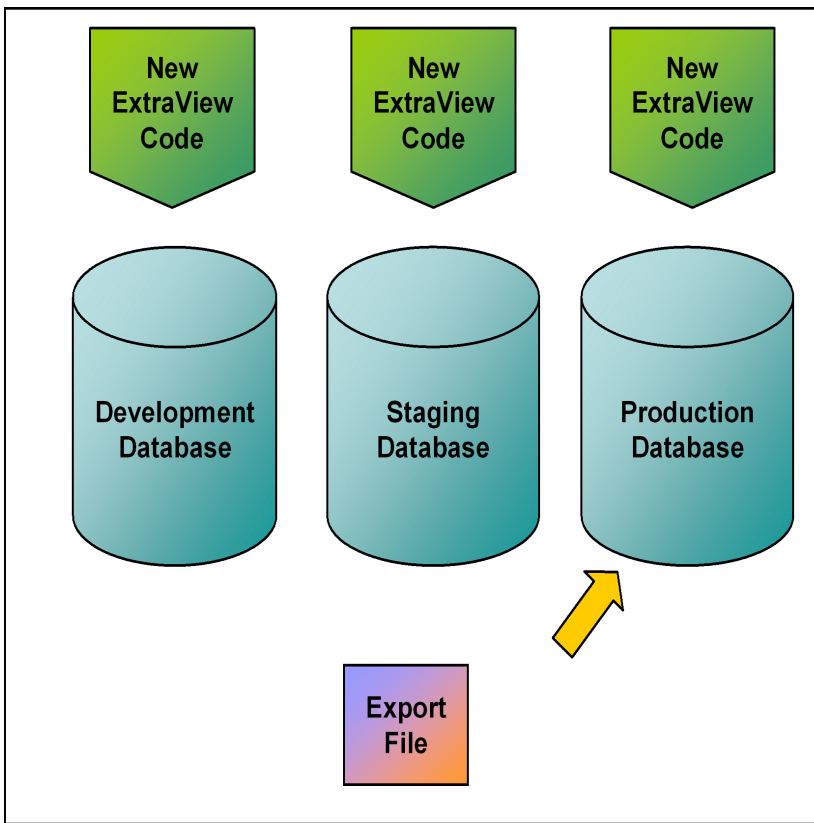
Step 4 – QA the entire ExtraView environment in the staging database

This is an essential part of the process to ensure that you gain the expected results, and that you can accurately predict the results you will obtain in the final production environment.

Note: You should not make any configuration changes to ExtraView here. If you find problems, you should repeat the process from step 1.

Step 5 – Upgrade the Production database

- Turn off the production database so users cannot access this during the upgrade process
- Take a backup of the production database
- If you are upgrading ExtraView and there is a database upgrade script to run, do this now against the production database. **It is critically important that the version number of the ExtraView database in the staging environment be the identical version number you are about to import from the development environment**
- Use the Metadata Import feature in the production database to import the export file that was created in Step 3
- If you are upgrading the ExtraView code, install this now and restart the application server
- With administrative access, check that the production environment is working correctly



Updating the production instance

The process to upgrade your production ExtraView instance is now complete.

Item Data XML Import

Batch Mode

This function is driven from the **Import/Export** tab of the **Administration** menus, in the function named **Item Data XML Import**. When you access this function, you will see a screen similar to the following:

The screenshot shows the 'Item Data XML Import' web interface. At the top right, there are 'Return' and 'Print Page' buttons. The main content area is titled 'Item Data XML Import'. Under the 'Directions' section, there are two numbered steps: 1. Press the "Browse" button and select the XML file to be uploaded. 2. Wait for ExtraView to upload the file. This may take several minutes before the file is uploaded from your computer to the server and the import to the database begins. Under the 'Actions' section, there is a radio button selected for 'Merge' with the description 'Leaves existing records in the target schema alone and adds new ones from the XML using new sequence numbers.' Below this is a text input field with a 'Browse...' button and an 'Upload XML file' button. At the bottom right, there are 'Return' and 'Print Page' buttons.

Batch interface to load an XML item file

Only a "merge" function is imported at this point in time. Future versions will support additional methods of importing item data. Use the Browse button to navigate to the XML file containing the item data to be imported. Then press the Upload XML file. Be prepared to wait until the XML data file is uploaded to the server. This may take some time, depending upon its size.

Note: To save time on a large import, you may zip the input file and upload the zipped file. ExtraView will automatically unzip the uploaded file.



Results screen from a batch XML import

While the file is being processed, you will see a status bar informing you of progress. Once complete, you will see a screen similar to the one above. If there are any errors in the import file, you will see these on the results screen.

API Commands

These commands are also explained in the ExtraView CLI & API Guide.

An API action named `xml_insert` creates a new record or records in the ExtraView database from input formatted as XML. The input can be made as part of the HTTP data stream, or can be input from a file in XML format.

Syntax:

```
http://www.myserver.com/evj/ExtraView/ev_api.action?  
user_id=username  
&password=password  
&statevar=insert_xml  
&xml_file_name=filename | &xml_string=xml_data  
&template_file=file.html
```

- Provide either the `xml_file_name` or `xml_string`, but not both. You provide `xml_file_name` if the input is from a file that exists at the time of the execution of the command. You provide `xml_string`, if the data for the insert is provided as part of the HTTP request. This string contains the XML data to be parsed.
- `template_file` is the name of the template to be used for return value string generation. Generally, this template file is stored on the server in the `WEB-INF/user_templates` directory. On normal completion of the operation, this template undergoes parameter substitution with the following variable names:

Tag	Explanation
<code>__ID__</code>	The item number of the last item inserted
<code>__NUMBER_ITEMS_INSERTED__</code>	The number of inserted items
<code>__ITEM_TITLE__</code>	The title of the <code>ITEM_ID</code> dictionary entry

See the section on Templates in the ExtraView CLI & API Guide, for a full explanation of how to create user templates

If no template file is requested, the command returns a completion message to the calling program via HTTP.

On error completion, the return string contains an error message substituted into the `error.html` user template in the format:

error-message “at line=`xxx` and column number=`yyy`”

where `xxx` and `yyy` are the values returned by the XML parser.

As an example, the following message may be returned:

```
"The end-tag for element type "ITEM" must end with a '>' delimiter at line=8 and column number=9"
```

- Only one record should be inserted with the XML_STRING in one call to the API. When the input is in a file, there is no restriction to the number of records in a single operation.

Item Data Import Errors

Error Message	Explanation
Ambiguous Area title: <i>title</i>	The business area title in the XML is not unique within the database. Use its name instead.
Ambiguous Module title: <i>title</i>	The module with the title is not unique. Use the module name in this case to avoid conflicts
Ambiguous Project title: <i>title</i>	The project title in the XML is not unique within the database. Use its name instead.
Ambiguous Repeating record title: <i>title</i>	The repeating record with the title is not unique. Use the name in this case to avoid conflicts
Ambiguous UDF title: <i>title</i>	The UDF with the title is not unique. Use the UDF name in this case to avoid conflicts
Bad zip file or invalid XML tag at beginning of file	ExtraView cannot read the zip file with the XML data, or the XML tag at the beginning of the file is invalid
Cannot dereference list entry for ddname [<i>value</i>]	There is no list value corresponding to the <i>value</i> for the data dictionary name
End Attachment tag outside Attachment	The end attachment tags must be at the end of the attachment data
End item tag outside item	The end item tags must be at the end of the item data
End module tag outside module	The end module tags must be at the end of the module data
End <i>name</i> tag outside <i>name</i>	The end name tags must be at the end of the name data
End Repeating record tag outside Repeating record	The end repeating row tags must be at the end of the repeating row data
End UDF tag outside UDF	The end UDF tags must be at the end of the UDF data
Illegal NAME construct ignored	Provide valid name constructs
Invalid characters in the title value: [<i>value</i>]	The title value contains illegal characters
No ddentry for dereferenced name: <i>dd_name</i>	There is no data dictionary entry corresponding to <i>dd_name</i>
No Area with title: <i>title</i>	The business area with the <i>title</i> does not exist in the database
No Module with title: <i>title</i>	The module with the title does not exist
No product name for module: <i>name</i>	You must always provide the product_name field in the XML when adding modules
No product name for release: <i>name</i>	You must always provide the product_name field in the XML when adding repeating records which are dependent upon this field
No Project with title: <i>title</i>	The project with the <i>title</i> does not exist in the database
No Repeating record with title: <i>title</i>	The repeating record with the title does not exist
No such XML file: <i>file_name</i>	Indicates the input XML file does not exist
No UDF with title: <i>title</i>	The UDF with the title does not exist in the data dictionary
Nothing to convert from XML to DB; quitting	Input XML file appears to be empty
Unrecognized end element tag: <i>name</i>	The end tag for the name does not match the beginning tag for the name
Unrecognized start element tag: <i>tag_name</i>	The element tag name is not valid
WARNING: this source locale: [<i>locale</i>] is not available in target system	The DTD indicated that a locale is to be used that does not exist within the ExtraView installation
Validation exception: <i>exception</i>	General validation exception, as given in <i>exception</i>

File Import - Issue Data

The file import utility allows the administrator to upload a tab-delimited or comma-delimited file from their client computer, for the fields and values within this file to be mapped to ExtraView values, to validate the data and to finally import the data. Data can be

uploaded as new issues, or can be used to update existing issues. Access to this feature is via the security permission key named `CF_FILE_IMPORT`. The import works as a separate process for each business area and project, therefore your import files will only target a single business area and project. For a record to be imported and inserted as new, it must exist on the appropriate *add* layout or one of its embedded layouts for the business area and project. For a record to be imported and update an existing record, it must exist on the appropriate *edit* layout or one of its embedded layouts for the business area and project.

Note: The Add / Update task must be configured and running for the file import utility to work. This is because the performance is optimized when the utility is running in the background. Further, this allows multiple copies of the utility to run at one time, further increasing the performance of the import.

Typically, the files to be imported will contain data from other systems that is to be inserted into ExtraView. Microsoft Excel is a good tool that can be used to prepare data in the appropriate format for the import. The process followed is:

- Create a template for the import and upload the file
- ExtraView automatically provides mappings for fields that are both in the uploaded file and within the ExtraView database
- ExtraView automatically provides mappings for field values that are both in the uploaded file and within the ExtraView database
- You can see the results of the mapping and alter the mapping of any field or field value
- You may then validate the uploaded data, ensuring the file is error free before performing the upload
- On the validation screen, there is an alternative to download the file that was uploaded. This is in addition to being able to observe the errors on the screen. If there were errors in the uploaded data found by the validation process, these errors will be shown within the file you can download. This simplifies the process of finding, fixing, re-uploading and re-validating the data before you perform the import
- Finally, you can perform the import and insert the records.

Note: ExtraView will ignore whether fields are or are not mandatory when importing data. It will also ignore whether fields have correct allowed value relationships when importing data. It will not ignore read-only fields and later in this section, you will find how to import fields that are read-only on your *edit* screen layout. However, when you edit any of these records in the web-interface or via the CLI, and attempt to update, the appropriate validations will be performed and you must correct any errors of these types at this time. Fields with default values defined in the data dictionary will have the default value created, unless there is a value provided in the import file.

Import Templates

When you use the File Import Utility, you create a template that may be reused as many times as needed. This aids the sometimes repetitive process of validating and correcting your data. You can set up the field and value mappings once, and upload your import file as often as is required, validating the data as you progress. This also aids the routine uploading and importing of data from other sources, as the same mappings can be used each time, without the need to set these up.

There are three import modes from which to select, when you create the import template:

1. **Insert Issues** - New issues are created from each record in the import file.
2. **Update Issues** - Existing issues are updated from each record in the import file. There must be an **ID** column within the import file, and this must contain the **ID** of the issue to be updated
3. **Update and Insert Issues** - New issues may be created and existing records may be updated. To facilitate this, there must be an **ID** column within the import file, and this must contain the **ID** of issues to be updated. If the field is left blank, then the record will be inserted. Note that the corresponding *add* layout for the business area and project is used for validation purposes, when inserting issues, and the *edit* layout is used when updating issues

Importing Issues Directly from an *Add* or *Edit* Screen

As part of an end-user workflow, the administrator can configure a button that is invoked on an *add* or *edit* screen. This will popup a window into which the user provides the details of a file to upload. Note that this will use a predefined import template set up by an administrator. When the file has been uploaded, there is an optional feature to define a report that is run on the *add* or *edit* screen. This is typically used to display the results of the import. Instructions on configuring this feature are found [here](#).

Large Volume Imports

Special consideration may be made when you have tens of thousands or more records that must be imported in a short space of time. You may configure multiple import files and these can be imported in parallel. Please see the section on [large volume imports](#) for more information.

Import Strategies

Legacy Data Issues

Importing data from a legacy system is often problematic, for a number of reasons. These include –

- Data in legacy systems is rarely “clean”. For example, you may have been required to type in entries that become list values in ExtraView. Typing data often leads to mistakes, making it difficult to map different entries. ExtraView allows you to map more than one input value to a list value
- You may not want to carry over all users from a legacy system to ExtraView. For example, you may not want to purchase an ExtraView license for an ex-employee who was the creator of an issue in ExtraView. You can either create a user account in ExtraView and deactivate the account, or you can map the name to a different person in ExtraView
- To take advantage of all the exciting features in ExtraView, you may be changing your workflow and data items that you capture in a significant way. Not all legacy data will have value in these circumstances, but you may want to import it for historic purposes. ExtraView allows you to do this
- If you want to import data that is read-only when in the mode of updating an issue, temporarily alter the field to be read-write, import your data, then reset the field to be read-only.
- One field of particular note when importing data from a legacy system is the ID field. ExtraView licensees may want to retain the legacy number. ExtraView must use its own sequence of numbers. To facilitate this requirement, a text field named ALT_ID is defined in the ExtraView data dictionary. Map your legacy field to this ExtraView field and retain it on the layouts while you make the transition. Eventually, you may remove this field from the ExtraView layout.

Fields with Special Treatment Upon Import

When a record is inserted into ExtraView or updated by ExtraView there are several fields which are maintained automatically, and cannot be inserted or updated via the web-based interface, the API or the CLI. However, when importing legacy data, you may need to import values from these fields. ExtraView supports this. However, the fields must be on the add screen layout, and must have write access to accommodate the import utility. This table specifies the treatment of these fields:

Data Dictionary Field Name	Treatment
DATE_CREATED	If this exists in the import file and is mapped, the value provided will be inserted, else the current date and time will be used
DATE_CLOSED	If this exists in the import file and is mapped, and the STATUS of the issue equals the STATUS defined in the behavior setting named STATUS_CLOSED_NAME, the value provided will be inserted, else no value will be inserted
DATE_LAST_STATUS_CHANGE	If this exists in the import file and is mapped, the value provided will be inserted, else the current date and time will be used
ID	The ID field is always created by ExtraView, without exception. It is provided a sequential value when the issue is first created. When you are using the file import utility to update data, this is normally used as the key field upon which you map the record being imported to the existing issue within ExtraView. If your installation is configured to use ALT_ID as the primary means of identifying an issue, then you can expect ExtraView to create this from records within the import file, and you will use this as the key field upon which to map issues being updated
LAST_CHANGE_USER	If this exists in the import file and is mapped, the value provided will be inserted, else the current user ID will be used
ORIGINATOR	If this exists in the import file and is mapped, the value provided will be inserted, else the current user ID will be used
TIMESTAMP	This field cannot be mapped when importing data. If you want to preserve the timestamp, or an issue's last date updated, it is suggested you create a user defined field and import the data into this field.

Business Areas and Projects

The import utility will only import data into a single business area and project. It is not possible to map and import data into multiple business areas and projects, or into the main item structure and the repeating record structure at the same time with the import facility. Other methods exist within ExtraView to handle complex structures; the utility described here is intended for the import of simple structures (this method handles about 80% of requirements), and it is quick and simple to use. For complex data migration purposes, consider the XML import utility or the CLI evimport function. The strategy to import data into multiple areas and projects is to segment your data by area and project in your import file, and to import each one separately.

Read-only Fields

Most of the time, the data you import will be writeable through the add screen layout that you are using. The layout selected for the import is defined by:

- The business area defined in the import template (if you are using business areas in your installation)
- The project defined in the import template (if you are using business areas and projects in your installation)
- The current role of the user performing the import. Normally this is an administrative role, such as admin.

Import Strategy

If you have a straightforward file to import, simply use the add screen layout you have created, and create an import file to upload that reflects its contents. However, if your administrative role does not have all the fields on the add screen and they are not all writeable, or you have a relatively complex system with multiple Business Areas and Projects, the following strategy is good to follow. This is especially true for companies needing to import data from other sophisticated tracking systems which contain a good deal of metadata about each issue:

- Create a new user role named *import* or similar
- For this new user role create a new add screen layout. The speediest way of doing this is to choose the an *add* or *edit* screen layout for a role with a layout close to what you need, to then alter the user role on the *edit* screen for the layout to the new user role, then save the layout as the *add* screen for this role
- Make sure that the fields are writeable on this new layout
- Alter your current role to the new user role
- Perform the import

If you have a very large volume of data to import, ExtraView supports some advanced features which allow you to import many files in parallel. These features are described [here](#).

The upload file

Issue #	Category	Title	Assigned To	Last Modified	Product	Priority	Committe	Customer	Status
23769	Feature Enhancement	RELATIONSHIP_GROUP req	Jon Green	11/6/2003	Global Pov	P 3	4.2.3	Small Inc	Open
23768	Product Bug	Reformat the Home Page HT	Jim Smithers	2/3/2004	Galaxy	P 3	4.2.3	Big Corp	Open
23767	Product Bug	STATUS field changes when	Jon Green	8/8/2003	Galaxy	P 2	4.2.2		Fixed
23766	Product Bug	MODULE_ID cannot be set b	Jon Green	1/6/2004	Galaxy	P 3	4.2.3		Open
23765	Product Bug	Different reports in evreport	Jim Smithers	11/16/2003	Global Pov	P 3	4.2.2	Middling In	Open
23764	Product Bug	Prefixes in evadlist not work	Jon Green	2/6/2004	Galaxy	P 3	4.2.2		Open
23763	Product Bug	Can't use titles with spaces	Jim Smithers	10/3/2004	Galaxy	P 3	4.2.3	ABC	Not a Bug
23762	Product Bug	Assigning invalid user on eva	Dave Elson	1/5/2003	Global Pov	P 3	4.2.2		Open
23766	Product Bug	timezone vs. alpha_timezone	Ed Baumann	1/6/2004	Galaxy	P 2			Fixed

Sample upload file in Excel

The top arrow in the diagram points to row 1 of the spreadsheet. Here you see that each column contains the field names that are part of the input. The remaining rows of the spreadsheet contain the data that corresponds to the field names. Note:

- Fields in the import file may have different names to the fields in ExtraView. However, if they have the same name (when compared on a case insensitive basis), ExtraView will automatically map the field from the import file to its own data dictionary
- ExtraView will attempt to map, automatically, values that are in fields that are of display type List, Tab, Popup and User. This is on a case insensitive basis. For example, a status in the import file named *open* will be automatically mapped to an ExtraView status value of *Open*. If the value cannot be mapped by ExtraView, you must provide a mapping before the record can be uploaded
- Values within the import file, in fields of display type List, Tab, Popup and User must exist in ExtraView, before the data can be imported. ExtraView will not automatically create new values for you, because of the inherent dangers of propagating bad data from a legacy system to ExtraView. However, ExtraView will allow you to map from a non-existent value to a legitimate value.
- If you are importing date fields, then the format of date is important and must match the format of date for the user who is performing the import. If this did not happen, then ExtraView may encounter ambiguous dates as there will be no certainty of the date format in the import file. To achieve this, the user should enter their personal options screen and select a date format from those shown that matches the format in the import file. If no format in the list matches the format in the import file, then **Custom date mask** should be selected, and the date format should be entered into the field provided for the custom format. See Appendix A of this guide for the specifications of custom date masks.

- If a default value is set in the data dictionary for any field, this value will be inserted into all records, if there is no value in the import file.

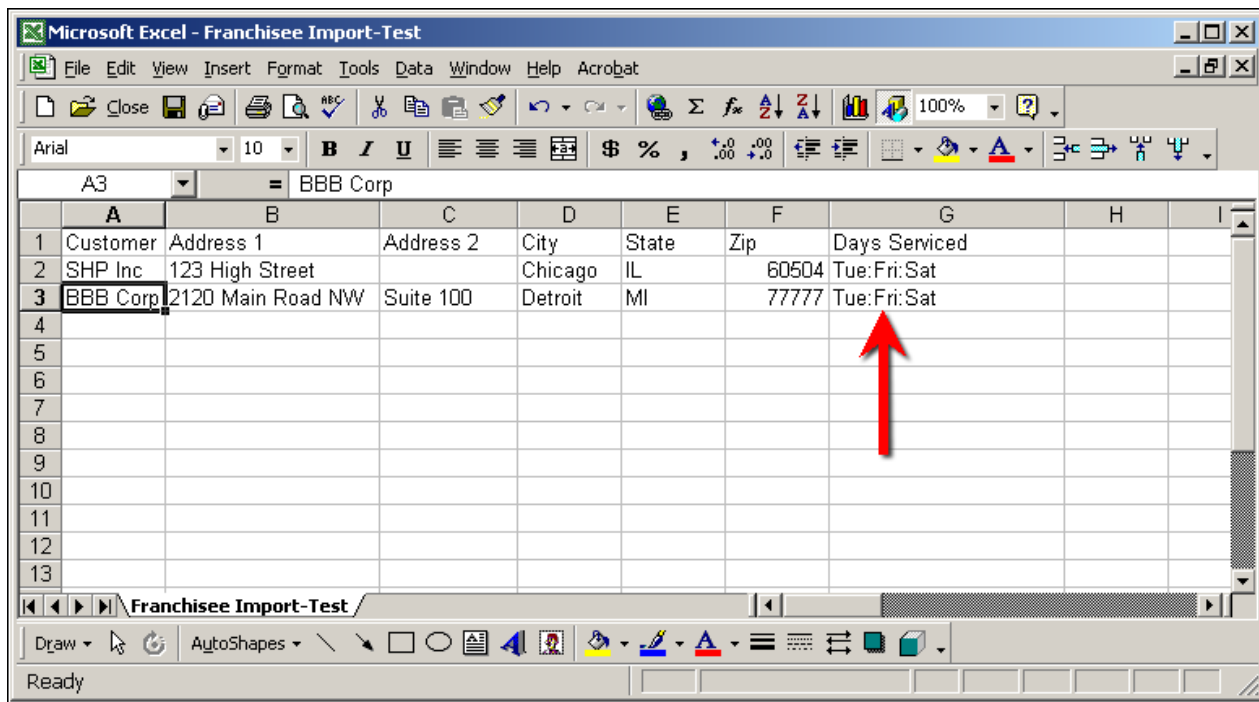
Once the spreadsheet is prepared, use the File, Save As menu within Excel, and choose either Text (Tab Delimited) or CSV (Comma Delimited) as the type.

Note: There is a limit of 500 Mbytes and 300 fields per record to the size of files that can be imported. If you have a very large amount of data to import, it is often more efficient to break it down into several import files, and to process these individually.

Fields

Multi-Valued Fields

Fields to be imported that are of a multi-value type require special preparation within the import file. All the values to be imported must exist in between the delimiters of the file (tabs or commas), yet ExtraView must be able to distinguish between the different values. This is accomplished by using the system-wide delimiter in the behavior setting named DEFAULT_TEXT_REPORT_DELIMITER. This has a default value of the colon character “:”. Use this delimiter to distinguish values. For example, you may have a list with days of the week (*Sun, Mon, Tue, Wed, Thu, Fri, Sat*). If you need to indicate that the valid values of data within the record are *Tue, Fri* and *Sat*, you would use an entry of *Tue:Fri:Sat* on your spreadsheet:



Importing multi-valued fields

Text Fields

Fields that are to be mapped to Text Area, Log Area and Print Text display types have special treatment, to allow you to import values that contain a return character (ASCII 13). This character is normally used by many applications to indicate the end of data of a row. This implies that the data following the return character is a new record. Unfortunately, when you export a comma or tab delimited file from Excel or other applications, these return characters are treated as an end of record. To counteract this in a way acceptable to Excel and the import facility in ExtraView:

1. Ensure new lines separated by a return character appear inside quoted strings (double quotes only). They will be transferred over into the record as is. In detail, carriage returns are discarded by ExtraView because they are non-existent within Unix files, and browsers behave correctly when they only receive a linefeed character
2. Tab characters may be inserted into the record inside quotes (if tab-delimited) or anywhere (if comma-delimited). They will be carried over to the record as is.
3. To get a double quote into a field, you need double it. Thus, "" represents one quote character. However, you can also put a double quote into a field if it is NOT the first non-whitespace character in a word. Thus, abc"def will carry across without modification, but "abcdef" will require modification.

User Name Fields

ExtraView expects to find user name in the import file in the same format as specified by the behavior setting USERNAME_DISPLAY. For example, this may be FIRST, LAST or ID. We recommend that for large imports where there may be more than one person with the same first and last name, that you import data using the ID setting. This will ensure that all users can be identified uniquely.

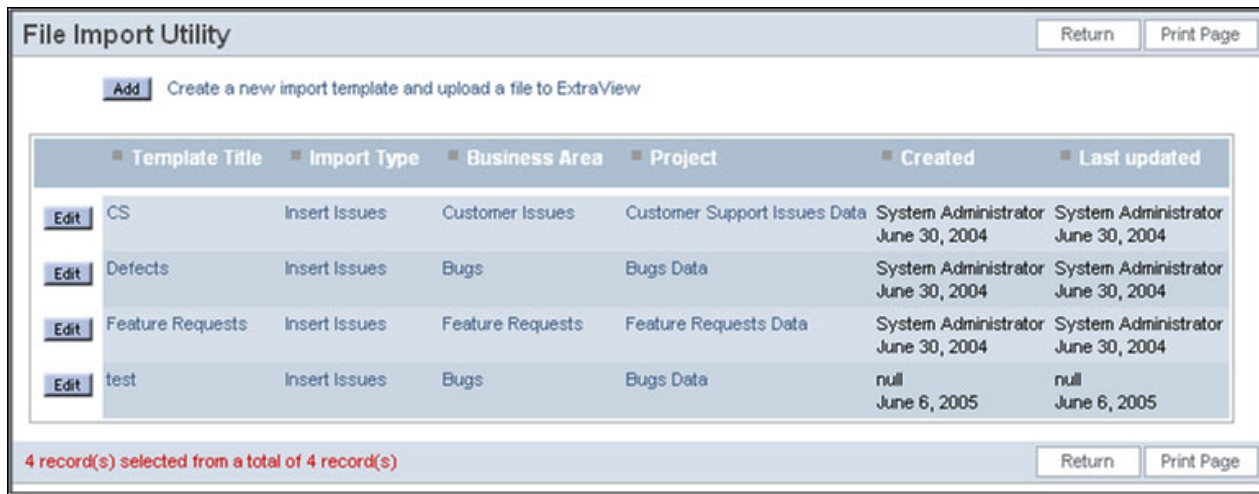
Maximum Field Sizes

Fields that are imported are subject to the maximum size constraints of their field types, and are as follows –

Field / Field Type	Maximum size
List field titles (loaded as metadata)	100 bytes
User ID (loaded as metadata)	30 bytes
User First Name (loaded as metadata)	128 bytes
User Last Name (loaded as metadata)	128 bytes
SHORT_DESCR	255 bytes
ALT_ID	128 bytes
UDF text field display types	256 bytes
UDF text area, log area, print text display types	Approx 10MBytes. Note that if you are using Microsoft Excel to prepare your input file, there is a 31k limit on the size of a cell.

Mapping your data

Within ExtraView administration, enter the File Import Utility. The following screen appears:



File Import Utility

Create a new import template and the following screen appears. Simply provide a name for the template, and select the file that is to be uploaded. Note that if your installation uses Business Areas and Projects, select lists for these will appear on the screen. Once a template has been created for a specific Business Area and Project, these cannot be altered. Note that you select whether the template is to be used to create new records, or to update existing records. You achieve this using the **Select Mode** prompt.

File Import Utility Create template & upload file Cancel Print Page

Set Business Area Bugs

Set Project Bugs Data

Title

Select mode Insert Issues

Choose file to upload Browse...

Create template & upload file Cancel Print Page

Creating the import template

Now you will see the main import screen, as follows:

From this screen you can perform all the tasks to import your file. You can edit the template details, and upload a different import file to use with the template. This is where you map fields and their values from the imported file to ExtraView. Finally, you can validate your imported file and perform the actual import.

Business Area: Bugs
 Project: Bugs Data
 Title:
 Upload a different file:
 Sample of uploaded file:

```
Category,Originator,Date Created,Status,Resolution,Priority,Severity,Assigned To,Changed by,Title,Product,Description
Hardware,CSR,12/17/2003,Unassigned,P 1,High,Developer,CSR,Metal mounting bracket is too short,Tracker,The bracket is n
Software,CSR,12/17/2003,New,P 3,Low,Developer,Developer,Turn left at the next Exit,Tracker Enterprise,Turn left at the
Documentation,CSR,12/18/2003,Fixed,Fixed,P 2,Medium,Test,CSR,Build it and they will come,Tracker Lite,You can leave it to h
```


 Tab-separated fields:

Function buttons

Template details

Sample data

Field Mappings For each import file field, choose an ExtraView field to map your data into. ExtraView will map the values within a field, if the same value exists in both the import file and ExtraView. To provide alternative mappings, click on the Map button. Choose *None* if you do not want to map a field in the import file. Click on the Refresh mappings button to see the results of your mapping.

Import file field	ExtraView field	
[1] Category	Category(CATEGORY)	<input type="button" value="Map"/>
[2] Originator	Originator(ORIGINATOR)	<input type="button" value="Map"/>
[3] Date Created	* None *	<input type="button" value="Map"/>
[4] Status	* None *	<input type="button" value="Map"/>
[5] Resolution	* None *	<input type="button" value="Map"/>
[6] Priority	Priority(PRIORITY)	<input type="button" value="Map"/>
[7] Severity	Severity(SEVERITY_LEVEL)	<input type="button" value="Map"/>
[8] Assigned To	Assigned To(ASSIGNED_TO)	<input type="button" value="Map"/>
[9] Changed by	* None *	<input type="button" value="Map"/>
[10] Title	Title(SHORT_DESCR)	<input type="button" value="Map"/>
[11] Product	Product(PRODUCT_NAME)	<input type="button" value="Map"/>
[12] Description	Description(DESCRIPTION)	<input type="button" value="Map"/>

Field mappings

Mapping Results This displays the results of mapping your data and how it will appear in ExtraView. The top field name in the table is the field in your import file, the bottom field is the ExtraView field. Click on any header, if you want to map list values from your input file, to different values in ExtraView. Press the Refresh button after changing any mapping.

Row Number	Category	Originator	Date Created	Status	Resolution	Priority	Severity	Assigned To	Changed by	Title
	Category(CATEGORY)	Originator(ORIGINATOR)				Priority(PRIORITY)	Severity(SEVERITY_LEVEL)	Assigned To(ASSIGNED_TO)		Title(SHORT_DESCR)
1	Hardware	CSR	12/17/2003	Unassigned		P 1	High	Developer	CSR	Metal mounting bracket is too short
2	Software	CSR	12/17/2003	New		P 3	Low	Developer	Developer	Turn left at the next Exit
3	Documentation	CSR	12/18/2003	Fixed	Fixed	P 2	Medium	Test	CSR	Build it and they will come
4	Hardware	CSR	12/19/2003	Closed	Implemented	P 4	High	Developer	Developer	Have wings will fly that's what they say
5	Documentation	CSR	12/20/2003	Duplicate		P 3	Medium	Test	CSR	A single swallow does not a spring make
6	Software	CSR	12/20/2003	Rejected	Not Found	P 2	Medium	Developer	CSR	Save it to a file with a good name
7	Hardware	CSR	12/20/2003	Unassigned		P 3	High	Developer	Test	Metal mounting bracket is too short
8	Software	CSR	12/21/2003	New		P 2	Medium	Test	CSR	Turn left at the next Exit
9	Documentation	CSR	12/21/2003	Closed	Fixed	P 1	Low	Developer	Developer	Build it and they will come
10	Software	CSR	12/21/2003	Closed	Implemented	P 3	Low	Test	CSR	Save it to a file with a good name
11	Software	CSR	12/22/2003	Fixed	Fixed	P 2	High	Test	Developer	Turn left at the next Exit
12	Hardware	CSR	12/22/2003	Closed	Implemented	P 4	Medium	Test	Test	Have wings will fly that's what they say
13	Documentation	CSR	12/27/2003	Duplicate		P 3	Medium	Developer	Test	A single swallow does not a spring make
14	Software	CSR	12/27/2003	Closed	Fixed	P 3	High	Test	Developer	Build it and they will come
15	Hardware	CSR	12/27/2003	Fixed	Fixed	P 2	High	Test	Test	Have wings will fly that's what they say
16	Documentation	CSR	12/27/2003	Rejected	Not Found	P 3	Medium	Developer	Developer	Metal mounting bracket is too short
17	Software	CSR	12/27/2003	Fixed	Fixed	P 4	Medium	Test	CSR	Turn left at the next Exit
18	Documentation	CSR	12/28/2003	Closed	Implemented	P 3	High	Developer	Developer	Save it to a file with

Results of mapping

19	Hardware	CSR	12/28/2003	New		P 2	Medium	Developer	CSR	a good name Turn left at the next Exit
20	Hardware	CSR	12/28/2003	Fixed	Fixed	P 3	Medium	Test	Developer	Save it to a file with a good name

Refresh mappings / Upload new file Validate import file Perform import Delete template Cancel Print Page

Import screen

Function buttons – these perform the following functions:

- *Refresh mappings / Upload new file* – if you alter the mapping of any field in the field mappings section, or use the Map button to alter a value mapping, or upload a new file, pressing this button will refresh the screen, redisplaying the results section
- *Validate import file* – this function checks each row of the import file and displays any errors in the input file. These errors should be corrected in the source file and the file uploaded again before performing the import. This can be done without leaving the import screen. You may validate the import file, correct errors within the file and re-upload the file as often as you need until the import file is error free
- *Perform import* – once the mappings are complete and the data validated, this button will perform a final validation and import the data into ExtraView. ExtraView will create new issues for each row of the uploaded, including new ID's
- *Delete template* – this deletes the current template and all mappings
- *Cancel* – this returns you to the initial file import screen with the list of templates.

Template details – shows the title of the template and allows you to upload another file into the template. Note that if the installation utilizes Business Areas and Projects, these will be shown for the current import template.

Sample data – this section shows a sample of data from the file that has been uploaded. You cannot edit the data within this text box, but must return to your source data to make any amendments.

Field mappings – Here you will see a fixed field name for each field header in the import file and a select list offering all the available fields within ExtraView to which you can map that column. To be a valid field for the import, the field must exist on the add screen layout or one of its embedded layouts for the appropriate business area and project, if these are in use and for the current role of the user performing the import. The field must have its security permissions set so the field can be updated. Further, you cannot map to the ID field. The ID field is maintained by ExtraView, and no value can ever be assigned to this from an external source. See later in this section on how to deal with read-only fields on your add screen layout. If you are trying to preserve the key identifying field from a previous system, the usual practice is to map the record identifier to the ALT_ID field.

ExtraView will attempt to map the field in the import file to a field on the *edit* screen layout, by comparing the field name in the import file to the data dictionary titles of the fields on the *edit* screen layout. This comparison is case insensitive. When a match is found, ExtraView sets the ExtraView field as the selected field for the mapping. You can override this selection, and you can provide your own selection for any field. This includes mapping a field to * None *, thereby skipping it during the import.

In a similar way that fields are mapped, ExtraView will attempt to map the values within any field that has a display type list, tab, or popup.. User fields cannot be mapped at this point. Performing a validation will show which field values are not mapped. To map the values within a field, press the Map button to the right of the field. The screen that appears will be similar to the following:

File Import Utility				Return	Print Page
<input type="button" value="Add"/> Add a new mapping for a value for the ExtraView field named "Priority"					
	ExtraView List Title	Import File Title	Case Sensitive		
<input type="button" value="Edit"/>	P 1	P 1	NO		
<input type="button" value="Edit"/>	P 2	P 2	NO		
<input type="button" value="Edit"/>	P 3	P 3	NO		
<input type="button" value="Edit"/>	P 4	P 4	NO		
4 record(s) selected from a total of 4 record(s)				Return	Print Page

Mapping field values

You may press **Add** to create a new mapping, or you can edit an existing mapping. Note that you have a choice as to whether you want the mapping to be case sensitive or case insensitive. One point of note is that you can map fields with null values to a specific value in ExtraView, and you can map values to different values than set as default. This gives you flexibility in altering the data that you are importing.

Note: Field mappings are retained within your template. This means that if you set up a number of mappings and want to re-use these with a different import file, you simply need to re-use the same template.

Results of mapping – This section of the screen shows which values will be inserted on which records, when you perform the import. The color-coding shows the fields that will be skipped when importing the data and shows the specific values that will be inserted into specific fields in the ExtraView database.

The Business Area and Project

If you provide the Business Area or the Project field in your input file, then you must provide both of these.

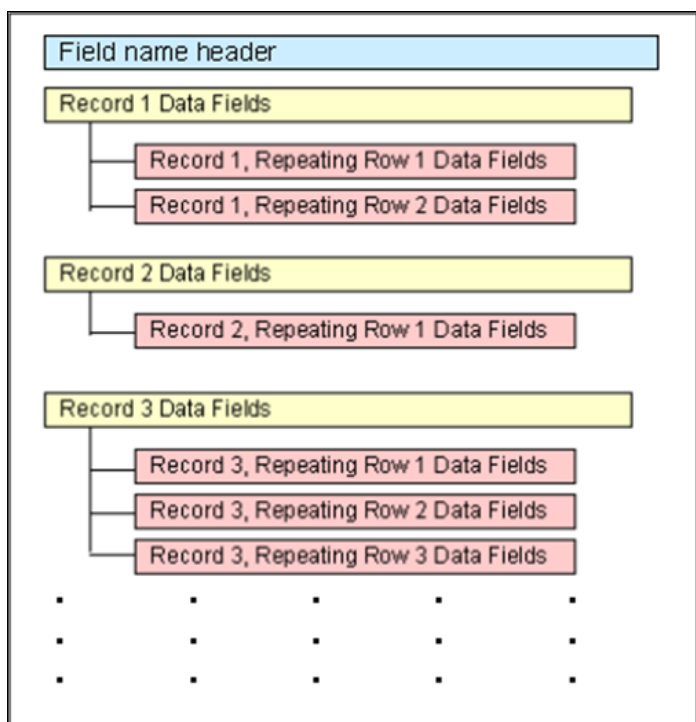
If you do not include these, then the File Upload Utility will use those specified in the template for the upload.

Updating Existing Issues

The file import utility has the capability to upload a file and to then update existing issues within ExtraView. To achieve this, a match must be made of a key field within the import file, with an existing key field within ExtraView. The only two key fields that can be used are either the ID field, or the ALT_ID field. Further, as ExtraView does not impose a unique value limitation on the ALT_ID field, the user must ensure that the values are unique. In practice this is usually achieved with the ALT_ID field by using user custom code.

Importing Repeating Row Data

If your ExtraView installation is configured to use repeating rows within the defined process, special consideration must be given in preparing the input file, to describe the repeating row fields, and to provide the data for the repeating rows. This diagram shows the structure if there is a single repeating row within each issue:



Structure of the import file

Within the import file that you create, this is reflected as shown in this screenshot of Excel, being used to prepare a comma separated value file:

Item Type	Category	Originator	Title	Product	Priority	Status	Release Status	Requested Release	Committed Release
0	Software	Bill Smith	This is the title of	Tracker	P 1	Open			
1	Open	v1	v1						
1	Open	v2	v2						
1	Will Not Fix	v0.5							
0	Documenta	George Wu	When a screw is tu	Tracker	P 3	New			
0	Software	Jim Bright	Enhance the user	Tracker En	P 2	New			
1	Open	v1	v1						
1	Open	v2	v2						

Import file with repeating row data

Note the presence of the first column with the title of **Issue Type**. A value of 0 indicates the row contains the issue field data. A value of 1 indicates that the row contains data for a repeating row. The 1 value is used for the built-in RELEASE repeating row. You will provide a different (arbitrary) number for repeating row layout types that you have created.

The red arrows point to the field titles, first for the issue itself, and then for the repeating row field titles. The blue arrows show how the repeating row data values are then inserted into the spreadsheet as rows following the issue. There may be any number of repeating rows inserted for any issue.

Note these differences when preparing a file for import that contains repeating rows compared to a file that only has issue data:

- **Header Row**
 - The header row with the field names must begin in the first column with the value **Item Type** or **ITEM_TYPE_ID**. **Item Type** is the title and **ITEM_TYPE_ID** is the name. These terms are synonymous for the purpose of preparing the input file and can be used interchangeably
 - You place each of the field names (or titles) to be imported on the first row of the spreadsheet. First, you will have all the field names / titles for the main issue data in the order that the data will appear within the data rows
 - Next you will have all the field names / titles for each of the fields within the repeating row, in the same order they will appear within the data rows of the spreadsheet. Placing these once on the header row negates the need to repeat these for each series of repeating rows within the data rows of the spreadsheet
- **Data Rows**
 - Each row in the data must begin with the type of data on the row. The valid entries are either:
 - a **0** to represent **Issue Item** rows or
 - an **ITEM_GROUP_TYPE_ID** or its **File Marker**, to represent **Repeating Row Items**. See the next section on this page for an explanation of the **File Marker**
 - You can see from the above example that these all appear with the header row of the column being **Item Type**. An **ITEM_GROUP_TYPE_ID** value of **1** represents the built-in **RELEASE** repeating row type
 - The first data row of each issue will be an **Issue Item** row with a value of **0**, followed by its set of repeating rows. The remaining columns of the first data row will be the field values for the main issue fields. Each of the field values will thus appear within the spreadsheet column whose header row is the field name or field title to the field value
 - You may now create any number of rows with the **Repeating Row Item Group** type of an **ITEM_GROUP_TYPE** or one of its **File Markers**. For each row that is of a repeating row type, a new repeating record will be created within the main

issue. You begin the value data for each repeating row in column B of the spreadsheet, and place the values in the same order as the field names / titles were entered into the Header Row

- o For each issue you are inserting, with its set of repeating rows, repeat the steps in this section starting in the next blank row of the spreadsheet.

Repeating row data stored within ExtraView issues may or may not have a unique identifier for each row of data. This is controlled with the behavior setting named ENFORCE_UNIQUE_RELEASES. When this is set to YES, you must:

- Map one field in the repeating row data of ITEM_GROUP_TYPE_ID 1 to be imported to the ExtraView field named RELEASE_FOUND
- Have a unique value of the field being mapped to RELEASE_FOUND for each row in the import file, within each issue
- Have write permission to the RELEASE_FOUND field

Importing Files Which Contain Data for Multiple Repeating Row Types

The preceding information relates to the importing of data which contains a single repeating row **Item Type**. ExtraView can import files which contain multiple repeating rows within a single file, using an extension of the above methodology.

You adjust the spreadsheet format for each repeating row type you wish to import by simply adding the field titles for each repeating row type in the header row, and then creating a data row for each repeating row type. The **Issue Type** column provides the indicator as to the repeating row to which the data belongs.

Each repeating row in an ExtraView database has an internal identifier which is not readily seen or displayed to the administrator creating the import file, therefore an intermediate *File Marker* is used to provide the connection between the field data within the import file and the data being stored within the ExtraView database. Follow this procedure to prepare your import file:

- **Header Row**
 - o Follow the instructions in the preceding section, but simply continue the entries in the header row with the names / titles of the fields for each repeating row type within the data to be imported. Again, these should appear in the order that the value data will appear within the spreadsheet
- **Data Rows**
 - o You arbitrarily select a number for each repeating row type that is to be uploaded. 0 is always the number to be used for the **Issue Item** rows of data. 1 is always used for the inbuilt RELEASE repeating row layout type
 - o The remaining rows will have their arbitrary number in column A of the spreadsheet. Obviously, each repeating row of a specific type should use the same arbitrary number within the input data values
 - o You simply use the arbitrary number to identify which repeating row fields are to be associated with the data on the rows within the spreadsheet; these numbers can be mapped to the internal ITEM_GROUP_TYPE numbers representing repeating row types
 - o When you see the mapping results within the File Import screen, you will see a connector field for each repeating row type. This has the title **File Marker**. You see the fields for each repeating row type within the mapping results grid on the screen, and you place the number you used within the spreadsheet you uploaded, within the **File Marker** field to identify which data rows in the spreadsheet belong to which fields in the header row.

Mapping Results This displays the results of mapping your data and how it will appear in ExtraView. The top field name is the ExtraView field. Click on any header, if you want to map list values from your input file. Click the Refresh button after changing any mapping.

Row Number	ITEM_TYPE_ID = 0	Fred is a textfield	Fred is a textfield(FRED_TEXTFIELD)
File Marker 1	ITEM_TYPE_ID = 1	Release Status	Release Status(RELEASE_STATUS)
File Marker 99	ITEM_TYPE_ID = 3	Fred is a text field on rr	Fred RR List
1	0	Fred is a text field on rr(FRED_TEXT1_RR)	Fred RR List(FRED_RR_LIST)

After uploading the spreadsheet with the multiple repeating row types, performing the mapping, and validating the data, you proceed with the file import.

Importing Image & Document Fields

You may import both documents and images into their respective field types via the File Import utility. This page describes the way in which you prepare a structure on the file system of the server where you will place the files to be loaded into the ExtraView database. This structure must be accessible by the ExtraView application server. The image and document files will be loaded from there into ExtraView - either into the database or onto a part of the file system maintained by ExtraView, dependent on the value of the behavior setting ATTACHMENT_REPOSITORY_OPT.

The fields to be imported into your database are specified with either the first row of the imported file or through the mapping interface described in the previous section. If an image or document display type field is defined as an imported field, then the contents of that column in each row is a filename that points to a file accessible to the ExtraView application server. The file is used to populate the image or document field contents in the target issue.

Image and document fields have the following metadata fields associated with them:

- File name
- Alternate text
- Character set
- Created by user
- Last updated by user
- MIME type

These metadata fields may be set from the row data that updates the image or document field.

To set the metadata field, the associated dictionary fields, named **EVFI_XXX** are used to define a column where the metadata values exist. There are 12 dictionary entries that represent the image/document metadata: 6 for item fields, and 6 for repeating row fields - those ending in **_RR**:

- File name: EVFI_FILE_NAME[_RR]
- Alternate text: EVFI_ALT_TEXT[_RR]
- Character set: EVFI_CHARSET[_RR]
- Created by user: EVFI_CREATED_BY_USER[_RR]
- Last updated by user: EVFI_LAST_UPDATED_BY_USER[_RR]
- MIME type: EVFI_MIME_TYPE[_RR]

These field names may be chosen in the File Import Utility to indicate where the metadata values in the row(s) reside. Note that only one set of metadata per row may be specified, and hence importing more than one image/document per row will not permit metadata values unique to the different fields.

Example

Header record (on a single row of the import file)

Description, FRED_MULTI, FRED_IMAGE, EVFI_ALT_TEXT, EVFI_CHARSET, EVFI_CREATED_BY_USER, EVFI_LAST_UPDATED_BY_USER, EVFI_FILE_NAME, EVFI_MIME_TYPE

Data record (on a single row of the import file)

freddie description,frd2, C:\Users\Public\Pictures\Sample Pictures\desert.jpg, "Alternate Description", "Shift-JIS", gary.rather, gary.rather, theDesert.jpg, image/jpeg

Note: The reader will note that the header record contains data dictionary names instead of titles to illustrate the example; in a true import, the header record should contain dd titles to assure correct mapping.

In this example, the metadata fields will populate the image field “FRED_IMAGE” when the issue is created.

Default Metadata Values

When metadata is not specified in the field mapping for an IMAGE/DOCUMENT field, the following defaults are applied:

- File name: the file name portion of the full path name of the input image/document file
- Alternate text: the file name
- Character set: UTF-8
- Created by user: the user running the import operation
- Last updated by user: the user running the import operation
- MIME type: computed from the file extension of the file name, using the ExtraView internal mapping

Repeating Rows

Images and documents fields may be imported to repeating rows using the same type of mapping described in the [Importing Repeating Row Data](#) page. In this case, there must be repeating row values to set the metadata - this is the purpose of the **EVFI_XXX_RR** fields. These metadata fields must be used to set the metadata for repeating row image/documents.

Update Option

Images and documents may be imported using either the INSERT option or the UPDATE option of the File Import utility.

Validation Option

The validation operation of the File Import function performs the following tests on imported images and documents:

- The file's existence and readability
- If an Image field, whether the file contains an image (a thumbnail can be created)
- For metadata
 - the MIME type must be recognized as a valid type
 - the CHARSET must be a valid recognized character set name

The same validation tests are done on the import operation. Validation errors will cause the import of that row to fail. Other rows are not affected, unless they also have errors.

Importing Attachments

You may import file attachments via the File Import utility. This page describes the way in which you prepare a structure on the file system of the server where you will place the files to be loaded into the ExtraView database. This structure must be accessible by the ExtraView application server. The image and document files will be loaded from there into ExtraView - either into the database or onto a part of the file system maintained by ExtraView, dependent on the value of the behavior setting ATTACHMENT_REPOSITORY_OPT.

Attachment metadata may be specified using similar metadata entries as for importing image and document fields. The attachments are specified in the import file by using the data dictionary name **ATTACHMENT** as a mapped field, and defining the file name as the value for that column. The remaining metadata entries that can be used are optional, and are defined as follows:

- EVFI_ALT_TEXT - the description of the attachment, with a default of the file name
- EVFI_CHARSET - the character set used for displaying the attachment, with a default of UTF-8
- EVFI_CREATED_BY_USER - the User ID of the user creating the attachment. The default is the User ID of the user running the import
- EVFI_UPDATED_BY_USER - the last updated user of the attachment, with a default of the User ID of the user running the import
- EVFI_FILE_NAME - the file name of the attachment, with the default of the actual file name
- EVFI_MIME_TYPE - the mime type of the attachment. The default is computed by ExtraView from the file's extension

These metadata fields may be set from the row data that describes the attachment to be imported.

To set the metadata field, the associated dictionary fields, named **EVFI_XXX** are used to define a column where the metadata values exist.

These field names may be chosen in the File Import Utility to indicate where the metadata values in the row(s) reside. Note that only one set of metadata per row may be specified, and hence importing more than one image/document per row will not permit metadata values unique to the different fields. Import document and image fields is similar to importing file attachments. You may view the [example](#) on that page as a model on how to use this feature.

Importing Multiple Attachments for a Single Issue

You may import multiple attachments for a single issue, by delimiting the attachment metadata within the appropriate fields. The delimiter used is defined by the behavior setting named DEFAULT_TEXT_REPORT_DELIMITER. Normally, this is a colon character. For example, the EVFI_FILE_NAME field for an issue may contain:

```
file_name1:file_name2:file_name3
```

This implies three separate attachments are going to be uploaded. Similarly, use delimited text in fields such as EVFI_ALT_TEXT to provide separate descriptions for each of the attachments.

Update Option

Attachments may be imported using either the INSERT option or the UPDATE option of the File Import utility.

Validation Option

The validation operation of the File Import function performs the following tests on imported images and documents:

- The file's existence and readability
- If an Image field, whether the file contains an image, so that a thumbnail can be created
- For metadata
 - the MIME type must be recognized as a valid type
 - the CHARSET must be a valid recognized character set name

The same validation tests are done on the import operation. Validation errors will cause the import of that row to fail. Other rows are not affected, unless they also have errors.

Large Volume Imports

Overview

Using the file import utility for the bulk import of tens of thousands (or more) issues currently requires a large investment of time due primarily to the sequential processing of the records being imported. ExtraView supports parallelism of the file import process by spawning multiple add/update requests to be processed simultaneously.

Current File Import Processing

There are two components to the overall processing. The File Import Utility is invoked from the Administration interface. This utility is responsible for:

- Interacting with the user to set up and performing the file import
- Uploading the file to be imported and saving it internally
- Creating the mapping of fields and rows to item sub-objects
- Starting the background File Import Worker task
- Reporting on the progress of the File Import process
- Formatting, displaying and downloading errors and results to the user.

The File Import Worker is the second component and is responsible for:

- Reading the internal file
- Performing the necessary field and row mapping to item objects
- Adding or updating records to the database
- This is a background task, is not interruptable, and only communicates its progress to the user interface component.

Each of these entities performs its responsibilities in a sequential, non-parallel manner.

Parallelization

The user can create multiple files to be uploaded within the File Import utility. With configuration of multiple File Import Worker background tasks, the import operations are then performed in parallel, increasing the number of simultaneous operations that can be processed in a given period of time.

Configuring ExtraView to Handle Parallel Imports

Each input file is processed separately as a background operation by a File Import Worker task. If there is more than one File Import Worker task, the input files are processed simultaneously, in parallel, improving performance. In a multi-node installation, you should configure at least one File Import Worker task running on each node. Generally, it makes no difference on which node a File Import Worker task is running on unless an attachment field, image, or document is being uploaded, in which case the File Import Worker task must be running on the same node as the File Import front end, so as to be capable of reading the referenced files. You should consider configuring one File Import Worker task for each file containing your import data that you are going to upload for processing at the same time.

The File Import Worker task(s) sends add/update requests to a queue for the task named Add Update, which also runs in the background. There must be at least one Add Update task running on each node within a multi-node system. This queue is processed by each running Add Update task taking the top entry from the queue, and performing the add or update to the database. When multiple Add Update tasks are configured, the queue is processed more quickly than if there is a single Add Update task.

Note that there is no direct relationship between the number of File Import Worker tasks and the number of Add Update tasks. There are also limits to the number of each tasks that you should configure as there are diminishing returns, dependent upon factors such as the speed of the hardware.

The optimization process is somewhat arbitrary and there are no hard and fast rules as to the optimal configuration. As a rule of thumb, these factors have proven useful in configuring large imports of data:

- For less than 30,000 records on a single node installation, only configure a single File Import Worker task and process a single import file. You might consider configuring a second Add Update task
- If you are working with larger data sets, and you have a multi-node installation, the parallelization configuration becomes worthwhile. Consider implementing a File Import Worker task for each import file and a similar number of Add Update tasks
- A limitation is that if you are importing images/documents/attachments, you must have a shared file system or limit your workers to a single node, as the file system is used to hold the temporary copy of the file so the tasks must both reside on the same physical server.

The CF_RUN_AS_ADMIN Security Permission Setting

This permission setting enables a checkbox on the file import screen. When this checkbox is set, the import utility will behave as the ADMIN user account and will ignore security permissions when importing the records. This proves to be a useful method of significantly speeding the import. It should be understood by the user performing the import that this is happening and that no field-level permission checking is happening while they import the data.

File Import - User Information

The import utility for user data allows the administrator to upload a tab-delimited or comma-delimited file from their client computer, for the fields and values within this file to be mapped to ExtraView values, to validate the data and to finally import new user data or update existing user data. Access to this feature is via the security permission key named CF_USER_FILE_IMPORT. Much of the user data file import utility is similar to the previous topic of importing issue data, so this section focuses on the differences. When you choose to import user data, similarly to importing issue data, you will create a template that can be reused with different uploaded files. This is shown in the next screenshot.

Template Title	Import Type	Created	Last updated
User	Insert Users	太郎 日本 7/14/10 6:12 PM	Bill Smith 12/7/21 4:04 PM

Adding a new user upload template

Once you have created a template, the process is to:

- Upload the data file containing the user data
- Map the fields in the import file to fields in ExtraView
- Make sure you have write permission to all the user fields that you are creating. The security permission fields for the user fields are all prefaced with USER
- Validate the data
- Import the data.

All mapping operations are similar to those for importing issue data. The fields that can be mapped to within ExtraView are:

Field	Purpose
ADDRESS_LINE1	The first line of the user's address. If none is specified, this is left blank
ADDRESS_LINE2	The second line of the user's address. If none is specified, this is left blank
ALPHA_TIMEZONE	The user's time zone. If none is specified, the value in the behavior setting named DEFAULT_TIMEZONE is used
AREA_ID	The default business area for the user. If none is supplied, the user will be placed in the current business area of the user performing the import
CELL_PHONE	The cell phone number of the user. If none is specified, this is left blank

CHART_FONT	The user's font they will use on charts they produce. If none is specified, the value in the behavior setting named DEFAULT_CHART_FONT is used
CITY	The City of the user. If none is specified, this is left blank
COMPANY_NAME	The user's company name. If none is specified, this is left blank
COUNTRY	The Country of the user. If none is specified, this is left blank
DATE_FORMAT	The user's date format If none is specified, the value in the behavior setting named DEFAULT_DATE_FORMAT is used
DRILLDOWN_REPORT	This has the value <i>QUICKLIST</i> by default. The two valid values are <i>QUICKLIST</i> and <i>DETAILED</i>
** EMAIL	The user's email address If none is specified, the value is left blank
EMAIL_FORMAT	The default for this field is the value HTML. The list of valid values is <i>HTML</i> , <i>TEXT</i> , <i>BRIF</i> and <i>VERY_BRIF</i> , corresponding to HTML, text, brief text and very brief text
ENABLED_USER	The default for this field is the value <i>Enabled</i> . If you want to create the user in a disabled state, then use the value of <i>Disabled</i> .
FAX	The fax number of the user. If none is specified, this is left blank
** FIRST_NAME	The first name of the user. If none is specified, this is left blank
HOME_TELEPHONE	The home telephone number of the user. If none is specified, this is left blank
HTTP_CHARSET	The user's character set If none is specified, the value in the behavior setting named HTTP_CHARSET is used
JOB_TITLE	The job title of the user. If none is specified, this is left blank
LANGUAGE	The language defaults to the setting in DEFAULT_LANGUAGE. Note that this should be in lower case. If you set another value, then ensure you have created the appropriate locale
* LAST_NAME	The last name of the user. Note this is a required field in the import file.
LOGIN_ID	The alternative User ID. If none is specified, the SECURITY_USER_ID is used
MS_OFFICE_CHARSET	The user's character set to use when outputting information to Microsoft Office products. If none is specified, the value in the behavior setting named MS_OFFICE_CHARSET is used. Note this is only useful if you are running versions of Microsoft Office prior to the Office 2003 versions
NOTIFY_ON_OWN_UPDATES	The default for this value is <i>Y</i> . You can also give it the value of <i>N</i> .
PAGER	The pager number of the user. If none is specified, this is left blank
* PASSWORD	The password, in plain text, for the user. The password is not stored in plain text, but is encrypted within the database as the user is created.
PASSWORD_EXPIRY_DATE	The date you want the user's account to expire. Note that if you do not provide this value, the password will never expire
PASSWORD_INTERVAL	The number of days between password expirations for the user. If this is not supplied, the default is zero which means the password will not expire
POSTAL_CODE	The postal code of the user. If none is specified, this is left blank
PRIVACY_GROUP	Each user may belong to multiple privacy groups; therefore importing privacy groups requires a different syntax than for most other user fields. Refer to the section above titled Importing Repeating Row Data . This shows how to construct the spreadsheet data to import user roles into ExtraView. Use <i>Privacy Group</i> as the title to the field.
PROJECT_ID	The default project for the user. If none is supplied, the user will be placed in the current project of the user performing the import. The project must be valid for the AREA_ID specified
RECORDS_PER_PAGE	This defaults to <i>20</i> and is the number of records that will be displayed on a home page report
REGION	The language defaults to the setting in DEFAULT_REGION. Note that this should be in upper case. If you set another value, then ensure you have created the appropriate locale with its region
REPORT_1_ID REPORT_2_ID REPORT_3_ID	This is the location to set the three Home Page reports. For each report, you must use the precise mapping of the report's name. This is case sensitive. As an example, if you want to refer to a Shared report that has a title of Assigned to you , and a description of Issues assigned to you then you would enter Shared:Assigned to you, Issues assigned to you
* SECURITY_USER_ID	This is a required field and is the key field for the entire user record. It must be alphanumeric, and be from one to thirty characters in length. As well as alphanumeric characters, the user ID may also contain periods ('.') and underscores ('_')
START_PAGE_ID	By default this has a value of zero. The potential values for this are:

	0 Home Page
	1 Query Screen
	2 Add Issue Screen
	Note that it is possible for the administrator to add additional values to this list.
STATE	The state of the user. If none is specified, this is left blank
STYLESHEET	The default value for this field is <i>small</i> . Other valid values are <i>medium</i> and <i>large</i> . These correspond to the font size for the user's account
TWENTY_FOUR_HOUR_TIME	This defaults to <i>N</i> . You may also provide a value of <i>Y</i> if you want the user to use a twenty-four hour clock
USER_FIELD_1 USER_FIELD_2 USER_FIELD_3 USER_FIELD_4 USER_FIELD_5	These are user defined fields that may be imported into ExtraView. Their titles are set in the data dictionary, and you may import values into these fields from your import file.
USER_ROLE	Each user may have multiple roles; therefore importing roles requires a different syntax than for most other user fields. Refer to the section above titled Importing Repeating Row Data . This shows how to construct the spreadsheet data to import user roles into ExtraView. Use <i>Role</i> as the title to the field. See below for additional information
VARIANT	The user's region variant. If none is specified, the value in the behavior setting named is used. This is not commonly used.
WORK_TELEPHONE	The work telephone number of the user. If none is specified, this is left blank.

** indicates that the field is always required. * indicates that the field may be required, depending on the value of the behavior setting ENFORCE_DETAILED_USER_INFO. This screenshot displays a sample import file. Note how the PRIVACY_GROUP and ROLE fields may be mapped to multiple values, for a single user. The fields with the multiple values are defined in the first row, and the values are placed in rows following each user, using an **Issue Type** of **1** as opposed to the user details which have an **Issue Type** of **0**.

	A	B	C	D	E	F	G	H	I	J
1	Issue Type	SECURITY_USER_ID	FIRST_NAME	LAST_NAME	EMAIL	COMPANY_NAME	JOB_TITLE	PASSWORD	PRIVACY_GROUP	ROLE
2	0	bsmith	William	Smith	bsmith@xyz.com	Superior Software	Doctor	Welcome		
3	1	Internal	Customer Support							
4	1		IT Support Manager							
5	0	jjone	Jennifer	Jones	jjones@xyz.com	BBC Company	Laboratory	Welcome		
6	1	Cust A	Guest							
7	0	ssingh	Sanjay	Singh	ssingh@xyz.com	Superior Software	Nurse	Welcome		
8	1	Internal	Administrator							
9	1	HR	IT Support Manager							
10										

The following screen shot displays the screen where you map the fields, validate the data and perform the import. Again, please consult the previous section for full details. The one difference to importing issue data is the prompt **Allow duplicates**. When this is checked, any duplicate combinations of **First Name** and **Last Name** or duplicate values of **Email Address** will be allowed. If this is not checked, then whenever a duplicate is found, the value will be rejected during the import phase.

File Import - User Information Refresh mappings / Upload new file Validate import file Perform import Delete template Cancel Print Page

From this screen you can perform all the tasks to import your file. You can edit the template details, and upload a different import file to use with the template. This is where you map fields and their values from the imported file to ExtraView. Finally, you can validate your imported file and perform the actual import.

Title: Localize

Upload a different file: Browse...

File character set:

Sample of uploaded file:

```
User ID,First Name,Last Name,Cell Phone,City,Company,Language,Area,Project
user1,First,Last,1234,Soquel,Any Company,English,Sample Business Area,Sample Project One
user2,First,Last,1234,Soquel,Any Company,English,Sample Business Area,Sample Project One
user3,First,Last,1234,Soquel,Any Company,English,Sample Business Area,Sample Project One
```

Tab-separated fields:

Allow duplicates:

Field Mappings

For each import file field, choose an ExtraView field to map your data into. ExtraView will map the values within a field, if the same value exists in both the import file and ExtraView. To provide alternative mappings, click on the Map button. Choose "None" if you do not want to map a field in the import file. Click on the Refresh mappings button to see the results of your mapping.

Import file field	ExtraView field
[1] User ID	User ID(SEcurity_USER_ID) <input type="button" value="Map"/>
[2] First Name	First Name(FIRST_NAME) <input type="button" value="Map"/>
[3] Last Name	Last Name(LAST_NAME) <input type="button" value="Map"/>
[4] Cell Phone	Cell phone(CELL_PHONE) <input type="button" value="Map"/>
[5] City	City(CITY) <input type="button" value="Map"/>
[6] Company	Company(COMPANY_NAME) <input type="button" value="Map"/>
[7] Language	Language(LANGUAGE) <input type="button" value="Map"/>
[8] Area	Area(AREA_ID) <input type="button" value="Map"/>
[9] Project	Project(PROJECT_ID) <input type="button" value="Map"/>

Mapping Results

This displays the results of mapping your data and how it will appear in ExtraView. The top field name in the table is the field in your import file, the bottom field is the ExtraView field. Click on any header, if you want to map list values from your input file, to different values in ExtraView. Press the Refresh button after changing any mapping.

Field values will be inserted into ExtraView Field values will not be inserted into ExtraView

Row Number	User ID	First Name	Last Name	Cell Phone	City	Company	Language	Area	Project
	User ID(SEcurity_USER_ID)	First Name(FIRST_NAME)	Last Name(LAST_NAME)	Cell phone(CELL_PHONE)	City(CITY)	Company(COMPANY_NAME)	Language(LANGUAGE)	Area(AREA_ID)	Project(PROJECT_ID)
1	user1	First	Last	1234	Soquel	Any Company	English	Sample Business Area	Sample Project One
2	user2	First	Last	1234	Soquel	Any Company	English	Sample Business Area	Sample Project One
3	user3	First	Last	1234	Soquel	Any Company	English	Sample Business Area	Sample Project One
4	user1	First	Last	1234	Soquel	Any Company	English	Sample Business Area	Sample Project One
5	user5	First	Last	1234	Soquel	Any Company	English	Sample Business Area	Sample Project One
6	user6	First	Last	1234	Soquel	Any Company	English	Sample Business Area	Sample Project One
7	user7	First	Last	1234	Soquel	Any Company	English	Sample Business Area	Sample Project One
8	user8	First	Last	1234	Soquel	Any Company	English	Sample Business Area	Sample Project One

Refresh mappings / Upload new file Validate import file Perform import Delete template Cancel Print Page

Validating and Importing Users

When validating the data and performing the import you will receive feedback in the same way as described in the previous section.

Note: For security purposes, the initial password of the user is set to a random value and is not defaulted to any value. The passwords will need to be set by the administrator individually, or via a custom-designed process.

Note: If inserting a new user will violate the number of licensed users, then an error is generated, and no update to the database is made. However if you do not specify the license type for a user, then they will be set to be concurrent, and this most probably will avoid any license constraints when loading the user. You may also load users in the disabled state by setting the ENABLED_USER field to a value of **D**.

Note: If your input file contains, or would cause a user to be created with a duplicate email address, or with a duplicate combination of first and last name, an error is also generated and the record is rejected.

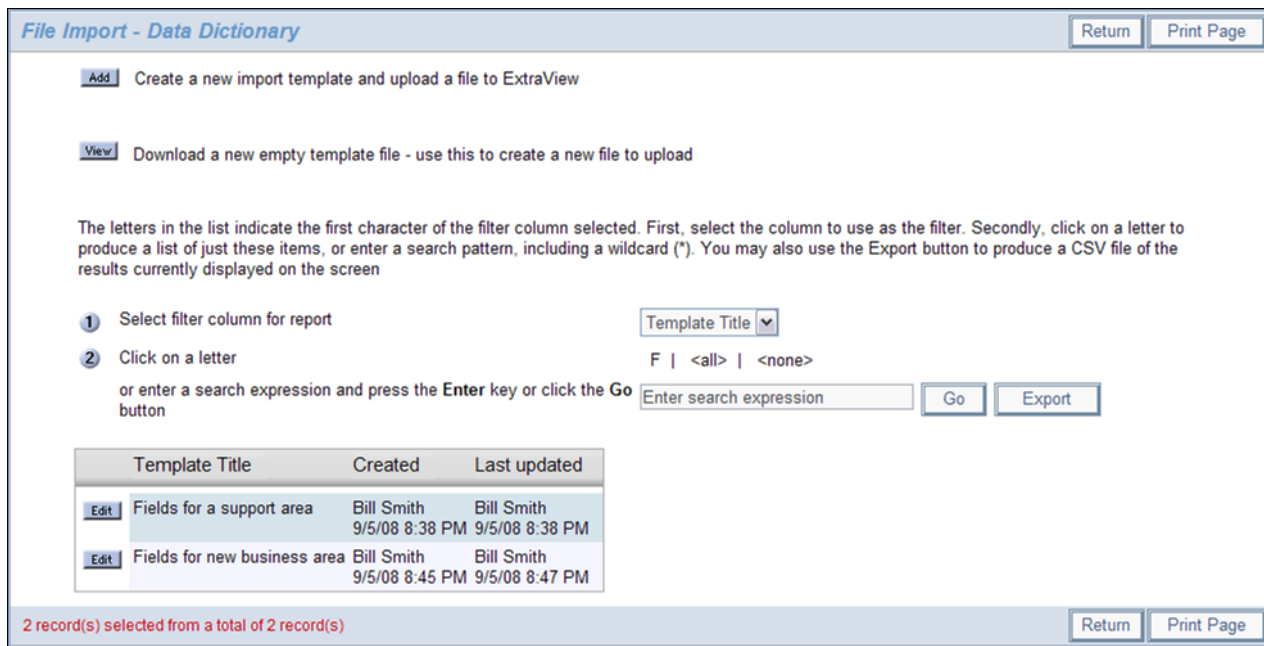
More about Mapping User Roles

Excel is a great tool but has one inherent disadvantage for importing user role information. Each user may have multiple roles, and we need to represent that a single user may have multiple roles, all on a two-dimensional spreadsheet. To achieve this, we use the first column in the spreadsheet (with the title **Issue Type** as a label to indicate whether the row of data is the user information or the role information that refers to the user. The user information is indicated with a **0** in the cell, whereas we indicate that it is user role information in the role by placing a **1** in the cell. When you signify that the row is to hold user roles, the headings in the first row of the spreadsheet do not apply, and you can place the roles in the columns of that row. However, you must still tell ExtraView that the spreadsheet contains user roles, and this is done by placing the title **ROLE** in the first row of the spreadsheet. The Excel screenshot further up this page shows how this is configured, for both Privacy and User Roles.

File Import - Data Dictionary

The purpose of this feature is to create new fields in the data dictionary from a spreadsheet. When creating a large ExtraView installation, there is often a significant amount of replication with similar fields, but with different **names**. You are able to create a spreadsheet with a set of fields plus their attributes from a comma- or tab-delimited file, and upload this file into ExtraView. Note that the template that you download is a Microsoft Excel spreadsheet. This allows the use of validation within the spreadsheet while preparing the input file. **You must save the file as a comma-delimited or tab-delimited file before you import it back into ExtraView.**

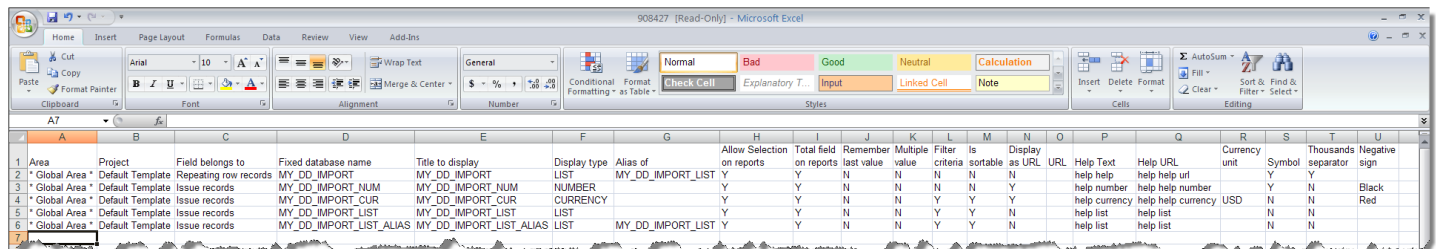
Significant validation is performed on the file you upload, with a similar two-step process as in uploading issue data. You are also able to save the templates you create for future use, allowing you to prepare fields in batches, and upload them as and when you are prepared.



Importing fields from a spreadsheet

Preparing the import file

Use Microsoft Excel or a similar spreadsheet tool to create your input data. An empty spreadsheet for use as an input file can be downloaded from within the utility. **You must save the file as a comma-delimited or tab-delimited file before you import it back into ExtraView** See the previous screenshot for details of how to download an empty spreadsheet.



Similar to the web-based input for the data dictionary, the following fields are available for input:

Field Name	Description
Area	The title of the Business Area for the field. If the field is to be global, use * Global Area *. This field is required
Project	The title of the Project within the Business Area to which you want to load the fields. If you are creating a global field, this will be * Master Project * If you are loading the fields for use across a single Business Area, this will be the default Project for the Business Area. If you want the field to only be visible within a single Project, then you will use the title of that Project. This field is required
Field belongs to	This must be set to Issue records if you want the field to be available to the main body of issues, or to Repeating row records if you want to use the field on a repeating row. This field is required

Fixed name	This is the fixed name for the field. Names can only consist of the characters A to Z, 0 to 9, and ‘_’. The first character of a fixed name must be alphabetic and the name can be up to 30 characters in length. Names cannot contain characters from non-English alphabets. A further restriction is that you may not have two underscore characters together in a name. This field is required
Title to display	The display title for the field. This may be up to 100 characters long and may contain any characters such as punctuation. This field is required
Display type	This must map to a valid display type within ExtraView. This field is required. The valid entries are: <ul style="list-style-type: none"> • Button • Checkbox • Currency • Custom • Date • Day • Decimal • HTML Area • Image • Label • List • Log Area • Number • Pop-up • Print Text • Radio Button - Horizontal • Radio Button - Vertical • Tab • Text Area • Text Field • Time Interval • User
Alias of	If the field is to be created as an alias of another field, and the other field is of type list, tab, or radio button then place the other field name in this column
Allow Selection on reports	Create as Yes or No
Total field on reports	Create as Yes or No
Remember last value	Create as Yes or No
Multiple value	Create as Yes or No
Filter criteria	Create as Yes or No
Is sortable	Create as Yes or No
Display as URL	Create as Yes or No
URL	If you are using the field as a display as URL, then provide the URL here
Help Text	The help text for the tooltip on the field
Help URL	The URL to use if you are providing your own help on the field
Currency unit	The currency unit for the field
Currency symbol	The currency symbol to be used for the field
Thousands separator	Create as Yes or No
Negative sign	Create as Yes or No
Internal precision	A number from -24 to 10 indicating how many digits of precision should be maintained for internal computations with this field
Report precision	A number from -24 to 10 indicating how many digits of precision should be displayed on reports or read-only displays of this field
Rounding mode	Select from one of the following list: <ul style="list-style-type: none"> • Round Up

	<ul style="list-style-type: none">• Round Down• Round Floor• Round Half Up• Round Half Down• Round Half Even
Percentage type	Create as Yes or No

Uploading the File and Providing any Mappings

This utility is very similar in usage to importing issue data. Please see the previous section in this guide for full instructions.

File Import - Data Dictionary Refresh mappings / Upload new file Validate import file Perform import Delete template Cancel Print Page

From this screen you can perform all the tasks to import your file. You can edit the template details, and upload a different import file to use with the template. This is where you map fields and their values from the imported file to ExtraView. Finally, you can validate your imported file and perform the actual import.

Title

Upload a different file

File character set

Sample of uploaded file

Tab-separated fields

Override existing field

Field Mappings For each import file field, choose an ExtraView field to map your data into. ExtraView will map the values within a field, if the same value exists in both the import file and ExtraView. To provide alternative mappings, click on the Map button. Choose "None" if you do not want to map a field in the import file. Click on the Refresh mappings button to see the results of your mapping.

Import file field	ExtraView field	Map
[1] Area	Area(AREA_ID)	<input type="button" value="Map"/>
[2] Project	Project(PROJECT_ID)	<input type="button" value="Map"/>
[3] Field belongs to	Field belongs to(ITEM_TYPE_ID)	<input type="button" value="Map"/>
[4] Fixed name	Fixed name(NAME)	<input type="button" value="Map"/>
[5] Title to display	Title to display(TITLE)	<input type="button" value="Map"/>
[6] Display type	Display type(DISPLAY_TYPE)	<input type="button" value="Map"/>
[7] Alias of	Alias of(ALIAS_OF)	<input type="button" value="Map"/>
[8] Allow Selection on reports	Allow selection on reports(SELECT_FOR_REPORTS)	<input type="button" value="Map"/>
[9] Total field on reports	Total field on reports(COL_REPORT_TOTAL)	<input type="button" value="Map"/>
[10] Remember last value	Remember last value(REMEMBER_LAST_VAL)	<input type="button" value="Map"/>
[11] Multiple value	Multiple value(MULTIPLE_VALUE)	<input type="button" value="Map"/>
[12] Filter criteria	Filter criteria(FILTER_CRITERIA)	<input type="button" value="Map"/>
[13] Is sortable	Is sortable(IS_SORTABLE)	<input type="button" value="Map"/>
[14] Display as URL	Display as URL(DISPLAY_AS_URL)	<input type="button" value="Map"/>
[15] URL	URL(URL)	<input type="button" value="Map"/>
[16] Help Text	Help Text(HELP_TEXT)	<input type="button" value="Map"/>
[17] Help URL	Help URL(HELP_URL)	<input type="button" value="Map"/>
[18] Currency unit	Currency unit(CURRENCY_UNIT)	<input type="button" value="Map"/>
[19] Currency symbol	Currency symbol(SHOW_CUR_SYMBOL)	<input type="button" value="Map"/>
[20] Thousands separator	Thousands separator(SHOW_THOU_SEP)	<input type="button" value="Map"/>
[21] Negative sign	Negative sign(NEGATIVE_SIGN)	<input type="button" value="Map"/>

Mapping Results This displays the results of mapping your data and how it will appear in ExtraView. The top field name in the table is the field in your import file, the bottom field is the ExtraView field. Click on any header, if you want to map list values from your input file, to different values in ExtraView. Press the Refresh button after changing any mapping.

Field values will be inserted into ExtraView Field values will not be inserted into ExtraView

Row Number	Area	Project	Field belongs to	Fixed name	Title to display	Display type	Alias of
	Area(AREA_ID)	Project(PROJECT_ID)	Field belongs to(ITEM_TYPE_ID)	Fixed name(NAME)	Title to display(TITLE)	Display type(DISPLAY_TYPE)	Alias of(ALIAS_OF)
1	* Global Area *	Default Template	Repeating row records	MY_DD_IMPORT	MY_DD_IMPORT	LIST	MY_DD_IMPORT
2	* Global Area *	Default Template	Issue records	MY_DD_IMPORT_NUM	MY_DD_IMPORT_NUM	NUMBER	
3	* Global Area *	Default Template	Issue records	MY_DD_IMPORT_CUR	MY_DD_IMPORT_CUR	CURRENCY	
4	* Global Area *	Default Template	Issue records	MY_DD_IMPORT_LIST	MY_DD_IMPORT_LIST	LIST	
5	* Global Area *	Default Template	Issue records	MY_DD_IMPORT_LIST_ALIAS	MY_DD_IMPORT_LIST_ALIAS	LIST	MY_DD_IMPORT_LIST_ALIAS
6	* Global Area *	Default Template	Issue records	MY_DD_IMPORT_LIST_ALIAS_2	MY_DD_IMPORT_LIST_ALIAS_2	LIST	MY_DD_IMPORT_LIST_ALIAS_2

Importing fields into the data dictionary

The key difference in using this utility and using the import issue data feature is that there is a prompt on the screen, **Override existing field**. If you check this, then you may update the properties of the field given in the **Fixed name** column.

Advanced Menu

The Advanced Menu contains administrative topics that are not regularly accessed. The administrative features within this menu are:

- ExtraView Version Information – This displays information regarding the server installation

- ExtraView Licenses – the End User License Agreement (EULA) for ExtraView
- Allowed Locales – If this is enabled in your system, this utility allows you to add a new language locale to the installation
- Translate System Messages and Prompts – If this is enabled in your system, this utility allows you to translate all the system messages and metadata in your system to an allowed locale
- Upload Server-side templates for use with ExtraView API – If you are creating server-side templates for use with external web pages, this utility allows you to upload the templates, without having access to the file system of the server
- Statistics – Key statistics of ExtraView usage
- System Log Types – Maintains the list of items that are logged within the System Log
- System Security Keys – This displays and allows you to create security keys within the installation, to which permissions are attached by the Grant Security Privileges routine
- View Allowed Functions – This displays all the functions within your installation and shows the difference between the allowed functions in the ExtraView Standard version and the ExtraView Global Compliance version
- Start Page Management – This controls the list of pages that can be addressed directly when a user first signs on to ExtraView
- Pre-cache Layouts at System Startup – This controls the list of layouts that can be loaded when the application server is started, providing improved performance when users first sign onto the system
- Edit the labels of the Administration tabs – This allows the editing of the labels on the tabs of the administration page. The only purpose for this utility is to localize the labels on the tabs
- Access Tokens for OAUTH2 Authentication / Authorization - This utility allows for the creation and maintenance of OAUTH2 tokens provided by remote servers
- Encryption Key Management - This utility allows the administrator to create and maintain encryption keys used within the ExtraView application

Version Information

This function, found under the **Advanced Menu** tab within Administration, provides the system user with all the vital operational, maintenance, and troubleshooting information available about their specific ExtraView installation. Companies that are self-hosting ExtraView on their own servers may use this feature as a convenient way to find information regarding their environment such as the ExtraView build number, third party software versions, operating system details, Java environment details, etc.

A screen similar to the following appears:

ExtraView Version Information		Return	Print Page
Build label	UNKNOWN		
Build date	Mon 02/27/2006 16:07:53.73		
Build OS	Windows_NT		
Build DB Host	127.0.0.1		
Build DB SID	nerdvana		
Build DB User	best_data		
Build DB Url	jdbc:oracle:thin:@(DESCRIPTION=(ADDRESS=(HOST=127.0.0.1)(PROTOCOL=tcp)(PORT=1521))(CONNECT_DATA=(SID=nerdvana)))		
Build Instance	/evj5.0		
Build Domain	.extraview.net		
Build Connection Pool Size	20		
Build Connection Pool Max	200		
Build Connection Use Count	500		
Build Connection Timeout	10		
Build Connection Pool Timeout	20		
License expiration date/time	NEVER		
Database product name	Oracle		
Database product version	Oracle9i Enterprise Edition Release 9.2.0.1.0 - Production With the Partitioning, OLAP and Oracle Data Mining options JServer Release 9.2.0.1.0 - Production		
JDBC version	9.2.0.3.0		
java.runtime.name	Java(TM) 2 Runtime Environment, Standard Edition		
sun.boot.library.path	C:\BuilderX\jdk1.4\jre\bin		
java.vm.version	1.4.2_01-b06		
java.vm.vendor	Sun Microsystems Inc.		
java.vendor.url	http://java.sun.com/		
path.separator	:		
java.vm.name	Java HotSpot(TM) Client VM		
file.encoding.pkg	sun.io		
user.country	US		
sun.os.patch.level	Service Pack 2		
java.vm.specification.name	Java Virtual Machine Specification		
user.dir	C:\Documents and Settings\Carl\My Documents\ExtraView\projects\evj5.0		
java.runtime.version	1.4.2_01-b06		
java.awt.graphicsenv	sun.awt.WWin32GraphicsEnvironment		
java.endorsed.dirs	C:\BuilderX\jdk1.4\jre\lib\endorsed		
os.arch	x86		
java.io.tmpdir	C:\DOCUME~1\Carl\LOCALS~1\Temp\		
line.separator			
java.vm.specification.vendor	Sun Microsystems Inc.		
user.variant			
java.naming.factory.url.pkgs	org.apache.naming		
os.name	Windows XP		
sun.java2d.fontpath			
log4j.configuration	file:c:/ApacheGroup/jakarta-tomcat-4.1.30/conf/log4j.properties		
java.library.path	C:\BuilderX\jdk1.4\bin; ; C:\WINDOWS\system32; C:\WINDOWS; C:\WINDOWS\system32; C:\WINDOWS\system32\WBEM; C:\oracle\ora92\bin; C:\Program Files\Oracle\jre\1.3.1\bin; C:\Program Files\Oracle\jre\1.8\bin; C:\Program Files\ATI Technologies\ATI Control Panel; C:\Program Files\Intel\Wireless\Bin; C:\Program Files\Microsoft SQL Server\80\Tools\Binn; C:\Program Files\UltraEdit; C:\Program Files\SecureCRT; C:\Program Files\Perforce; C:\Program Files\Intel\Wireless\Bin; C:\Program Files\Intel\Wireless		

Version Information screen

This information is useful for support purposes. ExtraView support personnel may ask you to review information on this screen when debugging problems.

ExtraView Licenses

The ExtraView end user license agreement (EULA) is available for reading within the **Advanced Menu** section of Administration.

Note that the license displayed here is the standard online version, which is agreed to when you first start ExtraView. This license may be superseded by a license agreement negotiated between ExtraView Corporation and your company. If such as license exists, then the license displayed here is not valid.

Note that, like virtually all modern enterprise software applications, ExtraView takes advantage of several open source components, which themselves are subject to licenses provided by the authors of these components. ExtraView only uses these open source components in their original, binary form, and does not alter the code. The licenses for these open source components are stored within the ExtraView distribution. These can be found within your deployed tree within the directory at /locales/en_US/license.

Allowed Locales

This function allows you to define the locales that users may select with the Language prompt on the user administration screen. Before this option appears within administration, you must set the behavior setting named MULTI_LOCALE to YES, and the security permission key named CF_ALLOWED_LOCALES must give you read and write permissions. From version 23 onward, it is recommended that you set this setting to a value of YES. Some years ago, having the setting as NO gave slightly better performance, but with up-to-date hardware, this is no longer an issue. In the future, some features may not work in single locale instances,

When you first access this function, you will see a list of the locales that are set up, and you can choose to modify the settings of these with the **Edit** button, or you can add a new locale.



List of Allowed Locales

When you add a new language package, you instantly allow any user to switch to that language, but localized messages may not exist for that language. You can use the **Translate System Messages and Prompts**, or the **Localize** buttons that appear to provide the messages in any new language you define.

Adding a new locale does more than giving the capability to translate the messages into that language. All date formats and other locale specific features will use different defaults. For example, the default locale is en_US (English US), but you may add a new locale of en_GB for British English. When you do this, the default date formats will be those to which a British user is familiar, rather than the traditional ones familiar to a user in the USA.

When no localized messages are available, or if the program is missing some localized messages in any specific language, ExtraView will display the language entry for the behavior setting named in DEFAULT_LOCALE. This is normally en_US. Note that a user in a country such as Britain can override a few localized messages, to eliminate any US English spelling.

Note: Once the setting named MULTI_LOCALE has been set to YES in an ExtraView database, and any changes to any text message has been made, the setting should not be reset to NO. Doing so may result in seeing text in a variety of locales being displayed to the user.

Localization

If the option to **Translate System Messages & Prompts** is enabled, the end user is able to select, as a personal preference, which language in which he wants to operate. There are three fundamental areas where localized messages can be entered and maintained:

- The user interface of ExtraView, including all system messages and prompts. Typically, these messages are the same for all installations of ExtraView. For example, this includes informative and error messages that come from the ExtraView software.
- The metadata values provided by the administrator, which are local to the installation. For example, if the administrator creates titles for each status value used across his organization in English, and he wants to provide the localized equivalents in French, German and Japanese, he can insert the appropriate translations.
- The metadata values provided by users, which are local to the installation. For example, if a user creates a report title used across his organization in English, and he wants to provide the localized equivalents in French, German and Japanese, he or another user may insert the appropriate translations.

These areas of localization are independent, and can be used in a mutually exclusive fashion. Localized versions of images can also be installed on the server. Please see the section on Initial Setup & Configuration for details.

Note: If a particular term or message is not translated into a specific language, ExtraView will choose to display the item with the default locale (normally US English). This can be used with advantage, for example, to provide a UK English localization, with the minimum of effort, only translating messages and metadata that have different spellings between the two languages.

Note: No matter what setting is used for a user's language preference, data can be entered and updated in any language, assuming the user's character set and browser provide the necessary support. For this reason, ExtraView recommends that the default character set used in the installation of an Oracle database be set at UTF-8, and that for a Microsoft SQL Server database, the character should be UCS-2.

Note: Before performing any localization, you should check your browser is set to use the UTF-8 character set. Failure to do this may result in corrupting previously saved messages that contain accented or double-byte characters. If you are not sure whether your browser is correctly configured, make sure you take a backup of your database before you start. Testing is extremely important as part of localizing ExtraView metadata and prompts into any language. Please thoroughly check your work before deploying into a production environment.

Entering Accented Characters

As stated above, your browser should be set to use the UTF-8 character set. However, there are still some issues to be aware of when entering characters. The characters that present the most problems are the quote (') and the double quote ("). The reason for this is that these characters are often used within a computer program to specify a string value being sent to the user interface. For example, the statement –

```
document.write('Today is Wednesday')
```

may be written by a JavaScript function to a screen. When this is translated to French, this would look like –

```
document.write('Aujourd'hui est Mercredi')
```

The additional quote in the middle of the text will cause a syntax error when the browser attempts to display the character. For this reason, you may need to substitute the character value of the quote as so –

```
document.write('Aujourd&#39;hui est Mercredi')
```

or as

```
document.write('Aujourd&#x27;hui est Mercredi')
```

The first method uses the decimal value of the quote; the second method uses the hexadecimal value.

This same principle can be used for all characters. Please see the Appendix on [Character Set Values](#) for a list of characters, their decimal and hexadecimal values. Some characters, such as the double quote also have a form like –

```
&quot;
```

End-User Selection of Language

Each user can select the language in which he wants to operate, by updating his account options. From the title bar at the top of each screen, the user clicks on the Account: link, enters their password and then sees a screen similar to the following, after clicking on the **Personal Options** tab.

The pull-down list labeled *Language* displays the available languages for this installation. Once the language is chosen, the account is updated and this language will be used for the display of all system messages, prompts and metadata.

User Accounts Screen

Localizing Screen Messages

This function is accessed from the Administration tab named **Advanced**, and is named **Translate System Messages and Prompts**. When you select this link, you will see a screen similar to the following:

Selecting a language to translate

Choose the language you want to localize and the category of messages. Choosing the *** System Text Messages *** option provides access to all the system level messages. Other categories you may choose are *** End User System Text Messages *** and *** Admin**

System Text Messages *. Alternatively choose a different category to localize the metadata values of a specific object. Once you choose these options, the screen refreshes, similar to the following:

The screenshot shows a web interface for localizing system messages. At the top, there are buttons for 'Update modified entries', 'Return', and 'Print Page'. A title bar reads 'Translate System Messages and Prompts'. Below this is a 'Filter List' section with instructions on how to filter messages by column or search pattern. A dropdown menu is set to 'English', and a search input field is available with 'Go' and 'Export' buttons. The main area is a table with three columns: 'English', 'Japanese', and 'Where Used'. The table lists various system messages such as 'MAX FRACTION DIGITS', 'MAXLENGTH', 'MIME Type Name', 'MINUS', 'MODAL WINDOW', 'MS Office char. set', and 'MS Office character set'. Each row shows the original English text, its Japanese translation, and the specific Java file and line number where the message is used.

English	Japanese	Where Used
MAX FRACTION DIGITS - This attribute only applies within numeric type input fields on ADD_PROBLEM an	MAX FRACTION DIGITS - This attribute only applies within numeric type input fields on ADD_PROBLEM and EDIT_PROBLEM layout types.	./presentation/admin ./LayoutElementAttributeDisplay.java(1515) ./util/dbpatches ./LayoutElementAttributeCreate.java(1343)
MAXLENGTH - The maximum number of characters that the user can type into text and numeric type field	MAXLENGTH - The maximum number of characters that the user can type into text and numeric type fields.	./presentation/admin ./LayoutElementAttributeDisplay.java(1517) ./util/dbpatches ./LayoutElementAttributeCreate.java(1345)
MIME Type Name	MIME Type Name	./presentation/admin/FullTextControlDisplay.java(772) ./presentation/admin/FullTextControlDisplay.java(1390) ./presentation/admin/FullTextControlDisplay.java(1496)
MINUS	MINUS	./presentation/search/RuntimeFilters.java(1218)
MODAL WINDOW - This layout cell attribute may be applied to the EDIT button on a related issue layout	MODAL WINDOW - This layout cell attribute may be applied to the EDIT button on a related issue layout only.	./presentation/admin ./LayoutElementAttributeDisplay.java(1623) ./util/dbpatches ./LayoutElementAttributeCreate.java(1451)
MS Office char. set	MS Office char. set	./presentation/admin/UserAccountsDisplay.java(3417) ./presentation/admin/UserAccountsDisplay.java(3428) ./presentation/admin/UserAccountsDisplay.java(4677) ./presentation/admin/UserAccountsDisplay.java(4687)
MS Office character set	MS Office character set	./applogic/admin/UserAccountsDisplayList.java(630)

Screen where messages are localized

Note the option with the radio button that allows you to display all messages, or to only display the messages that have not yet been translated. This gives you the ability to home in on the remaining messages to be localized, as opposed to viewing all messages. The messages appear in alphabetic order of the 'from' language. Edit any of the messages or prompts and then press the update button at the foot of the screen.

- Messages may contain one or more numbers within braces such as **Add entry to the {0} for {1}** or **Currently, there are {0,number,integer} user(s) connected**. Do not remove the numbers and information within braces from the localized message. The numbers within braces may be placed anywhere within the localized message
- Occasionally, messages in English may contain a numeric representation of a character. An example might be **Alternative User ID's must be unique**. Again, do not alter the representation, which is **'** in the example
- If there is HTML formatting tags within the message, such as: **<i>ExtraView</i> will not function correctly without cookies**. You can safely alter the HTML tags, but it is recommended that you leave them unaltered
- Messages that are longer than 100 characters in length are not displayed in full, but the full message to be translated can be displayed. Place your mouse over the shortened message and a tooltip will appear that displays the entire message
- The Java file names at the right hand side of the screen represent which file(s) the messages appear within, and the line number at which the message occurs within the file. This gives an indication of where about on the user interface that any message appears.

Localization of Reports

When localization is turned on within a site, there are additional prompts at the top of the report editors:

Localizing a Report Description

The **Localize** button is used to provide a localized title and / or description of the report for each locale you have defined.

Within the **Translate Messages and Prompts** administrative utility, it is possible to translate all the report titles and descriptions on a single screen. After entering the utility, choose the target language and then **Select Metadata Category** of REPORT. You will see a screen similar to the one below:

English(Report Title)	Japanese(Report Title)	English(Report Description)	Japanese(Report Description)	Owner	Report Folder	Where Used
Quicklist	Quicklist			Public Report		REPORT:1
Detailed	Detailed			Public Report		REPORT:2
Bugs	Bugs	Aging of all bugs that are not closed	クローズされていないすべてのバグの経過日数	Public Report	Bug Reports	REPORT:391
Customer Issues	Customer Issues	Aging of all issues	すべてのissueの経過日数	Public Report	Customer Reports	REPORT:386
Open P1 Issues	Open P1 Issues	All Areas - Ordered by Assigned To	すべてのエリア担当順番	Public Report	General Reports	REPORT:33
Test Plan with Associated Test Cases	Test Plan with Associated Test Cases	All Test Cases within a Selected Test Plan	All Test Cases within a Selected Test Plan	Public Report	Test Case Management Reports	REPORT:746
Test Plans	Test Plans	All Test Plans that are Incomplete	All Test Plans that are Incomplete	Public Report	Test Case Management Reports	REPORT:716
Assigned To By Status	Assigned To By Status	Assigned To By Status Group By Report	担当者ステータスグループ横レポート	Bill Smith	Folder with all reports that prepare PDF's	REPORT:638
New / Open Issues	New / Open Issues	Assigned to Me	自分自身が担当している新規 / オープン issues	Public Report	Helpdesk Reports	REPORT:239
All Issues Created in a Year	All Issues Created in a Year	Breakdown by Month & Quarter	Breakdown by Month & Quarter	Bill Smith		REPORT:974

On a single screen, you can localize both the **Report Title** and the **Report Description**.

Localizing Business Rules

Business Rules are developed in the base language of the system, indicated by the behavior settings named `DEFAULT_LANGUAGE` and `DEFAULT_REGION`. `DEFAULT_LANGUAGE` normally has the value of `en` for English. The `DEFAULT_REGION` normally

has the value of **US** which represents the value for the United States of America. Note that these values are case sensitive. It is unusual to alter these values, but it is usual to define other locales and assign users to these locales. The **Translate System Messages and Prompts** utility allows for the translation of messages into any locale, which is the combination of the language and region. The allowable locales for any system are defined within the administration utility named **Allowed Locales**.

In order to localize business rules, special consideration needs to be given and rules for the alternative languages need to be developed.

The following business rule actions may need to be localized, as they typically contain text which is displayed to the end user:

- ERROR
- STOP
- REAUTHORIZE

Consider a business rule in US English, such as this:

```
{STOP: Your entry is in error. Please correct and submit again}
```

If you also want to support French and Spanish language alternatives that have been added as allowed locales, you may do this:

```
if (USER.{language}) = 'en') {
    {STOP: Your entry is in error. Please correct and submit again}
}
if (USER.{language} = 'fr') {
    {STOP: Votre entrée est erronée. Veuillez corriger et soumettre de nouveau }
}
if (USER.{language}) = 'es') {
    {STOP: Su entrada está en error. Corrija y envíe de nuevo }
}
```

If you want to add variants of languages, you will also need to use the user's region within the logic. For example, if you want to support variants for different versions of English, you might do this:

```
if (USER.{language}) = 'en' && USER.{region} = 'US') {
    {STOP: Your entry for the field named Color is in error. Please correct.}
}
if (USER.{language}) = 'en' && USER.{region} = 'GB') {
    {STOP: Your entry for the field named Colour is in error. Please correct.}
}
```

Note the different spellings for the word Color.

Localizing Custom Code

In order to be able to localize messages that appear to users and that are coded within Java in ExtraView's custom code modules, the messages must be correctly coded to conform to the output requirements. Assuming the messages are correctly coded, the following procedure will integrate the messages into the appropriate message tables within the database. Thereafter, the messages are integrated into the translation screens and can be translated into any allowed locale.

This process should only be carried out by a developer who has good knowledge of ExtraView's internal structure and user custom coding.

- Check out the **UCMessageTest.java** from your source code repository, and make sure it is writeable
- Select and run the **build fapUC** build target within the **build.xml** script. This generates a new version of **UCMessageTest.java**
- Run the script **WEB-INF/data/UpgradeMessage.sh -u** or **WEB-INF/data/UpgradeMessage.bat -u** to insert/update the messages within the database.

There is no problem executing this process as many times as required. On each run, only new or changed messages will be inserted into the ExtraView database.

Localizing Metadata

Once localization is switched on within an ExtraView installation, all titles that can be localized will have a new button, named **Localize**, by the title within the administration section. For example, the titles of items with lists can be localized, and the titles within the data dictionary can be localized.

Note: You may localize all the metadata values on the same screen as that which localizes system messages. The two methods complement each other. You may either localize the metadata values when you access the underlying item, or in a single place on the system metadata screen.

It is particularly convenient to localize all the titles of user defined fields using the **Translate System Messages and Prompts** screen.

Once again, if you do not provide a localized equivalent for a value, ExtraView will revert to displaying the default locale's language. Usually this is US English. When you edit a status value, for example, the screen will look something similar to:



The screenshot shows a web form titled "Change an entry to Statuses". At the top right are buttons for "Update", "Cancel", "Delete", and "Print Page". The form contains three input fields: "Fixed database name" with the value "OPEN", "Title to display" with the value "Open", and "Sort sequence" with the value "3". A "Localize" button is positioned to the right of the "Title to display" field, with a red arrow pointing to it. At the bottom right, there are another set of buttons: "Update", "Cancel", "Delete", and "Print Page".

Localization button for metadata

When you first press the Localize button, you see a screen similar to the following:



The screenshot shows a web form titled "Localize titles on fields". At the top right are buttons for "Return" and "Print Page". Below the title is a table with two columns: "Locale" and "Title field". The table contains three rows of data:

	Locale	Title field
<input type="button" value="Edit"/> <input type="button" value="Delete"/>	Japanese(Japan)	Open
<input type="button" value="Edit"/> <input type="button" value="Delete"/>	French(France)	Open
<input type="button" value="Edit"/> <input type="button" value="Delete"/>	Spanish(Spain)	Open

At the bottom left, it says "3 record(s) selected from a total of 3 record(s)". At the bottom right, there are buttons for "Return" and "Print Page".

Localizing metadata

Notice that as no localization has yet been completed for this value, all available languages show the term "Open" as the value to display. Editing the Japanese value will show a screen like:

Localize title: Statuses Update Delete Cancel Print Page

Enter the localized message for the locale shown.

Locale Japanese(Japan)

Title

オープン

Update Delete Cancel Print Page

Creating a Japanese Status entry

When you have completed editing all the localized value for the status fields, the screen for the values will look similar to:

Localize titles on fields Return Print Page

	Locale	Title field
Edit Delete	Japanese(Japan)	オープン
Edit Delete	French(France)	Ouvrir
Edit Delete	Spanish(Spain)	Abierto

3 record(s) selected from a total of 3 record(s) Return Print Page

Completed localized text for a Status entry

Localizing User Defined Field Titles

From the **Translate System Messages and Prompts** administration screen, select the *target language*, and the metadata category of **UDF_LIST**. You may then select the specific User Defined Field for which you want to localize the titles. You will only see the fields to which you have write permission. This produces a screen similar to the following from which you can translate the titles to the UDF you selected:

Update modified entries Return Print Page Translate System Messages and Prompts ?

Message Translation

First select whether you want to display all the messages for the target language you will select, or whether you only want to display the messages that have yet to be translated. Next select the target language you want to work with. Then select a metadata category.

Choose *** All System Text Messages *** as the metadata category to localize all the system messages. Choose *** End User System Text Messages *** as the metadata category to localize all the end user messages. If you choose **UDF_LIST** as the metadata category you are then given a further choice to choose an individual list field and you may localize all the values within that list on this page. Choose a different category to localize metadata values from this screen as an alternative to localizing these values on the individual metadata maintenance screens.

Display All messages Untranslated messages only

Select target language

Select metadata category

User Defined Field

Hide Filters

Filter List

Select the column to use as a filter for the list. You may click on a letter to produce a list of the items which begin with this character, or you may enter a search pattern, including wildcards (*). The Export button creates a CSV file of the results currently displayed on the screen.

Select filter column for report

or click on a letter D | L | N | **<all>** | <none>

or enter a search expression and click the Go button

English	Japanese	Where Used
Deprecated(1670/title)	<input type="text" value="Deprecated"/>	UDF_LIST:title
Live(1845/title)	<input type="text" value="Live"/>	UDF_LIST:title
New(1775/title)	<input type="text" value="New"/>	UDF_LIST:title

Localizing Popup Calendars

The popup calendars seen on *add* and *edit* screens have a series of files that should be localized for each language. A wide variety of languages have predefined calendars, but should you need to localize a language not supplied, follow this procedure:

- Navigate to the web\javascript\zpcal\lang directory within your ExtraView installation
- You will see that the naming convention for the language files is **calendar-xx.js** where **xx** is the 2 character country code, such as **es** for the Spanish language
- Copy the **calendar-en.js** file to a file named **calendar-xx.js**, replacing **xx** with the appropriate 2 character country code
- Edit the new file and replace each character string for day names, month names and the tooltips with the appropriate local language equivalents
- Save the file.

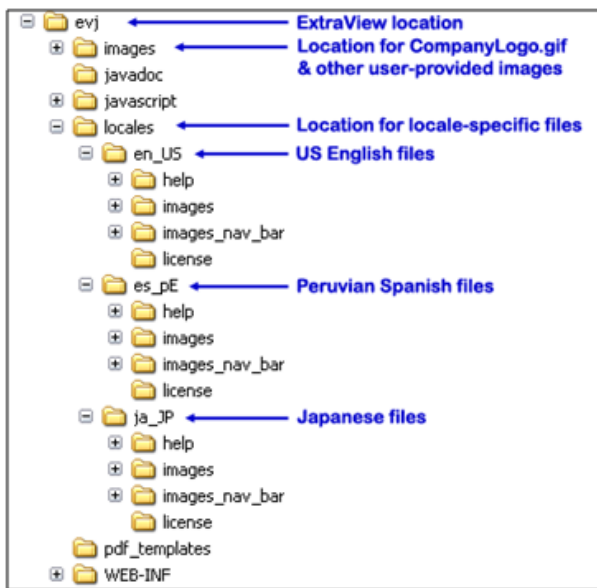
Globalization File Structure

If ExtraView Corporation is hosting your installation, you do not have direct access to the file system of the server to configure, alter or use this feature without contacting ExtraView support.

If you are considering altering the user interface, or adding additional image sets, or customizing the help pages, it is important to understand where ExtraView places files that can be altered or localized. The types of files that can be altered are as follows:

- Image files – note that the file with your company’s logo is treated differently from the remainder of the images
- Help files

The following tree structure shows the location of directories on a Microsoft Windows server.



Localization directory structure

- The image with your company logo is placed within the directory named /images . Its name is CompanyLogo.gif. There may only be a single company logo file for an instance.
- The /images directory also contains a directory named /tab_corners . This contains the images used to construct tabs that appear within ExtraView.
- The /locales directory is where all the locale specific image and help files are stored. ExtraView is always shipped with at least one set of files within this directory. This is named /en_US and contains US English image and help files. /en_US is the default locale for the installation. Other locale specific directories can be created and will contain the appropriate images and help.

Metadata Migration of Localized Data

The administrative utilities **Metadata Export** and **Metadata Import** are used to move localized data from one ExtraView instance to another. The migration of localized data may be independent of the movement of other metadata or may be part of the overall movement of data.

For further details consult the pages on these utilities [here](#).

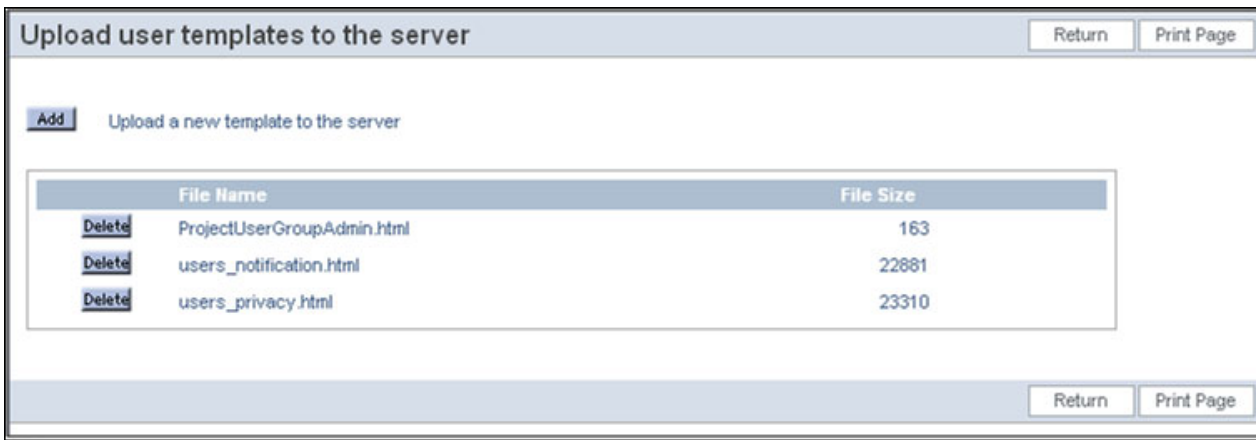
Manage Server-Side Templates

Server-side templates are used to format information returned from the API to a client browser or script. For example, when you enter a new issue from the API to ExtraView, you can format the information returned by the command (the ID of the issue or an error if the command failed) with a template, perhaps to style the output in the same form as your company’s website.

This is fully explained in the **Application Programming Interface Guide**. Templates are typically stored in the directory named WEB-INF/user_templates. To aid in placing templates on the server, when you may not have access to the directory structure of your server, this administrative function allows you to upload server-side templates, and allows you to delete them. They must be edited on your client computer.

Access to this feature is controlled by the security key named CF_UPLOAD_USER_TEMPLATES.

From the Administration menu, click on the **System Controls** tab. Then click on the link named Upload Server-Side Templates for use with ExtraView API. You will see the following screen:



Managing Server-side templates

The **Add** button allows you to add a new template. Once templates have been uploaded to the server, you can delete them with the **Delete** button.

Note: You cannot use this feature if you are running ExtraView from within a deployed War file.

Statistics

ExtraView maintains statistics on key information. Statistics are accessed via the Administration menu, under the System Controls tab.

Click **Statistics** to view the statistics.

The page is divided into 5 main sections: User Statistics, Issue Statistics, File Attachments, Background Time Counts, and Background Frequencies

User Statistics	
Total number of users (active and inactive)	15
Number of active users	14
Number of active customer users	2
Number of internal (non customer) users	12
Number of active users in user role <i>Administrator</i>	4
Number of active users in user role <i>Customer</i>	7
Number of active users in user role <i>Customer Support</i>	5
Number of active users in user role <i>Customer Support Manager</i>	2
Number of active users in user role <i>Development Engineer</i>	7
Number of active users in user role <i>Engineering Manager</i>	3
Number of active users in user role <i>IT Support</i>	5
Number of active users in user role <i>IT Support Manager</i>	3
Number of active users in user role <i>Quality Assurance</i>	6

User Statistics section

- **Total number of users (active and inactive).** This is the total number of users stored in ExtraView's database. It includes both active and deactivated user accounts.
- **Number of active users.** This is the number of active user accounts, and excludes deactivated accounts.
- **Number of active customer users.** This is the number of active users, in the user role specified by the behavior setting named LIMITED_USER_ROLE.

- **Number of internal (non-customer) users.** This is the number of users who are allocated to users groups other than the LIMITED_USER_ROLE. If a user is allocated to both LIMITED_USER_ROLE and any other group, they will appear in this total.
- **Number of active users in user role *group_name*.** This is the number of active users in the user role named *group_name*.

Issue Statistics	
Total number of issues in database	347
Number of issues created to date this month	0
Number of issues created last month (January)	0
Number of issues created in last 30 days	0
Number of updates applied to date this month	0
Number of updates applied last month (January)	0
Number of updates applied in last 30 days	0

Issue Statistics section

File attachments	
Number of attachments in system	29
Average size of attachment (kB)	126
Maximum size of an attachment (kB)	1602

File Attachments section

Background Time Counts	
Database data manipulation language	0
Database connection allocation	0

Background Time Counts

Background Frequencies	
Database data manipulation language	15
Database connection allocation	1

Background Frequencies

The Background Time Counts and Frequencies match those shown in EVSTATS for individual services, but they are accumulated for any task that runs in the background, such as SESSION_MONITOR, TASK_CONTROL, FULL_TEXT_SYNCHRONIZE, and BATCHMAIL when run as a background task.

The values are accumulated for the period of time from the most recent instance start of your application server (boot time) to the current time. The database manipulation language (DML) statistics are those used to access or modify the database, in particular, any SELECT, UPDATE or DELETE SQL statements.

The database connection allocation frequency is the number of times a connection is allocated from the ExtraView Connection Pool.

System Security Keys

It is unlikely that you will need to access this screen, therefore it is turned off by default. Should you require access to this feature, set the security permission key named SE_SECURITY_MODULE to read and write.

Each field, button, each screen and many features within ExtraView have corresponding System Security Keys. From the **Grant Security Privileges** section under the **Fields & Layouts** tab, you are able to control the visibility of the elements controlled by these keys, thereby restricting the access to these fields, buttons, and features.

Note: Changes in the system security keys area have system-wide implications. ExtraView Corporation strongly recommends that, other than editing the display titles (which appear in the grant security privileges screens) you not attempt to make changes in this area without first contacting ExtraView Support. It is unlikely that you will need to create new keys.

	Security key fixed name	Title to display on screens	Description
Edit	CF_ADMIN_MENU	Edit the labels of the Administration tabs	This is provided so you can localize the labels
Edit	CF_ALLOWEDLOCALES	Allowed Locales	Maintain the list of locales allowed to be set by users in this installation. Note that even though a locale is defined, the translated messages may need to be created
Edit	CF_ALLOWEDVALUE_TYPE	Allowed Value Types	Define and specify parent-child hierarchical relationships between fields. Once a relationship is established, you can maintain the list of allowed values
Edit	CF_ALLOWED_VALUES	Allowed value list	Access to the screen for maintenance of allowed value lists. These lists can also be maintained individually from the child list maintenance screen
Edit	CF_ALLOW_DEACTIVATE_USERS	Allow the administrator role to deactivate / activate users	When this is set to Y, the administrator may deactivate and reactivate users from the User Account Maintenance function. This is useful if you have multiple admin roles defined, and do not want every administrator to be able to deactivate users. Write permission is needed to enable this function
Edit	CF_ALL_BEHAVIOR_SETTINGS	All Behavior Settings	The complete list of behavior settings (in alphabetic order) can be viewed and modified from this list
Edit	CF_API_SETTINGS	API Settings	Maintain behavior settings that access ExtraView via the API
Edit	CF_AREA	Business areas	Maintain the list of Business Areas for the inbuilt AREA field
Edit	CF_CATEGORY	Categories	Maintain the list of Categories for the inbuilt CATEGORY field
Edit	CF_COMPANY_SETTINGS	Company Information Settings	Access the administration screen to set your company name, address and contact information
Edit	CF_DATA_DICTIONARY	Data Dictionary	The data dictionary is where you create and maintain inbuilt and user defined fields & other objects. This includes modifying their titles, display types, basic behavior and default values
Edit	CF_DEBUG_SETTINGS	System Debugging & User Custom Settings	Access the behavior settings for debugging options and the user custom classname
Edit	CF_DISPLAY_INFO	Font and Color Settings	Modify the behavior settings for fonts and colors to be used within ExtraView screens and layouts

System Security Keys Summary screen

Edit an Existing Security Key

1. Click on the **System Security Keys** option on the ExtraView Administration menu, under the **Advanced** tab.
2. Click on **Edit** and change the description or title as needed.

System Log Types

It is unlikely that the administrator will need to add or alter entry types to the system log. Each entry is used to monitor the usage of ExtraView metadata alterations by individual users, giving an audit of who changed which piece of metadata. The system log itself can be viewed from the **System Controls** administration menu.

Allowed Functions

This screen is purely for information purposes and there is no user interaction allowed.

ExtraView is licensed software that comes in several versions. The specific features for any version are controlled with an internal, encrypted, security device. This screen shows which features are available with each of the different license levels.

Access the screen via **Admin, Advanced, View Allowed Functions**. You will see a screen similar to this:

Return **Print Page** **View Allowed Functions** ?

Allowed Functions

This screen shows a summary of how functions in ExtraView are made visible to the administrator. For the **Administration Menus**, you will see the version of ExtraView required to be able to configure the ExtraView feature. For the **Behavior Settings**, you will see whether the feature appears in the Advanced Administration mode only or in All Modes.

The license for this installation is: **ExtraView Enterprise**

All ExtraView functions are available in the ExtraView Enterprise license. If you require access to a function for which you do not have a license, contact ExtraView support.

Show Filters

Function Type	Key Name	Level Information	Purpose
Administration Menu	CF_MANAGE_TASKS	ExtraView	Manage the list of background tasks that are used in this installation
Administration Menu	CF_MANAGE_USER_CONNECTION	ExtraView Enterprise	Manages end user connections and allows the administrator to sign off other users
Administration Menu	CF_METADATA	ExtraView Enterprise	This feature exports various subsets of metadata from your database, to be used to update other ExtraView installations or to prepare an ExtraView solution for other parties
Administration Menu	CF_METADATA_UPDATER	ExtraView	Administrative function which imports ExtraView configurations and solutions prepared by the metadata export function
Administration Menu	CF_MODULE	ExtraView	Maintenance of the inbuilt MODULE_ID field
Administration Menu	CF_MODULE_TYPE	ExtraView Enterprise	Maintenance of the inbuilt module types associated with the MODULE_ID field
Administration Menu	CF_PRIORITY	ExtraView	Maintenance of the inbuilt PRIORITY field
Administration Menu	CF_PRIVACY_GROUP	ExtraView Enterprise	Create and manage privacy groups for issues
Administration Menu	CF_PRODUCT	ExtraView	Maintenance of the inbuilt PRODUCT_NAME field
Administration Menu	CF_PRODUCT_LINE	ExtraView	Maintenance of the inbuilt PRODUCT_LINE field
Administration Menu	CF_PRODUCT_RELEASE	ExtraView	Maintenance of the inbuilt PRODUCT_RELEASE field
Administration Menu	CF_PROJECT	ExtraView	Manages the list of Projects within each of the defined Business Areas
Administration Menu	CF_RELATIONSHIP_GROUP	ExtraView	Create and manage relationship groups, including managing the issues within the

Managing Start Pages

The behavior setting named `USER_DEFINED_START_PAGE` must be set to YES before this feature is used. This feature allows the administrator to add additional start pages to be available. A start page is the location on which a user lands, after they successfully sign on. The default pages available are the Home Page, the Add Issue screen, the Search / Report screen and the Administration screen. It is unlikely that you will need more than these, but they can be added through this screen if necessary. Before adding a new entry, you will need to know the calling convention to be used. These are internal to ExtraView and are defined in terms of the Action and the Option. We suggest that if you need a new start page, you should consult with ExtraView support to define these values.

Start Page Management **Return** **Print Page**

Add Add a new field to the database

	Title to display	Permission	Action	Option	Created	Last updated
Edit	Home	MENU_HOME	doDisplay	HomeDisplay	October 1, 2003 SYSTEM	October 17, 2005 TOYO
Edit	Search/Report	MENU_RESOLUTION	doDisplay	search.SearchDisplay	October 1, 2003 SYSTEM	October 17, 2005 TOYO
Edit	Add Issue	MENU_ADD_PROBLEM	doAddDisplay	Display	October 1, 2003 SYSTEM	October 17, 2005 TOYO
Edit	Administration	MENU_ADMINISTRATION	doDisplay	admin.AdminDisplay	October 1, 2003 SYSTEM	October 17, 2005 TOYO

4 records selected **Return** **Print Page**

The list of start pages

Changing the Administration Menu Titles

This option is rarely used, but allows the administrator to re-title or localize the administration menus. You can turn this option off with the security permission key named CF_ADMIN_MENUS if you do not wish to see this on your screen.

Edit the labels of the Administration tabs

Add a new field to the database

	Administration Menu Number	Title to display	Sort sequence
<input type="button" value="Edit"/>	1	Users	1
<input type="button" value="Edit"/>	5	Lists	2
<input type="button" value="Edit"/>	3	Fields & Layouts	3
<input type="button" value="Edit"/>	8	Display	4
<input type="button" value="Edit"/>	7	Workflow	5
<input type="button" value="Edit"/>	9	Email Notification	6
<input type="button" value="Edit"/>	4	System Controls	7
<input type="button" value="Edit"/>	6	Import/Export	8

8 record(s) selected from a total of 8 record(s)

Altering the titles of the options within Administration

To alter or localize a title, access this function, then press the Edit button. There you may alter the title, or provide a localized title. Update after you alter the title and you will immediately see your new title within the administration screen.

Pre-Caching Layouts Upon System Restart

When a layout is first accessed, either upon a restart of the application server, or upon a change to the layout by the administrator, it is read by ExtraView, and compiled into a form that can be rendered speedily. This action may take a half-second for simple layouts to many seconds for complex layouts.

This feature is controlled by the security permission key named SE_TEMPLATE_PRECACHE.

If you do not want an end-user to face this delay when they are the first person to access a layout, you can use the utility at **Fields & Layouts --> Controls pre-caching templates at system startup** to compile and cache layouts when the application server is restarted.

Controls pre-caching templates at system startup

[Return](#) [Print Page](#)

Directions

After you start or restart the application server(s), the server caches the layouts it accesses when they are first used. This takes a few seconds each time an end user accesses each layout for the first time. This utility allows the administrator to set up layouts so that they are cached when the server(s) first start. This offers a performance benefit to the first users who access ExtraView following the server(s) restart. It is suggested that you use this utility to pre-cache the most frequently accessed layouts. You should not pre-cache all layouts and are limited to 100 layouts being pre-cached. Pre-caching more than 100 layouts leads to a performance degradation and is therefore not allowed.

Keys

Select one or more user roles: * None *
 * All *
 Administrator
 Customer
 Customer Support

Select one or more areas and projects: * None *
 * All *
 Assets | Assets Data
 Bugs | Bugs Data
 Customer Issues | Customer Support Issues Data

Select one or more layout types: * None *
 * All *
 Add Issue Screen
 Attachment History
 Customer Selection Tabs

Select one or more locales: * None *
 * All *
 English(United States)
 Japanese(Japan)

[Add Selected Keys](#) [Remove Selected Keys](#)

Filter List

Select the column to use as a filter for the list. You may click on a letter to produce a list of the items which begin with this character, or you may enter a search pattern, including wildcards (*). The Export button creates a CSV file of the results currently displayed on the screen.

Select filter column for report: Area Title
 or click on a letter: B | C | <all> | <none>
 or enter a search expression and click the Go button: Enter search expression [Go](#) [Export](#)

	Area Title	Project Title	Layout Type	Layout Id	Layout Title	Security Group	Display Mode	Locale	Created	Last updated
Del	Bugs	Bugs Data	Attachment History	1498	Default layout for Attachment Administrator History	Administrator	EDIT	en_US_	Bill Smith Jul 3, 2010	Bill Smith Jun 27, 2010
Del	Bugs	Bugs Data	Attachment History	1498	Default layout for Attachment Administrator History	Administrator	REFRESH	en_US_	Bill Smith Jun 27,	Bill Smith Jun 27, 2010

Pre-caching Layouts

ExtraView has an overall limit of 100 layouts held in the cache at one time, and if this number is exceeded, then the oldest layout is removed from the cache. At the same time, there is a cost in time to pre-cache layouts, therefore the recommendation is to only pre-cache layouts if a user is likely to complain about the time taken to reach the layout if they are first person to use it.

To pre-cache layouts, use the filters at the top of the screen to select the layout(s) you want to cache. This will be a combination of user role, business area, project, layout type and the locale with which the layout is to be displayed. Once you select the filters, use the **Add Selected Keys** button to add the layouts to the pre-cache list. You can remove layouts individually using the **Del** button, or you can set up keys and remove a list of layouts at one time.

The caching is controlled by a system task named `TEMPLATE_LOADER`. This task must be started in order for the caching to take place. Go to the **Manage Tasks and Threads** administrative utility and **Add** the task. The task should be set up to run on each node of a clustered system. It is recommended that you set the poll interval to zero. This causes the task to run once upon system startup and not to be run again.

Caching layouts is somewhat tricky, as a full understanding of exactly what needs to be cached to speed up the initial load time is essential. Some recommendations:

- Do not assume that trying to pre-cache all layouts will lead to better performance
- Do not cache the layouts in the Master Projects for any area. Only cache the layouts in the projects that actually store the user's data
- First cache the *Add* and *Edit* layouts for the most frequently used business areas in their data projects
- If you have embedded layouts in the *Add* and *Edit* layouts then cache these
- Cache the layouts only for the most frequently used roles
- Cache the layouts only for the most frequently used locales

- On a sizeable system, there can be many, many layouts when you look at the combination of the layouts, the business areas, the projects, the user roles and the locales. Look to cache only the most frequently used combinations, because of the limitation of being able to pre-cache 100 layouts.
- [Add new comment](#)

OAuth2 Client Access Tokens

This administrative utility allows for the maintenance of OAuth2 authentication tokens received from remote servers.

The key purpose of OAuth2 authentication is to provide additional security when accessing remote sites, without the need to pass authentication credentials such as your user name and password with every request for data. The authentication is performed once, and a token is provided to the calling application to use for subsequent calls. Each token is expected to have a lifetime defined on the remote server. This provides for automatic expiration of the tokens. Following expiration, action must be taken by the calling user or program to reauthenticate and receive a fresh token.

Before configuring the feature, please make sure your Apache Tomcat application server configuration file has the appropriate mount points for the OAuth2 connection. These will be similar to these entries with your instance's <instance name> and <tomcat service name>:

```
JkMount /<instance name>/Oauth2 <tomcat service name>
```

```
JkMount /<instance name>/Oauth2/* <tomcat service name>
```

You enter the utility via the **Client Access Tokens** which is under the **Advanced** administration tab..

You will see a list of existing tokens and their expiry time.

From Node URI	To Node URI	Token Owner	Created	Expiration Date / Time
http://nerdvana2.extraview.net/evj	http://nerdvana2.extraview.net/evj	BSMITH	Bill Smith 6/23/20 10:06 AM	6/23/20 11:06 AM
http://nerdvana2.extraview.net/evj	https://avalon.extraview.net/ora1-b	BSMITH	Bill Smith 6/24/20 2:23 PM	6/24/20 3:23 PM

Note that expired tokens show with their expiration date in red, while valid tokens appear in green.

To set up a new token, click the add button and simply insert the URL to the remote server, including the name of the installation. For example, if you access your installation with a URL of **https://www.mycompany.com/evj/ExtraView**, the entry to create a new token will be **https://www.mycompany.com/evj**. The new token will be displayed along with its expiration date and time.

One point to be aware of is that the OAuth2 protocol is only specified to work with https connections, not with http. However, if you or your users want to take advantage of a redirect configured within the web server, from http to https, then this is allowable, as long as the remainder of the address is the same. For security reasons, ExtraView will not allow a redirect from an address on one domain to a different domain.

Also on this screen is a button with the title **Delete Expired Tokens**. This allows the administrator to delete all the expired tokens from the database. Tokens have no purpose once they have expired, and this option simply cleans up the database entries for the expired tokens.

OAuth2 Server Access Tokens

This administrative utility allows for the maintenance of OAuth2 authentication tokens on the server running the utility.

The key purpose of OAuth2 authentication is to provide additional security when accessing remote sites, without the need to pass authentication credentials such as your user name and password with each and every request for data. The authentication is performed once, and a token is provided to the calling application to use for subsequent calls. Each token is expected to have a lifetime defined on the remote server. This provides for automatic expiration of the tokens. Following expiration, action must be taken by the calling user or program to reauthenticate and receive a fresh token.

Before configuring the feature, please make sure your Apache Tomcat application server configuration file has the appropriate mount points for the OAuth2 connection. These will be similar to these entries with your instance's <instance name> and <tomcat service name>:

```
JkMount /<instance name>/OAuth2 <tomcat service name>
```

```
JkMount /<instance name>/OAuth2/* <tomcat service name>
```

You enter the utility via the **Server Access Tokens** which is under the **Advanced** administration tab..

You will see a list of existing tokens and their expiry time.

From Node URI	To Node URI	Token Owner	Created	Expiration Date / Time
http://nerdvana2.extraview.net/evj	http://nerdvana2.extraview.net/evj	BSMITH	Bill Smith 6/23/20 10:06 AM	6/23/20 11:06 AM
http://nerdvana2.extraview.net/evj	https://avalon.extraview.net/ora1-b	BSMITH	Bill Smith 6/24/20 2:23 PM	6/24/20 3:23 PM

Note that expired tokens show with their expiration date in red, while valid tokens appear in green.

One point to be aware of is that the OAuth2 protocol is only specified to work with https connections, not with http. However, if you or your users want to take advantage of a redirect configured within the web server, from http to https, then this is allowable, as long as the remainder of the address is the same. For security reasons, ExtraView will not allow a redirect from an address on one domain to a different domain.

Also on this screen is a button with the title **Delete Expired Tokens**. This allows the administrator to delete all the expired tokens from the database. Tokens have no purpose once they have expired, and this option simply cleans up the database entries for the expired tokens.

The administrator may also use the delete button by each active token to immediately expire the token to which it refers.

When a site is being used as a server to provide tokens to client users who connect to the site, you should ensure the behavior setting named `AUTO_SIGNOFF_ON_USER_EXIT` is set to YES. If you do not do this, the user's tokens that have been granted and are still valid will still allow a user to access the server site until their session expires, even if the user's account is disabled. For security, it is good practice to cut off a user's access immediately if their access is disabled.

OAuth2 Email Access Tokens

Third-party email services from Google (Google Email) and Microsoft (Microsoft Azure) require that access to their mail servers is granted by a protocol named OAuth2. This is a token-based mechanism, and ExtraView supports this with automated as opposed to manual access. Given both incoming and outgoing email notifications with ExtraView are automated tasks, the complete process of authentication is handled by the ExtraView administration utility named **Access Tokens for 3rd Party Email Services**. This utility allows the administrator to reach out to the email servers and receive a token that provides access. When the token expires, ExtraView refreshes the token automatically, to ensure continuation of access without manual sign ons to the email servers.

Before configuring the feature, please make sure your Apache Tomcat application server configuration file has the appropriate mount points for the OAuth2 connection. These will be similar to these entries with your instance's <instance name> and <tomcat service name>:

```
JkMount /<instance name>/OAuth2 <tomcat service name>
```

```
JkMount /<instance name>/OAuth2/* <tomcat service name>
```

Familiarity with the Microsoft Azure and Google Email applications is assumed. The following pages document the key steps for both [Microsoft Azure](#) and [Google Email](#) configurations. Following these is the instruction [page to configure the token access within Extraview](#).

This is a summary of the steps:

- Ensure that there is a working and correctly configured email service outside of ExtraView
- Within the configuration screen of the remote email service, register ExtraView as an application
- Within the ExtraView **Access Tokens for 3rd Party Email Services** screen, find and copy the redirect URI
- Configure the remote email service with the redirect URI and copy the values of the fields that ExtraView requires:
 - Microsoft Azure - Copy the **Tenant ID**, the **Client ID** and the **Client Secret**
 - Google Email - Copy the **Client ID** and the **Client Secret**
- Configure the ExtraView administration utility with the authentication information from the remote email service
- If you are using the ExtraView incoming EVMail service, then configure that with the information to connect
- Configure the ExtraView BatchMail service to connect to the external email service
- Test incoming emails from EVMail
- Test outgoing notifications, which use the ExtraView BatchMail service.

When configuring Batchmail and EVMail, there is an appendix to this guide at [OAuth2 Email Mailbox Settings](#) to assist.

Hint: You need to interchange information between ExtraView and the Email service you are configuring. Open two browser windows, one with ExtraView and one with the Email portal so you can easily copy & paste information between them. This simplifies copying the ExtraView URI address to the email service, and the service information such as the client secret and token ID into ExtraView.

Using Multiple Email Addresses within ExtraView

ExtraView supports the use of multiple email addresses for different purposes. The key email addresses are each set as behavior settings that may have the same or different values:

- AD_HOC_EMAIL_FROM_ADDRESS
- EMAIL_ADMINISTRATOR_USER_ID
- EMAIL_FROM_USER_ID

In addition, individual user's email addresses may be used (explicitly or as the * **Current User** *) as outgoing email addresses. These each require authentication when used with Microsoft Azure or Google Email. Additional configuration of the external email services can be made to support multiple addresses.

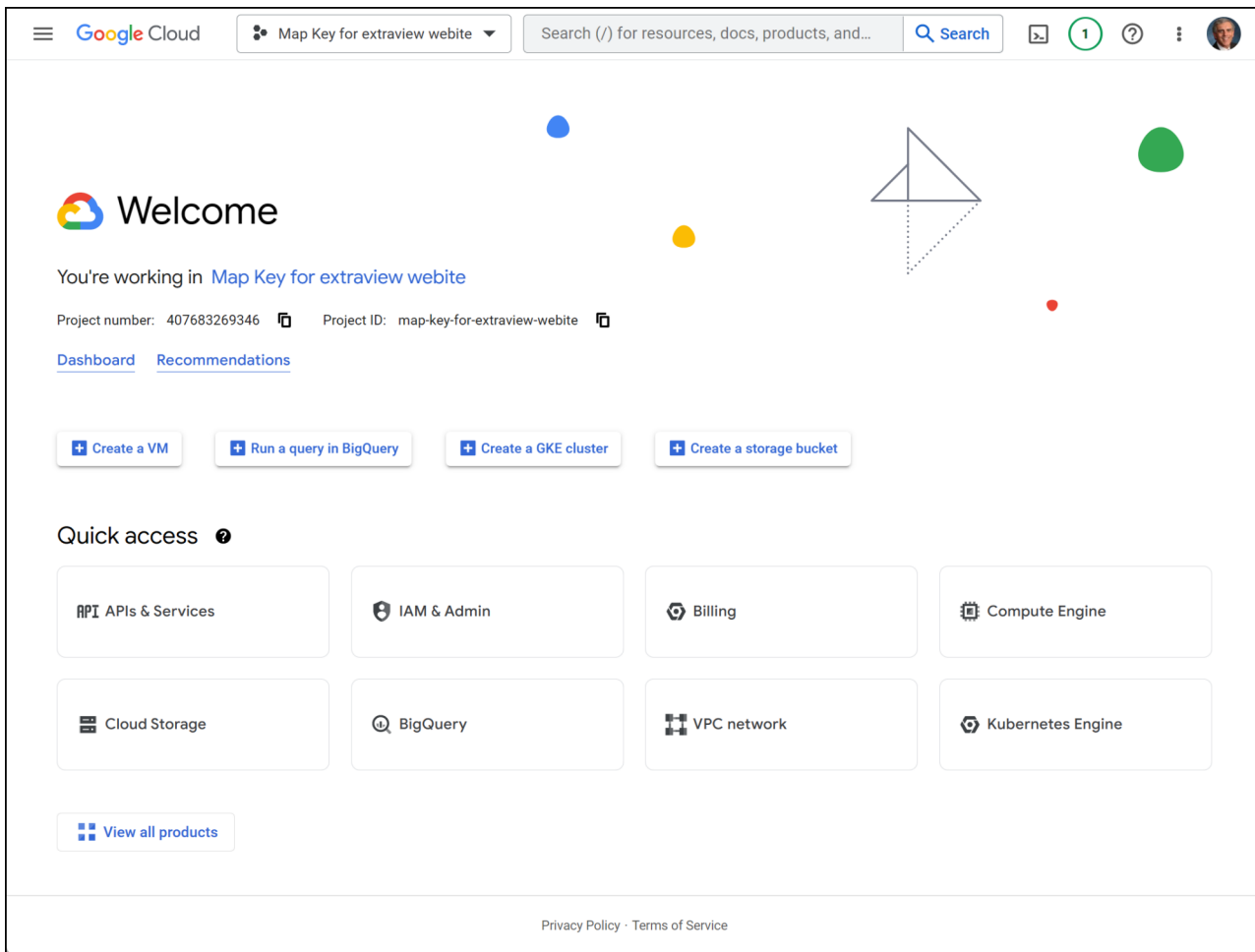
For example, within Microsoft Azure you may permit the user configured within Batchmail to be a **delegated sender** for all the other email addresses that you want to use as email **FROM** addresses. Alternatively, change the ExtraView configuration to set the **REPLY_TO** email header to the individual users, rather than the **FROM** header.

Google Email Configuration

The OAuth2 authentication scheme only works with Gmail Business Accounts, not individual Gmail accounts. Google Email support IMAP and SMTP connections. It does not support a POP3 connections.

Step 1 - Access the Google Email Portal

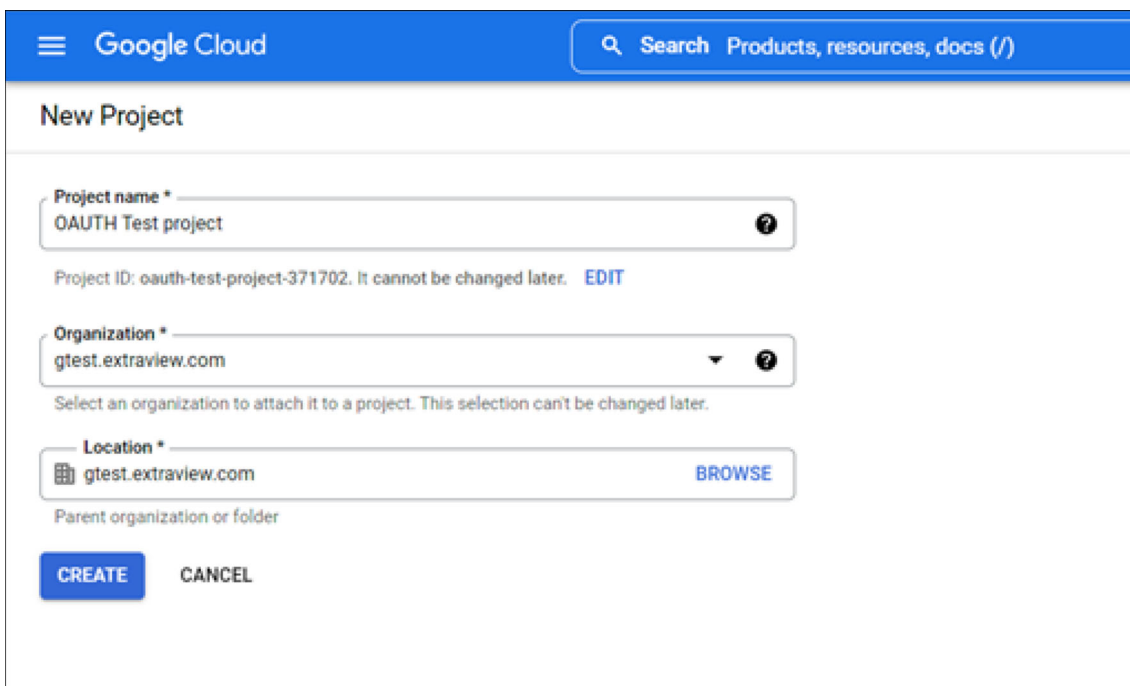
Sign on to your established Google Email business account at <https://console.cloud.google.com>. The screen will be similar to this:



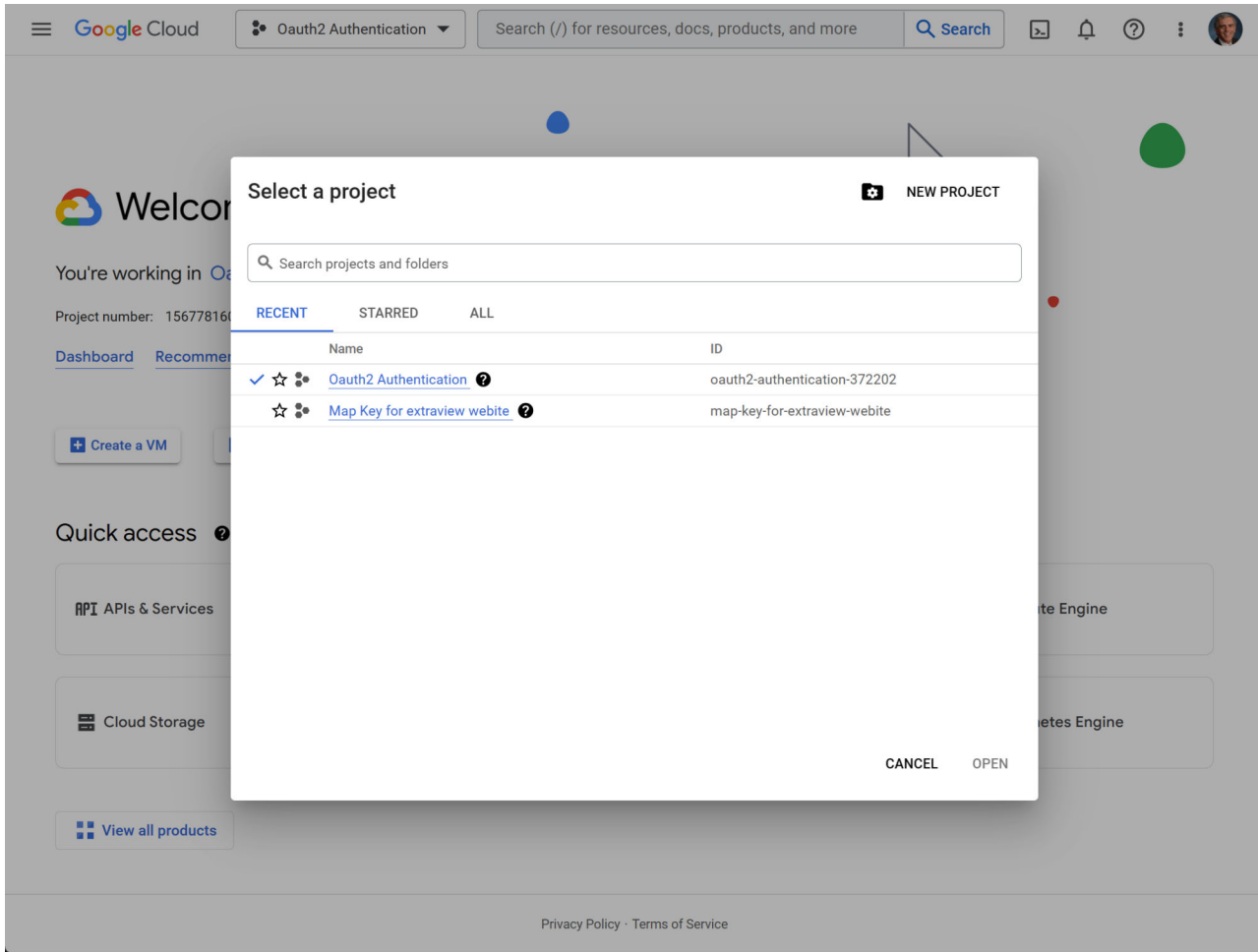
Click on the **APIs & Services** link.

Step 2 - Create a Project

Create a new Project with the **NEW PROJECT** button, or use an existing one if you want to modify its settings. The project requires a name, your organization and location details.



Make sure your project is selected - you see its name at the top of the Azure screen when it's selected.



Select the project you created.

Step 3 - Enable the APIs

This step is where you enable the APIs for the project you just created. Click on the **APIs & Services** link from the **Welcome** screen.

Google Cloud Oauth2 Authentication Search (/) for resources, docs, products, and more Search

API APIs & Services **ENABLE APIS AND SERVICES**

Enabled APIs & services

Library

Credentials

OAuth consent screen

Page usage agreements

1 hour 6 hours 12 hours **1 day** 2 days 4 days 7 days 14 days 30 days

Traffic

1.0/s

0.8/s

0.6/s

0.4/s

0.2/s

0

6 PM Tue 20 6 AM 12 PM

No data is available for the selected time frame.

Errors

100%

80%

60%

40%

20%

0

6 PM Tue 20 6 AM 12 PM

No data is available for the selected time frame.

Median latency

1.0

0.8

0.6

0.4

0.2

0

6 PM Tue 20 6 AM 12 PM

No data is available for the selected time frame.

Filter Filter

Name	Requests	Errors (%)	Latency, median (ms)	Latency, 95% (ms)
BigQuery API				
BigQuery Migration API				
BigQuery Storage API				
Cloud Datastore API				
Cloud Debugger API				
Cloud Logging API				
Cloud Monitoring API				

Now click on the link at the top of the screen **ENABLE APIS AND SERVICES**. Search down the page for the **Gmail API**. Click on the **Gmail API** button and then click the **ENABLE** button.



Gmail API

[Google](#)

View and manage Gmail mailbox data.

[ENABLE](#)

[TRY THIS API](#)

[OVERVIEW](#)

[DOCUMENTATION](#)

[SUPPORT](#)

Overview

With the Gmail API, you can view and manage Gmail mailbox data like threads, messages, and labels.

[Learn more](#)

About Google

Google's mission is to organize the world's information and make it universally accessible and useful. Through products and platforms like Search, Maps, Gmail, Android, Google Play, Chrome and YouTube, Google plays a meaningful role in the daily lives of billions of people.

Additional details

Type: [SaaS & APIs](#)

Last updated: 11/16/22

Category: [Google Workspace](#)

Service name: gmail.googleapis.com

Tutorials and documentation

[Overview](#)

Learn key terms and use cases.

[Quickstarts](#)

Create a simple app to start

The screenshot shows the Google Cloud API & Services console. The left-hand navigation menu includes 'Enabled APIs & services', 'Library', 'Credentials', 'OAuth consent screen', and 'Page usage agreements'. The main content area displays the 'Gmail API' details, including its service name, type, and status. Below this, there are tabs for 'METRICS', 'QUOTAS', and 'CREDENTIALS'. The 'METRICS' tab is selected, showing a graph for 'Traffic by response code' with a warning that no data is available for the selected time frame.

Step 4 - Create the OAuth Consent

From the screen just shown, click on the **OAuth consent screen** link in the left-hand menu. Select a **User Type** of **Internal** on this screen and click the **CREATE** button..

The screenshot shows the Google Cloud OAuth consent screen configuration page. The 'User Type' section is visible, with 'Internal' selected. Below this, there is a 'CREATE' button and a link to provide feedback on the OAuth experience.

Step 5 - Provide the App Information

Complete the form for the **OAuth consent screen** with the entries required for your email access and click **Save AND CONTINUE**.

API APIs & Services

ExtraView Mail Auth

Search Products, resources, docs (/)

Enabled APIs & services

Library

Credentials

OAuth consent screen

Page usage agreements

Edit app registration

App information

This shows in the consent screen, and helps end users know who you are and contact you

App name *
ExtraView Email Integration
The name of the app asking for consent

User support email *
admin@gtest.extraview.com
For users to contact you with questions about their consent

App logo [BROWSE](#)
Upload an image, not larger than 1MB on the consent screen that will help users recognize your app. Allowed image formats are JPG, PNG, and BMP. Logos should be square and 120px by 120px for the best results.

App domain

To protect you and your users, Google only allows apps using OAuth to use Authorized Domains. The following information will be shown to your users on the consent screen.

Application home page
Provide users a link to your home page

Application privacy policy link
Provide users a link to your public privacy policy

Application terms of service link
Provide users a link to your public terms of service

Authorized domains ?

When a domain is used on the consent screen or in an OAuth client's configuration, it must be pre-registered here. If your app needs to go through verification, please go to the [Google Search Console](#) to check if your domains are authorized. [Learn more](#) about the authorized domain limit.

[+ ADD DOMAIN](#)

Developer contact information

Email addresses *
support@extraview.com
These email addresses are for Google to notify you about any changes to your project.

[SAVE AND CONTINUE](#) CANCEL

Step 6 - Set the Scopes

This takes you to the **Scopes** screen. You may add the required scopes with the button labeled **ADD OR REMOVE SCOPES**. Click this button.

Use the **Filter** search capability to look for **GMAIL** and select the **Gmail API** with a scope of **https://mail.google.com** and check this entry.

Google Cloud ExtraView Mail Auth Search Products, resources, docs

APIs & Services Edit app registration

Enabled APIs & services OAuth consent screen 2 Scopes 3 Summary

Library Credentials OAuth consent screen Page usage agreements

ADD OR REMOVE SCOPES

Your non-sensitive scopes

API	Scope	User-facing description
No rows to display		

Your sensitive scopes

Sensitive scopes are scopes that request access to private user data.

API	Scope	User-facing description
No rows to display		

Your restricted scopes

Restricted scopes are scopes that request access to highly sensitive user data.

API	Scope	User-facing description
No rows to display		

SAVE AND CONTINUE CANCEL

Update selected scopes

Only scopes for enabled APIs are listed below. To add a missing scope to this screen, find and enable the API in the [Google API Library](#) or use the Pasted Scopes text box below. Refresh the page to see any new APIs you enable from the Library.

Filter gmail Enter property name or value

API	Scope	User-facing description
<input checked="" type="checkbox"/>	Gmail API https://mail.google.com/	Read, compose, send, and permanently delete all your email from Gmail
<input type="checkbox"/>	Gmail API .../auth/gmail.modify	Read, compose, and send emails from your Gmail account
<input type="checkbox"/>	Gmail API .../auth/gmail.compose	Manage drafts and send emails
<input type="checkbox"/>	Gmail API .../auth/gmail.addons.current.action.compose	Manage drafts and send emails when you interact with the add-on
<input type="checkbox"/>	Gmail API .../auth/gmail.addons.current.message.action	View your email messages when you interact with the add-on
<input type="checkbox"/>	Gmail API .../auth/gmail.readonly	View your email messages and settings
<input type="checkbox"/>	Gmail API .../auth/gmail.metadata	View your email message metadata such as labels and headers, but not the email body
<input type="checkbox"/>	Gmail API .../auth/gmail.insert	Add emails into your Gmail mailbox
<input type="checkbox"/>	Gmail API .../auth/gmail.addons.current.message.metadata	View your email message metadata when the add-on is running
<input type="checkbox"/>	Gmail API .../auth/gmail.addons.current.message.readonly	View your email messages when the add-on is running

Rows per page: 10 1 - 10 of 14

Manually add scopes

If the scopes you would like to add do not appear in the table above, you can enter them here. Each scope should be on a new line or separated by commas. Please provide the full scope string (beginning with "https://"). When you are finished, click "Add to table".

ADD TO TABLE

UPDATE

Click **UPDATE** to add this scope.

Google Cloud ExtraView Mail Auth Search Products, resources, docs (/)

API APIs & Services Edit app registration

Enabled APIs & services Library Credentials OAuth consent screen Page usage agreements

OAuth consent screen — 2 Scopes — 3 Summary

Scopes express the permissions you request users to authorize for your app and allow your project to access specific types of private user data from their Google Account. [Learn more](#)

ADD OR REMOVE SCOPES

Your non-sensitive scopes

API ↑	Scope	User-facing description
No rows to display		

Your sensitive scopes

Sensitive scopes are scopes that request access to private user data.

API ↑	Scope	User-facing description
No rows to display		

Your restricted scopes

Restricted scopes are scopes that request access to highly sensitive user data.

Gmail scopes

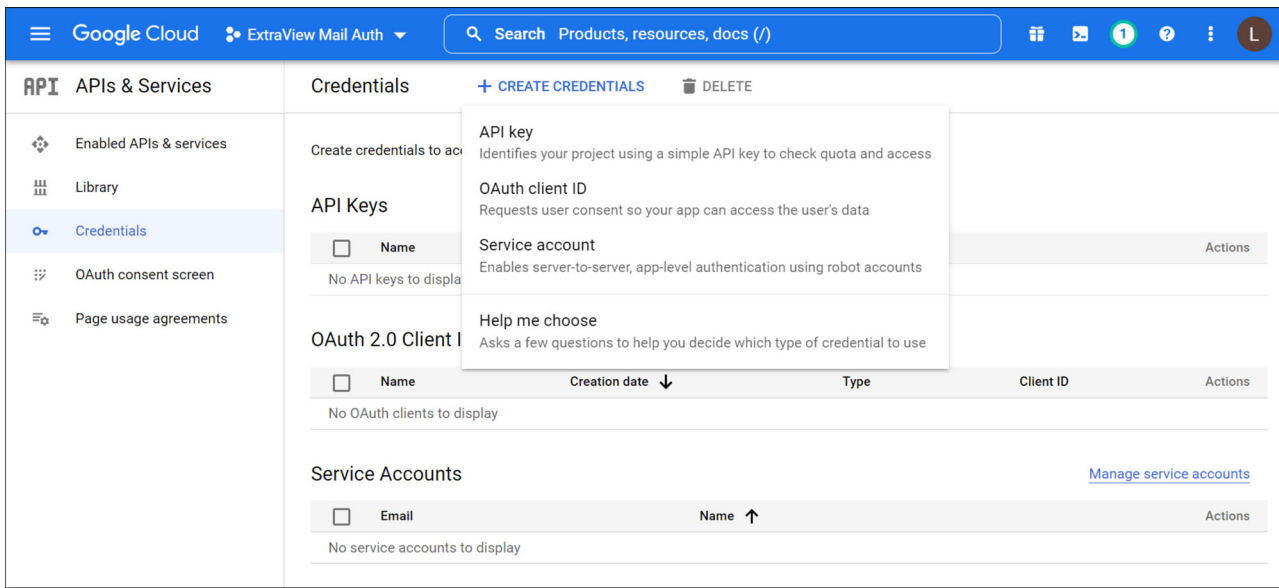
API ↑	Scope	User-facing description	
Gmail	https://mail	Read, compose, send, and	🗑️
API	.google.com/	permanently delete all your email from Gmail	

SAVE AND CONTINUE CANCEL

Click **SAVE AND CONTINUE** to save the scope information. You will see a summary for the **OAuth consent screen**.

Step 7 - Create Credentials

Click **Create Credentials** from the left-hand navigation menu.



Select the **OAuth Client ID** from the menu, The **Application Type** is **Web Application**. Provide a **Name**.

The **Authorization redirect URI** is required. This is the URI that redirects the app back to the ExtraView code. Its value can be seen on the directions within the screen **Access Tokens for 3rd Party Email Services** within ExtraView. Copy and paste this value from the ExtraView configuration screen into this field within the **Credentials** screen.

Lastly, click **Create** to complete the configuration.

Step 8 - OAuth Details

These are displayed on a summary popup within Azure. The **Client ID** and **Your Client Secret** are required for entering within the **ExtraView Token Interface**, so please make sure you keep these.

Microsoft Azure Email Configuration


OAuth2 authorization with access tokens is supported for Microsoft Exchange (EWS), POP3, IMAP and SMTP connections.

Step 1 - Access the Azure Portal

Sign on to your established Microsoft Azure account at <https://portal.azure.com/#home>. Your screen will look like this:

Welcome to Azure!


Don't have a subscription? Check out the following options.



Start with an Azure free trial

Get \$200 free credit toward Azure products and services, plus 12 months of popular [free services](#).


[Start](#)



Manage Azure Active Directory

Manage access, set smart policies, and enhance security with Azure Active Directory.

[View](#) [Learn more](#)



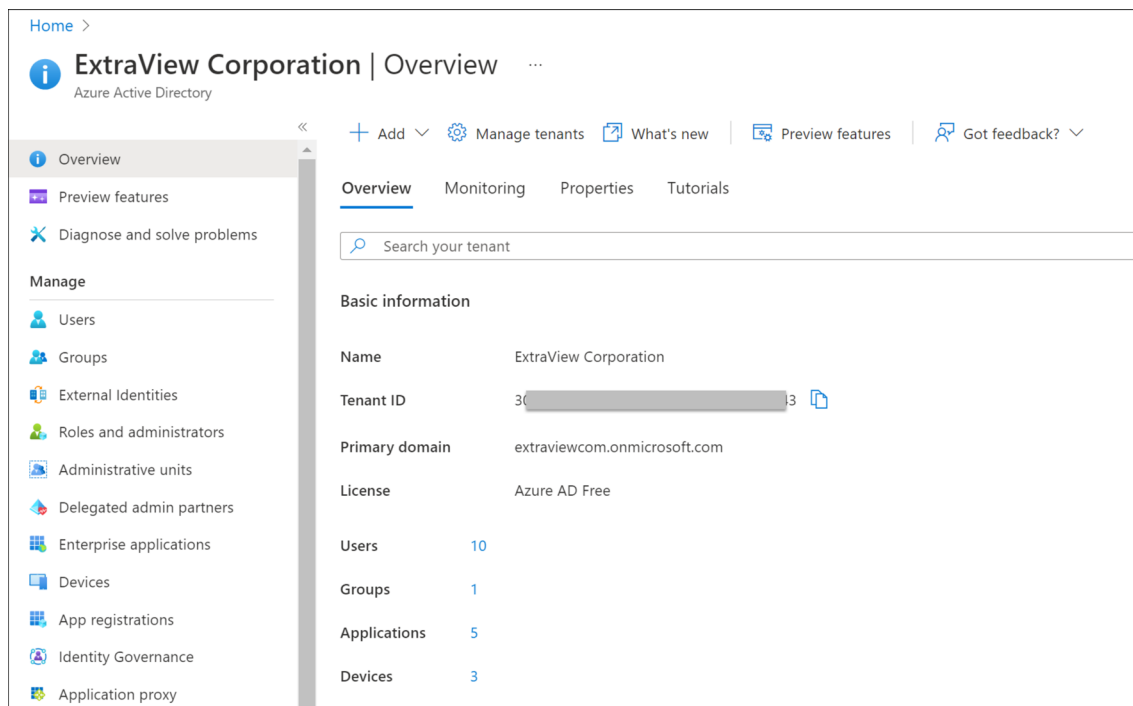
Access student benefits

Get free software, Azure credit, or access Azure Dev Tools for Teaching after you verify your academic status.

[Explore](#) [Learn more](#)

Step 2 - Create the Tenant ID

Click the **Manage Azure Active Directory View** button. If you have already established your Microsoft email account, you will already have a **Tenant ID**, and you should use this. It can be viewed on the **App registration** screen. If you need to create a **Tenant ID**, click on **Manage Tenants** and then **Create**. Provide the information required by Microsoft, such as your band **Initial Domain Name**. Once configured, you will have a **Tenant ID**, as shown in the following screen. If you have not already done so, copy down the value of the **Tenant ID** as this is needed when configuring ExtraView.



Home > **ExtraView Corporation | Overview** Azure Active Directory

Overview | Monitoring | Properties | Tutorials

Search your tenant

Basic information

Name	ExtraView Corporation
Tenant ID	30[redacted]3
Primary domain	extraviewcom.onmicrosoft.com
License	Azure AD Free
Users	10
Groups	1
Applications	5
Devices	3

Step 3 - Register the Application

Now, use the **Add, App registration** option to register ExtraView as the application which will be granted access.

Home > ExtraView Corporation | Overview >

Register an application

* Name

The user-facing display name for this application (this can be changed later).

ExtraView ✓

Supported account types

Who can use this application or access this API?

Accounts in this organizational directory only (ExtraView Corporation only - Single tenant)

Accounts in any organizational directory (Any Azure AD directory - Multitenant)

Accounts in any organizational directory (Any Azure AD directory - Multitenant) and personal Microsoft accounts (e.g. Skype, Xbox)

Personal Microsoft accounts only

[Help me choose...](#)

Redirect URI (optional)

We'll return the authentication response to this URI after successfully authenticating the user. Providing this now is optional and it can be changed later, but a value is required for most authentication scenarios.

Select a platform

The platform must be **Web** and the **Redirect URI** must be:

`https://yourextraviewurl.com/evj/OAuth2?p_action=getTokenReturn&p_option=admin.EmailTokenUtility`

where `https://yourextraviewurl.com/evj` is the path to your ExtraView instance.

Step 4 - Copy the Values Needed for ExtraView

On the **Overview** screen, note down the Application (Client) ID and the Directory (tenant) ID if you have not already done so. These will be required when you configure the ExtraView Token interface.

Step 5 - Configure the Application

The next step is to configure the application, and to add a client secret.

- On the Azure navigation menu, choose **App registrations**
- Register a new application or edit the app you registered in the previous step
- Add a **Client Secret**
- This will generate the **Client Secret** and show its value
- Immediately copy the value of the **Client Secret** to the clipboard, as you will need this when configuring the ExtraView Token interface. Note that Azure only displays the value of the **Client Secret** when first creating it. You will not be able to retrieve this value later. **Note that it is the value of the Client Secret and not the Client Secret ID that you need.**

Step 6 - Set the Permissions

The next step in configuring the API and Office 365 Exchange permissions of the Microsoft Azure application. The specific permissions may depend on your requirements of the email server, but the following provides the permissions you are likely to need.

From the **App registrations** screen:

- Choose your application
- Click on the **API permissions** entry in the navigation bar
- Click on **Microsoft Graph**
- Select **Delegated permissions**
- Search for and select the following permissions as needed with their checkboxes:
 - **OpenId permissions:** offline_access
 - **IMAP:** IMAP.AccessAsUser.All

- o **POP:** POP.AccessUser.All
- o **EWS:** EWS.AccessAsUser.All
- o **SMTP:** SMTP.Send

Save the settings. with the **Add** button and then click on **Grant admin consent** to complete setting the permissions.

The screenshot shows the 'Permissions' page for the 'ora1c_2' enterprise application. The page includes a navigation sidebar on the left with categories like Overview, Manage, Security, and Activity. The main content area displays the 'Permissions' section with a 'Grant admin consent for ExtraView Corporation' button. Below this, there are tabs for 'Admin consent' and 'User consent', and a search bar for permissions. A table lists the granted permissions:

API Name	Claim value	Permission	Type	Granted through	Granted by
Microsoft Graph	offline_access	Maintain access to dat...	Delegated	Admin consent	An administrator
Microsoft Graph	EWS.AccessAsUser.All	Access mailboxes as t...	Delegated	Admin consent	An administrator
Microsoft Graph	Mail.Send.Shared	Send mail on behalf of...	Delegated	Admin consent	An administrator
Microsoft Graph	User.Read	Sign in and read user ...	Delegated	Admin consent	An administrator
Microsoft Graph	IMAP.AccessAsUser.All	Read and write access ...	Delegated	Admin consent	An administrator
Microsoft Graph	POP.AccessAsUser.All	Read and write access ...	Delegated	Admin consent	An administrator
Microsoft Graph	SMTP.Send	Send emails from mail...	Delegated	Admin consent	An administrator

Step 7 - Set the User

You will then select a user to use with this application. It is likely the user already exists, but if not, you will create a new user to access the application. From the Azure navigation bar enter the **Users** screen and choose an existing user, or create a new one.

The user name used must be the email address(es) configured within ExtraView. For EVMail, this is the address used to sign on and retrieve emails from the Azure server. For BatchMail, this is the email address used to authenticate for outgoing email.

This user must be assigned to the application. From the list of **Enterprise Applications**, choose the application you created, **Assign users and groups** and then add the user to the application.

Home > ExtraView Corporation | Enterprise applications > Enterprise applications | All applications >

Carl-Test-ora1-b | Overview

Enterprise Application

- Overview
- Deployment Plan
- Diagnose and solve problems
- Manage
 - Properties
 - Owners
 - Roles and administrators
 - Users and groups
 - Single sign-on
 - Provisioning
 - Application proxy
 - Self-service
 - Custom security attributes (preview)
- Security
 - Conditional Access
 - Permissions
 - Token encryption
- Activity
 - Sign-in logs
 - Usage & insights
 - Audit logs
 - Provisioning logs
 - Access reviews

Properties

CA Name ⓘ
Carl-Test-ora1-b

Application ID ⓘ
28a7fd84-7cb6-4298-9ab2-...

Object ID ⓘ
f69df82f-e438-4c93-a655-e...

Getting Started

- 1. Assign users and groups**
Provide specific users and groups access to the applications
[Assign users and groups](#)
- 2. Provision User Accounts**
You'll need to create user accounts in the application
[Learn more](#)
- 3. Self service**
Enable users to request access to the application using their Azure AD credentials
[Get started](#)

ExtraView Email Configuration

Enter the administration utility named **Access Tokens for 3rd Party Email Services** on the **Advanced** administration menu.

This screen will be similar to:

Return Print Page Access Tokens for 3rd Party Email Services

Directions
 This utility allows you to add new, and maintain existing connections to an external email service that uses OAuth2 for authentication. After adding a new entry, use the edit screen to fetch the token from the remote service. The edit screen also shows complete details of each token.

Note that the redirect URI required by the remote email service is:
http://localhost:8081/evj/OAuth2?p_action=getTokenReturn&p_option=admin.EmailTokenUtility

+ Add a new email token

Show Filters

Token Id	Token Name	Token Type	Client Id	Tenant Id	Created	Expiration Date / Time	Last Updated Date / Time
37	car_email_test	Microsoft Azure	2780c8bf-803e-48d6-919b-0327443db48c	305e2d0b-f7d2-4d81-93e0-8d502c7f4343	11/2/22 12:34 PM	12/2/22 1:53 PM	12/2/22 12:29 PM
42	car_test_nerdvana	Microsoft Azure	1afba062-1e7c-4813-b227-811bdf067a2a	305e2d0b-f7d2-4d81-93e0-8d502c7f4343	11/2/22 4:14 PM	11/3/22 12:10 PM	11/3/22 10:41 AM
47	leeann_token	Microsoft Azure	cbb41359-7bdc-468e-ac41-09387d141e84	305e2d0b-f7d2-4d81-93e0-8d502c7f4343	11/2/22 4:45 PM	11/2/22 4:45 PM	11/2/22 4:49 PM

Return Print Page 3 record(s) selected from a total of 3 record(s)

Note that this screen displays the redirect URI that is required by the email service you are configuring. This redirect is used to direct the email service back to ExtraView automatically once it has successfully authenticated the access. You can copy this URI to your clipboard so that you can paste it into the email service configuration screen.

Click on the button **Add a new email token**.

Add New Token Cancel Print Page Add Access Tokens for 3rd Party Email Services

Directions
 In order to provision a new token complete this form and click **Add New Token**. Where required, the **Tenant ID**, **Client ID** and **Client Secret** are all obtained from your email service. After adding the new token, you will edit its entry to request authorization.

Note that the redirect URI required by the remote email service is:
http://localhost:8081/evj/OAuth2?p_action=getTokenReturn&p_option=admin.EmailTokenUtility

Email Token Name

Email Token Type * Select *

Email Address

Client Id

Client Secret

Scope

Authorization URL

Add New Token Cancel Print Page

Field	Required	Value
Email Token Name	Yes	This is an arbitrary name for the token you are creating, A recommended name is the email address which you use for the EVMail service
Email Token Type	Yes	Select from Microsoft Azure and Google Gmail
Email Address	No	This field is for reference only. When you have multiple mailboxes configured, it is useful on this screen to view which mailbox this connection is used with
Tenant ID	Yes for Microsoft Azure	Paste or copy the Tenant ID that you received from the external email service, This is only required for Microsoft Azure
Client ID	Yes	Paste or copy the Client ID that you received from the external email service
Client Secret	Yes	Paste or copy the Client Secret that you received from the external email service
Scope	Yes	The scope defines the range of permissions that ExtraView is requesting. Note that permissions for offline working are added automatically. More than one scope can be

		<p>requested. Simply concatenate the requests with a space between each.</p> <p>The entire scope (that you can copy and paste into ExtraView) is:</p> <pre>https://outlook.office.com/SMTP.Send https://outlook.office.com/EWS.AccessAsUser.All https://outlook.office.com/IMAP.AccessAsUser.All https://outlook.office.com/POP.AccessAsUser.All</pre> <p>You may remove unneeded permissions from the Scope. The following is a guide as to how each scope is utilized:</p> <p>Microsoft Exchange</p> <pre>https://outlook.office.com/EWS.AccessAsUser.All https://outlook.office.com/Mail.ReadWrite https://outlook.office.com/Mail.Send https://outlook.office.com/EWS.AccessAsUser.All https://outlook.office.com/SMTP.Send</pre> <p>Microsoft IMAP</p> <pre>https://outlook.office.com/IMAP.AccessAsUser.All</pre> <p>Microsoft POP3</p> <pre>https://outlook.office.com/POP.AccessAsUser.All</pre> <p>Microsoft SMTP</p> <pre>https://outlook.office.com/POP.AccessAsUser.All</pre>
Authorization URL	Yes	<p>This is the URL of the authorization server.</p> <ul style="list-style-type: none"> • For Microsoft Azure connections this value is https://login.microsoftonline.com/ • For Google Email connections this value is https://accounts.google.com/
Access Token URL	Yes for Google Email	<p>For Google Email this is the URL of the authorization server. This value is https://oauth2.googleapis.com/. Microsoft uses the same URL as the authorization URL</p>

Once you have added the token using the **Add New Token** button, click the **Get Email Token** button.

- With Google GMail, on the first occasion that you get a token, you will be prompted to authorize the app permissions
- With Microsoft Azure, if the admin **Grants admin consent** to any permissions associated with the app, the user is not prompted to authorize the app. If the mail administrator does not grant admin consent to the permissions, the app cannot access the mailboxes using the token.

ExtraView redirects the administrator to the sign on screen for the remote email service. After verifying your identity, return to ExtraView and refresh the **Access Tokens for 3rd Party Email Services** screen.

You will see the newly configured token. The screen will show the token details, together with the expiry time of the token, and when it was last updated.

Update Get Email Token Cancel Delete Print Page

Change Access Tokens for 3rd Party Email Services

Directions

In order to provision a new token or refresh an existing one, click **Get Email Token**. The system will redirect you to the authorization provider's login screen where you will be prompted to sign in.

You are then asked to confirm the permissions requested for ExtraView to receive and send email.

Close the browser tab and re-edit the token to display the value of the new tokens.

Note that the redirect URI required by the remote email service is:
http://localhost:8081/evj/OAuth2?p_action=getTokenReturn&p_option=admin.EmailTokenUtility

Email Token Name ?

Email Token Name ?

Email Address ?

Tenant Id ?

Client Id ?

Client secret ?

Scope ?

Authorization Code ?

Token ?

Refresh Token ?

Date Created ?

Last Date Updated ?

Expiration Date ?

Authorization URL ?

Update Get Email Token Cancel Delete Print Page

Configuring EVMail

Within the EVMail task properties, there is a section which refers to the OAuth2 token to be used. This looks like:

```
# The MAILBOX_AUTH_TYPE default is PASSWORD. Alter the value of the property to OAUTH2 for OAuth2 authentication
# MAILBOX_AUTH_TYPE = PASSWORD | OAUTH2
# MAILBOX_EMAIL_TOKEN_NAME is the name of the OAUTH2 token that should be used when MAILBOX_AUTH_TYPE = OAUTH2.
# The token is added under Admin / Advanced / Access Tokens for 3rd Party Email Services
# MAILBOX_EMAIL_TOKEN_NAME = <name of the token in the admin utility that creates and maintains the email tokens>
```

Uncomment and alter the MAILBOX_AUTH_TYPE to OAUTH2. Now set the value of the MAILBOX_EMAIL_TOKEN_NAME property to the name of the token you created in the field **Email Token Type**.

If EVMail was previously running, stop and restart the task to load the new settings.

Configuring BatchMail

.Similar alterations to the BatchMail task properties need to be made as to the changes to the EVMail task, although the property names are a little different.

```
# The MAIL_AUTH_TYPE default is PASSWORD. Alter the value of the property to OAUTH2 for OAuth2 authentication
# MAIL_AUTH_TYPE = PASSWORD | OAUTH2
# MAIL_TOKEN_NAME is the name of the OAUTH2 token that should be used when MAILBOX_AUTH_TYPE = OAUTH2.
# The token is added under Admin / Advanced / Access Tokens for 3rd Party Email Services
# MAIL_TOKEN_NAME = <name of the token in the admin utility that creates and maintains the email tokens>
```

Uncomment and alter the MAIL_AUTH_TYPE to OAUTH2. Now set the value of the MAIL_TOKEN_NAME property to the name of the token you created in the field **Email Token Type**.

Encryption Key Management

ExtraView is a secure application and has been developed to adhere to the strictest standards. Additional security is important and should be deployed by ensuring the environment within which ExtraView resides is secure, using firewalls and encryption of the network traffic with SSL, etc.

It is possible to protect sensitive data within the database using a further level of encryption. This protects against your database from unauthorized access, and unauthorized users using SQL commands to extract data. This encryption is provided for fields with a display type of text, and is applied on a field-by-field basis. This can be used, for example, to provide added protection for fields such as social security numbers and bank account numbers.

The precise name of the method used to encrypt this data is termed AES/ECB/PKCS5Padding (128-bit). This is widely recognized as a state-of-the-art algorithm that provides a very high level of protection.

AES = Advanced Encryption Standard

ECB = Electronic CodeBook blocking of data

PKCS5Padding = the type of padding to encrypted value. This causes the same text to produce different encrypted values from one encryption to the next

Authorized users will still see data that is encrypted within the database in the normal way. It is assumed that users will be educated on the sensitivity and privacy of data, and that the screens and reports they view may contain proprietary data that should not be stored with unauthorized personnel.

To provide the security, secret keys (or passwords) are stored in what is termed a keystore, within ExtraView. You may use a single key for all the fields you protect, or use different keys for different fields. The keystore may also be used to store certificates, for example certificates that grant access to SAML authentication servers.

These keys must be stored safely by the administrator, and there is no way to ever retrieve a lost key. This is critical to understand and neither the ExtraView application nor ExtraView Corporation personnel can ever retrieve a lost key. It cannot be stressed too much how important it is to have a process to record the keys used, and to keep them safe.

Further, here are items that should be considered before implementing encrypted fields:

- Only text fields that do not have data stored as yet may be encrypted
- Once encrypted, you cannot revert a field to being non-encrypted
- You cannot use an encrypted field as a filter in a query or report
- Encrypted fields cannot be sorted within reports

The above limitations may be relaxed within future versions of the product.

There are 3 possibilities of how the secret keys may be used to unlock the data, dependent upon your requirements:

1. The secret key(s) must be entered manually by the administrator on each and every occasion after starting the application. This is accomplished by the administrator going to the **Encryption Key Management** utility and entering the passwords for each of the secret keys
2. The passwords may be entered into the `Configuration.properties` file which is read by ExtraView upon startup of the application. This is more convenient than entering the passwords manually, but not quite as secure. Of course, the filesystem with the `Configuration.properties` (and other) files should be protected
3. You can encrypt the entries within the `Configuration.properties` file using the technique described in the `ENCRYPT_PROPERTIES` section of the [Installation & Configuration Guide](#).

Setting Up Encryption

1. Enter the administrative utility, **Encryption Key Management**, on the **Advanced** administration tab
2. Carefully read the directions, remembering lost keys can never be retrieved
3. Click **Add a new encryption key to the keystore**
4. Provide a fixed name for the key. This follows the usual naming conventions of all ExtraView names
5. Enter the secret key password

user's current locale setting. The following table shows the date format names used in ExtraView, with an example of how this appears in English/US locale representation:

Format Name	Description	Example
SHORT	Short without time	12/30/02
MEDIUMDATE	Medium without time	Dec 30, 2002
LONGDATE	Long without time	December 30, 2002
FULLDATE	Full without time	Monday December 30, 2002
SHORTDATETIME	Short with time	12/30/02 1:15 PM
MEDIUMDATETIME	Medium with time	Dec 30, 2002 1:15 PM
LONGDATETIME	Long with time	December 30, 2002 1:15 PM
FULLDATETIME	Full with time	Monday December 30, 2002 1:15 PM

Standard Date/Time Parsing Formats

Certain date and time formats are built in to ExtraView as patterns to be used for parsing dates. If a date is entered in one of the standard formats, it will be parsed without any errors. Use of a custom date mask extends the possible date/time entry formats to include the custom mask pattern.

The following are the standardized date/time parsing formats:

Format	Example
MM/dd/yy	04/21/03
dd/MM/yy	21/04/03
MM/dd/yyyy	04/21/2003
dd/MM/yyyy	21/04/2003
dd-MMM-yy	21-April-03
dd-MMM-yyyy	21-April-2003
yyyy/MM/dd HH:mm:ss z	2003/04/21 10:23:34 PST
yyyy/MM/dd HH:mm:ss	2003/04/21 10:23:34
yyyy/MM/dd	2003/04/21
yyyy-MM-dd HH:mm:ss	2003-04-21 10:23:34
yyyy MM dd HH:mm:ss	2003 04 21 10:23:34
MM-dd-yyyy HH:mm	04-21-2003 10:23
yyyy-MM-dd	2003-04-21
MM/dd/yy HH:mm	04/21/03 10:23
MM/dd/yy HH	04/21/03 10
yy-MM-dd	03-04-21
MMM dd yyyy	April 21 2003
MMM dd, yyyy	April 21, 2003
MMM. dd yyyy	Apr. 21 2003
MMM. dd, yyyy	Apr. 21, 2003

Custom Date Masks

A custom date mask provides the ExtraView user with the maximum of flexibility, but the representation of dates and times using a custom date mask are formatted similarly regardless of the user's current locale setting. Text strings such as month names or days of week within the representation are locale-sensitive.

Entry of date values into forms can use one of the ExtraView standard date formats or whatever format the user has defined using a custom date mask.

Custom date masks consist of a sequence of characters consisting of punctuation or pattern letters that are chosen from the following:

Letter	Date or Time Component	Usage	Examples
G	Era designator	G	AD
y	Year	yyyy, yy	1996; 96
Y	Week Year (context sensitive)	YYYY, YY	2015; 15

M	Month in year (standalone)	MMMM, MMM, MM	July; Jul; 07
L	Month in year	LLLL, LLL, LL	July; Jul; 07
w	Week in year	ww	29
W	Week in month	W	3
D	Day in year	DDD	219
d	Day in month	dd	10
F	Day of week in month	F	3
E	Day in week	EEEE, EE	Tuesday; Tue
a	Am/pm marker	a	PM
H	Hour in day (0 - 23)	HH	24
k	Hour in day (1-24)	kk	24
K	Hour in am/pm (0 - 11)	KK	10
h	Hour in am/pm (1-12)	hh	12
m	Minute in hour	mm	30
s	Second in minute	ss	55
S	Millisecond	SSS	834
Z	Time zone (general)	Z	Pacific Standard Time; PST; GMT-08:00
Z	Time zone (RFC 822)	Z	-0800
X	Time zone (ISO 8601)	X	-08:00

Pattern letters are usually repeated, as their number determines the exact presentation:

- **Text:** For formatting, if the number of pattern letters is 4 or more, the full form is used; otherwise a short or abbreviated form is used if available. For parsing, both forms are accepted, independent of the number of pattern letters.
- **Number:** For formatting, the number of pattern letters is the minimum number of digits, and shorter numbers are zero-padded to this amount. For parsing, the number of pattern letters is ignored unless it's needed to separate two adjacent fields.
- **Year:** For formatting, if the number of pattern letters is 2, the year is truncated to 2 digits; otherwise it is interpreted as a number. For parsing, if the number of pattern letters is more than 2, the year is interpreted literally, regardless of the number of digits. So using the pattern "MM/dd/yyyy", "01/11/12" parses to "Jan 11, 12 A.D". For parsing with the abbreviated year pattern ("y" or "yy"), ExtraView must interpret the abbreviated year relative to some century. In ExtraView, the year on a date parsed from user input is always checked to see if it is greater than 1000. If not, the year is adjusted to a more "rational" value by adding either 1900 or 2000 to the specified year. 2000 is added if the result would be less than or equal to the current year, otherwise, 1900 is added. For example, using a pattern of "MM/dd/yy" and a date presented on Jan 1, 1997, the string "01/11/03" would be interpreted as Jan 11, 2003 while the string "05/04/64" would be interpreted as May 4, 1964.
- **Month:** If the number of pattern letters is 3 or more, the month is interpreted as text; otherwise, it is interpreted as a number.
- **General time zone:** Time zones are interpreted as text if they have names. For time zones representing a GMT offset value, the following syntax is used: GMTOffsetTimeZone: GMT Sign Hours : Minutes Sign: one of - Hours: Digit Digit Digit Minutes: Digit Digit Digit: one of 0 1 2 3 4 5 6 7 8 9. Hours must be between 0 and 23, and Minutes must be between 0 and 59. The format is locale independent and digits must be taken from the Basic Latin block of the Unicode standard. For parsing, RFC 822 time zones are also accepted.
- **RFC 822 time zone:** For formatting, the RFC 822 4-digit time zone format is used: RFC822TimeZone: Sign TwoDigitHours Minutes TwoDigitHours: Digit Digit TwoDigitHours must be between 00 and 23. Other definitions are as for general time zones. For parsing, general time zones are also accepted.

Security Permission Keys

CF_ALLOWEDLOCALES	Maintain the list of locales allowed to be set by users in this installation. Note that even though a locale is defined, the translated messages may need to be created. Write access is needed to control this
CF_ALLOWEDVALUE_TYPE	Define and specify a parent-child hierarchical relationship between two fields. Write access is needed to control this
CF_ALLOWED_FUNCTIONS_DISPLAY	Access to the Allowed Functions screen. This is for viewing the properties of each of the ExtraView versions, but no changes may be made
CF_ALLOWED_VALUES	Access to the screen for maintenance of allowed value lists. These lists can also be maintained individually from the child list maintenance screen
CF_ALLOW_CHANGE_ROLE	Display the Role: change option on the menu bar

CF_ALLOW_RETURN_FROM_WORKSPACE	Allow users to close the workspace and return to the standard interface
CF_ALL_BEHAVIOR_SETTINGS	The complete list of behavior settings (in alphabetic order) can be viewed and modified from this list. Write access is needed to control this
CF_API_SETTINGS	Access to the configuration screen to maintain behavior settings that access ExtraView via the API. Write access is needed to control this
CF_AREA	Maintain the list of Business Areas for the inbuilt AREA field. Write access is needed to control this
CF_CATEGORY	Maintain the list of Categories for the inbuilt CATEGORY field. Write access is needed to control this
CF_COMPANY_SETTINGS	Access the administration screen to set your company name, address and contact information. Write access is needed to control this
CF_DATA_DICTIONARY	Access to the data dictionary where you create and maintain inbuilt and user defined fields & other objects, including modifying their title, display type, basic behavior and default values. Write access is needed to control this
CF_DATE_TIME_LABEL_MAP	Manage date time label mappings
CF_DD_ATTRIBUTE	Allows the administrator to manage data dictionary attributes
CF_DD_FILE_IMPORT	Access to the data dictionary file import utility
CF_DD_LIST_BUTTON	Controls the presence of the List button on the data dictionary screen
CF_DEBUG_SETTINGS	Access the behavior settings for debugging options and the user custom classname. Write access is needed to control this
CF_DESIGN_CENTER	This is the control for access to the Design Center
CF_DISPLAY_INFO	Access the behavior settings for fonts and colors to be used within ExtraView screens and layouts. Write access is needed to control this
CF_DISPLAY_SETTINGS	Control and set behavior settings that affect how screens and layouts are presented. Write access is needed to control this
CF_EMAIL_SETTINGS	Setup and administer email behavior settings. Write access is needed to control this
CF_ENABLE_DISABLE_USER_ACCESS	Access the administrative option to quiesce the ExtraView system for maintenance. Write access is needed to control this
CF_ENVIRONMENT	Access the behavior settings that maintain physical paths and URL information for accessing ExtraView. Write access is needed to control this
CF_ESCALATION_RULES	Escalation Rules
CF_EXPIRE_PASSWORD	This key controls access to allow the administrator to expire password in user accounts. Write access is needed to control this
CF_FILE_IMPORT	Access to the File Import Utility to upload and import a tab-delimited or comma-delimited data file containing records. Write access is needed to control this
CF_FULL_TEXT_CONTROL	This key controls access to the Quickfind settings
CF_GET_PROJECTS_API	This key controls access to the API function named <i>get_projects</i>
CF_HIERARCHY	Reporting Hierarchies
CF_HIERARCHY_LEVEL	Reporting Hierarchy Levels
CF_INSTALLATION_DETAILS	Setup the basic behavior settings of the ExtraView installation. Write access is needed to control this
CF_INTEREST_LIST	Interest List access. Note that giving read and write access to this key will allow non-administrative users access to maintain interest lists. This access is from a prompt on the Notification section of their Personal Options screen. Be aware that the end-user will have full access to interest list maintenance if they are given this permission
CF_KEYSTORE	Controls access to the encryption utility where keys are managed
CF_ITEMDATA	Access the administrative function to export item data to an XML formatted file. The file can be used for import to a different ExtraView schema. Read access is needed to control this
CF_LAYOUT_TYPE	Maintain the list of types of screen and report layouts that can be defined. Write access is needed to control this

CF_LICENSE	The End User License Agreement (EULA) for ExtraView. Write access is needed to control this
CF_LICENSE_UPLOAD	This key controls access to allow administrators to upload new license keys
CF_LOCALIZE	Access to this key allows locale-specific titles to be added to metadata field values. Write access is needed to control this
CF_MANAGE_TASKS	This is the key to allow access to the Manage Tasks utility
CF_MANAGE_USER_CONNECTION	Manage and disconnect users connection to ExtraView, releasing licenses back to the common pool. This is only used for concurrent license installations. Write access is needed to control this
CF_METADATA	Provide access to the export function where system metadata is dumped in XML format. Read access is needed to control this
CF_METADATA_UPDATER	Imports XML from a formatted file created with the XML export utility, and updates ExtraView with the information. Please make sure you backup your installation before using! Write access is needed to control this
CF_MODULE	Access to maintain the list of modules (MODULE_ID) within products (PRODUCT_NAME). Write access is needed to control this
CF_MODULE_TYPE	Create and manage the list of module types. Note that this key may be deprecated in a future release. Write access is needed to control this
CF_NAV_BAR	Controls access to the utility where navigation bars are managed
CF_OAUTH2_TOKEN	Read and write access is required to control access to the administration utility to create and maintain OAUTH2 tokens from a remote server
CF_PDF_MAPPING	This is the control for access to the utility where mappings to Adobe PDF documents are set up and maintained
CF_PERSONAL_OPTIONS	This key controls access to each user role's personal option link that appears in the title bar of the screen. Write access is needed to control this
CF_PRIORITY	Maintain the list of values for the inbuilt PRIORITY field. Write access is needed to control this
CF_PRIVACY_GROUP	Management of privacy groups by the administrator
CF_PRODUCT	Maintain the list of values for the inbuilt PRODUCT_NAME field. Write access is needed to control this
CF_PRODUCT_LINE	Maintain the list of values for the inbuilt PRODUCT_LINE field. Write access is needed to control this
CF_PRODUCT_RELEASE	Manages the Release Found field
CF_PROJECT	Access and maintain the list of Projects (PROJECT) within Business Areas (AREA). Write access is needed to control this. There is no use case to have read or write access to this key unless the same access is given to the CF_AREA permission key
CF_RANKING	Set up and maintain ranking fields
CF_RELATIONSHIP_GROUP	This key controls access to the global settings and names of issue relationship groups. Write access is needed to control this
CF_RELATIONSHIP_GROUP_DELETE_BUTTON	This key controls access to delete an issue from within a relationship group. Write access is needed to control this
CF_RELATIONSHIP_GROUP_EDIT	This key controls whether a user role may modify an existing relationship group of issues. Write access is needed to control this
CF_RELATIONSHIP_GROUP_EDIT_PROBLEM_BUTTON	This permission key controls the presence of the "Edit issue" button on the relationship group screen. Write access is needed to control this
CF_RELATIONSHIP_GROUP_PROBLEM_ADD_PROBLEM_BUTTON	This key controls whether a user role may add an issue to an existing relationship group of issues. Write access is needed to control this
CF_RELATIONSHIP_GROUP_VIEW_PROBLEM_BUTTON	This permission key controls the presence of the "View" button on the relationship group screen. Write access is needed to control this
CF_REPORT_DOCUMENT	Controls access to the administration of the document repository
CF_REPORT_SETTINGS	This key grants permissions to alter the behavior settings that affect reports and queries. Write access is needed to control this
CF_REPORT_USER	Create and manage reports created by individual users

CF_RESOLUTION	Maintain the list of values for the inbuilt RESOLUTION field. Write access is needed to control this
CF_RULE_CONFIGURATION	Access to create and maintain business rules
CF_RUN_AS_ADMIN	This permission setting allows the user who is performing a file import to ignore field level permissions. The primary purpose of this is to speed up the importation of extremely large volumes of records. It's unlikely that this setting is needed with less than 25,000 records within the import file
CF_SESSION_SETTINGS	This key controls access to the maintenance screen for system-wide behavior settings. Write access is needed to control this
CF_SEVERITY	Maintain the list of values for the inbuilt SEVERITY_LEVEL field. Write access is needed to control this
CF_SLA	Access to the Service Level Agreement maintenance function
CF_SSO_SETTINGS	Set up ExtraView to work with SSO and LDAP servers
CF_START_PAGE	Controls the ability for users to alter the start page seen when signing on to ExtraView
CF_STATISTICS	This provides access to summary information about users, user roles and usage patterns.. Read access is needed to control this
CF_STATUS	Maintain the list of values for the inbuilt STATUS field. Write access is needed to control this
CF_STATUS_RULES	This controls access to the definition screen for rules that apply to status changes. Sets up the business rules for workflow based on status. Write access is needed to control this
CF_SYSTEM_LOG	Controls access to reporting on all metadata changes in the administration log. Read access is needed to control this
CF_SYSTEM_LOG_TYPE	The list of activities in the administration log. New entries must be supported by program changes at the source code level
CF_SYSTEM_SIGNON	Controls access to view the log entries that track the sign on and sign off activities of all users. Read access is needed to control this
CF_TEMPLATE	Controls access to create and edit email templates to use in communication with internal and external users when updating issues
CF_THEME_SETTINGS	Access to allow administrators to change the user interface theme
CF_TRANSLATOR	Controls access to translate all system messages and prompts into different languages. Write access is needed to control this
CF_UDF_LIST	Allows individual users to add values to UDF lists, when configured for fields
CF_UDF_LIST_ADMIN	Controls access to maintain the list of values for User Defined Fields stored within ExtraView. This is a single key that controls access to all lists. Write access is needed to control this
CF_UPLOAD_COMPANY_LOGO	Controls access to the feature that allows an administrator to upload a Company Logo
CF_UPLOAD_USER_TEMPLATES	Write access to this key allows the uploading of Server-Side Templates for use with the ExtraView API
CF_USER_FILE_IMPORT	Controls access to the File Import - User Information feature. Write access allows the administrator to create new users with this facility
CF_USER_GROUP	Allows administrators to control user groups within the administration section
CF_USER_ROLES	Maintenance of user roles within administration
CF_USER_SETTINGS	This key controls access to the behavior settings and options associated with user names and users. Write access is needed to control this
CF_VERSION_INFO	This key controls access to version information for ExtraView and its supporting software. Read access is needed to control this
CF_VIEW_APP_SERVER_LOG	Read access to this permission key will place a button on the System Log administration screen. Pressing this button will display the application server log in a new window.
CF_WORKFLOW_DEFAULTS	This key controls access to the behavior settings and options associated with workflow. Write access is needed to control this

MENU.EV_NAV_BAR_BUTTON_ADMIN	This key controls access to the inbuilt Administration button on the inbuilt navigation bar
MENU.EV_NAV_BAR_BUTTON_HELP	This key controls access to the inbuilt Help button on the inbuilt navigation bar
MENU.EV_NAV_BAR_BUTTON_HOME	This key controls access to the inbuilt Home button on the inbuilt navigation bar
MENU.EV_NAV_BAR_BUTTON_QUERY	This key controls access to the inbuilt Query button on the inbuilt navigation bar
MENU.EV_NAV_BAR_BUTTON_REPORT	This key controls access to the inbuilt Report button on the inbuilt navigation bar
MENU.EV_NAV_BAR_BUTTON_SIGN_OFF	This key controls access to the inbuilt Sign Off button on the inbuilt navigation bar
MENU.EV_NAV_BAR_BUTTON_WS_CONTROL	This key controls access to the inbuilt Workspace control menu on the inbuilt navigation bar
MENU.EV_NAV_BAR_BUTTON_WORKSPACE	This key controls access to the inbuilt Workspace button on the inbuilt navigation bar
MENU_ADD_PROBLEM	This setting controls access to the Add issue layout from the main navigation bar Add button. Write access is needed to control this
MENU_ADMINISTRATION	This setting controls access to the Administration system from the main navigation bar Administration button. Write access is needed to control this
MENU_DRILLDOWN_ON_NAV_BAR	This permission key controls the presence of the drilldown box on the navigation bar. Read access is needed to be able to access the drilldown box.
MENU_EDIT	This setting controls access to the Update button on any Edit screen. Write access is needed to control this
MENU_HOME	This key controls access to the Home button on the Navigation bar. Read access is needed to control this
MENU_MOBILE_NAV_BAR	This controls the visibility of the navigation bar within the mobile client. You require read permission to see the navigation bar
MENU_MULTIPLE_HOME_PAGES	This key enables the feature that allows users to create and access multiple home pages. This key turns the entire feature on and off for each user role
MENU_RESOLUTION	This key controls access to the Query (Search & Reports) screen. Read access is needed to control this
MENU_WORKSPACE	Providing access to this key allows users to access workspaces
PR_ADD_PROBLEM.ALT_ID	Alternate ID
PR_ADD_PROBLEM.AREA	Business Area
PR_ADD_PROBLEM.ASSIGNED_TO	Assigned To
PR_ADD_PROBLEM.ATTACH_CONTENT_TYPE	This controls the presence of the content type on an attachment record. This can be seen with read access, but cannot be written to
PR_ADD_PROBLEM.ATTACH_CREATED_BY_USER	This controls the presence of the user's name who created the attachment. This can be seen with read access, but cannot be written to
PR_ADD_PROBLEM.ATTACH_DATE_CREATED	This controls the presence of the date an attachment was created. This can be seen with read access, but cannot be written to
PR_ADD_PROBLEM.ATTACH_DELETE	This allows users to delete attachments from the <i>ADD_PROBLEM</i> screen layouts. If the <i>ATTACH_SELECT</i> button is placed on the layout and the user role has permission to this, then it also enables a button that allows the user to select and delete multiple attachments at one time
PR_ADD_PROBLEM.ATTACH_FILE_DESC	This controls the presence of the attachment description, when you are entering the file name to be uploaded to an attachment. Write access is needed to control this
PR_ADD_PROBLEM.ATTACH_FILE_NAME	This controls the presence of the attachment file name on an attachment record. This can be seen with read access, but cannot be written to
PR_ADD_PROBLEM.ATTACH_FILE_SIZE	This controls the presence of the file size on an attachment record. This can be seen with read access, but cannot be written to
PR_ADD_PROBLEM.ATTACH_HIST_TIMESTAMP	Controls the presence of a timestamp that shows when an attachment was accessed, This is viewable with the read permission key on the

	History screen of an attachment
PR_ADD_PROBLEM.ATTACH_LAST_UPDT_COMPANY	Controls the presence of the name of a user's company that accessed an attachment, and viewable with the read permission key on the History screen of an attachment
PR_ADD_PROBLEM.ATTACH_PATH	This controls the presence of the original client attachment path to an attachment file, on an attachment record. This can be seen with read access, but cannot be written to
PR_ADD_PROBLEM.ATTACH_THUMBNAIL	Controls the presence of a thumbnail of an attachment of an image type, when the record that contains the attachment is viewed on the edit screen or on a report containing the ATTACHMENT record
PR_ADD_PROBLEM.ATTACHMENT	This is the controlling key for attachments. Without read and write permission to this key, attachments will not appear on the add issue screen layout. Once this key gives permission to the user role, the remaining attachment keys control the read / write permissions to the individual fields
PR_ADD_PROBLEM.ATTACHMENT_ADD	This controls the Add button on attachments. Write access is needed to control this
PR_ADD_PROBLEM.ATTACHMENT_DELETE	This allows the deletion of attachments from <i>ADD_PROBLEM</i> layouts. If the ATTACH_SELECT button is placed on the layout, then it also enables a button that allows the user to select and delete multiple attachments at one time
PR_ADD_PROBLEM.CATEGORY	Category
PR_ADD_PROBLEM.CC_EMAIL	Controls the presence of the CC Email input box on the add screen. The user role should have read and write permission to this field to allow the users to input email addresses on this line
PR_ADD_PROBLEM.CC_EMAIL_BUTTON	Controls the presence of a button by the CC Email input box on the add screen. The user role should have read permission to this field to allow the user to pop up a list of users that can be added to the CC Email box
PR_ADD_PROBLEM.COMMENTS	Comments
PR_ADD_PROBLEM.CONFIRM_ALLOW_EDIT	This permission key controls the visibility of the Edit button on the Add Confirmation screen
PR_ADD_PROBLEM.CONTACT	Contact
PR_ADD_PROBLEM.DATE_CREATED	Date Created
PR_ADD_PROBLEM.DESCRPTION	Description
PR_ADD_PROBLEM.EMAIL_CUSTOMER	If the user role has Read permission to this field, the checkbox to allow email to be sent to external users will be visible
PR_ADD_PROBLEM.EMAIL_SWITCH	This key enables or disables the Generate Email checkbox for the user role. If there is no Read access to this key, the Generate Email checkbox is not visible, and its setting is obtained from the value of the behavior setting named GENERATE_EMAIL_BOX.
PR_ADD_PROBLEM.ID	Controls access to the inbuilt field named ID
PR_ADD_PROBLEM.INTEREST_LIST	If the user role has write access to this permission key, they will see a checkbox in the notification area of the add screen and will be able to add themselves to an interest list for the issue they are creating. The user will also be able to add other users to an interest list for the issue via an input box
PR_ADD_PROBLEM.ITEM_ID	Controls access to the inbuilt field named ITEM_ID
PR_ADD_PROBLEM.MAILING_LIST	Controls access to the distribution email list for the issue. When the user has Read access to this permission key, an icon is also available to refresh the list
PR_ADD_PROBLEM.MODULE_ID	Module ID - this is the main key that should be used to control the Module field on a form
PR_ADD_PROBLEM.ORIGINATOR	Originator of the problem
PR_ADD_PROBLEM.OWNER	The owner of the issue
PR_ADD_PROBLEM.PRIORITY	The priority of the issue
PR_ADD_PROBLEM.PRIVACY	The Privacy of the issue
PR_ADD_PROBLEM.PROBLEM_RELEASE_DELETE	This key controls the presence of a check box on a repeating row record, that allows you to delete the current row. Write access is needed to control the checkbox

PR_ADD_PROBLEM.PRODUCT_LINE	Product Line
PR_ADD_PROBLEM.PRODUCT_NAME	Product name
PR_ADD_PROBLEM.PROJECT	Project
PR_ADD_PROBLEM.RELEASE	This is the controlling key for repeating row records. If you have read and write permission to this key, the entire repeating row structure will be available to the user role, and access to the individual fields on the repeating row structure is controlled by the security permission keys for each field
PR_ADD_PROBLEM.RELEASE_ASSIGNED_TO	Release Assigned To
PR_ADD_PROBLEM.RELEASE_DATE_CREATED	Release Date Created
PR_ADD_PROBLEM.RELEASE_FIXED	Release Fixed
PR_ADD_PROBLEM.RELEASE_FOUND	Release Found
PR_ADD_PROBLEM.RELEASE_OWNER	Release Owner
PR_ADD_PROBLEM.RELEASE_PRIORITY	Release Priority
PR_ADD_PROBLEM.RELEASE_PRODUCT	Release Product
PR_ADD_PROBLEM.RELEASE_RESOLUTION	Release Resolution
PR_ADD_PROBLEM.RELEASE_SEVERITY	Release Severity
PR_ADD_PROBLEM.RELEASE_STATUS	Release Status
PR_ADD_PROBLEM.RELEASE_TIMESTAMP	Release Timestamp
PR_ADD_PROBLEM.RESOLUTION	Resolution
PR_ADD_PROBLEM.SAVE_AND_CONT	Provides access to save an issue and continue in edit mode with write permission to this key
PR_ADD_PROBLEM.SEVERITY_LEVEL	Severity Level
PR_ADD_PROBLEM.SHORT_DESCR	Short description or Title of an issue
PR_ADD_PROBLEM.SHOW_PRIVATE_IN_PRIVACY_LIST	When you give a user role write access to this key, they will be able to enter Private issues within the privacy field
PR_ADD_PROBLEM.SHOW_PUBLIC_IN_PRIVACY_LIST	When you give a user role write access to this key, they will be able to enter Public issues within the privacy field
PR_ADD_PROBLEM.STATUS	Status
PR_ADD_PROBLEM.TIMESTAMP	Last date modified
PR_RESOLUTION.ALLOW_EDIT_CLOSED	Access to this key controls whether a user role can edit "closed" issues, as defined by the behavior setting named STATUS_CLOSED_NAME.
PR_RESOLUTION.ALLOW_EDIT_NEXT_PREVIOUS	Access to this key controls whether a user role can move from one issue in a list created from a report, to the next or the previous issue in the report list, reviewing and updating each issue in turn. When this is enabled for a role, there will be two additional buttons on the edit screen of each issue allowing the user to move back and forwards in the list of issues on the current page of the report in which the user first started to edit issues.
PR_RESOLUTION.ALT_ID	Alternate ID
PR_RESOLUTION.AREA	Business Area
PR_RESOLUTION.ASSIGNED_TO	Assigned To
PR_RESOLUTION.ATTACH_CONTENT_TYPE	This controls the presence of the content type on an attachment record. This can be seen with read access, but cannot be written to
PR_RESOLUTION.ATTACH_CREATED_BY_USER	This controls the presence of the user's name who created the attachment. This can be seen with read access, but cannot be written to
PR_RESOLUTION.ATTACH_DATE_CREATED	This controls the presence of the date an attachment was created. This can be seen with read access, but cannot be written to
PR_RESOLUTION.ATTACH_DELETE	This allows users to delete attachments from the <i>EDIT_PROBLEM</i> screen layouts. If the ATTACH_SELECT button is placed on the layout and the user role has permission to this, then it also enables a button that allows the user to select and delete multiple attachments at one time
PR_RESOLUTION.ATTACH_FILE_DESC	This controls the presence of the attachment description, when you are entering the file name to be uploaded to an attachment. Write access is needed to control this

PR_RESOLUTION.ATTACH_FILE_NAME	This controls the presence of the attachment file name on an attachment record. This can be seen with read access, but cannot be written to
PR_RESOLUTION.ATTACH_FILE_SIZE	This controls the presence of the file size on an attachment record. This can be seen with read access, but cannot be written to
PR_RESOLUTION.ATTACH_PATH	This controls the presence of the original client attachment path to an attachment file, on an attachment record. This can be seen with read access, but cannot be written to
PR_RESOLUTION.ATTACHMENT	This is the controlling key for attachments. Without read and write permission to this key, attachments will not appear on the <i>edit</i> issue screen layout. Once this key gives permission to the user role, the remaining attachment keys control the read / write permissions to the individual fields
PR_RESOLUTION.ATTACHMENT_ADD	This controls the Add button on attachments. Write access is needed to control this
PR_RESOLUTION.ATTACHMENT_DELETE	This is to enable and disable the delete attachment button
PR_RESOLUTION.ATTACHMENT_EDIT	Controls whether a user role may edit the attachment description of a previously uploaded attachment. Write permission is needed for this
PR_RESOLUTION.ATTACHMENT_VIEW	Controls whether a user role may view a previously uploaded attachment. Read or write permission is needed for this
PR_RESOLUTION.CATEGORY	Category
PR_RESOLUTION.CC_EMAIL	Controls the presence of the CC Email input box on the <i>edit</i> screen. The user role should have read and write permission to this field to allow the users to input email addresses on this line
PR_RESOLUTION.CC_EMAIL_BUTTON	Controls the presence of a button by the CC Email input box on the <i>edit</i> screen. The user role should have read permission to this field to allow the user to pop up a list of users that can be added to the CC Email box
PR_RESOLUTION.CLONE	Controls the presence of a Clone button on the <i>edit</i> screen toolbar. The user should have write permission to be able to clone issues
PR_RESOLUTION.COMMENTS	Comments
PR_RESOLUTION.CONTACT	Contact
PR_RESOLUTION.DATE_CREATED	Date Created
PR_RESOLUTION.DELETE_BUTTON	Controls the presence of the Delete button on the <i>edit</i> screen. If a user role has write access to this key they will be able to delete the issue
PR_RESOLUTION.DESCRPTION	Description
PR_RESOLUTION.EDIT_BUTTON	Controls whether a user role has access to an Edit button within reports and email. Write access is needed for this control
PR_RESOLUTION.EDIT_LOGAREA_FIELDS	Controls whether a user role is allowed to edit historic logarea fields such as COMMENTS. Normally only administrators will be given this control, through write access to the key
PR_RESOLUTION.EMAIL_BUTTON	Determines whether a user role has the Email button on the toolbar of the Edit screen
PR_RESOLUTION.EMAIL_CUSTOMER	If the user role has Read permission to this field, the checkbox to allow email to be sent to external users will be visible
PR_RESOLUTION.EMAIL_FILTER_SCREEN	Read permission to this key controls access to the search filter screen for ad hoc email
PR_RESOLUTION.EMAIL_SWITCH	This key enables or disables the Generate Email checkbox for the user role. If there is no Read access to this key, the Generate Email checkbox is not visible, and its setting is obtained from the value of the behavior setting named GENERATE_EMAIL_BOX.
PR_RESOLUTION.HISTORY_BUTTON	Read access to this key gives access to the history (audit trail) of an issue. History buttons can be placed on the <i>edit</i> screen and reports.
PR_RESOLUTION.ID	Controls access to the inbuilt field named ID
PR_RESOLUTION.INTEREST_LIST	If the user role has write access to this permission key, they will see a checkbox in the notification area of the edit screen and will be able to add themselves to an interest list for the issue they are updating. The user will also be able to add other users to an interest list for the issue via an input box
PR_RESOLUTION.ITEM_ID	Controls access to the inbuilt field named ITEM_ID

PR_RESOLUTION.KEYWORD	Determines whether a user role may perform searches by keyword, through the KEYWORD field on a filter layout. Read access is needed
PR_RESOLUTION.LAST_CHANGE_USER	Last user to update an issue
PR_RESOLUTION.MAILING_LIST	Controls access to the distribution email list for the issue. When the user has Read access to this permission key, an icon is also available to refresh the list
PR_RESOLUTION.MASS_DELETE_ISSUES	This controls access to the feature that allows users to perform mass deletions of issues from the database. Read and write access is required. Normally this facility is only given to key personnel
PR_RESOLUTION.MASS_DELETE_ISSUE_HISTORY	Write access to this key is needed in order to be able to delete the history of issues. Note that permission to PR_RESOLUTION.MASS_DELETE_ISSUES is needed in addition to this key.
PR_RESOLUTION.MASS_UPDATE_ISSUES	Controls access to the Mass Update button on report output. Write permission is needed to perform mass updates. Normally this facility is only given to key personnel
PR_RESOLUTION.MODULE_ID	Module ID - this is the main key that should be used to control the Module field on a form
PR_RESOLUTION.MONTHS_IN_STATUS	Number of months a problem has remained in its current status
PR_RESOLUTION.MONTHS_OPEN	Number of months a problem has been open
PR_RESOLUTION.OWNER	The Owner of an issue
PR_RESOLUTION.PRIORITY	The priority of the issue
PR_RESOLUTION.PRIVACY	The Privacy of the issue
PR_RESOLUTION.PROBLEM_RELEASE_DELETE	This key controls the presence of a check box on a repeating row record, that allows you to delete the current row. Write access is needed to control the checkbox
PR_RESOLUTION.PRODUCT_LINE	Product Line
PR_RESOLUTION.PRODUCT_NAME	Product name
PR_RESOLUTION.PROBLEM. PROBLEM_RELEASE_DELETE	This key controls the presence of a check box on a repeating row record, that allows you to delete the current row. Write access is needed to control the checkbox
PR_RESOLUTION.PROJECT	Project
PR_RESOLUTION.RELATIONSHIP_GROUP	Relationship Groups on Edit Screen
PR_RESOLUTION.RELATIONSHIP_GROUP_ID	Controls visibility of the relationship group ID on the <i>edit</i> screen
PR_RESOLUTION.RELATIONSHIP_GROUP_OWNER	Read access to this key provides the user role with visibility of the owner of relationship groups
PR_RESOLUTION.RELATIONSHIP_GROUP_TITLE	Read access to this key provides the user role with visibility of the title of relationship groups
PR_RESOLUTION.RELATIONSHIP_GROUP_TYPE	Read access to this key provides the user role with visibility of the type of relationship groups
PR_RESOLUTION.RELATIONSHIP_GRP_ADMIN	This permission key controls access to the Manage Relationship Groups button that is placed on the menubar of edit screens. When permission is granted to this key, users can access the management screen for relationship groups directly from the edit screen.
PR_RESOLUTION. RELATIONSHIP_GRP_PARENT_ID	Read access to this key provides visibility to the parent issue of the relationship group
PR_RESOLUTION.RELEASE	This is the controlling key for repeating row records. If you have read and write permission to this key, the entire repeating row structure will be available to the user role, and access to the individual fields on the repeating row structure is controlled by the security permission keys for each field
PR_RESOLUTION.RELEASE_ASSIGNED_TO	Release Assigned To
PR_RESOLUTION.RELEASE_DATE_CREATED	Release Date Created
PR_RESOLUTION.RELEASE_FIXED	Release Fixed
PR_RESOLUTION.RELEASE_FOUND	Release Found
PR_RESOLUTION.RELEASE_OWNER	Release Owner
PR_RESOLUTION.RELEASE_PRIORITY	Release Priority
PR_RESOLUTION.RELEASE_PRODUCT	Release Product

PR_RESOLUTION.RELEASE_RESOLUTION	Release Resolution
PR_RESOLUTION.RELEASE_SEVERITY	Release Severity
PR_RESOLUTION.RELEASE_STATUS	Release Status
PR_RESOLUTION.RELEASE_TIMESTAMP	Release Timestamp
PR_RESOLUTION.RESOLUTION	Resolution
PR_RESOLUTION.RG_EMAIL_BUTTON	Provides access to the email button on the Relationship Group Filter Screen.
PR_RESOLUTION.RG_MERGE_BUTTON	Provides access to the merge button on the Relationship Group Filter Screen
PR_RESOLUTION.RG_SPLIT_BUTTON	Provides access to the split button on the Relationship Group Filter Screen
PR_RESOLUTION.SEARCH_ATTACHMENTS	This key controls the searching of attachments on the query filter screens. When this key has Write access, a checkbox appears underneath the KEYWORD field, giving the ability to search through attachments for the user role
PR_RESOLUTION.SEVERITY_LEVEL	Severity Level
PR_RESOLUTION.SHORT_DESCR	Short description or Title of an issue
PR_RESOLUTION.SHOW_PRIVATE_IN_PRIVACY_LIST	When you give a user role write access to this key, they will be able to enter Private issues within the privacy field
PR_RESOLUTION.SHOW_PUBLIC_IN_PRIVACY_LIST	When you give a user role write access to this key, they will be able to enter Public issues within the privacy field
PR_RESOLUTION.START_DATE	This key offers the user role the ability to enter the Created Date as the lower value in a query filter when searching for an issue. Typically used in conjunction with PR_RESOLUTION.STOP_DATE
PR_RESOLUTION.START_UPDATE	This key offers the user role the ability to enter the Last Modified Date as the lower value in a query filter when searching for an issue. Typically used in conjunction with PR_RESOLUTION.STOP_UPDATE. Note that the data dictionary setting “ Filter criteria ” must be set to Yes for this field to work.
PR_RESOLUTION.STATUS	Status
PR_RESOLUTION.STATUS_HIST	Status History
PR_RESOLUTION.STOP_DATE	This key offers the user role the ability to enter the Created Date as the upper value in a query filter when searching for an issue. Typically used in conjunction with PR_RESOLUTION.START_DATE
PR_RESOLUTION.STOP_UPDATE	This key offers the user role the ability to enter the Last Modified Date as the upper value in a query filter when searching for an issue. Typically used in conjunction with PR_RESOLUTION.START_UPDATE. Note that the data dictionary setting “ Filter criteria ” must be set to Yes for this field to work.
PR_RESOLUTION.TIMESTAMP	Last date modified
PR_RESOLUTION.VIEW_BUTTON	Controls the visibility of the View button on reports. Read access is required for this
SE_LOGIN_MESSAGE	Provides access to alter the sign on message that appears on all users' Home Pages. Write access is required for this function
SE_PRIVACY_GROUP	Write access allows the creation and management of the list of privacy groups
SE_SECURITY_GROUP	Create and manage the list of user roles with this key. Write access is needed
SE_SECURITY_MODULE	Create and maintain the list of security objects. Normally these are created automatically by ExtraView. Write access is required
SE_SECURITY_PERMISSION	This key controls access to update the security permission keys within the installation. Write access is required. Without access to this key, no security permissions can be altered
SE_SECURITY_USER	Provides access to create and maintain user accounts and user account details. Write access is needed
SE_TEMPLATE_PRECACHE	This key controls access to allow the caching of templates upon the startup of the application server
SE_USER_ATTRIBUTES	If the user's role has permission to this key, then they are able to use the user defined attributes that have been configured within the data

	dictionary, as fields for a custom operation on the user account administration screens. The use of this feature is always accompanied by user custom code
SR_ALLOWED_VALUES_CHK	Enables and disables the Allowed Values checkbox on advanced queries
SR_ALLOW_ADVANCED_QUERIES	When this setting is YES, the user role can create, edit, save, delete and execute reports composed with the Advanced Query option. When this is set to NO, reports composed with Advanced Query may only be run, and only if the user role has permission to the appropriate SR_PUBLIC_COLUMN_REPORT and SR_PERSONAL_COLUMN_REPORT permission keys
SR_ALLOW_EXPANDED_QUERIES	When the user role has read access to this key, the users can switch between condensed and expanded queries. When this key is set to no access, the users will only be able to create queries with the condensed mode and will not be able to switch into the expanded mode
SR_ALLOW_HIERARCHY_REPORTS	Access to this key is required for users to perform queries with hierachies
SR_ALLOW_MASS_UPDATE_FILTERS	This key places a prompt Use Saved Mass Update List on the Column and Treegrid report editors. This allows the user role to select a saved mass update list and use this on mass updates following the output of a report
SR_ALLOW_REPORT_DND	This permission key controls which roles have permission to darg and drop reports between folders on the Report screen
SR_ALLOW_REPORTS_ACCESS	This controls access to the main report screen from the navigation bar
SR_DASHBOARD_ON_HOME_PAGE	Read access provides the user role with access to an executive dashboard report on the home page. Note that this report must be configured in user custom code
SR_FILTER_BUTTON	Controls access to the Filter button on the menubar output of reports
SR_KB_ON_HOME_PAGE	Read access provides the user role with access to search the inbuilt Knowledgebase business area from the home page
SR_MENUBAR_REPORTS	This key enables the appearance of a user's reports on the Home PAge
SR_SET_HOME_PAGE_REPORTS	Read access to this key allows the user to select and set their Home Page reports
SR_PERSONAL_ADMIN	This key enables access to personal admin reports. Read access is required to run the reports and write access is required to create and modify the reports
SR_PERSONAL_AGING	Read access determines access to save personal aging reports and to place personally created aging report on the user's home page
SR_PERSONAL_CALENDAR	Read access determines access to save personal calendar reports and to place personally created candar reports on the user's home page
SR_PERSONAL_CHART	Read access determines access to save personal charts and to place personally created charts on the user's home page
SR_PERSONAL_COLUMN_REPORT	Determines the ability to create and run personal column reports. Both Read and Write access can be used to determine the functionality required
SR_PERSONAL_CONTAINER	Determines the ability to create and run personal Container reports. Both Read and Write access can be used to determine the functionality required
SR_PERSONAL_DASHBOARD	Determines the ability to create and run personal Dashboard reports. Both Read and Write access can be used to determine the functionality required
SR_PERSONAL_GEOSPATIAL	Read access for this key gives the ability to view and run personal Geospatial reports. Write access gives the ability to create new personal Geospatial reports
SR_PERSONAL_LINKED_REPORT	Determines the ability to create and run personal linked custom reports. Both Read and Write access can be used to determine the functionality required
SR_PERSONAL_MATRIX	Determines the ability to create and run personal Matrix reports. Both Read and Write access can be used to determine the functionality required

SR_PERSONAL_PAGE_LAYOUT	Determines the ability to create personal Page Layout reports. Both Read and Write access can be used to determine the functionality required
SR_PERSONAL_SUMMARY_REPORT	Determines the ability to create and run personal summary reports. Both Read and Write access can be used to determine the functionality required
SR_PERSONAL_TASKBOARD	Determines the ability to create and run personal Taskboard reports. Both Read and Write access can be used to determine the functionality required
SR_PERSONAL_TREEGRID	Determines the ability to create and run personal Treegrid reports. Both Read and Write access can be used to determine the functionality required
SR_PUBLIC_ADMIN	This key enables access to public admin reports. Read access is required to run the reports and write access is required to create and modify the reports
SR_PUBLIC_AGING	Read access determines access to save public aging reports and to place public aging reports on the user's home page
SR_PUBLIC_CALENDAR	Determines the ability to create and run public Calendar reports. Both Read and Write access can be used to determine the functionality required
SR_PUBLIC_CHART	Read access determines access to save public charts and to place public charts on the user's home page
SR_PUBLIC_COLUMN_REPORT	Determines the ability to create and run public Column reports. Both Read and Write access can be used to determine the functionality required
SR_PUBLIC_CONTAINER	Determines the ability to create and run public Container reports. Both Read and Write access can be used to determine the functionality required
SR_PUBLIC_DASHBOARD	Determines the ability to create and run public Dashboard reports. Both Read and Write access can be used to determine the functionality required
SR_PUBLIC_GEOSPATIAL	Read access for this key gives the ability to view and run public Geospatial reports. Write access gives the ability to create new personal Geospatial reports
SR_PUBLIC_LINKED_REPORT	Determines the ability to create and run public linked custom reports. Both Read and Write access can be used to determine the functionality required
SR_PUBLIC_MATRIX	Determines the ability to create and run public Matrix reports. Both Read and Write access can be used to determine the functionality required
SR_PUBLIC_PAGE_LAYOUT	Determines the ability to create public Page Layout reports. Both Read and Write access can be used to determine the functionality required
SR_PUBLIC_PLANNING	Determines the ability to create and run public Planning reports. Both Read and Write access can be used to determine the functionality required
SR_PUBLIC_SUMMARY_REPORT	Determines the ability to create and run public summary reports. Both Read and Write access can be used to determine the functionality required
SR_PUBLIC_TASKBOARD	Determines the ability to create and run public Taskboard reports. Both Read and Write access can be used to determine the functionality required
SR_PUBLIC_TREEGRID	Determines the ability to create and run public Treegrid reports. Both Read and Write access can be used to determine the functionality required
SR_PUBLIC_WORKSPACE	This permission key controls end user access to view and select from the list of public workspaces to which the user has permission. Typically, this means the user must have access to the business area, project and user role in which the workspace is saved
SR_RELATIONSHIP_GROUP	This key controls access to the Group Issues button on column reports and Quicklist reports. Write access is needed to control this

SR_REPORT_GROUP	Allows users to create and maintain ad hoc reporting groups
SR_REPORT_REPOSITORY_ACCESS	Controls access to the document repository
SR_REPORT_SCHEDULE	This key provides access to set up and control the report scheduler from within all report editors
SR_SAVE_PERSONAL_FILTERS	This provides the ability to allow the user role to save and delete personal report filters on the Query screen and report editors
SR_SAVE_PUBLIC_FILTERS	This provides the ability to allow the user role to save and delete shared report filters on the Query screen and report editors
SR_SCHEDULE_ALLOW_ROLE_SELECT	Enables access to select entire roles from within the report scheduler
SR_SET_HOME_PAGE_MOBILE_REPORT	Allows users to add a Home Page report to their mobile client
SR_SET_HOME_PAGE_REPORTS	Allows users to add Home Page reports to their desktop
SR_USERGROUP_ADMIN	Access for administrators to the User Group reports maintenance function
SR_USERROLE_ADMIN	This key enables access to admin reports by the user role. Read access is required to run the reports and write access is required to create and modify the reports
SR_USERROLE_AGING	Read access for this key gives the ability to see and run aging reports created for the current user role. Write access gives the ability to create these aging reports
SR_USERROLE_CALENDAR	Read access for this key gives the ability to see and run Calendar report created for the current user role. Write access gives the ability to create these charts
SR_USERROLE_CHART	Read access for this key gives the ability to see and run charts created for the current user role. Write access gives the ability to create these charts
SR_USERROLE_COLUMN_REPORT	Read access for this key gives the ability to see and run Column reports created for the current user role. Write access gives the ability to create these reports
SR_USERROLE_CONTAINER	Read access for this key gives the ability to see and run Container reports created for the current user role. Write access gives the ability to create these reports
SR_USERROLE_DASHBOARD	Read access for this key gives the ability to see and run Dashboard reports created for the current user role. Write access gives the ability to create these reports
SR_USERROLE_GEOSPATIAL	Read access for this key gives the ability to view and run public Geospatial reports for the current user role. Write access gives the ability to create new Geospatial reports for the current user role
SR_USERROLE_LINKED_REPORT	Read access for this key gives the ability to see and run Linked custom reports created for the current user role. Write access gives the ability to create these reports
SR_USERROLE_MATRIX	Read access for this key gives the ability to see and run Matrix reports created for the current user role. Write access gives the ability to create these reports
SR_USERROLE_PAGE_LAYOUT	Read access for this key gives the ability to see Page Layout reports created for the current user role. Write access gives the ability to create these reports
SR_USERROLE_PLANNING	Read access for this key gives the ability to see and run Planning reports created for the current user role. Write access gives the ability to create these reports
SR_USERROLE_SUMMARY_REPORT	Determines the ability to create and run summary reports for the current user role. Both Read and Write access can be used to determine the functionality required

Language and Locale Codes

The following is a list of language and locales supported by Java, and therefore by ExtraView.

Language	Country	Locale ID
Arabic	Saudi Arabia	ar_SA
Chinese (Simplified)	China	zh_CN
Chinese (Traditional)	Taiwan	zh_TW
Dutch	Netherlands	nl_NL
English	Australia	en_AU
English	Canada	en_CA
English	United Kingdom	en_GB
English	United States	en_US
French	Canada	fr_CA
French	France	fr_FR
German	Germany	de_DE
Hebrew	Israel	iw_IL
Hindi	India	hi_IN
Italian	Italy	it_IT
Japanese	Japan	ja_JP
Korean	South Korea	ko_KR
Portuguese	Brazil	pt_BR
Spanish	Spain	es_ES
Swedish	Sweden	sv_SE
Thai (Western digits)	Thailand	th_TH
Thai (Thai digits)	Thailand	th_TH_TH

The following list is provided, and believed to work, but is not part of the testing done by Oracle with their Java releases.

Language	Country	Locale ID
Albanian	Albania	sq_AL
Arabic	Algeria	ar_DZ
Arabic	Bahrain	ar_BH
Arabic	Egypt	ar_EG
Arabic	Iraq	ar_IQ
Arabic	Jordan	ar_JO
Arabic	Kuwait	ar_KW
Arabic	Lebanon	ar_LB
Arabic	Libya	ar_LY
Arabic	Morocco	ar_MA
Arabic	Oman	ar_OM
Arabic	Qatar	ar_QA
Arabic	Sudan	
Arabic	ar_SD	
Arabic	Syria	ar_SY
Arabic	Tunisia	ar_TN
Arabic	United Arab Emirates	ar_AE
Arabic	Yemen	ar_YE
Bulgarian	Bulgaria	bg_BG
Belorussian	Belorussia	be_BY
Catalan	Spain	ca_ES
Chinese	Hong Kong	zh_HK
Croatian	Croatia	hr_HR
Czech	Czech Republic	cs_CZ
Danish	Denmark	da_DK
Dutch	Belgium	nl_BE
English	India	en_IN
English	Ireland	en_IE

English	New Zealand	en_NZ
English	South Africa	en_ZA
Estonian	Estonia	et_EE
Finnish	Finland	fi_FI
French	Belgium	fr_BE
French	Luxembourg	fr_LU
French	Switzerland	fr_CH
German	Austria	de_AT
German	Luxembourg	de_LU
German	Switzerland	de_CH
Greek	Greece	el_GR
Hungarian	Hungary	hu_HU
Icelandic	Iceland	is_IS
Italian	Switzerland	it_CH
Latvian	Latvia	lv_LV
Lithuanian	Lithuania	lt_LT
Macedonian	Macedonia	mk_MK
Norwegian (Bokmål)	Norway	no_NO
Norwegian (Nynorsk)	Norway	no_NO_NY
Polish	Poland	pl_PL
Portuguese	Portugal	pt_PT
Romanian	Romania	ro_RO
Russian	Russia	ru_RU
Serbian (Cyrillic)	Yugoslavia	sr_YU
Serbo-Croatian	Yugoslavia	sh_YU
Slovak	Slovakia	sk_SK
Slovenian	Slovenia	sl_SI
Spanish	Argentina	es_AR
Spanish	Bolivia	es_BO
Spanish	Chile	es_CL
Spanish	Colombia	es_CO
Spanish	Costa Rica	es_CR
Spanish	Dominican Republic	es_DO
Spanish	Ecuador	es_EC
Spanish	El Salvador	es_SV
Spanish	Guatemala	es_GT
Spanish	Honduras	es_HN
Spanish	Mexico	es_MX
Spanish	Nicaragua	es_NI
Spanish	Panama	es_PA
Spanish	Paraguay	es_PY
Spanish	Peru	es_PE
Spanish	Puerto Rico	es_PR
Spanish	Uruguay	es_UY
Spanish	Venezuela	es_VE
Turkish	Turkey	tr_TR
Ukrainian	Ukraine	uk_UA

Time Zones

Offset to GMT	Time Zone	Offset to GMT	Time Zone
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GMT -12:00	Etc/GMT +12	GMT +1:00	Africa/Ceuta	
GMT -11:00	Etc/GMT+11		Africa/Douala	
	MIT		Africa/Kinshasa	
	Pacific/Apia		Africa/Lagos	
	Pacific/Midway		Africa/Libreville	
	Pacific/Niue		Africa/Luanda	
	Pacific/Pago_Pago		Africa/Malabo	
	Pacific/Samoa		Africa/Ndjamena	
	US/Samoa		Africa/Niamey	
GMT -10:00	America/Adak		Africa/Porto-Novo	
	America/Atka		Africa/Tunis	
	Etc/GMT+10		Africa/Windhoek	
	HST		Arctic/Longyearbyen	
	Pacific/Fakaofu		Atlantic/Jan_Mayen	
	Pacific/Honolulu		CET	
	Pacific/Johnston		ECT	
	Pacific/Rarotonga		Etc/GMT-1	
	Pacific/Tahiti		Europe/Amsterdam	
	SystemV/HST10		Europe/Andorra	
	US/Aleutian		Europe/Belgrade	
	US/Hawaii		Europe/Berlin	
	GMT -9:30	Pacific/Marquesas		Europe/Bratislava
				Europe/Brussels
GMT -9:00	AST		Europe/Budapest	
	America/Anchorage		Europe/Copenhagen	
	America/Juneau		Europe/Gibraltar	
	America/Nome		Europe/Ljubljana	
	America/Yakutat		Europe/Luxembourg	
	Etc/GMT+9		Europe/Madrid	
	Pacific/Gambier		Europe/Malta	
	SystemV/YST9		Europe/Monaco	
	SystemV/YST9YDT		Europe/Oslo	
US/Alaska		Europe/Paris		
GMT -8:00	America/Dawson		Europe/Prague	
	America/Ensenada		Europe/Rome	
	America/Los_Angeles		Europe/San_Marino	
	America/Tijuana		Europe/Sarajevo	
	America/Vancouver		Europe/Skopje	
	America/Whitehorse		Europe/Stockholm	
	Canada/Pacific		Europe/Tirane	
	Canada/Yukon		Europe/Vaduz	
	Etc/GMT+8		Europe/Vatican	
	Mexico/BajaNorte		Europe/Vienna	
	PST		Europe/Warsaw	
	PST8PDT		Europe/Zagreb	
	Pacific/Pitcairn		Europe/Zurich	
	SystemV/PST8		MET	
	SystemV/PST8PDT		Poland	
	US/Pacific		GMT +2:00	ART
	US/Pacific-New			Africa/Blantyre
GMT -7:00	America/Boise			Africa/Bujumbura
	America/Cambridge_Bay			Africa/Cairo
	America/Chihuahua			Africa/Gaborone
	America/Dawson_Creek			Africa/Harare
	America/Denver			

	America/Edmonton		Africa/Johannesburg
	America/Hermosillo		Africa/Kigali
	America/Inuvik		Africa/Lubumbashi
	America/Mazatlan		Africa/Lusaka
	America/Phoenix		Africa/Maputo
	America/Shiprock		Africa/Maseru
	America/Yellowknife		Africa/Mbabane
	Canada/Mountain		Africa/Tripoli
	Etc/GMT+7		Asia/Amman
	MST		Asia/Beirut
	MST7MDT		Asia/Damascus
	Mexico/BajaSur		Asia/Gaza
	Navajo		Asia/Istanbul
	PNT		Asia/Jerusalem
	SystemV/MST7		Asia/Nicosia
	SystemV/MST7MDT		Asia/Tel_Aviv
	US/Arizona		CAT
	US/Mountain		EET
GMT -6:00	America/Belize		Egypt
	America/Cancun		Etc/GMT-2
	America/Chicago		Europe/Athens
	America/Costa_Rica		Europe/Bucharest
	America/El_Salvador		Europe/Chisinau
	America/Guatemala		Europe/Helsinki
	America/Managua		Europe/Istanbul
	America/Menominee		Europe/Kaliningrad
	America/Merida		Europe/Kiev
	America/Mexico_City		Europe/Minsk
	America/Monterrey		Europe/Nicosia
	America/North_Dakota/Center		Europe/Riga
	America/Rainy_River		Europe/Simferopol
	America/Rankin_Inlet		Europe/Sofia
	America/Regina		Europe/Tallinn
	America/Swift_Current		Europe/Tiraspol
	America/Tegucigalpa		Europe/Uzhgorod
	America/Winnipeg		Europe/Vilnius
	CST		Europe/Zaporozhye
	CST6CDT		Israel
	Canada/Central		Libya
	Canada/East-Saskatchewan		Turkey
	Canada/Saskatchewan	GMT +3:00	Africa/Addis_Ababa
	Chile/EasterIsland		Africa/Asmera
	Etc/GMT+6		Africa/Dar_es_Salaam
	Pacific/Easter		Africa/Djibouti
	Pacific/Galapagos		Africa/Kampala
	SystemV/CST6		Africa/Khartoum
	Mexico/General		Africa/Mogadishu
	SystemV/CST6CDT		Africa/Nairobi
	US/Central		Antarctica/Syowa
GMT -5:00	America/Bogota		Asia/Aden
	America/Cayman		Asia/Baghdad
	America/Detroit		Asia/Bahrain
	America/Eirunepe		Asia/Kuwait
	America/Fort_Wayne		Asia/Qatar

	America/Grand_Turk		Asia/Riyadh
	America/Guayaquil		EAT
	America/Havana		Etc/GMT-3
	America/Indiana/Indianapolis		Europe/Moscow
	America/Indiana/Knox		Indian/Antananarivo
	America/Indiana/Marengo		Indian/Comoro
	America/Indiana/Vevay		Indian/Mayotte
	America/Indianapolis		W-SU
	America/Iqaluit	GMT +3:30	Asia/Tehran
	America/Jamaica		Iran
	America/Kentucky/Louisville	GMT +4:00	Asia/Aqtau
	America/Kentucky/Monticello		Asia/Baku
	America/Knox_IN		Asia/Dubai
	America/Lima		Asia/Muscat
	America/Louisville		Asia/Oral
	America/Montreal		Asia/Tbilisi
	America/Nassau		Asia/Yerevan
	America/New_York		Etc/GMT-4
	America/Nipigon		Europe/Samara
	America/Panama		Indian/Mahe
	America/Pangnirtung		Indian/Mauritius
	America/Port-au-Prince		Indian/Reunion
	America/Porto_Acre		NET
	America/Rio_Branco	GMT +4:30	Asia/Kabul
	America/Thunder_Bay	GMT +5:00	Asia/Aqtobe
	Brazil/Acre		Asia/Ashgabat
	Canada/Eastern		Asia/Ashkhabad
	Cuba		Asia/Bishkek
	EST		Asia/Dushanbe
	EST5EDT		Asia/Karachi
	Etc/GMT+5		Asia/Samarkand
	Jamaica		Asia/Tashkent
	SystemV/EST5		Asia/Yekaterinburg
	SystemV/EST5EDT		Etc/GMT-5
	US/East-Indiana		Indian/Kerguelen
	US/Eastern		Indian/Maldives
	US/Indiana-Starke		PLT
	US/Michigan	GMT +5:30	Asia/Calcutta
GMT -4:00	America/Anguilla		IST
	America/Antigua	GMT +6:00	Antarctica/Mawson
	America/Aruba		Antarctica/Vostok
	America/Asuncion		Asia/Almaty
	America/Barbados		Asia/Colombo
	America/Boa_Vista		Asia/Dacca
	America/Caracas		Asia/Dhaka
	America/Cuiaba		Asia/Novosibirsk
	America/Curacao		Asia/Omsk
	America/Dominica		Asia/Qyzylorda
	America/Glace_Bay		Asia/Thimbu
	America/Goose_Bay		Asia/Thimphu
	America/Grenada		BST
	America/Guadeloupe		Etc/GMT-6
	America/Guyana		Indian/Chagos
	America/Halifax	GMT +6:30	Asia/Rangoon

	America/La_Paz		Indian/Cocos	
	America/Manaus	GMT +7:00		
	America/Martinique		Antarctica/Davis	
	America/Montserrat		Asia/Bangkok	
	America/Port_of_Spain		Asia/Hovd	
	America/Porto_Velho		Asia/Jakarta	
	America/Puerto_Rico		Asia/Krasnoyarsk	
	America/Santiago		Asia/Phnom_Penh	
	America/Santo_Domingo		Asia/Pontianak	
	America/St_Kitts		Asia/Saigon	
	America/St_Lucia		Asia/Vientiane	
	America/St_Thomas		Etc/GMT-7	
	America/St_Vincent		Indian/Christmas	
	America/Thule		VST	
	America/Tortola		GMT +8:00	Antarctica/Casey
	America/Virgin			Asia/Brunei
	Antarctica/Palmer			Asia/Chongqing
	Atlantic/Bermuda	Asia/Chungking		
	Atlantic/Stanley	Asia/Harbin		
	Brazil/West	Asia/Hong_Kong		
	Canada/Atlantic	Asia/Irkutsk		
	Chile/Continental	Asia/Kashgar		
	Etc/GMT+4	Asia/Kuala_Lumpur		
	PRT	Asia/Kuching		
	SystemV/AST4	Asia/Macao		
	SystemV/AST4ADT	Asia/Macao		
GMT -3:30	America/St_Johns	Asia/Makassar		
	CNT	Asia/Manila		
	Canada/Newfoundland	Asia/Shanghai		
GMT -3:00	AGT	Asia/Singapore		
	America/Araguaina	Asia/Taipei		
	America/Belem	Asia/Ujung_Pandang		
	America/Buenos_Aires	Asia/Ulaanbaatar		
	America/Catamarca	Asia/Ulan_Bator		
	America/Cayenne	Asia/Urumqi		
	America/Cordoba	Australia/Perth		
	America/Fortaleza	Australia/West		
	America/Godthab	CTT		
	America/Jujuy	Etc/GMT-8		
	America/Maceio	Hongkong		
	America/Mendoza	PRC		
	America/Miquelon	Singapore		
	America/Montevidео	GMT +9:00		Asia/Choibalsan
	America/Paramaribo			Asia/Dili
	America/Recife			Asia/Jayapura
	America/Rosario			Asia/Pyongyang
	America/Sao_Paulo		Asia/Seoul	
	Antarctica/Rothera		Asia/Tokyo	
	BET		Asia/Yakutsk	
	Brazil/East		JST	
	Etc/GMT+3		Japan	
	GMT -2:00		America/Noronha	Etc/GMT-9
			Atlantic/South_Georgia	Pacific/Palau
Brazil/DeNoronha			ROK	

	Etc/GMT+2		GMT +9:30	ACT
GMT -1:00	America/Scoresbysund			Australia/Adelaide
	Atlantic/Azores			Australia/Broken_Hill
	Atlantic/Cape_Verde			Australia/Darwin
	Etc/GMT+1			Australia/North
GMT +0:00	Africa/Abidjan			Australia/South
	Africa/Accra			Australia/Yancowinna
	Africa/Bamako		GMT +10:00	AET
	Africa/Banjul			Antarctica/DumontDURville
	Africa/Bissau			Asia/Sakhalin
	Africa/Casablanca			Asia/Vladivostok
	Africa/Conakry			Australia/ACT
	Africa/Dakar			Australia/Brisbane
	Africa/El_Aaiun			Australia/Canberra
	Africa/Freetown			Australia/Hobart
	Africa/Lome			Australia/Lindeman
	Africa/Monrovia			Australia/Melbourne
	Africa/Nouakchott			Australia/NSW
	Africa/Ouagadougou			Australia/Queensland
	Africa/Sao_Tome			Australia/Sydney
	Africa/Timbuktu			Australia/Tasmania
	America/Danmarkshavn			Australia/Victoria
	Atlantic/Canary			Etc/GMT-10
	Atlantic/Faeroe			Pacific/Guam
	Atlantic/Madeira			Pacific/Port_Moresby
	Atlantic/Reykjavik			Pacific/Saipan
	Atlantic/St_Helena			Pacific/Truk
	Eire			Pacific/Yap
	Etc/GMT		GMT +10:30	Australia/LHI
	Etc/GMT+0			Australia/Lord_Howe
	Etc/GMT-0		GMT +11:00	Asia/Magadan
	Etc/GMT0			Etc/GMT-11
	Etc/Greenwich			Pacific/Efate
	Etc/UCT			Pacific/Guadalcanal
	Etc/UTC			Pacific/Kosrae
	Etc/Universal			Pacific/Noumea
	Etc/Zulu			Pacific/Ponape
	Europe/Belfast			SST
	Europe/Dublin		GMT +11:30	Pacific/Norfolk
	Europe/Lisbon		GMT +12:00	Antarctica/McMurdo
	Europe/London			Antarctica/South_Pole
	GB			Asia/Anadyr
	GB-Eire			Asia/Kamchatka
	GMT			Etc/GMT-12
	GMT0			Kwajalein
	Greenwich			NST
	Iceland			NZ
	Portugal			Pacific/Auckland
	UCT			Pacific/Fiji
	UTC			Pacific/Funafuti
	Universal			Pacific/Kwajalein
	WET			Pacific/Majuro
	Zulu			Pacific/Nauru
GMT +1:00	Africa/Algiers			Pacific/Tarawa

Character Set Values

The following table represents the ISO Latin 1 Character Entities as defined by the ASCII-ISO 8859-1 standard. Note that not all browsers can display all these characters accurately.

Decimal	Symbol	HTML Code	Decimal	Symbol	HTML Code
32		 	144	☐	
33	!	!	145	‘	‘
34	"	"	146	’	’
35	#	#	147	“	“
36	\$	$	148	”	”
37	%	%	149	•	•
38	&	&	150	–	–
39	'	'	151	—	—
40	((152	~	˜
41))	153	™	™
42	*	*	154	š	š
43	+	+	155	›	›
44	,	,	156	œ	œ
45	-	-	157	□	
46	.	.	158	ž	ž
47	/	/	159	Ÿ	Ÿ
48	0	0	160		
49	1	1	161	ı	¡
50	2	2	162	¢	¢
51	3	3	163	£	£
52	4	4	164	¤	¤
53	5	5	165	¥	¥
54	6	6	166	¦	¦
55	7	7	167	§	§
56	8	8	168	¨	¨
57	9	9	169	©	©
58	:	:	170	ª	ª
59	;	;	171	«	«
60	<	<	172	¬	¬
61	=	=	173		­
62	>	>	174	®	®
63	?	?	175	¯	¯
64	@	@	176	°	°
65	A	A	177	±	±
66	B	B	178	²	²
67	C	C	179	³	³
68	D	D	180	´	´
69	E	E	181	µ	µ
70	F	F	182	¶	¶
71	G	G	183	•	·
72	H	H	184	,	¸
73	I	I	185	¹	¹
74	J	J	186	º	º
75	K	K	187	»	»

76	L	L
77	M	M
78	N	N
79	O	O
80	P	P
81	Q	Q
82	R	R
83	S	S
84	T	T
85	U	U
86	V	V
87	W	W
88	X	X
89	Y	Y
90	Z	Z
91	[[
92	\	\
93]]
94	^	^
95	_	_
96	`	`
97	a	a
98	b	b
99	c	c
100	d	d
101	e	e
102	f	f
103	g	g
104	h	h
105	i	i
106	j	j
107	k	k
108	l	l
109	m	m
110	n	n
111	o	o
112	p	p
113	q	q
114	r	r
115	s	s
116	t	t
117	u	u
118	v	v
119	w	w
120	x	x
121	y	y
122	z	z
123	{	{
124		|
125	}	}
126	~	~
127		
128	€	€
129	□	

188	¼	¼
189	½	½
190	¾	¾
191	¿	¿
192	À	À
193	Á	Á
194	Â	Â
195	Ã	Ã
196	Ä	Ä
197	Å	Å
198	Æ	Æ
199	Ç	Ç
200	È	È
201	É	É
202	Ê	Ê
203	Ë	Ë
204	Ì	Ì
205	Í	Í
206	Î	Î
207	Ï	Ï
208	Ð	Ð
209	Ñ	Ñ
210	Ò	Ò
211	Ó	Ó
212	Ô	Ô
213	Õ	Õ
214	Ö	Ö
215	×	×
216	Ø	Ø
217	Ù	Ù
218	Ú	Ú
219	Û	Û
220	Ü	Ü
221	Ý	Ý
222	Þ	Þ
223	ß	ß
224	à	à
225	á	á
226	â	â
227	ã	ã
228	ä	ä
229	å	å
230	æ	æ
231	ç	ç
232	è	è
233	é	é
234	ê	ê
235	ë	ë
236	ì	ì
237	í	í
238	î	î
239	ï	ï
240	ð	ð
241	ñ	ñ

130	,	‚	242	ò	ò
131	f	ƒ	243	ó	ó
132	„	„	244	ô	ô
133	…	…	245	õ	õ
134	†	†	246	ö	ö
135	‡	‡	247	÷	÷
136	^	ˆ	248	ø	ø
137	‰	‰	249	ù	ù
138	Š	Š	250	ú	ú
139	‹	‹	251	û	û
140	Œ	Œ	252	ü	ü
141	□		253	ý	ý
142	Ž	Ž	254	þ	þ
143	□				

The HTML Area Utility

The HTML Area is available to as an editor for HTML, allowing you to enter rich text or HTML without knowing the HTML language. It offers many features similar to a word processor, but it is not a full word processor, due to the limitations of Internet browsers. Advanced users may switch to edit HTML directly. HTML Area fields may contain images which are pasted into the field from the user's clipboard. Likewise, entire files may be embedded. Embedded files are represented by an icon, once they have been placed within the field.


As you enter text / images into an HTML Area field, it will grow in height to allow you to see as much of the information as possible, to a maximum height which is set to be a little less than most screens.

A behavior setting named `EDITOR_TOOLBAR_BUTTONS` controls the visibility of the toolbar buttons when HTML Area fields are first displayed. If this is set to `NO`, the toolbar is empty and only becomes visible when the user clicks on the icon at the right-hand edge of the field. If this is set to `YES`, the user will see all the toolbar buttons when the field becomes available, but can hide the buttons by clickong on the icon.

You may select one of three available toolbars or you may customize a toolbar solely for your company's use. The built-in toolbars are shown in the following screenshots. The HTML Area utility makes use of scripts that run within the browser, and according to the security settings of the browser, you may need to acknowledge that it is OK to run these scripts. If you are using a mobile client, only the basic toolbar is initialized, to conserve space on the screen.

Images and Embedded Files

There are several methods of including images and files within your HTML Area fields:

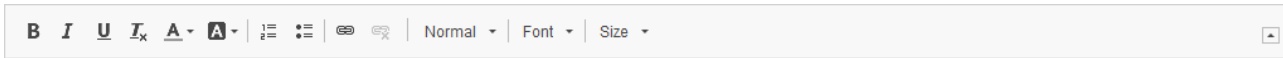
- Paste an image into the field from your computer clipboard. Simply place the cursor at the point where you want the image to be included, right-click with your mouse and choose the paste option. Ctrl-V accomplishes the same action. Depending on your browser settings you may see a popup window and be asked to paste the image again. You will see a message that the image has been uploaded and the image will appear within the field
- You can include an image that resides on any server by knowing the URL path to the image. In this case, use the  button on the toolbar and enter the URL of the image. You will see the image at the point where you inserted it in the field
- There is a behavior setting named `MAX_EMBEDDED_IMAGE_WIDTH` that can be used to resize large images to a more reasonable size when they are displayed on *add*, *edit* screens and reports. This aids the usability of these screens so that users do not need to scroll horizontally to view the images when they are embedded on these screens. The images within the database are stored exactly as they were uploaded and are not resized
- You can copy a document type file, such as a word processing or spreadsheet file from the computer clipboard into the field. When pasted, you will see an icon as a placeholder within the field. When viewing the issue, you can click on the icon to download and view the file.

IE 11 Note: There are known issues with embedding document files in an HTML Area field when using the Microsoft Internet Explorer version 11 browser. Dragging-and-dropping or copying and pasting a file (directly from the file system) is often unreliable. This is a problem within the Microsoft browser software which ExtraView cannot work around. The most reliable way to use the feature is as follows, although it may also fail on occasion:

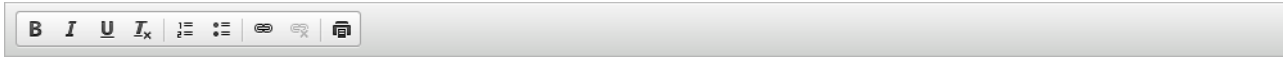
- Click within the HTML Area field within the browser window so that the cursor appears at the location where you want to embed the document

- Select the file within a Windows Explorer window and drag it into the HTML Area field
- You should see the document appear within the HTML Area field and see the message **File Successfully Uploaded.**

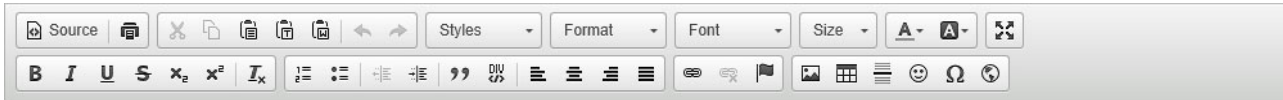
MODERATE Toolbar



Basic Toolbar



Standard Toolbar



Full Toolbar

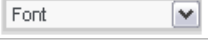




























The use of the HTML Area field is intuitive. Just enter text and use the buttons on the toolbar to provide the formatting.

Note that there are some limitations when entering and updating text within the utility. A key limitation is that you cannot click on a link when the field is being updated. This functionality only works when the field is in read-only mode.

The available toolbar buttons are:

Basic	Standard	Full	Button	Function
✓	✓	✓		Toggle bold on and off for the selected text
✓	✓	✓		Toggle italic text on and off for the selected text
✓	✓	✓		Toggle underlined text on and off for the selected text
✓	✓	✓		Remove text formatting from the selected text
✓	✓	✓		Toggle a numbered list for the selected text
✓	✓	✓		Toggle a bulleted list for the selected text
✓	✓	✓		Add a link to the selected text
✓	✓	✓		Remove the link from the selected text
✓	✓	✓		Print the contents of the HTML Area
	✓	✓		Toggle the display mode between "what-you-see-is-what-you-get" and HTML source views
	✓	✓		Cut the selected text to the clipboard
	✓	✓		Copy the selected text to the clipboard
	✓	✓		Paste the text from the clipboard to the cursor position
	✓	✓		Paste the text, as plain unformatted text, from the clipboard to the cursor position
	✓	✓		Paste text from Microsoft Office documents - this will remove the obscure formatting that Microsoft Office documents often contain
	✓	✓		Undo the last operation
	✓	✓		Redo the last operation that was undone
				Use a style from the list. Note that there are interdependencies with the Style, Format, Font and Size lists. Not all combinations work with all computers, as

Basic	Standard	Full	Button	Function
				your browser, or computer operating system may not support the combination you choose
	✓	✓		Format the text from the selections within the list. Note that there are interdependencies with the Style, Format, Font and Size lists. Not all combinations work with all computers, as your browser, or computer operating system may not support the combination you choose
	✓	✓		Select a font from the selections within the list. Note that there are interdependencies with the Style, Format, Font and Size lists. Not all combinations work with all computers, as your browser, or computer operating system may not support the combination you choose
	✓	✓		Set a size for the text from the selections within the list. Note that there are interdependencies with the Style, Format, Font and Size lists. Not all combinations work with all computers, as your browser, or computer operating system may not support the combination you choose
	✓	✓		Set a color for the selected text
	✓	✓		Set a background color for the selected text
	✓	✓		Maximize / Restore the size of the HTML Area within the browser
	✓	✓		Strikeout the selected text
	✓	✓		Subscript the selected text
	✓	✓		Superscript the selected text
	✓	✓		Outdent the selected text
	✓	✓		Indent the selected text
	✓	✓		Place the selected text in blockquotes
				Place the selected text in an HTML DIV
	✓	✓		Left-justify the selected text
	✓	✓		Center-justify the selected text
	✓	✓		Right-justify the selected text
	✓	✓		Full-justify the selected text
	✓	✓		Insert an HTML text anchor tag
	✓	✓		Insert an image
	✓	✓		Insert a table
	✓	✓		Insert a horizontal rule
	✓	✓		Insert a smiley face
	✓	✓		Insert a character symbol
				Insert an HTML IFRAME
		✓		Search for text within the HTML Area field
		✓		Search and replace text within the HTML Area field
		✓		Select all the text within the HTML Area field
		✓		Text direction goes from left-to-right (the default)
		✓		Text direction goes from right-to-left
		✓		Insert a page-break for printing

OAuth2 Email Mailbox Settings

These settings are a guide for setting up Batchmail and EVMail. Your mail administrator may have additional information or alternative settings, dependent on your configuration.

OAuth2 Connections with Batchmail to Microsoft Email

For SMTP, your mailbox must have SMTP AUTH enabled.

Batchmail configuration with Microsoft Mail servers

```
MAIL_SERVER=smtp.office365.com
MAIL_PORT=587
MAIL_USER=<your email address>
MAIL_AUTH_TYPE = OAUTH2
MAIL_TOKEN_NAME = <token name>
MAIL_ENABLE_TLS = YES
```

Alternative EVMail configurations with Microsoft Mail servers

```
MAILBOX_TYPE = POP3
MAILBOX_PORT = 995
MAILBOX_SECURE = YES
MAILBOX_SERVER = outlook.office.com
MAILBOX_USER = <your email address>
MAILBOX_PASSWORD =
MAILBOX_AUTH_TYPE = OAUTH2
MAILBOX_EMAIL_TOKEN_NAME =<token name>
```

```
MAILBOX_TYPE = IMAP
MAILBOX_PORT = 993
MAILBOX_SECURE = YES
MAILBOX_SERVER = outlook.office.com
MAILBOX_USER = <your email address>
MAILBOX_AUTH_TYPE = OAUTH2
MAILBOX_EMAIL_TOKEN_NAME =<token name>
```

```
MAILBOX_TYPE = EXCHANGE
MAILBOX_SECURE = YES
MAILBOX_SERVER = outlook.office.com
MAILBOX_USER = <your email address>
MAILBOX_AUTH_TYPE = OAUTH2
MAILBOX_EMAIL_TOKEN_NAME =<token name>
EXCHANGE_URL = https://outlook.office.com/ews/Exchange.asmx
```

Spell Checker

The ExtraView Spell Checker is an alternative to the spell checking built into most browsers. It offers these advantages:

- Consistency of use for all your users
- A central dictionary with the same vocabulary for all users
- Many languages and variants
 - US English
 - UK English
 - Canadian English
 - Australian English
 - Spanish
 - French
 - Dutch
 - English Medical Dictionary
- The ability to add words to the central dictionaries

The dictionary is enabled with the behavior setting named `ENABLE_SPELLCHECK`. When this is turned on, all text area, log area, print area and text fields are spell checked as the user types, when the user enters or modifies data within them. You can also spell check HTML area fields, by clicking on the spell check button on the toolbar. Spell checking as the user types is not supported in HTML Area fields.

There are occasions when you might not want to spell check a field. For example, if the field contains an account number, or some arbitrary text that never spells a word, you might want to skip the spell check for that field. This is achieved by adding an HTML Modifier layout cell attribute to the field on its layout within the Design Center. The HTML Modifier is:

nospell=true

Attachment Migration

This appendix describes an ExtraView command-line utility that moves file attachments from internal storage within the database, to the file system.

By default, file attachments uploaded to ExtraView are stored as binary objects in the database. The ExtraView Administrator has the choice to configure the system to store some or all of the uploaded attachments to a file system accessible by the application server.

Within ExtraView, the program keeps track of where all particular attachments are located. Prior to the conversion, all attachments are marked as being stored “internally” – within the database. As part of the migration process, as each individual file is extracted and copied to the final location on the external file system, the system marks that attachment as now being stored “externally”. This allows the migration process to be done as a background task, without impacting the availability of ExtraView or its attachments to the end users.

This provides flexibility – the Administrator can choose to have all files stored internally in the database, all files stored externally in the file system, or have a mixture of some file types stored within the database, and some file types stored on the file system.

Configuring External Storage

Note: It is strongly recommend that you back up your database prior to performing any of the procedures described below.

To configure attachment storage options, log in to ExtraView with the Administrator role. Click on the **Admin** navigation button, then the **System Controls** tab, then select **All Behavior Settings**, and edit the following settings:

- **ATTACHMENT_REPOSITORY_OPT** - This setting controls whether attachments, document field and image fields are stored internally within the database, externally on the file system, or in some combination of the two methods.

If the value of this setting is **INTERNAL** (the default value), then all attachments, document fields and image fields are stored internally within the database. If the value is set to **EXTERNAL**, then all the attachments, document fields and image fields are stored on the external file system.

Alternatively, you may provide a comma separated list of file extensions and then all files with these extensions are stored in the database while all others are stored externally in the file repository.

For example, if you set the value of this setting to **txt, doc, docx, htm, html** then files of these types will be stored within the database. This strategy leaves the files stored internally in the database, while image and video files with extensions such as **jpg** and **mp4** are stored externally.

Regardless of the setting, ExtraView will continue to store dynamically generated thumbnail-sized image files in the database as these are relatively small files and for performance reasons must be more readily available.

- **ATTACHMENT_REPOSITORY_ROOT** – This setting defines the location outside the database where attachments, document fields and image fields will be stored. You must ensure that the path is valid from the application server(s) that are running ExtraView and that you have all the permissions to read and write to the storage. In a clustered or load-balanced environment, you must ensure that all instances of ExtraView can read and write to the same file system using this path.

Please note – if you change this setting, new attachments, document field and image fields will be saved to the new location, and existing attachments, document fields and image fields will still reference the old location. You will need to ensure that the previous file path is still accessible by the ExtraView instance, or these existing attachments will not be available to end users.

Set up a separate backup method for this external storage as backing up your database will no longer backup the file attachments

- **ATTACHMENT_REPOSITORY_DMAX** - This setting defines the maximum number of files or directories that will be created under one node of the external directory structure. The default for this value is 999. It is not likely that this value needs to be altered.

Sizing the file system

You should ensure that there is adequate space for future growth when sizing the file system to be used for storing attachments externally. To do this, have your DBA connect to your ExtraView database using Query Analyzer (MSSQL) or SQL Plus (Oracle) and run the following queries:

```
-- bring back the total size of the attachments stored in the database, in bytes.
select sum(file_size) from attachment;
-- bring back the number of attachments in the database
select count(*) from attachment;
```

Migration Utility Options

There are several forms of the doAttachmentMigration command. The utility is found in the directory named WEB-INF/data. All require one or more parameters passed as part of the ExtraView command line utility:

- Move a single attachment by providing a single attachment ID:

```
doAttachmentMigration instanceName -id 10000
```

- Move a batch of attachments by providing a range of attachment IDs:

```
doAttachmentMigration instanceName -from 10000 -to 50000
```

- Move attachments according to their content type:

```
doAttachmentMigration instanceName -type content-type ...
```

The content type may contain valid database wildcard characters. This typically means that a percentage sign (%) will match multiple characters and an underscore (_) will match a single character. Further, you can specify multiple -type parameters in a single command. For example, the following will migrate all the files that contain **binary** and **zip** within their content types:

```
doAttachmentMigration instanceName -type %binary% -type %zip%
```

- Migrate a list of attachments, from a file containing the list of ID's:

```
doAttachmentMigration instanceName -id_list filename
```

The filename contains a list of the IDs that are to be migrated.

Attachment ID values can be found by having your DBA run the following SQL query against the ExtraView database:

```
select min(attachment_id), max(attachment_id) from attachment;
```

Optional parameters can be added inside the double quotes:

-report <filename> - Generates a specific location for the report file. By default the report will be dumped into ExtraView log file.

-delete - If specified, deletes the attachment content blob from the database after migration. We would not generally recommend this if you have a large number of attachments, as it is much more efficient to simply have your DBA truncate the table when you have completed the migration and you have validated your results.

-testOnly - This allows a dry run migration of the attachments without any modification to the database or the repository.

-noValidation - This prevents the CRC-32 check on the stored migrated attachments, and will be somewhat faster. Use of this parameter is not recommended, because the extra time to validate the file content vis-à-vis the blob content is nominal, and the consequences of storing a blob in the file system incorrectly due to I/O error or network error could include a loss of valuable data. If the CRC-32 validation fails, the attachment is not migrated and an error is posted to the log and/or report file.

Running the Migration Utility

The migration command line utility is included in the ExtraView application package. It requires Java be installed on the application server to run. We provide shell and batch file scripts that you can use to run the utility.

If you have deployed ExtraView in a WAR/EAR file, you will need to set up an exploded directory to run this script. The scripts are located in the evj/WEB-INF/data folder on your application server.

Microsoft Windows with Apache Tomcat

Edit the doAttachmentMigration.bat file

Locate the lines

```
set JAVA_HOME=C:\ExtraView\java\jdk1.7.0
set TOMCAT_HOME=C:\ExtraView\Tomcat7.0
set EV_BASE=C:\ExtraView\Tomcat7.0\webapps\evj
```

and modify the paths to match your installation

Save and exit the edit session.

Open a Command window in the evj\WEB-INF\data folder and type the following command:

```
doAttachmentMigration instanceName "parameters"
```

where "parameters" is a double-quote enclosed list of parameters as per the options listed above.

Linux / Unix with Tomcat

Edit the doAttachmentMigration.sh file

Locate the lines

```
TOMCAT_HOME=/usr/local/extraview/tomcat
JAVA_HOME=/usr/local/extraview/java
EV_BASE = $TOMCAT_HOME/webapps/evj
```

Set TOMCAT_HOME, JAVA_HOME and EV_BASE to the correct paths for your installation.

Save and exit the edit session.

At the command prompt, type the following command:

```
sh doAttachmentMigration.sh instanceName "parameters"
```

where "parameters" is a double-quote enclosed list of parameters as per the options listed above.

For All Platforms

Run the script you just edited. You must provide some additional parameters as shown here:

```
REM required:
REM -from (the starting attachment id for the migration) and -to (the ending attachment
id for the migration)
REM or
REM -id (an attachment id for the migration)
REM or
REM -type content_type [-type content_type2[ ...]] (content type may be a wild card using
database wild cards -- i.e. '%')
REM or
REM -id_list <file> (the name of a file containing attachment id's - one per line)
```

If you do not know the attachment IDs you may run this query:

```
select min(attachment_id), max(attachment_id) from attachment;
```

You might also simply substitute 1 and a very high number.

Linux / Unix with Weblogic

Edit the doAttachmentMigrationWeblogic.sh file

```
JAVA_HOME=/usr/local/extraview/java
WL_HOME=/usr/local/bea/weblogic81
EV_BASE=/path/to/extraview/application/evj52-x.jar
```

Set JAVA_HOME, WL_HOME and EV_BASE to the correct paths for your installation.

Save and exit the edit session.

At the command prompt, type the following command:

```
sh doAttachmentMigrationWeblogic.sh instanceName "parameters"
```

where "parameters" is a double-quote enclosed list of parameters as per the options listed above.

Validation and Completion

While the migration utility runs, it will print out information to the console. It will also write detailed log entries to a file in the evj/WEB-INF/log folder or to the file defined in the -report parameter option. Once the process has completed, you can check the log file to determine if there were any problems.

If all attachments were migrated, you can verify that the attachments are available to download and view through the ExtraView web interface. Once you are satisfied, you can have your DBA remove the binary attachments from the database.

If you have selected the option to have all attachments stored in the file system, your DBA can simply run the command

```
update attachment set thumbnail_id = null where thumbnail_id is not null;
truncate table attachment_content;
```

Note: this will remove all thumbnails. The thumbnail will be regenerated dynamically the next time the attachment is referenced, e.g., as part of a detailed report.

If you have selected the option of having some types of file stored in the database and some files stored externally, your DBA will need to run some variant of

```
delete from attachment_content
where attachment_id in
( select attachment_id from attachment where STORED_INTERNAL = 'N' );
```

Note: We strongly recommend that you back up your database prior to performing any of the procedures described above (particularly before deleting any attachments). Please contact support@extraview.com if you would like assistance with this step.

Document & Image Field Migration

This appendix describes an ExtraView command-line utility named DocumentImageMigration that moves fields with the display types of *document* and *image* from internal storage within the database, to the file system. The utility will typically be run with the support of doDocumentMigration.bat (Windows) or doDocumentMigration.sh (Linux).

By default, the contents of document and image fields uploaded to ExtraView are stored as binary objects in the database. The ExtraView Administrator has the choice to configure the system to store the uploaded field contents on the file system, where they will be accessible by the application server.

The program must be run stand-alone, and the ExtraView application server(s) should be stopped while the documents and images are being migrated.

Configuring External Storage

Note: It is strongly recommend that you back up your database prior to performing any of the procedures described below.

To configure the storage options, log in to ExtraView with the Administrator role. These settings are shared with storing [file attachments](#) on the file system. Click on the **Admin** navigation button, then the **System Controls** tab, then select **All Behavior Settings**, and edit the following settings:

- **ATTACHMENT_REPOSITORY_OPT** - This setting controls whether attachments, documents and images are stored internally within the database, externally on the file system, or in some combination of the two methods.

If the value of this setting is **INTERNAL** (the default value), then all attachments, documents and images are stored internally within the database. If the value is set to **EXTERNAL**, then all the attachments, documents and images are stored on the external file system.

Alternatively, you may provide a comma separated list of file extensions and then all files with these extensions are stored in the database while all others are stored externally in the file repository.

For example, if you set the value of this setting to **txt, doc, docx, htm, html** then files of these types will be stored within the database. This strategy leaves the files stored internally in the database as searchable by keywords, while image and video files with extensions such as **jpg** and **mp4** are stored externally

- **ATTACHMENT_REPOSITORY_ROOT** – This setting defines the location outside the database where attachments, documents and images will be stored. You must ensure that the path is valid from the application server(s) that are running ExtraView and that you have all the permissions to read and write to the storage. In a clustered or load-balanced environment, you must ensure that all instances of ExtraView can read and write to the same file system using this path.

Please note – if you change this setting, new attachments will be saved to the new location, and existing attachments will still reference the old location. You will need to ensure that the previous file path is still accessible by the ExtraView instance, or these existing attachments will not be available to end users.

Set up a separate backup method for this external storage as backing up your database will no longer backup the file attachments

- **ATTACHMENT_REPOSITORY_DMAX** - This setting defines the maximum number of files or directories that will be created under one node of the external directory structure. The default for this value is 999. It is not likely that this value needs to be altered.

Running the Migration Utility

The DocumentImageMigration utility is a Java program. This is run from Windows with the doDocumentMigration.bat file, and from Linux with the doDocumentMigration.sh file. You should stop the application server (usually Apache Tomcat) before running this utility and restart it once the utility has completed its task.

The migration command line utility is included in the ExtraView application package. It requires Java be installed on the application server to run. We provide shell and batch file scripts that you can use to run the utility.

If you have deployed ExtraView in a WAR/EAR file, you will need to set up an exploded directory to run this script. The scripts are located in the evj/WEB-INF/data folder on your application server. **Syntax:**

```
doDocumentMigration [-instanceName] [-testOnly] [-migrate] [-updateSize]
```

You must provide one of the optional parameters. The meaning of the parameters is:

- -instanceOnly - the name of your ExtraView instance, e.g. *evj*. This parameter is required
- -testOnly - perform a dry run of the migration, but without making any changes to the database or to the file system
- -migrate - perform the migration
- -updateSize - update the size of the external attachments in the database (not normally used)

Microsoft Windows with Apache Tomcat

Edit the doDocumentMigration.bat file.

Locate the lines

```
set JAVA_HOME=%1
set TOMCAT_HOME=%2
set EV_BASE=%3
```

replace %1 with your path to Java, e.g. D:ExtraView\java\jdk-1.4.2
replace %2 with your path to Tomcat, e.g. D:ExtraView\jakarta-tomcat-5.0.28
replace %3 with your path to ExtraView, e.g. D:ExtraView\jakarta-tomcat-5.0.28\webapps\evj

Save and exit the edit session.

Open a Command window in the evj\WEB-INF\data folder and type the following command:

```
doDocumentMigration instanceName "parameter"
```

where

instanceName and "parameter" are defined by the options listed above.

Linux / Unix with Tomcat

Edit the doDocumentMigration.sh file.

Locate the lines

```
TOMCAT_HOME=/usr/local/extraview/tomcat  
JAVA_HOME=/usr/local/extraview/java
```

Set TOMCAT_HOME and JAVA_HOME to the correct paths for your installation.

Save and exit the edit session.

At the command prompt, type the following command:

```
sh doDocumentMigration.sh instanceName "parameter"
```

where

instanceName and "parameter" are defined by the options listed above.

Completing the Migration

You must use the Java utility named runPatches when you have completed the above steps. The setup for this is identical to the setup for doDocumentMigration, except you edit the file named either runPatches.bat or runPatches.sh. Once you have set up the file, simply run the runPatches from the command line.

Again: We strongly recommend that you back up your database prior to performing any of the procedures described above. Please contact support@extraview.com if you would like assistance with this step.

ExtraView Accessibility Features

ExtraView Corporation is committed to the delivery of software that meets or exceeds many accessibility guidelines:

- US Government Rehabilitation Act, Section 508
- W3C Web Content Accessibility Guidelines, WCAG
- ISO 40500
- EN 301 549

In January 2009, the Information Technology Industry Council (ITI) asked for the development of a specification that could be used for ITI's Voluntary Product Accessibility Template (VPAT). This VPAT was been embraced by the U.S. General Services Administration as a way to simplify government market research on IT products with accessible features. Later, guidelines emerged from the W3C organization in the form of their Web Content Accessibility Guidelines (WCAG), from the International Standards Organization with ISO 40500 and from the European equivalent EN 301 549. There is a significant overlap of these guidelines. This page mainly covers the 508 requirements, and thereby embraces other guidelines.

It is the responsibility of the ExtraView administrator to implement many of the accessibility features, as in most respects ExtraView it is an endlessly configurable environment, with the administrator having total control over elements such as colors, text fonts and sizes, the placement of most elements on the screen, the addition of help that is available to screen readers and data validation. ExtraView provides the tools to implement an accessible environment and the administrator needs to understand and follow the guidelines to achieve the best results.

The first table of the Template provides a summary view of the section 508 Standards. The subsequent tables provide more detailed views of each subsection. There are three columns in each table. Column one of the Summary Table describes the subsections of sub-parts B and C of the Standards. The second column describes the supporting features of the product or refers you to the corresponding detailed table, "e.g., equivalent facilitation." The third column contains any additional remarks and explanations regarding ExtraView. In the subsequent tables, the first column contains the lettered paragraphs of the subsections. The second column describes the supporting features of the product with regard to that paragraph. The third column contains any additional remarks and explanations regarding the product.

ExtraView is reliant on the correct functioning and support of an Internet browser. Supported browsers are Microsoft Edge, Mozilla Firefox, and Google Chrome. If there are exceptions to any of the VPAT criteria within any of these browsers, then ExtraView will only meet the criteria to the extent that the browser meets the criteria. The VPAT for these browsers should be consulted for any and all limitations that may exist.

Summary Table VPAT™**Voluntary Product Accessibility Template®**

Criteria	Supporting Features	Remarks and explanations
Section 1194.21 Software Applications and Operating Systems		
Section 1194.22 Web-based Internet Information and Applications		
Section 1194.23 Telecommunications Products		
Section 1194.24 Video and Multi-media Products		
Section 1194.25 Self-Contained, Closed Products		
Section 1194.26 Desktop and Portable Computers		
Section 1194.31 Functional Performance Criteria		
Section 1194.41 Information, Documentation and Support		

Section 1194.21 Software Applications and Operating Systems – Detail VPAT™**Voluntary Product Accessibility Template®**

Criteria	Supporting Features	Remarks and explanations
(a) When software is designed to run on a system that has a keyboard, product functions shall be executable from a keyboard where the function itself or the result of performing a function can be discerned textually.	Supports with exceptions that may exist within the browser software that is required for ExtraView to function	ExtraView supports all standard keyboard operations of the user interface provided by the browser software that is required to operate ExtraView.
(b) Applications shall not disrupt or disable activated features of other products that are identified as accessibility features, where those features are developed and documented according to industry standards. Applications also shall not disrupt or disable activated features of any operating system that are identified as accessibility features where the application programming interface for those accessibility features has been documented by the manufacturer of the operating system and is available to the product developer.	ExtraView does not interfere with any keyboard accessibility features built into the operating system or the browser that supports ExtraView.	ExtraView does not interfere with Mouse Keys, Sticky Keys, Filter Keys or Toggle Keys
(c) A well-defined on-screen indication of the current focus shall be provided that moves among interactive interface elements as the input focus changes. The focus shall be programmatically exposed so that Assistive Technology can track focus and focus changes.	ExtraView utilizes a visual focus indicator that moves among interactive objects as in the input focus changes is provided. This visual focus indicator is provided by the browser that supports ExtraView and ExtraView is therefore subject to limitations and extensions of any individual browser type.	
(d) Sufficient information about a user interface element including the identity, operation and state of the element shall be available to Assistive Technology. When an image represents a program element, the information conveyed by the image must also be available in text.	ExtraView provides information to the extent that the underlying browser provides this information and is subject to any limitations that may exist in the supported browser required for operation.	ExtraView extends functionality by providing a means to document each element of the user interface into which data is entered and stored with a tooltip. The ExtraView administrator is able to define a context and function sensitive message which appears on the screen and is available to assistive technology.

<p>(e) When bitmap images are used to identify controls, status indicators, or other programmatic elements, the meaning assigned to those images shall be consistent throughout an application's performance.</p>	<p>There is a consistent set of bit map images used throughout the user interface.</p>	<p>There are a number of complete sets of images, or themes, that are selectable by the administrator, to offer the user of ExtraView. All images that are members of a set are consistent throughout the set, in regard to color, style and font.</p>
<p>(f) Textual information shall be provided through operating system functions for displaying text. The minimum information that shall be made available is text content, text input caret location, and text attributes.</p>	<p>Again, ExtraView is compliant with this criteria to the extent that the required browser is compliant.</p>	
<p>(g) Applications shall not override user selected contrast and color selections and other individual display attributes.</p>	<p>Again, ExtraView is compliant with this criteria to the extent that the required browser is compliant. Note that different browsers offer a different level of compliance with this criteria.</p>	<p>In practice this is not a limitation for ExtraView's end users unless an end user's browser has been configured with unusual settings.</p>
<p>(h) When animation is displayed, the information shall be displayable in at least one non-animated presentation mode at the option of the user.</p>	<p>The only place where animation is used is for progress bars for lengthy data import, and mass update operations. In these cases, the progress is indicated with both an animation and with text-based numeric counters that show how far the operation has progressed and how far there is to go to reach completion.</p>	<p>The user interface never relies only on animation for user feedback and always offers text information.</p>
<p>(i) Color coding shall not be used as the only means of conveying information, indicating an action, prompting a response, or distinguishing a visual element.</p>	<p>Firstly, ExtraView works within any constraints imposed by the supported browsers. Secondly, ExtraView uses color to differentiate different elements of information on the screens generated to end users. However, this color embellishment is for aesthetics only and does not impart any essential information to the end user. When there is a requirement to distinguish information, ExtraView uses non-color elements such as underlines, bolding and font sizes.</p>	<p>Many of the distinguishing elements may be set by the ExtraView administrator, so much of the control becomes the responsibility of the administrator to ensure the meeting of the criteria.</p>
<p>(j) When a product permits a user to adjust color and contrast settings, a variety of color selections capable of producing a range of contrast levels shall be provided.</p>	<p>The only area of ExtraView where end users may choose color settings is when preparing charts for viewing. A number of different color preconfigured palettes are available, from high-contrast color to monochrome.</p>	<p>End users may also define their own color palettes for charts, and may choose from any colors that their computer browser and computer operating system will generate.</p>
<p>(k) Software shall not use flashing or blinking text, objects, or other elements having a flash or blink frequency greater than 2 Hz and lower than 55 Hz.</p>	<p>ExtraView does not utilize any flashing or blinking objects.</p>	
<p>(l) When electronic forms are used, the form shall allow people using Assistive Technology to access the information, field elements, and functionality required for completion and submission of the form, including all directions and cues.</p>	<p>ExtraView offers highly customizable forms. Indeed this feature is at the core of ExtraView's functionality. Each form can be designed with a variable number of fields, of varying types, and this information is programmable by the ExtraView administrator. ExtraView offers a complete toolbox (the Design Center) with which to create the electronic forms, and it is the administrator's responsibility to ensure that compliance with this criteria is met. For example, every field has the capability of text being available to assistive technology, but it is the administrator's responsibility to compose relevant text for the field.</p>	<p>The text offered to assistive technology is fully customizable by the ExtraView administrator, and each message may be of any length up to 4,000 characters.</p>

Section 1194.22 Web-based Internet information and applications – Detail VPAT™
Voluntary Product Accessibility Template®

Criteria	Supporting Features	Remarks and explanations
(a) A text equivalent for every non-text element shall be provided (e.g., via "alt", "longdesc", or in element content).	Non-text elements are implemented in the form of bitmap images. All such images are complemented with a text equivalent which can be interpreted by assistive technology.	It is possible for the ExtraView administrator to implement non-text elements. When they do this, it is their responsibility to provide a text equivalent.
(b) Equivalent alternatives for any multimedia presentation shall be synchronized with the presentation.	Not applicable	
(c) Web pages shall be designed so that all information conveyed with color is also available without color, for example from context or markup.	Color is used for aesthetics only and does not impart any essential information.	
(d) Documents shall be organized so they are readable without requiring an associated style sheet.	It is the responsibility of the ExtraView administrator to comply with this criteria when they configure an ExtraView installation. For example, it is possible to implement a field display type known as an <i>HTML Area</i> field. In this case, markup information within the field might be inserted by an end user that would not satisfy this criteria.	It is ExtraView Corporation's recommendation that administrators do not utilize the <i>HTML Area</i> field display type if compliance with Section 508 is required. There are two other field display types that may be used as alternatives.
(e) Redundant text links shall be provided for each active region of a server-side image map.	Not applicable	
(f) Client-side image maps shall be provided instead of server-side image maps except where the regions cannot be defined with an available geometric shape.	Only end user charts which are generated with drilldown links utilize client-side image maps. In all cases the regions are defined within either a rectangular or pie-slice shape.	
(g) Row and column headers shall be identified for data tables.	These are implemented throughout the reporting function and all data tables that present information in the form of results to an end user have the appropriate column and/or row headers.	There are a number of generated data tables that only use column headers and row headers are not applicable in their context.
(h) Markup shall be used to associate data cells and header cells for data tables that have two or more logical levels of row or column headers.	Only reports known as Matrix Reports fall within this category, and there are two logical levels of row and column headers. Each of these is supported with markup that indicates to assistive devices what the underlying data means.	
(i) Frames shall be titled with text that facilitates frame identification and navigation	There are two possible frames used through ExtraView, that present information to the end user. In both cases, these are identified with titles	There is a third frame that appears on some screens. This is hidden from the end user and is only used to store transactional data that is invisible to the end user. Purposely, this frame is not titled.
(j) Pages shall be designed to avoid causing the screen to flicker with a frequency greater than 2 Hz and lower than 55 Hz.	Not applicable	
(k) A text-only page, with equivalent information or functionality, shall be provided to make a web site comply with the provisions of this part, when compliance cannot be accomplished in any other way. The content of the text-only page shall be updated whenever the primary page changes.	Not applicable	

<p>(l) When pages utilize scripting languages to display content, or to create interface elements, the information provided by the script shall be identified with functional text that can be read by Assistive Technology.</p>	<p>JavaScript is used within various pages to display user alerts. These alerts are text-based and are visible to assistive technology. Ajax techniques are frequently used to retrieve parts of screen forms from the server. When this occurs, the appropriate text information that is required by assistive technology is automatically downloaded to the user's browser.</p>	
<p>(m) When a web page requires that an applet, plug-in or other application be present on the client system to interpret page content, the page must provide a link to a plug-in or applet that complies with §1194.21(a) through (l).</p>	<p>There is a single function within ExtraView (file upload) that utilizes an applet, as opposed to HTML and JavaScript. This applet only contains a single message, supported by alternative text, and is therefore compliant with this criteria.</p>	
<p>(n) When electronic forms are designed to be completed on-line, the form shall allow people using Assistive Technology to access the information, field elements, and functionality required for completion and submission of the form, including all directions and cues.</p>	<p>ExtraView offers highly customizable forms. Indeed this feature is at the core of ExtraView's functionality. Each form can be designed with a variable number of fields, of varying types, and this information is programmable by the ExtraView administrator. ExtraView offers a complete toolbox (the Design Center) with which to create the electronic forms, and it is the administrator's responsibility to ensure that compliance with this criteria is met. For example, every field has the capability of text being available to assistive technology, but it is the administrator's responsibility to compose relevant text for the field.</p>	<p>The text offered to assistive technology is fully customizable by the ExtraView administrator, and each message may be of any length up to 4,000 characters.</p>
<p>(o) A method shall be provided that permits users to skip repetitive navigation links.</p>	<p>Not applicable</p>	

<p>Section 1194.23 Telecommunications Products – Detail VPAT™ Voluntary Product Accessibility Template®</p>		
<p>Criteria</p>	<p>Supporting Features</p>	<p>Remarks and explanations</p>
<p>(a) Telecommunications products or systems which provide a function allowing voice communication and which do not themselves provide a TTY functionality shall provide a standard non-acoustic connection point for TTYs. Microphones shall be capable of being turned on and off to allow the user to intermix speech with TTY use.</p>	<p>Not applicable</p>	
<p>(b) Telecommunications products which include voice communication functionality shall support all commonly used cross-manufacturer non-proprietary standard TTY signal protocols.</p>	<p>Not applicable</p>	
<p>(c) Voice mail, auto-attendant, and interactive voice response telecommunications systems shall be usable by TTY users with their TTYs.</p>	<p>Not applicable</p>	
<p>(d) Voice mail, messaging, auto-attendant, and interactive voice response</p>	<p>Not applicable</p>	

telecommunications systems that require a response from a user within a time interval, shall give an alert when the time interval is about to run out, and shall provide sufficient time for the user to indicate more time is required.		
(e) Where provided, caller identification and similar telecommunications functions shall also be available for users of TTYs, and for users who cannot see displays.	Not applicable	
(f) For transmitted voice signals, telecommunications products shall provide a gain adjustable up to a minimum of 20 dB. For incremental volume control, at least one intermediate step of 12 dB of gain shall be provided.	Not applicable	
(g) If the telecommunications product allows a user to adjust the receive volume, a function shall be provided to automatically reset the volume to the default level after every use.	Not applicable	
(h) Where a telecommunications product delivers output by an audio transducer which is normally held up to the ear, a means for effective magnetic wireless coupling to hearing technologies shall be provided.	Not applicable	
(i) Interference to hearing technologies (including hearing aids, cochlear implants, and assistive listening devices) shall be reduced to the lowest possible level that allows a user of hearing technologies to utilize the telecommunications product.	Not applicable	
(j) Products that transmit or conduct information or communication, shall pass through cross-manufacturer, non-proprietary, industry-standard codes, translation protocols, formats or other information necessary to provide the information or communication in a usable format. Technologies which use encoding, signal compression, format transformation, or similar techniques shall not remove information needed for access or shall restore it upon delivery.	Not applicable	
(k)(1) Products which have mechanically operated controls or keys shall comply with the following: Controls and Keys shall be tactilely discernible without activating the controls or keys.	Not applicable	
(k)(2) Products which have mechanically operated controls or keys shall comply with the following: Controls and Keys shall be operable with one hand and shall not require tight grasping, pinching, twisting of the wrist. The force required to activate controls and keys shall be 5 lbs. (22.2N) maximum.	Not applicable	
(k)(3) Products which have mechanically operated controls or keys shall comply with the following: If key repeat is supported, the delay before repeat shall be adjustable to at least 2 seconds. Key	Not applicable	

repeat rate shall be adjustable to 2 seconds per character.		
(k)(4) Products which have mechanically operated controls or keys shall comply with the following: The status of all locking or toggle controls or keys shall be visually discernible, and discernible either through touch or sound.	Not applicable	

Section 1194.24 Video and Multi-media Products – Detail VPAT™		
Voluntary Product Accessibility Template®		
Criteria	Supporting Features	Remarks and explanations
(a) All analog television displays 13 inches and larger, and computer equipment that includes analog television receiver or display circuitry, shall be equipped with caption decoder circuitry which appropriately receives, decodes, and displays closed captions from broadcast, cable, videotape, and DVD signals. As soon as practicable, but not later than July 1, 2002, widescreen digital television (DTV) displays measuring at least 7.8 inches vertically, DTV sets with conventional displays measuring at least 13 inches vertically, and stand-alone DTV tuners, whether or not they are marketed with display screens, and computer equipment that includes DTV receiver or display circuitry, shall be equipped with caption decoder circuitry which appropriately receives, decodes, and displays closed captions from broadcast, cable, videotape, and DVD signals.	Not applicable	
(b) Television tuners, including tuner cards for use in computers, shall be equipped with secondary audio program playback circuitry.	Not applicable	
(c) All training and informational video and multimedia productions which support the agency's mission, regardless of format, that contain speech or other audio information necessary for the comprehension of the content, shall be open or closed captioned.	Not applicable	
(d) All training and informational video and multimedia productions which support the agency's mission, regardless of format, that contain visual information necessary for the comprehension of the content, shall be audio described.	Not applicable	
(e) Display or presentation of alternate text presentation or audio descriptions shall be user-selectable unless permanent.	Not applicable	

Section 1194.25 Self-Contained, Closed Products – Detail VPAT™		
Voluntary Product Accessibility Template®		
Criteria	Supporting Features	Remarks and explanations

(a) Self contained products shall be usable by people with disabilities without requiring an end-user to attach Assistive Technology to the product. Personal headsets for private listening are not Assistive Technology.	Not applicable	
(b) When a timed response is required, the user shall be alerted and given sufficient time to indicate more time is required.	Not applicable	
(c) Where a product utilizes touchscreens or contact-sensitive controls, an input method shall be provided that complies with §1194.23 (k) (1) through (4).	Not applicable	
(d) When biometric forms of user identification or control are used, an alternative form of identification or activation, which does not require the user to possess particular biological characteristics, shall also be provided.	Not applicable	
(e) When products provide auditory output, the audio signal shall be provided at a standard signal level through an industry standard connector that will allow for private listening. The product must provide the ability to interrupt, pause, and restart the audio at anytime.	Not applicable	
(f) When products deliver voice output in a public area, incremental volume control shall be provided with output amplification up to a level of at least 65 dB. Where the ambient noise level of the environment is above 45 dB, a volume gain of at least 20 dB above the ambient level shall be user selectable. A function shall be provided to automatically reset the volume to the default level after every use.	Not applicable	
(g) Color coding shall not be used as the only means of conveying information, indicating an action, prompting a response, or distinguishing a visual element.	Not applicable	
(h) When a product permits a user to adjust color and contrast settings, a range of color selections capable of producing a variety of contrast levels shall be provided.	Not applicable	
(i) Products shall be designed to avoid causing the screen to flicker with a frequency greater than 2 Hz and lower than 55 Hz.	Not applicable	
(j) (1) Products which are freestanding, non-portable, and intended to be used in one location and which have operable controls shall comply with the following: The position of any operable control shall be determined with respect to a vertical plane, which is 48 inches in length, centered on the operable control, and at the maximum protrusion of the product within the 48 inch length on products which are freestanding, non-portable, and intended to be used in one location and which have operable controls.	Not applicable	

(j)(2) Products which are freestanding, non-portable, and intended to be used in one location and which have operable controls shall comply with the following: Where any operable control is 10 inches or less behind the reference plane, the height shall be 54 inches maximum and 15 inches minimum above the floor.	Not applicable	
(j)(3) Products which are freestanding, non-portable, and intended to be used in one location and which have operable controls shall comply with the following: Where any operable control is more than 10 inches and not more than 24 inches behind the reference plane, the height shall be 46 inches maximum and 15 inches minimum above the floor.	Not applicable	
(j)(4) Products which are freestanding, non-portable, and intended to be used in one location and which have operable controls shall comply with the following: Operable controls shall not be more than 24 inches behind the reference plane.	Not applicable	

Section 1194.26 Desktop and Portable Computers – Detail VPAT™		
Voluntary Product Accessibility Template®		
Criteria	Supporting Features	Remarks and explanations
(a) All mechanically operated controls and keys shall comply with §1194.23 (k) (1) through (4).	Not applicable	
(b) If a product utilizes touchscreens or touch-operated controls, an input method shall be provided that complies with §1194.23 (k) (1) through (4).	Not applicable	
(c) When biometric forms of user identification or control are used, an alternative form of identification or activation, which does not require the user to possess particular biological characteristics, shall also be provided.	Not applicable	
(d) Where provided, at least one of each type of expansion slots, ports and connectors shall comply with publicly available industry standards	Not applicable	

Section 1194.31 Functional Performance Criteria – Detail VPAT™		
Voluntary Product Accessibility Template®		
Criteria	Supporting Features	Remarks and explanations
(a) At least one mode of operation and information retrieval that does not require user vision shall be provided, or support for Assistive Technology used by people who are blind or visually impaired shall be provided.	Assistive Technology supports this criteria.	Note that each user has the ability to alter the text size of all information presented to them when using ExtraView. This setting allows visually impaired users to better use ExtraView, without the limitations that are often inherent when using browser settings alone.
(b) At least one mode of operation and information retrieval that does not require visual acuity greater than 20/70 shall be	Both modes are provided within ExtraView.	

provided in audio and enlarged print output working together or independently, or support for Assistive Technology used by people who are visually impaired shall be provided.		
(c) At least one mode of operation and information retrieval that does not require user hearing shall be provided, or support for Assistive Technology used by people who are deaf or hard of hearing shall be provided	Not applicable	
(d) Where audio information is important for the use of a product, at least one mode of operation and information retrieval shall be provided in an enhanced auditory fashion, or support for assistive hearing devices shall be provided.	Not applicable	
(e) At least one mode of operation and information retrieval that does not require user speech shall be provided, or support for Assistive Technology used by people with disabilities shall be provided.	Not applicable	
(f) At least one mode of operation and information retrieval that does not require fine motor control or simultaneous actions and that is operable with limited reach and strength shall be provided.	Not applicable	

Section 1194.41 Information, Documentation and Support – Detail VPAT™		
Voluntary Product Accessibility Template®		
Criteria	Supporting Features	Remarks and explanations
(a) Product support documentation provided to end-users shall be made available in alternate formats upon request, at no additional charge	Product support documentation is provided as standard and at no charge to all end users in an online format, accessed through a standard web browser, where Assistive Technology may be utilized. The documentation may also be downloaded by any end user in the Adobe PDF format. Other formats may be obtained by copying the text of the product documentation into a word processor or text editor for reading or conversion into alternate formats.	
(b) End-users shall have access to a description of the accessibility and compatibility features of products in alternate formats or alternate methods upon request, at no additional charge.	This VPAT is available online as part of the product documentation. In addition the product documentation refers to many parts of this VPAT to highlight specific criteria.	
(c) Support services for products shall accommodate the communication needs of end-users with disabilities.	Support services for the product are available in many forms, telephone, email, fax and writing are the common forms of accessing the support services.	

More information on how ExtraView meets the needs to comply with Section 508 can be seen [here](#).