



SERENA®

SERENA PRODUCT PORTFOLIO MANAGEMENT 2010 R1

Serena Product Portfolio Management 2010 R1

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Project Portfolio Management

Project Portfolio Management is a powerful, integrated portfolio management solution from Serena Software that helps people in your organization -- project managers, portfolio managers, resource managers, team members, executives, and other project stakeholders -- make better decisions, which helps to ensure maximum returns on the items your organization chooses to make. Using Project Portfolio Management, an organization can manage applications, projects, product initiatives, resources, and assets -- also called a portfolio -- in a manner consistent with the principles of best-in-class business practices. All of this can be accomplished in a single system that integrates, manages, and analyzes enterprise data.

Project Portfolio Management provides key benefits for the following user types:

- **Executive Stakeholders** Executive stakeholders require visibility across a portfolio. Project Portfolio Management helps your organization get that visibility by helping you build a set of value-based initiatives and then make key item decisions with greater confidence. A role-based home page provides personalized status information when users log on, which helps give everyone quick insight into the items on which your organization is currently working.
- **Portfolio Managers** Along with project managers, portfolio managers help manage IT projects and other items so they are on-time and on-budget. Portfolio managers can start with high-level portfolio views, drill-down into detailed project data, and use "what-if" analysis tools to help assess the impact of changes within the portfolio and to ensure continued alignment of a portfolio with the overall business objectives.
- **Project Managers** Along with portfolio managers, project managers help manage IT projects and other items so they are on-time and on-budget. In order to help drive consistent team collaboration, project managers build task plans, find and schedule the appropriate resources, resolve issues, mitigate risks, and track progress. Automated reporting and built-in notifications help ensure that project managers spend less time managing documents and data and more time managing projects. Project Portfolio Management also supports bidirectional integration with Microsoft Project.
- **Resource Managers** Effective resource management leads to fewer bottlenecks, better forecasting of demand, and more measurable performance. With Project Portfolio Management, resource managers have the ability to assess competing demands for resources and then efficiently direct the right people to the most critical tasks and activities. Agreements with project managers about resource allocation (both generic and specific resource types) are clearly tracked.
- **Team Members** Team members are freed from the randomizing effects of shifting priorities and demands. Project collaboration, document management, and time tracking tools help individuals make better decisions in support of the portfolios to which they have been assigned. Project Portfolio Management provides a familiar browser-based user interface that is intuitive and easy to use.

Users who belong to these user roles will have access to the project portfolio tree, the Projects module, the Analyzer module, the Resources module, and the Workspace module. Not all users will have access to all of the features within these areas at all times -- how users get access to the various features of Project Portfolio Management and the projects your organization adds to the project portfolio tree depends on how your

organization chooses to configure Project Portfolio Management and the licenses available to the users in your organization.

Another key role for Project Portfolio Management is the Administrator. Users in your organization who belong to the Administrator role are the users in your organization that are responsible for configuring Project Portfolio Management. Depending on your organization -- its size, project methodologies, and so on -- an administrator role can range from the traditional IT administrator to a project management office to a small group of skilled, hands-on project managers. The administrator role in Project Portfolio Management is a security group that enables access to the Administration and Configuration modules in which decisions can be made that affect your organization's global project portfolio.

Project Portfolio Management provides granular administrative tools through the use of the Project Portfolio Management Administrative and Configuration modules. An administrator is responsible for installing, setting up, and maintaining Project Portfolio Management. It is important that you understand how Project Portfolio Management works and how users interact with data. This information helps you understand how to customize Project Portfolio Management so that it properly captures the type of data that is meaningful to your organization and so that the Project Portfolio Management system is maintained while new users, project portfolios, and item types are added.

For more information, see the following topics:

- [Application Toolbar \[page 15\]](#)

Application Toolbar

The application toolbar is the place around which most activities in Serena Project Portfolio Management 2009 R1 are based. For example, the out-of-the-box configuration of Project Portfolio Management 2009 R1 contains the following modules (from left-to-right: **Home**, **Projects**, **Reports**, **Reports**, and **Tools**).

The application toolbar contains the following options and settings (from right-to-left: **Settings**, **Change Password**, **Setup**, **Help**, and **Search**).

To access any module, change settings, search within your portfolio, and so on, just click the application toolbar for the appropriate activity. Modules are configurable as well, so your administrator may have added custom elements to your application toolbar.

For more information, see the following topics:

- [Change Password \[page 16\]](#)
- [Help \[page 16\]](#)
- [Log Out / Log In \[page 18\]](#)
- [Print \[page 18\]](#)
- [Rich Text Editor \[page 20\]](#)
- [Search \[page 20\]](#)
- [Settings \[page 23\]](#)
- [Setup \[page 25\]](#)

Change Password

For each database to which you have been given access, your password is the same. Passwords are case-sensitive, and must be at least four characters long and must conform to the password policy settings for your organization. There are three password policy settings:

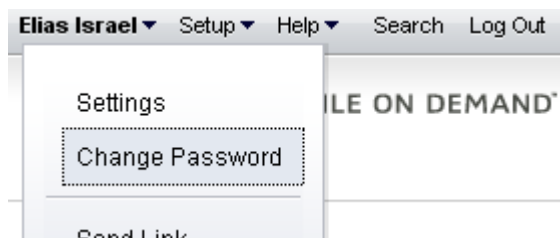
- **Strong** The password must be between 8-16 characters and must contain at least one number (0-9), one lowercase letter (a-z), one uppercase letter (A-Z), and one non-alphanumeric character (such as #, \$, !, or %).
- **Medium** The password must be between 8-16 characters and must contain at least one number (0-9), one lowercase letter (a-z), and one uppercase letter (A-Z). Default.
- **Weak** The password must be between 4-16 characters.

Changing Your Password

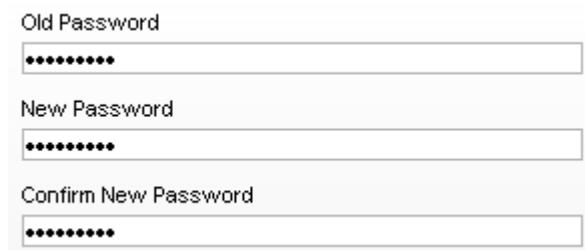
You can change your password at any time and as often as you want.

To change your password

1. From the application toolbar, select your name, and then choose **Change Password**.



2. In the **Change Password** dialog box, enter your current password, and then your new password (twice).

A screenshot of the 'Change Password' dialog box. It contains three text input fields, each with a label and a password mask of eight dots. The labels are 'Old Password', 'New Password', and 'Confirm New Password'. The dialog box has a light gray background and rounded corners.

3. Click **OK**.

Help

Click **Help** to access the following additional resources: **Environment Info**, **Help**, **Product Blog**, **Tutorials**, and **What's New**. For more information about any of these additional resources, click one of the following tabs.

Environment Info

The **Environment Info** dialog box provides information about the connection type, database version, most recent update, and other information that may be helpful if you ever need to talk with Serena Support.

Current User
 Connection Name **QABVT01_AOD_SpudDB_20091007_02**
 Database Version **2009.04.00.0002**
 Last Database Update **Mariner_2009_04_Migration.sql**
 Last Updated On **10/7/2009**

Help

The **Help** will open the documentation for the product. Most help links are context-sensitive; the topic that is opened usually depends on the location from which you clicked help.

nts
 Agile on Demand
 Release Notes
 Guidance
 Setup Projects and Users
 Build a Backlog
 Plan Sprints
 Track Sprints
 Allocate Work to Teams
 Plan Releases
 Application Toolbar
 File
 Reports
 Resources
 Workspace
 Manage Users
 System Settings
 Configuration
 Reference

[Agile on Demand](#) → [Guidance](#) → Setup Projects and Users

Setup Projects and Users

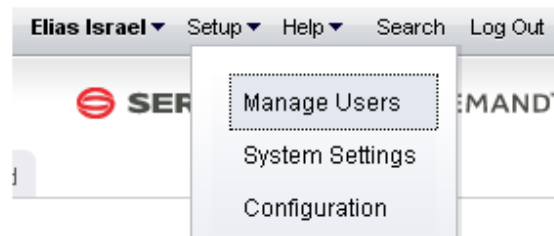
Before you can begin using Serena Agile On Demand, you must create team members. Once created, any individual team member can be assigned to stories, tasks, and other work items.

Add project **Add user**

After you have finished using the **New Project Wizard**, the next step is to add your team members into the system. Once added, they can be assigned to stories, tasks, and other work items. Team members can then log on from which they can log on and begin using Agile On Demand.

To add a user

1. From the application toolbar, click **Setup**, and then click **Manage Users**.



2. Click Add **+**.
3. Under **User Properties**, enter the first name, last name, and email address.

User Properties

When you are viewing Help, you can navigate the full contents of the help using the left-side TOC. Click a topic that has an arrow next to it to view subtopics. You can use the breadcrumbs found across the top of many of the topics to navigate back up the hierarchy. Most topics that have child topics will have a mini TOC within the topic. Many topics also contain tabs, generally for task-based topics, but not always. Additional help can be found at the top in the tabs. For example, Agile On Demand has the Agile 101 tab, which contains methodology content from Valtech. There is also a simple search feature. Though it's not as powerful as Google, it should help you find the topics in the help collection that contain the words from your query. To return to the full help TOC (after viewing a topic you have searched for), simply click the Help tab at the top.

Log Out / Log In

Before you can access modules, views, and other features, you must first log on with your username and password. When you are finished, you should log out.

Logging out

When you are finished working, you should log out.

To log off

1. From the application toolbar, click **Log Out**.

Logging in

Before you can access modules, views, and other features, you must first log in with your user name and password.

To log on

1. Type your user name and password. Click **Log In**
2. Select your database. Click **Continue**.

Print

When you click the **Print** button on the application toolbar in the **Charts, Summary,** and **Timegrid** tabs in the **Reports** module, or in the **Financials** tab in the **Projects** module, the **Print** dialog box opens. When you print a datasheet, chart, or financials data using the **Print** dialog box, it is printed to a portable document format (PDF) file. The **Print** page contains two tabs, the **General** tab and the **Options** tab. The **General** tab is used to define the general and margin settings, including the font, paper size and orientation, and page numbering used for the PDF file. After filling out the **General** and **Options** tabs, click the **Print** button on the **Print** dialog box to print the datasheet or chart to the PDF file.

To print to a PDF file and view the PDF file, Adobe Acrobat Reader 6.02 or later must be installed on the machine from which you are printing.

- **Font** Select the font and font size to use from the **Font** lists.
- **Paper Size** Select the size of the paper you want to use.
- **Orientation** Select *Portrait* to print using the portrait orientation. Select *Landscape* to print using the landscape orientation.
- **Include page numbers** Select this option to include page numbers on each page.
- **Save Settings** Select this option to save your general and margin settings on the **General** tab. When **Save Settings** is selected, the settings on the **General** tab will be the default settings each time you open the **Print** dialog box. Selecting **Save Settings** does not save your settings on the **Options** tab.
- **Left** Type the left page margin you want to use for the pages of the PDF file in inches.
- **Right** Type the right page margin you want to use for the pages of the PDF file in inches.
- **Top** Type the top page margin you want to use for the pages of the PDF file in inches.

- **Bottom** Type the bottom page margin you want to use for the pages of the PDF file in inches.

The view you are currently in determines the boxes available on the **Options** tab. In the **Charts** tab, the **Options** tab is used to determine whether all of the selected datasheet's charts are printed or just the currently selected chart. In the **Summary** and **Timegrid** tabs, the **Options** tab is used to determine whether charts defined for the selected datasheet's dashboard are printed to the PDF file, whether text wraps when the datasheet is printed, and the column settings for the PDF file. In the **Financials** tab, the **Options** tab is used to determine whether the PDF includes the *Self*, *Roll-up*, and *External* values, entries from the **View** pane, and/or the Breakeven chart for the work item. The **Options** tab is also used to define the maximum number of columns allowed on a page.

After filling out the **General** and **Options** tabs, click the **Print** button on the **Print** dialog box to the PDF file.

When you print a chart to a PDF file, only the default attributes defined for the chart on the **Attributes** tab and the default datasheet snapshot defined on the **Chart Settings** tab on the **Chart Properties** dialog box are used for printing the chart. Default attributes are the first attribute listed in each parameter box on the **Attributes** tab. The default datasheet snapshot is the snapshot selected in the chart using this data list on the **Chart Settings** tab.

To print datasheets or charts to a PDF file and view the PDF file, Adobe Acrobat Reader 6.02 or later must be installed on the machine from which you are printing.

- **All Charts** Select this option to print all of the selected datasheet's charts.
- **Selected Chart** Select this option to only print the chart currently selected in the **Charts** tab.

For the **Options** tab in the **Reports** module, **Summary** tab:

- **Include Dashboard Charts** Select this check box to print the charts defined for the selected datasheet's dashboard. When you print a chart to a PDF file, only the default attributes defined for the chart on the **Attributes** tab and the default datasheet snapshot defined on the **Chart Settings** tab on the **Chart Properties** dialog box are used for printing the chart. Default attributes are the first attribute listed in each parameter box on the **Attributes** tab. The default datasheet snapshot is the snapshot selected in the chart using this data list on the **Chart Settings** tab.
- **Include Summary** Select this check box to print the datasheet's summary information with the datasheet. The **Include Summary** check box is selected by default. Clear the check box to exclude the datasheet's summary information from the datasheet.
- **Maximum Columns Per Page Type** The maximum numbers of summary columns to print on a page for the selected datasheet.
- **Percentages** The **Percentages** box displays the current column width percentages for each column of the summary section on the selected datasheet.
- **Allow Cells to Wrap** Select the **Allow Cells to Wrap** check box to have the text in the datasheet's cells wrap when you print the datasheet. Clear the check box to turn off the text wrapping.
- **Include Timegrid** Select the **Include Timegrid** check box to print the datasheet's timegrid data with the datasheet. The **Include Timegrid** check box is selected by default when there is timegrid data on the selected datasheet. Clear the check box

to exclude the datasheet's timegrid information from the datasheet. (This check box is only available in the **Timegrid** tab.)

- **Maximum Columns Per Page Type** The maximum numbers of timegrid columns to print on a page in the **Maximum Columns Per Page Type** box for the selected datasheet. (This box is only available in the **Timegrid** tab.)
- **Percentages** The Percentages box displays the current column width percentages for each column of the timegrid section on the selected datasheet. The percentages for each column of the timegrid section on the selected datasheet. The columns are listed from left to right. (This box is only available in the **Timegrid** tab.)

For the **Options** tab in the **Financials** tab:

- **Include Details** Select the **Include Details** option to include all *Self*, *Roll-up*, and *External* values, as well as any work item from the View pane for each tab in the **Financials** tab in the PDF.
- **Include Breakeven Chart** Select this option to include the Breakeven chart for the work item in the PDF.
- **Maximum Columns Per Page Type** The maximum numbers of columns to print on a page.

Rich Text Editor

The rich text editor is enabled for description fields. It allows simple formatting of contents within these description fields, such as bold, italics, underlines, or strikethroughs. You can add ordered or unordered lists. You can indent and outdent text.



Search

The **Search** dialog is used to search for a work item, log entry, resources, documents, and work item types. You can access the **Search** dialog from every view. The **Search** dialog consists of a standard search view and an advanced search view for refining your search. To open the advanced search view, click **Advanced**. To hide the advanced search view, click **Hide Advanced**.

Searching for attributes, any log type, any work item, and resources

The search feature allows you to find any searchable attribute found in a work item, log types (such as issues, risks, or documents), or resources. In the default mode, you can specify the type of match you want (any or all words), a particular attribute to search in, and the object type. When searching against **All Investments**, a log item, any work item, and resources will not be included in the search results.

To search for attributes, log types, work items, and resources

1. In the application toolbar, click **Search**.

- Enter the details for the search query you wish to make. Click **Advanced**

Search for

In attribute

Match any word all words

Display

Name	Description
------	-------------

- Click **Advanced** to add rules, rule details, search within documents stored in Agile On Demand, or search across all project types.

Rules

Rule Detail

And Or

Attribute:

Comparison:

Compare To: the specific value another attribute

Documents

Search In Keywords Title Description

Extended Options

All Project Types Selected item and descendants

- Click **Search**.

Search Criteria

When you are searching for documents, document file names are always searched, and can search document keywords, title, and/or description. Text within a document is not searched. When you are searching datasheets, the work item hierarchy for all portfolios is searched or the selected portfolios and its descendants in the **Reports** tab, it does not search a datasheet's resulting data.

- **Search for** Type the text you want to search for in this box. You can enter a any alpha-numeric value. To search for a specific string, enclose the text in quotation marks.
- **In Attribute** This drop-down list enables you to select a specific attribute to search. This can help refine your search and reduce false-positive returns. For example, if you want to find a work item and know that the work item name contains the term "router", you can search only for instances of the word "router" in the *Name* attribute. Your administrator determines which attributes are searchable. All searchable attributes are included in this drop down list.
- **Match: any word** Select this option to have the search results include any of the text you typed.
- **Match: all words** Select this option to have the search results include all of the text you typed. To search for a specific phrase, type quotation marks at the beginning and end of the phrase in the **Search for** box.
- **Display** To further refine your search, use this option to specify the object type against which your search executes. You can choose to search only work item types or a particular work item type, all logs or a particular log type, or only for a work item, resources, or documents. For example, if you are searching for the term "router" in the *Name* attribute, and you know that the work item for which you are searching is a project, specify *Project* in the display drop down.
- **Search** Click the **Search** button to start the search.
- **Advanced** When you click the **Advanced** link on the **Search** page, the following features are available for refining your search. You can hide the advanced search features by clicking the **Hide Advanced** link on the Search page.

Advanced Search Criteria

The **Advanced Investment Criteria** section is used to search for specific work item data.

- **Rules** Lists all of the current rules set up for the work item search criteria.
- **Up** Moves the selected rule up in the **Rules** list.
- **Down** Moves the selected rule down in the **Rules** list.
- **Delete** Removes the selected rule from the **Rules** list.
- **And** Select this option to indicate that the work item you are searching for must meet the conditions of the selected rule and all other rules that do not begin with **Or**.
- **Or** Select this option to indicate that the work item you are searching for must meet the conditions of the selected rule, or all the rules that do not begin with **Or**, or another rule that begins with **Or**.
- **Attribute** Select the attribute you want to create a search rule for from this list. Only the attributes that have been marked as searchable in the **System Settings** module are displayed in the **Attribute** list.
- **Comparison** Select the test you want to apply to the attribute selected in the **Attribute** list.
- **Comments To** Select what the search criteria should compare the attribute to: This specific value. Select the this specific value option and type a value in the box below

the options to only search for a work item with the **Comparison** relationship to the value you specified for the selected attribute. If you are searching for a percentage value, type the percentage decimal value in the **Comments To** box. For example, you would type .20 in the **Comments To** box for 20 percent. Select the another attribute option and select an attribute from the list below the options to only search for a work item with the **Comparison** relationship between the two selected attributes.

- **Update** Click this button to update the selected search rule.
- **Add** Click this button to add the rule to the search.
- **Documents** This section is used to determine whether to use document keywords, title, and/or description when searching for documents. Document file names are always searched.
- **Keywords** Select this check box to search document keywords when searching for documents.
- **Title** Select this check box to search document keywords when searching for documents.
- **Description** Select this check box to search document descriptions when searching for documents.
- **Extended Options** This section is used to determine whether any work item is searched or only the work item and its descendants currently selected in the Items pane.
- **All Investments** Select this option to search any work item.
- **Selected investments and descendants** Select this option to only search the work item currently selected in the **Portfolios** pane and any descendants.

Settings

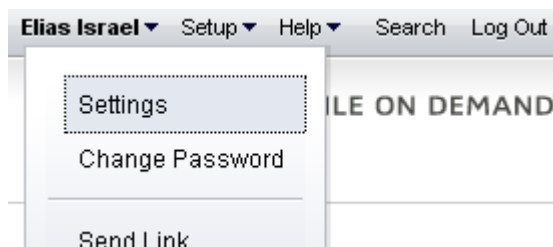
Use the **Settings** dialog box allows you to configure the tabs you want available from your homepage, whether you want to receive email notifications, and the sorting order for a work item.

Configuring your homepage

Your homepage is available from the application toolbar. You can choose which tabs you want to have on your homepage. In addition to the out-of-the-box homepages, such as **My Work** or a role-based dashboard, your administrator may have configured additional homepages.

To configure your homepage

1. From the application toolbar, select your name, and then choose **Settings**.



- In the **Settings** dialog box, choose the tabs that you want to make available from your homepage. Move the homepages that you want to use to the right. The tabs will appear in your homepage from left-to-right based on the order (top-to-bottom) they appear in the **Settings** dialog box.

Homepage

Available Homepage Tabs		Selected Homepage Tabs
Guidance	▶ ▶	My Work
Product Owner Dashboard		
Scrum Master Dashboard		
Stakeholder Dashboard		

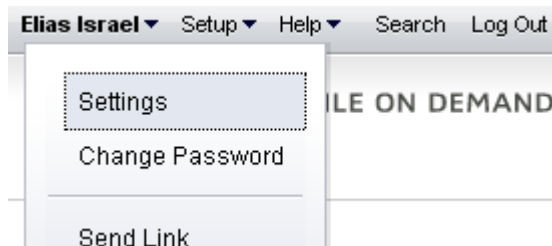
- Click **OK**.

Configuring notification settings

You can choose to receive email notifications for any notification you have configured from the **Define Notifications** tab from the **Tools** module.

To configure notification settings

- From the application toolbar, select your name, and then choose **Settings**.



- In the **Settings** dialog box, indicate whether you want to receive email notifications, and then select the email locale you wish to use.

Notification Settings

Receive Notifications as Email

Email Locale

English - United States

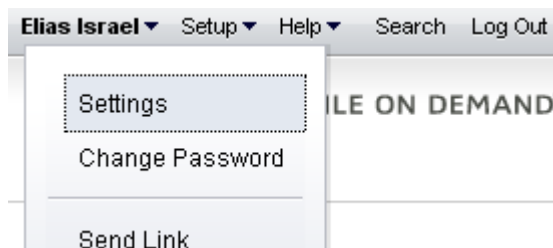
- Click **OK**.

Configuring your work item sorting order preference

You can pick any work item attribute to use as the primary sorting preference for a work item, such as **Name**, **Estimated Hours**, or **Start Date**. This sort order preference is available from any backlog when that backlog is viewed using the **Tree** option.

To configure your work item sorting order preference

- From the application toolbar, select your name, and then choose **Settings**.



2. In the **Settings** dialog box, select the work item attribute you wish to sort a work item by, and then choose **Ascending** or **Descending**.

Item Tree Sort Order

Sort By

Name

- Ascending
 Descending

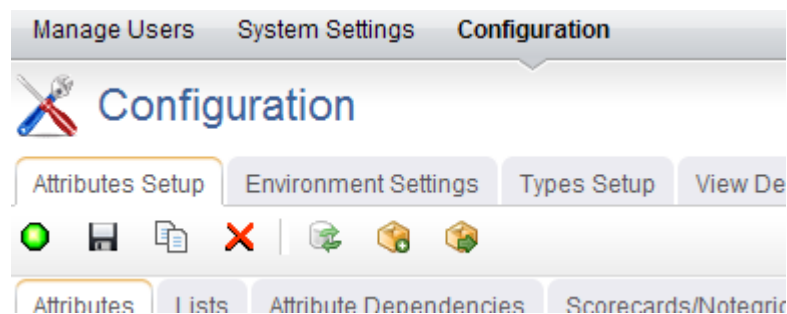
3. Click **OK**.

Setup

Click **Setup** to manage users, configure the application, and change settings.

Configuration

After you have created users, added licenses, defined security roles (and assigned users to them), you are ready to configure the application. The **Customization** module is used to manage the work item types, attributes, and views that your organization wants to use.



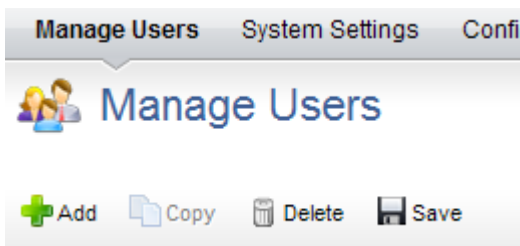
The **Configuration** module helps you configure the following:

- **Attributes Setup** You can use the **Attributes Setup** tab to create and manage work item type attributes.
- **Environment Settings** You can use the **Environment Settings** tab to manage system settings, such as documents management, workflow, and reporting server settings or to configure system notifications.
- **Module Designer** A module (sometimes called a homepage) can be used to provide a daily starting point for members of your organization, including individual contributors, project and resource managers, portfolio analysts, and so on. You can use the **Module Designer** tab to create and modify homepage layouts and to help provide a centralized view into the information that users in your organization need.

- **Types Setup** A work item is what users in your organization use to create, plan, manage, and analyze your projects. They can be assets, programs, projects, or portfolios. They can be the stages in a lifecycle, such as a request, an approval, or a rejection. They can be the phases in an Agile lifecycle, such as projects, releases, and sprints. They can have dependencies on another work item.
- **User Synchronization** You can use the **User Synchronization** tab to manage the XML configuration file that contains the field mappings between attributes and a directory service, such as Active Directory or Novell eDirectory. When you create a provider, you have the option of managing some aspects of that provider in the **User Synchronization** tab.
- **View Designer** You can use the **View Designer** tab to modify the layout of financials views and to create custom summary views for use in the **Projects** module. Custom summary views are also used to layout item request pages.
- **View Management** You can use the **View Management** tab to manage work item types, log views, and the order in which views appear in modules.

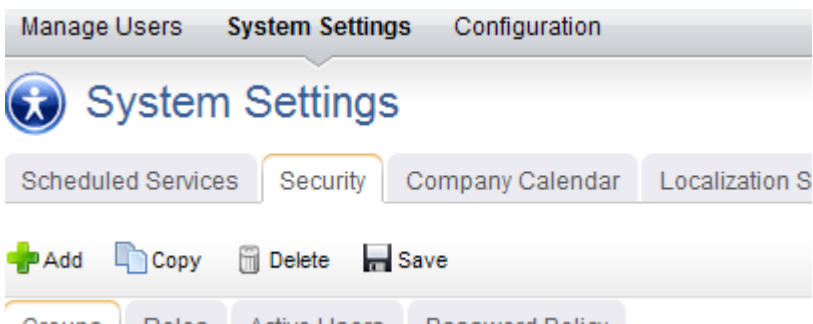
Manage Users

The **Manage Users** module helps you manage the users of your application. You can add, edit, and delete users, you can change the roles to which users belong, and you can reset passwords.



System Settings

The **System Settings** module is used to set up and configure financial settings, scheduled services, calendar settings, localization settings, system notifications, licenses, and security configuration for your organization.



The **System Settings** module helps you configure the following:

- **Company Calendar** You can use the **Company Calendar** tab to customize the calendar being used by your organization. You can define your organization's working and non-working days, you can define the days in your organization's working week, and you can define the number of hours in a day that makes up a full working day. These settings are used to determine resource capacity and scheduling

for resources that are used in task plans or for the number of days that can appear in a sprint burndown chart. Individual resources have their own calendars and they may override company calendar settings in their local calendar (if they are given permission to do so).

- **Localization Settings** You can use the **Localization Settings** tab to modify the strings that appear in the application's user interface. This can help your organization address any localized language requirements that you may have. If you add new elements, such as views, attributes, forms, or charts, you will be able to localize the strings associated with the new elements.
- **Scheduled Services** You can use the **Scheduled Services** tab to create and maintain scheduled jobs and plug-ins. Jobs that are in the queue are run sequentially, with the next job in the queue starting after the current one is finished. In general, most jobs should be scheduled to run at off-peak times.
- **Security** You can use the **Security** tab to manage the users and groups of users who will be working, and to define the security roles that allow them to access the **Projects, Reports, Resources, Tools, System Settings, and Customization** modules.
- **System Notifications** You can use the **System Notifications** tab to manage the notifications that will be available to all of the users in your organization. System notifications are available for many events associated with the lifecycle of a work item, such as adding resource allocations or assigning risks. The full list of system notifications is available in the **System Notifications** tab.

Projects

A work item is any entity within your organization to which personnel, finances, and time can be allocated. A work item is defined as a project, a portfolio, an Agile project (including backlogs, features, and sprints), a product, a program, an application, a service, a request, or an asset. A work item can be scheduled, tracked, modeled, compared, reported against, managed, analyzed, and assigned. Every work item is placed in a hierarchical structure called the work item tree that orders each work item in relation to its parent work item, any any peer or child work item.

More detailed views are available in the **Projects** module. The ability to use a specific **Projects** module view depends on the work item type and the role assignments that are defined for that work item. Not all **Projects** module views are available for each work item type.

For more information, see the following topics:

- [Discussions \[page 28\]](#)
- [Documents \[page 30\]](#)
- [Financials \[page 35\]](#)
- [Issues \[page 42\]](#)
- [Project Reports \[page 44\]](#)
- [Risks \[page 49\]](#)
- [Schedule Dependencies \[page 52\]](#)
- [Summary \[page 53\]](#)
- [Task Plan \[page 54\]](#)
- [Team Roster \[page 114\]](#)
- [Timesheets \[page 119\]](#)
- [Homepages \[page 122\]](#)
- [Work Items \[page 123\]](#)
- [Workflow \[page 126\]](#)
- [User Actions \[page 136\]](#)

Discussions

You can use the **Discussions** tab to participate in discussions related to a particular work item. The **Discussions** tab is used to help improve collaboration and communication among team members as they work together to finish any work item to which they have been assigned. The **Discussions** tab is a type of log view. Other types of log views that are included include the **Issues** tab, the **Risks** tab, and the **Documents** tab. The addition of custom log views is supported. Information in a log view is presented in a list format. You can allow a work item in a log view to be converted into a new work item.

Adding a discussion

Select a work item and open the **Discussions** tab. Add a new discussion about that work item.

To add a discussion

1. Open the **Projects** module.
2. Select a work item.
3. Select the **Discussions** tab.
4. Click **New Discussion**.
5. In the **New Log Item** dialog box, enter a name and a description for the discussion.
6. Click **Save**.

Converting to a log type

You can convert a discussion to a different log type, such as to an issue, a risk, or a document. When you convert one log type into another, only information details that are contained in both log types will be preserved after the conversion. Information details that exist in the original log view but do not exist in the new log view will not be available after the conversion.

To convert a discussion to a new log type

1. Open the **Projects** module.
2. Select a work item.
3. Select the **Discussions** tab.
4. Click **Convert Discussion** to convert a discussion to a new log type (such as an issue or a risk).
5. Click **OK**.

Converting to a work item

You can convert a discussion into a work item. A work item can then be assigned to a resource and can be tracked alongside tasks and other activities associated with a work item.

To convert a discussion to a work item

1. Open the **Projects** module.
2. Select a work item.
3. Select the **Discussions** tab.
4. Click **Convert Discussion** to convert a discussion to a new log type (such as an issue or a risk).
5. Click **OK**.

Deleting a discussion

If you are no longer using discussion, you can delete it.

To delete a discussion

1. Open the **Projects** module.
2. Select a work item.
3. Select the **Discussions** tab.

4. Select a discussion.
5. Click **Delete** to delete the discussion.
6. Click **OK**.

Viewing a discussion

Discussions can be viewed from the **Discussions** tab in the **Projects** module.

To view a discussion

1. Open the **Projects** module.
2. Select a work item.
3. Select the **Discussions** tab.

Documents

Users in your organization can use the **Documents** tab to track, manage, and store documents which relate to a work item. Every work item will have its own **Documents** tab. As users in your organization work on the tasks and activities related to a work item, they can add documents, check them out (make updates), and check them in (save updates). A document can only be updated by one team member at a time. A history of each document is kept and users are allowed to access older versions. Documents can be moved from one **Documents** tab to another.

Team members are allowed access to the **Documents** tab based on their permissions to access the work item to which the view is associated. All team members with permission to view the work item will be able to view documents. Team members with permission to add documents and folders will be able to add documents, check them out (make updates), and check them in (save them).

Adding a document

As you work on a work item, files will be created that will be helpful to other team members working on the same work item. You can add these documents to the **Documents** tab for that work item.

To add a document

1. Open the **Projects** module.
2. Select a work item.
3. Select the **Documents** tab.
4. Select the folder into which you want to add a document.
5. Click **New Document** to add a document to the selected folder.
6. In the **New Document** dialog box, enter a name, a description, keywords (that can help the document be found using search), and any additional comments.
7. Browse to the location on your computer from where you will upload the document.
8. Click **OK**.

Checking in a document

When you are done updating a checked-out document, save your changes by checking it in.

To check-in a document

1. Open the **Projects** module.
2. Select a work item.
3. Select the **Documents** tab.
4. Select a checked-out document, right-click and select **Check In**.
5. In the **Check In** dialog box, select the location of the document being checked-in and add comments. Select the **Update the copy in the repository, but keep the file checked out** check-box to replace the file with the copy you have on your local computer and keep the document checked out.
6. Choose the incremental update that will be made to the document revision history during check in. The format is major.minor.revision (as in 1.0.0 or 2.1.2). Set **Increment Version** to *Major*, *Minor*, or *Revision* to update the document's revision history.
7. Click **OK**.

Checking out a document

Before you can make changes to a document, you must first check it out.

To check-out a document

1. Open the **Projects** module.
2. Select a work item.
3. Select the **Documents** tab.
4. Select a document, right-click and select **Check Out**.
5. In the **Check Out** dialog box, add comments. Select **Mark the file as checked out, but do not download the file** to replace the file with the copy you have on your local computer when you check it back in.
6. Click **OK**.
7. Save the file to your local computer. (Opening the file directly can place the working copy of the document in your temporary Internet files directory.)

Copying to another folder

Many documents useful for one work item will be useful to another. You can copy a document from one **Documents** tab and add it to another **Documents** tab.

To copy a document from one work item to another

1. Open the **Projects** module.
2. Select a work item.
3. Select the **Documents** tab.
4. Right-click the document that you want to copy and select **Move/Copy** on the shortcut menu to open the Document Move/Copy dialog box.
5. Select **Copy Document**.
6. In the **Target Investment** list, select the name of the work item in which you are placing a copy of the selected document.

7. In the **Target Folder** list, select the document folder in which you want to place the copy of the selected document.
8. Click **Save**.

Deleting a document

Any document can be deleted.

To delete a document

1. Open the **Projects** module.
2. Select a work item.
3. Select the **Documents** tab.
4. Select a document, right-click and select **Delete**.
5. Click **OK**.

Finding a document

Use the search feature to find a document. Searches rely on a document's file name, but can also look for keywords, titles, and descriptions. Search does not look within the text of a document.

To find a document

1. Open the **Projects, Reports, Tools, or Customization** modules.
2. Click **Search** in the toolbar.
3. In the **Search** dialog box, type the string for which you want to search.
4. Select the *Name* attribute.
5. For **Match**, select any word to have the search results include any of the text you typed or select all words to have the search results include all of the text you typed. To search for a specific phrase, put quotation marks around the word(s) for which you are searching.
6. From the **Display** drop-down, select *Documents*.
7. Click **Advanced** to set up a more detailed search, including defining rules, searching by keyword, title, and description, and selected items.

Moving a document

You may decide that a document needs to be moved from one item's **Documents** tab to another.

To move a document

1. Open the **Projects** module.
2. Select a work item.
3. Select the **Documents** tab.
4. Right-click the document that you want to move and select **Move/Copy** on the shortcut menu to open the Document Move/Copy dialog box.
5. Under **Target Investment**, select the work item to which you want to move a document.

6. Under **Target Folder**, select the folder in which you want to place the document.
7. Click **OK**.

Viewing a document

To view a document, you can open the file from the **Documents** tab.

To view a document

1. Open the **Projects** module.
2. Select a work item.
3. Select the **Documents** tab.
4. Right-click the document name in the **Documents** tab and select **Properties**.
5. In the **Document Properties** dialog box, review the list of historical documents at the bottom. Select the version of the document that you want to view and click **View**.
6. In the **Download Information** dialog box, click **OK**.
7. In the **File Download** dialog box, click **Open** to open the file and view it in your Web browser or click **Save** to save the file to disk.

Document Folders

If there are a lot of documents associated with a work item, the **Documents** tab can be organized into sub-folders.

Adding a document folder

If a work item has a large number of documents you can add folders to the **Documents** tab and organize it.

To add a document folder

1. Open the **Projects** module.
2. Select a work item.
3. Select the **Documents** tab.
4. Select the folder into which you want to add a folder.
5. Click **New Document Folder** to add a document folder to the selected folder.
6. In the **New Folder** dialog box, enter a name and a description.
7. Click **Save**.

Deleting a document folder

You can delete any folder in the **Documents** tab that is not being used.

To delete a document folder

1. Open the **Projects** module.
2. Select a work item.
3. Select the **Documents** tab.
4. Select a document folder, right-click and select **Delete**.

5. Click **OK**. All documents contained within the folder, including sub-folders, will be deleted.

Renaming a document folder

You can rename folders in the **Documents** tab.

To rename a document folder

1. Open the **Projects** module.
2. Select a work item.
3. Select the **Documents** tab.
4. Select a document folder, right-click and select **Properties**.
5. In the **Folder Properties** dialog box, rename the document folder.
6. Click **OK**.

Document Versions

If there are a lot of documents associated with a work item, the **Documents** tab can be organized into sub-folders.

Deleting a document version

For some documents, a history of the saved versions is useful. For others, it may not be. You can delete versions of a document that are in a document's history.

To delete a document version

1. Open the **Projects** module.
2. Select a work item.
3. Select the **Documents** tab.
4. Right-click the document which contains the version you want to delete and click **Properties**.
5. In the **Document Properties** dialog box, review the list of historical documents at the bottom of the page, select the version of the document that you want to delete, and click **Delete**.
6. Click **OK** to delete the historical version of the document from the **Documents** tab. Deleting a document version is not reversible.

Viewing a document's history

Every time a document is checked-out, modified, and then checked-in, a version of that document is retained along with information about when the document was checked-in, who it was checked-in by, and comments (if any) left by the team member.

To view a document's history

1. Open the **Projects** module.
2. Select a work item.
3. Select the **Documents** tab.
4. Right-click the document name in the **Documents** tab and select **Properties**.

5. In the **Document Properties** dialog box, review the list of historical documents at the bottom. Select the version of the document that you want to view and click **View**.

Viewing the current version of a document

You can view the most recent version of a document by clicking the document name, and then choosing to view it.

To view the current version of a document

1. Open the **Projects** module.
2. Select a work item.
3. Select the **Documents** tab.
4. Right-click a document and select **View**.

Financials

You can use the **Financials** tab to display and maintain timephased allocation of costs and benefits to items. Costs are broken out into two categories: capital expenses (**CapEX**) and operational expenses (**OpEx**). Currency-based data can be viewed in multiple currencies when that option is available. Costs and benefits are displayed as *currency* or *Timephased - FTE* and their rates are configured by an administrator.

The upper pane of the **Financials** tab is a series of tabs, such as **Financial Summary**, **Planned Costs**, or **Actual Costs** (these tabs will vary from view to view and can be customized). Each tab contains a list of cost and benefit categories presented as rows in a table along with rows for total costs and total benefits. Cost and benefit categories can be expanded to view detailed costs or benefits (click the arrow to the left of the cost or benefit). Select a cost or a benefit category to view or update detailed values in the lower pane.

You can change the information available in each tab of the **Financials** tab by changing the starting or ending dates, by adjusting the calendar period, or by changing the target dimension from the drop-down lists at the top of the **Financials** tab. Click **Apply** to recalculate the information. Use the **All Tabs** option to apply your changes to all of the tabs in the **Financials** tab.

For each cost or benefit row in the upper pane, there are three value types that can be tracked:

- **Self** The allocation values which were manually entered for the cost or benefit.
- **Rollup** The roll-up allocation values of costs and/or benefits related to child items.
- **External** Values that are imported from another application, such as Microsoft Project.

The lower pane of the **Financials** tab is used to enter and modify allocation values for costs and benefits. Select a cost or benefit category (the rows in the costs and benefits grid which can be expanded) in the upper pane to work with details about that cost or benefit.

Adding a cost or a benefit value

Cost and benefit values that may not otherwise be captured on the **Financials** tab can be manually added as needed. These values will automatically update the financial totals as well.

To add a cost or a benefit value

1. Open the **Projects** module.
2. Select the **Financials** tab.
3. Select a tab in the **Financials** tab.
4. Define the date range, time period, and dimension.
5. Select a cost or a benefit.
6. In the lower pane, click **New**.
7. Choose the starting and finishing dates, enter a value, and give the new cost or benefit a brief description.
8. Click **Save**.

Adding an allocation value

If your organization has configured the **Financials** tab to include allocation data, such as costs and benefits, you may be able to add those allocation values from within the **Financials** tab.

To add an allocation value

1. Open the **Projects** module.
2. Select a work item.
3. Select the **Financials** tab.
4. Select the tab containing a cost, benefit, or split to which you want to add an allocation value.
5. Click the name of the cost, benefit, or split.
6. In the lower pane, click **New**. Enter the value and set the start and finish dates. Add a description.
7. Click **Save**.

Deleting a cost or a benefit

A manually entered cost or benefit value can be deleted.

To delete a cost or a benefit value

1. Open the **Projects** module.
2. Select the **Financials** tab.
3. Select a tab in the **Financials** tab.
4. Expand a cost or a benefit row, and then select the cost or benefit for which you want to delete a value.
5. In the lower pane, select a cost or a benefit entry, and then click **Delete**.
6. Click **Save**.

Deleting an allocation value

If your organization has configured the **Financials** tab to include allocation data, such as costs and benefits, you may be able to delete those allocation values from within the **Financials** tab.

To delete an allocation value

1. Open the **Projects** module.
2. Select a work item.
3. Select the **Financials** tab.
4. Select a tab that contains a cost, a benefit, or a split.
5. Click the name of the cost, the benefit, or the split.
6. In the lower pane, select the row for the value you want to delete and click **Delete**.
7. Click **Save**.

Editing a cost or a benefit

Cost and benefit values that may not otherwise be captured in the **Financials** tab can be manually added, as needed. If changes to these values occur, they can be edited.

To edit a cost or a benefit value

1. Open the **Projects** module.
2. Select the **Financials** tab.
3. Select a tab in the **Financials** tab.
4. Define the date range, time period, and dimension.
5. Select a cost or a benefit.
6. In the lower pane, select a cost or a benefit, and then update the starting and finishing dates, the value, or the name.
7. Click **Save**.

Editing an allocation value

If your organization has configured the **Financials** tab to include allocation data, such as costs and benefits, you may be able to edit those allocation values from within the **Financials** tab.

To edit an allocation value

1. Select a backlog.
2. In the backlog toolbar, click **Edit** (to enable inline edit).
3. Select the row which contains the work item you want to edit and click in a column.
4. Make your changes.
5. Click **Save**.
6. Click **Edit** (to disable inline edit).

Refreshing information

You can refresh the information that is shown in the **Financials** tab so that the most current cost and benefit data is shown.

To refresh the information shown

1. Open the **Projects** module.
2. Select a work item.
3. Select the **Financials** tab.
4. Select a tab in the **Financials** tab. Or, select **All Tabs** to apply your changes to all of the tabs in the view.
5. Adjust the starting and ending dates, the time period, or the dimension.
6. Click **Apply**.

Import and Export Data using Microsoft Excel

Timephased attribute data is displayed from the **Financials** tab in the **Projects** module. A two-way data transfer capability is provided that can help you view and edit this data using Microsoft Excel. If multiple currencies are enabled, your personal currency will be used to render the data in the Microsoft Excel worksheet.

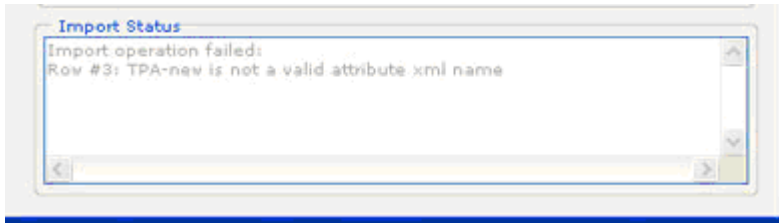
The individual line items in the **Financials** tab show data that contains timephased attributes (including mapped and *calculated timephased* attributes) in the upper pane; associated details for each attribute is shown in the lower pane. All three types of timephased data can be exported; only timephased attributes can be imported.

Tabs in the **Financials** tab can be exported individually or as a group. Data is always exported into a single Microsoft Excel worksheet. A separate row is created for each value in the **Financials** tab, up to 255 total columns. You can modify the timephased attribute data in Microsoft Excel; once finished, you can import changes to timephased attributes (but not mapped or *calculated timephased* attributes) back in.

The first screen shot shows rolled-up timephased data (such as that which appears in the upper-pane of the **Financials** tab) that has been exported to Microsoft Excel:

	A	B	C	D	E	F	G
1							
2	TPA-XML	TPA-Display	Units	Dimension-XML	Dimension-Display	2006-03-01	2006-04-01
3	bcbenefits	Benefits	Currenc Plan	Plan		8,611.11	32,967.03
4	ctpabccapexlaborcurr	Labor	Currenc Plan	Plan		7,360.00	6,400.00
5	bccapexhw	Hardware	Currenc Plan	Plan		0.00	0.00
6	bccapexother	Other	Currenc Plan	Plan		0.00	0.00
7	ctpabccapex		Currenc Plan	Plan		7,360.00	6,400.00
8	ctpabccopexlaborcurre	Labor	Currenc Plan	Plan		0.00	0.00
9	bcopexmaint	Maintenance	Currenc Plan	Plan		0.00	0.00
10	bcopexother	Other	Currenc Plan	Plan		0.00	0.00
11	ctpabccopex		Currenc Plan	Plan		0.00	0.00
12	ctabccapex		Currenc Plan	Plan		1,751.11	76,567.03

The second screen shot shows detailed timephased data (such as that which appears in the lower-pane of the **Financials** tab) that has been exported to Microsoft Excel:



Exporting financials data using Microsoft Excel

You can view and modify timephased attribute data in Microsoft Excel.

To export financials data using Microsoft Excel

1. Open the **Projects** module.
2. Select a work item.
3. Select the **Financials** tab.
4. Right-click the work item in the work item tree and select **Export to Excel**.
5. In the **Export to Excel** dialog box, specify the export parameters.
6. Select **Include Details** to include details for each timephased attribute in the **Financials** view.
7. Select **Export All Tabs** to include data for each tab in the **Financials** tab.
8. Select **Export To Existing Workbook** to export to a Microsoft Excel file that already exists. Specify the file name and the name of the worksheet in the Microsoft Excel file into which you want to export Mariner 2008 data.
9. Click **Save**.

Importing financials data using Microsoft Excel

You can import changes made to timephased attribute data in Microsoft Excel back into the **Financials** tab.

To import financials data using Microsoft Excel

1. Open the **Projects** module.
2. Select a work item.
3. Select the **Financials** tab.
4. Right-click the work item in the work item tree and select **Import from Excel**.
5. In the **Import from Excel** dialog box, select a Microsoft Excel file.
6. In **Worksheet**, type the name of tab in the Microsoft Excel file that you want to import to Mariner 2008 as a datasheet.
7. From the **Period** drop-down, select the time period into which data in the spreadsheet is divided.
8. Under **Add or Replace**, choose whether you want to add the data from the Microsoft Excel file to existing Mariner 2008 data or if you want to replace existing Mariner 2008 data with the data from the Microsoft Excel file.
9. Click **Save**.

Breakeven Chart

The **Breakeven Chart** dialog box allows you to see costs, benefits, and the breakeven point for a selected time period for any work item. The bars represent the selected costs and benefits. The line represents the breakeven points. You can hover your mouse over any bar to display its value. A breakeven chart will not render unless the attributes that are used to build the chart contain valid data.

Printing a breakeven chart

You can print a Breakeven chart. Click **Print**.

To print a Breakeven chart

1. Open the **Projects** module.
2. Select a work item.
3. Select the **Financials** tab.
4. Click **View Chart** to view the Breakeven chart.
5. After the Breakeven chart opens, click **Print**.

Updating data in a breakeven chart

If data in the **Financials** tab changes while you are working in a Breakeven chart, click **Apply** to refresh the data.

To update data in a Breakeven chart

1. Open the **Projects** module.
2. Select a work item.
3. Select the **Financials** tab.
4. Adjust the date range, time period, and dimension as needed, across a single tab or across all tabs.
5. Click **Apply**.
6. Click **View Chart** to view the updated Breakeven chart.

Viewing a breakeven chart

A Breakeven chart displays total cumulative costs, cumulative benefits, and break even points for a date range and time period. The bars in a Breakeven chart represent costs and benefits and the line represents the break even points. Breakeven charts will not render unless the attributes which are used to build the chart contain valid data. You can change the date ranges, time periods, and dimensions from which information in the **Financials** view is based.

To view a Breakeven chart

1. Open the **Projects** module.
2. Select the **Financials** tab.
3. Select a tab in the **Financials** tab.
4. Define the date range, time period, and dimension.
5. Select a dimension.

6. Click **View Chart** to view a Breakeven chart.

Issues

You can use the **Issues** tab to track and manage issues that are related to a particular work item. The **Issues** tab is used to help improve collaboration and communication among team members as they work together to finish the items to which they have been assigned. The **Issues** tab is a type of log view. Other types of log views are included: the **Discussions** tab, the **Risks** tab, and the **Documents** tab. Adding custom log views is supported. Information in a log view is presented in a list format. Items in a log view to be converted into work item types.

Adding an issue

Select a work item and open the **Issues** tab. Add a new issue about that work item.

To add an issue

1. Open the **Projects** module.
2. Select a work item.
3. Select the **Issues** tab.
4. Click **New Issue**.
5. In the **New Log Item** dialog box, enter a name and a description. Use the other fields to help other team members understand how the issue can affect the work item to which it's being associated. Such as what the issue resolution might be, or how important the issue is to the project or its current status.
6. Click **Save**.

Assigning an issue

Issues can be assigned to team members. If you want the issue to be tracked alongside tasks and assignments associated with the item, you should change the issue into a work item.

To assign an issue

1. Open the **Projects** module.
2. Select a work item.
3. Select the **Issues** tab.
4. Select an issue.
5. Click the **Assign Issue** button.
6. Choose the resource to whom the issue will be assigned.
7. Click **Save**.

Converting an issue to a new log type

You can convert an issue to a different log type, such as to a risk, a discussion, or a document. When you convert one log type into another, only information details that are contained in both log types will be preserved after the conversion. Information details that exist in the original log view but do not exist in the new log view will not be available after the conversion.

To convert an issue to a new log type

1. Open the **Projects** module.
2. Select a work item.
3. Select the **Issues** tab.
4. Click **Convert Issue** to convert an issue to a new log type (such as a work item).
5. Click **OK**.

Converting an issue to a work item

You can convert an issue into a work item. A work item can then be assigned to a resource and can be tracked alongside tasks and other activities associated with a work item.

To convert an issue to a work item

1. Open the **Projects** module.
2. Select a work item.
3. Select the **Issues** tab.
4. Click **Convert Issue** to convert an issue to a new log type (such as a work item).
5. Click **OK**.

Deleting an issue

If you are no longer using an issue, you can delete it.

To delete an issue

1. Open the **Projects** module.
2. Select a work item.
3. Select the **Issues** tab.
4. Select the issue and click **Delete Issue**.

Escalating an issue

Issues can be escalated. Escalating an issue makes it visible in the parent work item as well as in the original item, making it more visible to more members of your team.

To escalate an issue

1. Open the **Projects** module.
2. Select a work item.
3. Select the **Issues** tab.
4. Select an issue and click **Escalate** to escalate it.

Resolving an escalated issue

Once a resolution to an escalated issue is found, the escalated issue can be resolved.

To resolve an escalated issue

1. Open the **Projects** module.

2. Select a work item.
3. Select the **Issues** tab.
4. Click an escalated issue.
5. In the lower pane, select the **Summary** tab.
6. From **Status**, select **Resolved**.
7. Click **Save**.

Viewing an issue

Issues can be viewed from the **Issues** tab in the **Projects** module.

To view an issue

1. Open the **Projects** module.
2. Select a work item.
3. Select the **Issues** tab.

Project Reports

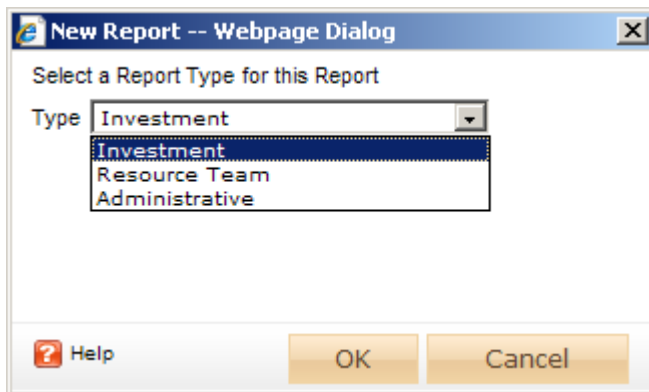
You can use the **Reports** tab to display a list the reports available for a work item. The **Reports** tab is available from two modules: **Tools** and **Projects**. The **Reports** tab in the **Tools** module displays all the work item and resource reports that are associated with the team member. The **Reports** tab in the **Projects** module displays only work item-based reports and only those associated with the selected work item.

Adding a report

Add a new report. Open the **New Report** dialog box. Name the report. Set the parameters and define its update frequency.

To add a report

1. Open the **Projects** module.
2. Select the **Reports** tab.
3. Click **New Report**, select a report type (**Investment**, **Resource Team**, or **Administrative**) and then click **OK**.



4. In the **New Report** dialog box, type a name for the report.

- On the **General** tab, from the **Report Template** drop-down, select a report, enter a description (optional), and indicate whether you want to run the report immediately (after you are finished creating it).

General Schedule

Run this report immediately

Report Template

Description

Associate Report With

... Investment: IT Hardware Upgrade

- Under **Associate Report With**, click the ellipses button and then use the **Select Investments** dialog box to identify the work items that will be included in the report data.

General Schedule

Run this report immediately

Report Template

Description

Associate Report With

... Investment: IT Hardware Upgrade

- On the **Schedule** tab, select **Run this report on a schedule** if you want the report to be run on a periodic basis. Once selected, you can define how frequently you want the report to be run, the format in which the report will be presented, and how many previous instances of the report you want to store.

General **Schedule** Recipients Template

Run this report on a schedule

Schedule

Frequency: Daily Weekly
 Monthly

Time of Day: 1:00 PM

Day of Week: Monday

Day of Month: 1

Output

Format: Acrobat (PDF) File

Store: 5 instances of the report.

Report Parameters

Start Date: Sch. date + 0 days End Date: Sch. date + 0 days

Status: Show all Priority: Show all

8. If you have chosen to run the report on a scheduled basis, you can use the **Recipients** tab to select the users, security groups, and security roles who will receive a notification when this report is run. After you have chosen the recipients, click **Add**.
9. If you have chosen to run the report on a scheduled basis, you can use the **Template** tab to define parameters for the email notification. You can define the title (as it will appear in the subject line). You can add the **Timestamp** and **Report Name** attributes into the title or the template (the message body). You can add a URL link into the message body that will allow any recipient to link directly to the report.

General Schedule Recipients **Template**

* Title: _____

Insert Attribute: Timestamp

Insert URL Link:

<<Report_Name>> ran as scheduled at <<Timestamp>>

10. Click **Save**.

Copying a report

Add a new report by copying one that already exists.

To copy a report

1. Open the **Projects** module.
2. Select a work item.
3. Select the **Reports** tab.
4. Select a report.
5. Click **Copy Report**.
6. In the **Copy Report** dialog box, name the report.
7. Click **OK**.

Deleting a report

If you're not using a report, you can delete it.

To delete a report

1. Open the **Projects** module.
2. Select a work item.
3. Select the **Reports** tab.
4. Select a report.
5. Click **Delete**.

Editing a report

You can change the parameters and update frequency of any report.

To edit a report

1. Open the **Projects** module.
2. Select a work item.
3. Select the **Reports** tab.
4. Select a report.
5. Click **Edit Report**.
6. In the **Edit Report** dialog box, make your changes.
7. Click **Save**.

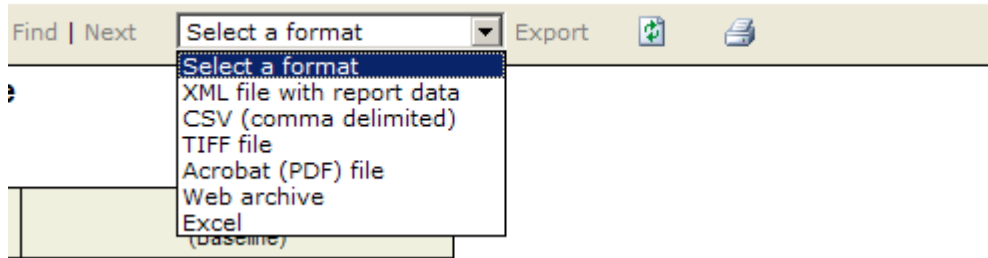
Exporting a report

Reports can be exported to the following formats:

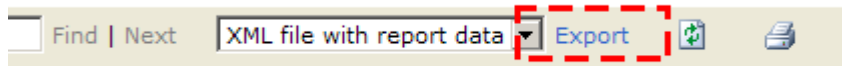
- XML
- CSV
- TIFF
- PDF
- Web Archive (MHTML)
- Microsoft Excel

To export a report

1. Open the **Projects** module.
2. Select a work item.
3. Select the **Reports** tab.
4. Select a report.
5. Click **View Report**.
6. After the report has been generated, select the format to which you want to export the report: **XML file with report data**, **CSV (comma delimited)**, **TIFF file**, **Acrobat (PDF) file**, **Web archive**, or **Excel**.



7. Click Export.



1ce

8. Save the exported file to the location of your choice.

Sharing a report

Reports can be shared with other team members. Shared reports will be available in the **Reports** tab of the team members with whom the reports is shared. Only the current instance of a report is shared and a report must be re-shared every time it is updated. A shared report that can be modified by any user and/or member of a security group that has been given access to the report. A private report can only be modified by the user who created the report.

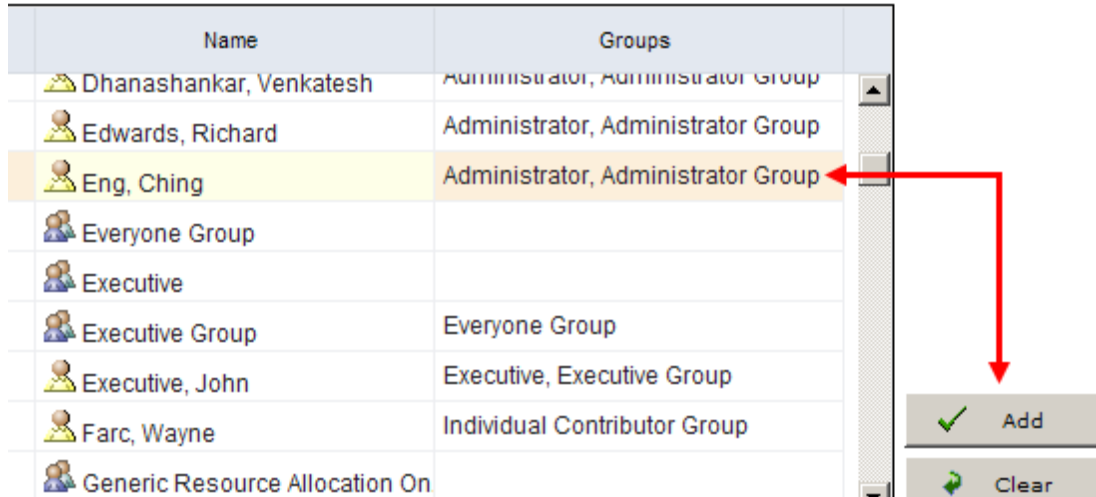
To share a report

1. Open the **Projects** module.
2. Select a work item.
3. Select the **Reports** tab.
4. Select a report.
5. Click **Share Report** to share the report.
6. In the **Share Report** dialog box, select whether you want to show users, groups, and/or unselected resources.

Select users to share report with

Show Users Groups Unselected

7. Select a user or group, and then click **Add**.



8. Click **OK**.

Viewing a report

Reports can be viewed from the **Reports** tab in the **Projects** or **Tools** modules.

To view a report

1. Open the **Projects** module.
2. Select a work item.
3. Select the **Reports** tab.
4. Select a report.
5. Click **View Report**.

Risks

You can use the **Risks** tab to track and manage risks that are related to a particular work item. The **Risks** tab is used to help improve collaboration and communication among team members as they work together to finish the items to which they have been assigned. The **Risks** tab is a type of log view. Other types of log views are included: the **Issues** tab, the **Discussions** view, and the **Documents** tab. Adding custom log views is supported. Information in a log view is presented in a list format. You can convert a log view into other work item types.

Adding a risk

Select a work item and open the **Risks** tab. Add a new risk.

To add a risk

1. Open the **Projects** module.
2. Select a work item.
3. Select the **Risks** tab.
4. Click **New Risk** to add a risk.

5. In the **New Log Item** dialog box, enter a name and a description. Use the other fields to help other team members understand how the risk can affect the work item to which it's being associated. Such as what the mitigation strategy or contingency plan might be, or how important the risk is to the project, what its level of impact is, how likely it is to occur, and its current status.
6. Click **Save**.

Assigning a risk

Risks can be assigned to team members. If you want the risk to be tracked alongside tasks and assignments associated with the item, you should change the risk into a work item.

To assign a risk

1. Open the **Projects** module.
2. Select a work item.
3. Select the **Risks** tab.
4. Select a risk.
5. Click the **Assign Risk** button.
6. Choose the resource to whom the risk will be assigned.
7. Click **OK**.

Converting a risk to a log type

You can convert a risk to a different log type, such as to an issue, a discussion, or a document. When you convert one log type into another, only information details that are contained in both log types will be preserved after the conversion. Information details that exist in the original log view but do not exist in the new log view will not be available after the conversion.

To convert a risk to a new log type

1. Open the **Projects** module.
2. Select a work item.
3. Select the **Risks** tab.
4. Click **Convert Risk** to convert a risk to a new log type (such as a work item). In the **Convert Log Type** dialog box, select the log type to which you want to convert the risk.
5. Click **OK**.

Converting a risk to a work item

You can convert a risk into a work item.

To convert a risk to a work item

1. Open the **Projects** module.
2. Select a work item.
3. Select the **Risks** tab.
4. Click **Convert Risk** to convert a risk to a work item type.

-
5. Click **OK**.

Deleting a risk

If you are no longer tracking a risk, you can delete it.

To delete a risk

1. Open the **Projects** module.
2. Select a work item.
3. Select the **Risks** tab.
4. Select a risk and click **Delete Risk**.

Editing a risk

You can edit the properties of a risk.

To edit the properties of a risk

1. Open the **Projects** module.
2. Select a work item.
3. Select the **Risks** tab.
4. Select a risk.
5. Make your changes.
6. Click **Save**.

Escalating a risk

Risks can be escalated. Escalating a risk makes it visible in the parent work item as well as in the original item, making it more visible to more members of your team.

To escalate a risk

1. Open the **Projects** module.
2. Select a work item.
3. Select the **Risks** tab.
4. Select a risk and click **Escalate** to escalate it.

Resolve an escalated risk

Once a resolution to an escalated risk is found, the escalated risk can be resolved.

To resolve an escalated risk

1. Open the **Projects** module.
2. Select a work item.
3. Select the **Risks** tab.
4. Click an escalated risk.
5. In the lower pane, select the **Summary** tab.
6. From **Status**, select **Resolved**.
7. Click **Save**.

Viewing a risk

Risks can be viewed from the **Risks** tab in the **Projects** module.

To view a risk

1. Open the **Projects** module.
2. Select a work item.
3. Select the **Risks** tab.

Schedule Dependencies

You can use the **Cross-project Dependencies** tab to relate task milestones to each other across items. A schedule dependency is when one task must finish before another task can begin. Use this view to highlight inconsistencies across items and to identify where your organization can work to resolve them by identifying in which items they are being driven from. Tasks that are marked as externally visible in the **Tasks** tab will be available in the **Cross-project Dependencies** tab.

The **Cross-project Dependencies** tab shows a list of items with a timeline of their externally visible tasks. The list of items will automatically include the work item currently selected in the **Projects** module, its child items, and any other explicitly-included items. The list is filtered so that only items with externally visible tasks are shown.

When the schedule dependency dates are sequential (the predecessor's planned finish date is before or equal to the successor's planned start date), the schedule dependency line will be green. When the schedule dependency dates are not sequential (the predecessor's planned finish date is after the successor's planned start date), the schedule dependency line will be red.

Adding a schedule dependency

If a work item contains a task that is externally visible, Once a schedule dependency has been created, it is visible in the **Cross-project Dependencies** tab. Once you have made at least one task in a work item as externally visible, the item, with the milestones you selected as externally visible, will appear in the **Cross-project Dependencies** tab of the parent work item. You can also select that work item to show in the **Cross-project Dependencies** tab for other items. Once you have at least two items showing to the **Cross-project Dependencies** tab, you can then create a dependency between the two items. The tasks that you chose to be externally visible appear as the milestone diamonds on the Gantt bar.

To add a schedule dependency

1. Open the **Projects** module.
2. Select a work item.
3. Select the **Cross-project Dependencies** tab.
4. Click the milestone (diamond) in the Gantt bar to which you want to add a schedule dependency. When the cursor changes to a four-headed arrow, drag it to the milestone (diamond) that will be the schedule-dependent milestone.
5. In the **Dependency Creation** dialog box, enter a name and description for this dependency.
6. Click **Save**.

Deleting a schedule dependency

Once a schedule dependency has been created, it is visible in the **Cross-project Dependencies** tab. In order to change a dependency, you must first remove it, and then create a new dependency to replace it.

To delete a schedule dependency

1. Open the **Projects** module.
2. Select a work item.
3. Select the **Cross-project Dependencies** tab.
4. Select the dependency arrow you want to delete and press the delete key on your computer.

Making tasks externally visible

In order to show work item milestones on the **Cross-project Dependencies** view, you must first make at least one task in the work item externally visible to other users in the **Tasks** tab.

To make tasks externally visible

1. Open the **Projects** module.
2. Select a work item.
3. Select the **Tasks** tab.
4. Click **Check Out** to check out the project plan.
5. Select a task that you want to make externally visible.
6. In the lower pane, on the **Details** tab, under **Milestone Mapping** select **Task Externally Visible**.
7. Click **Milestone Mapping**. In the **Map Milestone** dialog box, select the milestone to which you want to map the task.
8. Click **OK**.
9. In the lower pane, click **Save**.
10. Click **Check In** to check in the project plan.

Viewing a schedule dependency

Once a schedule dependency has been created, it is visible in the **Cross-project Dependencies** tab. In order to change a schedule dependency, you must delete it and then add a dependency to replace it.

To view a schedule dependency

1. Open the **Projects** module.
2. Select a work item.
3. Select the **Cross-project Dependencies** tab.

Summary

A **Summary** tab provides a high-level overview of the selected work item. A **Summary** tab can be used in many locations, but they are used primarily within the **Projects** and

Resources modules. They can be simple (as the default summary pages are), but they can also be customized to provide rich detail, making them an ideal starting point for any work item type and for any user in your organization.

Task Plan

The Task Plan view helps you manage a task plan for every project in your work hierarchy.

For more information, see the following topics:

- [Concepts \[page 54\]](#)
- [Working in a Task Plan \[page 73\]](#)
- [Using Task Plan Tables \[page 76\]](#)
- [Dialog Boxes \[page 87\]](#)
- [Fields \[page 105\]](#)

Concepts

Managing a task plan is a process that involves planning, organizing, and managing costs, resources, and time in a way that ensures that a task plan is completed within the right timeframe, with the right amount of work, and of the right level of quality. The key elements are:

- **Cost** The amount of money it takes to complete any task or task plan. A cost is a value that is associated with time spent working on a task or the amount of something that is consumed while completing a task. In other words, cost is the total amount of money spent while completing all of the work defined in a task plan.
- **Quality** The point at which completion of a task or a task plan satisfies non-task plan requirements, such as those of an external customer, an executive sponsor, other teams within your organization, and so on. The level of quality is often determined by a combination of cost, scope, and time, plus the resources allocated to a task plan.
- **Resources** The people, equipment, and material that are used to complete each task in a task plan.
- **Scope** The overall size of the task plan, including all of its tasks, goals, and requirements.
- **Time** The duration of any task, its relationship to other tasks (dependencies), and the importance of getting that task done (critical path).

The three most important elements, in terms of managing a task plan, are time, scope, and cost. Each of them has a limit. There is only so much money with which to pay for and acquire resources. There is only so much time in which the task plan can be completed. And scope must (at some point) be limited in a way that allows the project to be completed on time and on budget.

These three elements work together to provide boundaries to any task plan and help to determine the successful outcome of any project. Typically, one cannot make changes to one of these elements without having to make tradeoffs that can affect one or both of the others. You can think of it like this: $[\text{cost} + \text{time} + \text{scope}] = 100\%$ of all the things that must come together in order to finish the work that is defined in a task plan. Cost, time, and scope can be any fraction of 100%.

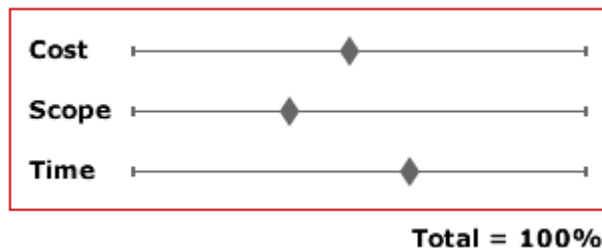
There are a number of ways this relationship can be visualized. The most traditional way is to show them as a triangle, where cost, scope, and time each represent one side, where quality sits in the middle (and therefore depends on cost, scope, and time), and where resources are implied (resources have a cost, resources take time, resources need to be factored into the overall scope of a task plan, and resources play a critical role in affecting the quality of effort):



You could visualize the traditional way with an emphasis on one of the three main elements, for example an emphasis on cost:



You can visualize them as a three sliding components:



Add in quality and resources (to cost, scope, and time) and you have the five key elements integral to any task plan. They are dependent on each other and their sum is often greater than their parts.

It doesn't matter how your organization chooses to visualize this interaction as long as your organization understands that a well-balanced project plan can be completed on time, on budget, and on scope. That a well-balanced project plan will often result in something of high quality. And that resources should only be committed to work on something that will result in something that provides value to its customers.

For more information, see the following topics:

- [Allocations \[page 56\]](#)
- [Assignments \[page 56\]](#)
- [Baselines \[page 57\]](#)

- [Calendars \[page 57\]](#)
- [Costs \[page 58\]](#)
- [Critical Path \[page 58\]](#)
- [Dependencies \[page 60\]](#)
- [Earned Value \[page 61\]](#)
- [Material vs Work \[page 64\]](#)
- [Rates \[page 65\]](#)
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Allocations

An allocation is the commitment of a resource (work or material) to be available to work on a task in a task plan. A resource allocation is an agreement between a resource manager and a project manager as to a resource's availability to work on a work item.

An allocation can be similar to an assignment, but only if the allocation is made at the task level and for a single resource. More commonly, allocations are made as teams; a group of resources (for example, 4 developers, 3 testers, and a technical writer) are assigned to a task plan and then are assigned to individual tasks by a project manager.

However, an allocation is only the commitment of a resource to work on one or more tasks. A resource must be assigned to a task in order for a resource to be able to report progress on that task in their timesheet.

Resources can become overallocated. This occurs when a resource has been assigned to do more work in the time that resource has available to complete that work. For example, if two tasks in a task plan overlap on a single day, but the same resource is assigned to 100% on both tasks. On the overlapping day, the resource is overallocated (100% on two separate tasks). Overallocations can occur when:

- A resource is assigned more work than they can complete in the time that resource has available
- A task's duration has increased, causing an overlap with another task to which a resource is assigned
- An increase or decrease in the number of assigned or available units for a task
- A resource is assigned to a summary task

Assignments

An assignment is the commitment of a resource (work or material) to perform actual work on a task in a task plan. You can use the Assign Resources dialog box to assign a resource to a task in a task plan. Resources that have been assigned to work on a task in a task plan can report progress against that task using their timesheet.

An assignment is the commitment of a resource (work or material) to perform actual work on a task in a task plan. You can use the **Assign Resources** dialog box to assign a resource to a task in a task plan. Resources that have been assigned to work on a task in a task plan can report progress against that task using their timesheet.

Baselines

A baseline is a snapshot of task plan data that can be used to compare the original project with the current project. The initial baseline should be used to represent the original, approved scope of a task plan, including its costs, dates, durations, labor assignments, and so on. It should be set after the task plan has been created, but before any work on a task plan is started.

As a task plan progresses, changes to the original scope, resource allocation, and budget will affect the original estimates. You can use add new baselines, with which comparisons between original and actual data can be made. For task plans that diverge greatly from the original, it may help to create a new task plan with new targets and a new baseline.

A task plan can have up to eleven saved baselines; each baseline saves cost, work, start, finish, and duration values. A baseline can be set to one or more tasks in a task plan or for an entire task plan.

Calendars

A calendar is used to define the working days and times for resources, tasks, and task plans. Calendars are set (by default) to 8 working hours per day, 40 working hours per week, and 20 working days per month. Tasks can only be scheduled when there is available working time in a calendar.

A calendar that is assigned to a task plan is called a base calendar. The calendar associated with the task plan is the default calendar for all tasks and resources associated with that task plan. There are three predefined base calendars:

- **Standard** This calendar has working time set Monday through Friday, from 8:00 AM to 5:00 PM, with an hour off for lunch from 12:00 PM to 1:00 PM each day. Default.
- **24 Hour** This calendar has working time set from 12:00 AM to 12:00 AM, seven days per week. This calendar is typically used in a scenario where a task needs to occur regularly, such as a software application team's nightly build or automated testing environment, manufacturing, or for teams that have resources assigned to work around-the-clock.
- **Night Shift** This calendar has working time set Monday through Saturday, from 11:00 PM to 8:00 AM, with an hour off for lunch from 3:00 AM to 4:00 AM each morning. This calendar is most often used for resources who work a night shift, but it can also be used for projects that are carried out only at night, such as scheduled, periodic backups of your company's database or online services.

A resource uses one of the base calendars, but can also create exceptions in a base calendar. This allows individual resources to use the standard calendar, but also capture personal holidays or other working times that are unique to a resource.

Typically, a task can use the same calendar as the calendar used by the task plan, but in rare cases (such as if a single, non-repeating task occurred on a Sunday), a task may use its own calendar.

Costs

The amount of money that is spent to produce something of value. In a task plan, a cost is the amount of money that is spent while finishing a task. For example, a resource's hourly billing rate or the cost of renting a tractor (a material resource) for a day. A cost can be associated with a task, a resource, an assignment, or a task plan.

There are three types of costs: fixed, per-use, and rate.

- A fixed cost is one that does not change regardless of a task's duration or how much actual work is completed.
- A per-use cost is one that is applied each time a resource is used. When a work resource is associated with a per-use cost, that cost is applied each time that resource is assigned work in a task plan. When a material resource is associated with a per-use cost, that cost is applied once.
- A rate cost is one that is applied based on a duration (typically, per-hour). A rate cost is most often associated with a work resource and it is used to represent the units worked (typically hours) against a task in a task plan. There are two types of rates: regular and overtime.

You can use a baseline to compare original costs to actual costs over the life of a task plan by comparing the variance between the original cost values and the actual cost values.

Critical Path

The critical path represents a task (or a series of tasks) that must be finished on time in order for the task plan to be finished on time. The critical path is based on the longest possible sequence of tasks, factoring in their start dates, finish dates, dependencies, and constraints. It compares the calculated finish date of the last task in the sequence to the planned finish date for the task plan.

The critical path is shown in red in a task plan. Any task on the critical path is a critical task. When a critical task is delayed, it nearly always results in a comparable delay to the finish date of the task plan. A task plan can only be considered 100% complete when the last task in the critical path is finished.

As you are working in a task plan, you should pay close attention to the tasks that are part of the critical path and should work to ensure that they are completed on time (and without causing delays to other tasks or to the task plan). For each critical task, verify that the resources assigned (or allocated) to the task are not only the right resources, but that there are enough of them. For example, replacing a less experienced resource with one who has more experience may be what is needed to ensure that the task is finished on time; however, don't forget that adding a resource who is unfamiliar with the task may require ramp-up time that the schedule does not have room for. Try to find slack in the task plan. Once slack is identified, you can determine whether any tasks can be given an earlier start time, a later finish time, and so on, so that any negative slack is removed and any available slack is used to your advantage. Verify constraints. For example, an inflexible constraint puts pressure on the overall task plan because a task with an inflexible constraint must start (or finish) on a fixed date. Though it is not always possible, you should work to avoid having tasks on the critical path that have inflexible constraints.

Lead Time vs Lag Time

Sometimes a task with a dependency needs to start sooner than one (or more) of its predecessor tasks can be finished. This is represented using lead time and lag time.

Lag	The amount of time in the schedule that a task can be delayed before it will affect the scheduling of other tasks. Lag occurs when there is a delay between two tasks that share a dependency.
Lead	Lead time occurs when there is overlap between two tasks that share a dependency.

Lead time and lag time are entered as a duration or as a percentage of the task's duration, where a negative entry is used for lead time and a positive entry is used for lag time. For example, -1d is a lead time of one day and 3d is a lag time of three days. Use a percentage to indicate at what point the lead time or lag time should begin. For example, a lead time of -50% indicates that a task may begin when its predecessor is 50% complete.

It is important to note that lead time and lag time is not the same as slack, though (at times) they can appear in a similar manner in the schedule. Lead time and lag time are deliberately scheduled events in the task plan, whereas slack indicates room (or lack of room) in the task plan's schedule.

Slack

Slack is the amount of time in a task plan where a task can be delayed without causing another task (or the task plan itself) to be delayed. Slack is also referred to as float. There are two types of slack: free slack and total slack. Free slack is the amount of time that a single task can be delayed before that delay causes another task in the task plan (or the task plan itself) to be delayed. Total slack is the amount of time that one or more tasks in a task plan can be delayed before that delay causes the task plan to be delayed.

In general, it is preferable to have a task plan with some (but not too much) slack present. This allows room in the timeline to adjust to changes in your overall business that can affect the outcome of the task plan. For example, a change in resource availability may cause a delay to one or more tasks (if a resource is removed) or may allow one or more tasks to be completed sooner (if a resource is added). These kinds of changes will be visible in the task plan as slack (available or negative, free or total).

When a task's slack equals zero, there is no room in the schedule for that task to be delayed without causing a delay to another task in the task plan (or to the task plan itself). A task with zero slack should be considered to be a critical task; any delay to the completion of this single task will cause a similar delay to another task (or to the entire task plan). The following example shows three critical tasks with zero slack:



Available slack occurs when the total duration of one or more tasks in the task plan is less than the total duration of the task plan itself. The following example shows three tasks with available slack. The first task has two days of free slack, the middle task has four days of free slack, and the final task has one day of free slack. The task plan has seven days of total slack:



Negative slack can occur when a task is scheduled to start before another (predecessor) task is scheduled to finish, when a task is scheduled to finish after another (successor) task is finished, or when a task must be finished sooner than the schedule currently allows. The following example shows three tasks, each having available slack and one having negative slack. The final task is currently scheduled to be started before the middle task is scheduled to be finished:



Negative slack can be removed by using the available slack in the project. In this example, the middle task could be started sooner, the final task could be finished later, or a constraint on the final task (if one is present) could be adjusted.

Dependencies

A dependency (often called a linked task) determines how a task in a task plan is scheduled, in relation to all other tasks in the task plan. A dependency is based on a task's start date and/or finish date. A dependency that determines how other tasks in a task plan are scheduled is called a predecessor. A dependency that relies on another task's start date or finish date to determine how it can be scheduled is called a successor.

There are four types of dependencies:

- **Finish-to-Start** This dependency prevents a successor task from starting until the predecessor task is finished. Default.



- **Start-to-Start** This dependency requires that a successor task start at the same time as its predecessor.



- **Start-to-Finish** This dependency prevents a successor task from finishing until the predecessor task is starting. Very rare.



- **Finish-to-Finish** This dependency prevents a successor task from finishing until the predecessor task is also finishing.



You can create dependencies in the following ways: dragging and dropping tasks while working in the Gantt chart or network views, by selecting tasks and clicking the link button in the tool bar, or by defining them in the **Predecessor** or **Successor** tabs in the **Task Information** dialog box. Remember that the most common (and most useful) dependency is finish-to-start; all of the other dependencies are much less commonly used (and start-to-finish dependency types are used rarely, if at all). The appearance of a dependency in the Gantt chart view will be similar to the diagrams (above), but the actual links will vary depending on the position of the tasks (in relation to each other), the start dates, the finish dates, durations, and so on.

Predecessors

A predecessor is a task that determines when another task (a successor) can be scheduled. The default link type for all links between tasks is finish-to-start (FS).

The format for identifying a predecessor task in the **Predecessors** column is Task ID[Dependency Type][Lag duration or percent]. ID identifies the successor task's position in the task plan. The amount of lag time for the dependency (if a negative number) or lead time (if a positive number) is shown as a duration or a percent. For example, a predecessor task with a finish-to-start dependency and a lead time of 20% would be formatted as 7FS20%; a predecessor task with a finish-to-finish dependency and a lag of 10 days would be formatted as 6FF-10d. When a task has more than one dependency, a semi-colon is used to separate them. For example, 7FS20%;6FF-10d.

Successors

A successor is a task that has its schedule determined by another task (a predecessor). The default link type for all links between tasks is finish-to-start (FS).

The format for identifying a successor task in the **Successors** column is Task ID[Dependency Type][Lag duration or percent]. ID identifies the predecessor task's position in the task plan. The amount of lag time for the dependency (if a negative number) or lead time (if a positive number) is shown as a duration or a percent. For example, a successor task with a finish-to-start dependency and a lead time of 50% would be formatted as 5FS50%; a successor task with the same task and dependency type, but with a lag of 2 days would be formatted as 5FS-2d. When a task has more than one dependency, a semi-colon is used to separate them. For example, 5FS50%;5FF-2d.

Earned Value

Earned value is a way to measure the performance of a task plan by using a series of calculations to compare actual and expected costs over the life of the project. All earned value calculations are measured by comparing the dates saved as part of the original baseline in the task plan to a specific date of your choosing, up to the current date.

The most important earned value calculations are actual cost of work performed (ACWP), budgeted cost of work scheduled (BCWS), and budgeted cost of work performed (BCWP); however, there are many other earned value calculations that are available for use in the task plan.

Earned values are best measured and tracked early in the task plan lifecycle. A project that is on track to being completed on time, under budget, and so on, will have healthy

early indicators for earned value. Some earned value metrics such as cost performance index, the variance between its value 10-20% into the task plan is often close to its value at the point on which the task plan is completed.

Some important elements that can affect the quality of earned value data include: work breakdown structure, a good initial baseline for the task plan, and updated/current data added to the project for each task as its work progresses.

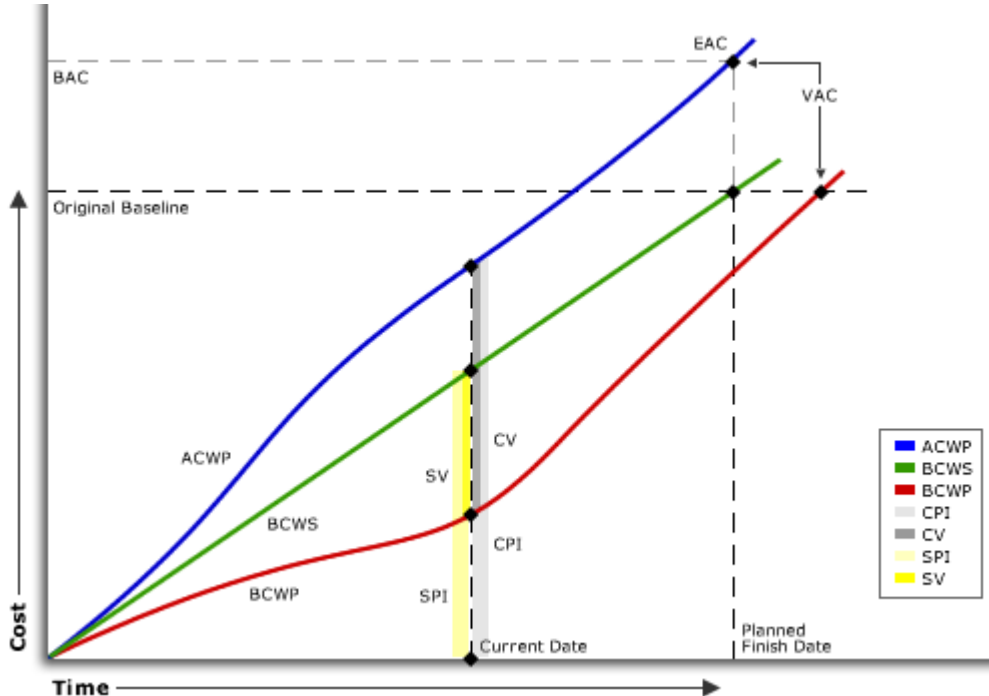
The following fields provides a description for all of the earned value fields that are available in a task plan:

Earned Value	Description
ACWP	Actual cost of work performed. The actual cost of all completed work, including resource costs, actual work, fixed costs, and so on, up to the current date.
BAC	Budget at completion. The total planned cost to complete every scheduled task. This is sometimes called baseline cost.
BCWP	Budgeted cost of work performed. The cumulative costs of planned work that has been actually completed, and then compared to the original estimates for that work. This is sometimes called earned value (EV).
BCWS	Budgeted cost of work scheduled. The planned cost of total amount of work that has been scheduled. This is sometimes called planned value (PV).
CPI	Cost performance index. The difference in value between the budgeted cost of work performed and the actual cost of work performed. The calculation for cost performance index is as follows: $CPI = BCWP / ACWP$. When the cost performance index is greater than 1, it is an indicator that the task plan is over budget.
CSI	Cost schedule index. The difference in value between the cost performance index and schedule performance index. The calculation for cost schedule index is as follows: $CSI = CPI \times SPI$. Cost schedule index should be as close to 1 as possible. When the cost schedule index is not one, it is an indicator that the task plan is behind schedule and over budget. The farther away from 1, the farther behind and/or over budget the task plan is.
CV	Cost variance. The difference between planned costs of work performed and the actual costs of work performed. The calculation for cost variance is as follows: $CV = BCWP - ACWP$. When the cost variance is less than 1, it is an indicator that the task plan is over budget.

Earned Value	Description
CV%	Cost variance percentage. The percentage over or under budget, based on cost variance and the planned cost of work in the task plan. The calculation for cost variance percentage is as follows: $CV\% = CV / BCWP$. When the cost variance percentage is greater than 1, it is an indicator that the task plan is under budget.
EAC	Estimate at completion. The expected cost to complete all remaining work. The calculation for estimate at completion is as follows: $EAC = ACWP + (BAC - BCWP)$. BAC - BCWP represents the planned costs of all uncompleted tasks. This is sometimes referred to as the estimate to complete (ETC).
Earned Value Method	Earned value method. This field is manually entered (and its value is not calculated). Use earned value method when there are tasks in a task plan that require physical percent complete.
Physical Percent (%) Complete	The percentage of work completed, measured independently of a task's duration. Use physical percent complete to manually override budgeted cost of work performed values when the process of completing a task can be measured independently of the task's duration. Sometimes used as an alternative to budgeted cost of work scheduled (BCWS).
SPI	Schedule performance index. The difference in value between current progress and the expected progress. The calculation for schedule performance index is as follows: $SPI = BCWP / BCWS$. When the schedule performance index is less than 1, it is an indicator that the task plan is behind schedule.
SV	Schedule variance. The difference in costs between current progress and expected progress. The calculation for schedule variance is as follows: $SV = BCWP - BCWS$. When the schedule variance is less than 0, it is an indicator that the task plan is behind schedule.
SV Percent (%)	Schedule variance percent. A percentage that shows how well the schedule is doing in relation to the cost of scheduled work. The calculation for schedule variance percent is as follows: $SV\% = (SV / BCWS) * 100$. When the schedule variance percentage is greater than 1, it is an indicator that the task plan is behind schedule.
TCPI	To-complete performance index. A ratio of remaining work. The difference between the planned costs of all completed tasks to the to the planned costs of all remaining, uncompleted tasks. The calculation for to-complete performance index is as follows: $TCPI = [BAC - BCWP] / [BAC - ACWP]$. When the to-complete performance index is greater than 1, it is an indicator that close attention should be paid to all of the work that remains so that the task plan can stay within budget.

Earned Value	Description
VAC	Variance at completion. The difference between the the total planned cost to complete every scheduled task and the expected cost to complete all remaining work. The calculation for variance at completion is as follows: $BAC - EAC$. When the variance at completion is negative, it is an indicator that your task plan is over budget.

The following diagram shows the relationship of earned value data points:



Material vs Work

There are two types of resources: material and work.

A material resource is a consumable resource, such as gasoline, cement, or a truck. Material resources are commonly defined as resources that are not people; however, while often true, this is not always the case. Material resources can be machines, raw materials, places, vehicles, and so on.

A work resource is a person who is assigned or allocated to a task in a task plan and makes progress against that task at a defined rate.

Material resources are defined by setting the **Type** column in the Gantt view to **Material**. Once defined, you can use the **Material Label** column to describe the material resource.

	Name	RBS	Type	E-mail Address	Material Label
1	Truck		Material		truck
2	Cement		Material		bag

Rates

A rate is the amount of money that it costs a resource to work on a task in a task plan for a given amount of time.

How much does it cost to finish all of the tasks in a task plan? In order to track costs, you must ensure that all rates are entered as accurately as possible. A rate is a way of associating a cost with an increment of time, whether that cost occurs just once, per-hour, per-day, and so forth. For example, renting a battery powered forklift for 8 hours may cost \$60 per hour. Having 2 tons of gravel delivered may cost \$400 per ton of gravel, plus an \$80 delivery fee. Assigning a Web developer to one or more tasks in a task plan for two weeks may be billed at a \$45 per-hour rate. Or if an outside contractor is brought in at a flat-fee of \$2000 to create four online training videos.

There are three types of rates (fixed, per-use, and resource) that are used in a task plan:

- **Fixed** A fixed rate represents a single cost, regardless of any resource requirements, the number of hours required to finish the task, or the amount of material resources that were used. For example, an \$80 delivery fee or a flat, \$2000 fee for an outside contractor.
- **Per-use** A per-use rate represents the cost for each time a resource (work or material) is used. For example, \$400 per ton of gravel used.
- **Resource rates** A resource rate is associated with the amount of time a work resource spends doing actual work on a task in a task plan or when the cost of a material resource is best measured as an increment. For example, a \$45 per-hour billing rate or a \$60 per-hour rental rate.

Resource Breakdown Structure

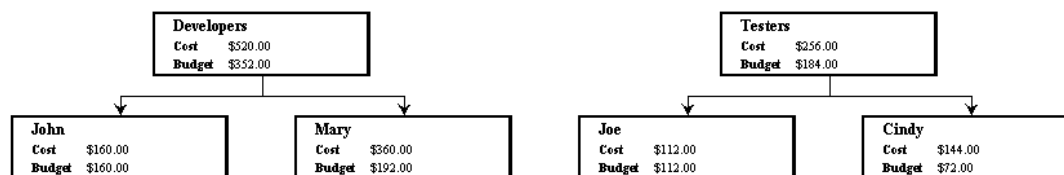
A resource breakdown structure (RBS) is a way of organizing resources as a hierarchy, often by team or by location. A resource breakdown structure is similar to a work breakdown structure (WBS).

A Resource Breakdown Structure (RBS) provides a hierarchical structure to organize resource teams and resources. Often this reflects the organizational reporting structure. The primary purposes of the Resource Breakdown Structure (RBS) are:

- To provide the basis of security to view and manage resources.
- To provide a structure for views and reporting.

Any group of resources has some type of organization, whether it's a simple hierarchy of teams that is grouped in the same way as your organization or a more complex hierarchy that groups resources by costs, skills, and location. In many ways, a resource breakdown structure is best used as a way of defining the framework from which your organization assigns, allocates, and tracks how resources (both material and working) can affect values that are important to tasks and task plans, such as values related to time, effort, duration, or cost.

A resource breakdown structure (RBS) is a way of organizing resources as a hierarchy (often visually) that can take on characteristics similar to a work breakdown structure. For example, a simple RBS may have a structure that organizes developers and testers as peers in the hierarchy:



Depending on the size of your organization and the amount of detail you want to track across projects, the complexity of the RBS can grow to include other options, such as by organization, by geographic location, by skill or role, or a combination of those (and other) options.

Resource Pool

A resource pool is the group of resources who are available to be assigned to a task in a task plan. A resource pool can be used by a single task plan or it can be shared across several task plans.

Typically, the resource pool for a single task plan is comprised of the resources who belong to the list of resources found in the **Team Roster** tab which shares the project with the **Task Plan** tab.

When you import projects from Microsoft Project that contain one or more resource assignments, you can map a resource (and all of their assignments) in the project to a single resource who belongs to the resource pool for that task plan. Resource mapping will apply all assignments to the newly-mapped resource. If you choose not to map an assignment, it will be left unassigned.

Roles

A role is a simple way of defining the different types of individuals in your organization who are participating in all of the events related to a task plan. From planning the project (a project manager, business analyst, program manager, and so on), doing the actual work defined in the task plan (Web developer, QA tester, technical writer, scrum master, senior architect, and so on), and approving the results (executive sponsor, client, and so on).

Many projects have high-level roles that are similar to the following:

- **Project Managers** The individual (or individuals) responsible for ensuring that a task plan is completed on time, on budget, and with a level of quality that meets (or exceeds) the expectations.
- **Team Members** The individuals responsible for completing the tasks that comprise the task plan.
- **Project Sponsor** The individual (often an executive sponsor) who supports the project within the organization.
- **Clients and Stakeholders** The people for whom the tasks in the task plan are being completed and for whom they have a stake in the project.

Most organizations use more specific role definitions, often mapping to job titles and especially with regards to the team members that are allocated to a task plan. There are many types of team members: developers, testers, technical writers, and they all have different levels of experience. It is because of this that roles are often broken down by job title and with experience levels. For example, Web Developer and Web Developer, Sr. Or QA Tester I, QA Tester II, and QA Tester III. In general, the larger the organization the

greater the need for more refined roles management and tracking. Whatever approach is taken, it is more important that the list of roles (and skills) be meaningful to all of the people involved in managing projects in your organization.

Skills

A skill is a specific area of expertise. For example, a Web developer may have expertise with JavaScript, CSS, and XHTML. A database administrator may have expertise with Oracle and SQL. Or a programmer writer may have experience with PERL, XML, and XSLT. Three different resources, each with different areas of expertise and therefore, different skills.

In many cases, it's the actual skill (or group of skills) that is the reason behind why a particular resource (or group of resources) is assigned to work in a task plan. By using skills as a key data point while doing resource allocations, and by using skills in conjunction with resource roles, you can help to ensure that resources are being given appropriate assignments.

Some skills are common to a resource role (Web-based programming languages such as JavaScript, XML, Flash, or HTML) and should be skills that any Web designer (regardless of level) has some expertise. However, some skills are unique or may be specific to a resource role. For example, some organizations may require that before a resource can reach a certain experience level they must hold a certification in one or more skills related to that experience level. For example, a senior Web designer will have skills in JavaScript, CSS, and XHTML, but may also hold a certification in AJAX development techniques.

Skill levels can be specified in many ways, including using:

- Experience levels as part of the skill description (JavaScript I, JavaScript II, and so on).
- Experience levels as part of the role description (Web Designer, Web Designer, Sr., and so on).
- A combination; using experience levels as part of skill and role descriptions.

Some organizations view certifications as a skill that lives alongside the other skills, such as Flash or Flash, Certified.

The level of detail that your organization needs depends as much on how your organization wants to track and manage skills usage and availability as it does on the size of the organization itself. In general, the larger the organization, the greater the need for more refined skills management and tracking. Whatever approach is taken, it is more important that the list of skills (and roles) be meaningful to all of the people involved in managing projects in your organization.

Tasks

A task is a work item that tracks a combination of three elements: duration, work, and units. Duration defines the total length of time required to complete a given task, measured by a task's start and finish dates. Work defines the total amount of labor that is needed to complete a given task. Units defines the resource (or resources) assigned to complete a given task.

All tasks are scheduled using the formula $\text{Duration} = \text{Work} / \text{Units}$. You can determine which part of the formula is calculated (or recalculated) by choosing a task type:

- **Fixed Duration** A task where the values for the task's start and finish dates are fixed values. Changes to a task's units or work will not affect fixed duration. For a

task with a fixed duration task type, work will be recalculated when units or duration values are revised and units will be recalculated when work is revised.

- **Fixed Work** A task where the value for the work to be completed is a fixed value. Changes to a task's units or duration values will not affect fixed work. For a task with a fixed work task type, duration will be recalculated when units or work values are revised and units will be recalculated when duration is revised.
- **Fixed Units** Default. A task where the value for the resource (or resources) assigned to the task is a fixed value. Changes to a task's work or duration values will not affect fixed units. For a task with a fixed units task type, duration will be recalculated when units or work values are revised and work will be recalculated when duration is revised.

In addition to duration, work, and units, many tasks also have dependencies and constraints. Some tasks are summary tasks, which contain rolled-up information from all of the child tasks.

Constraints

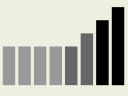
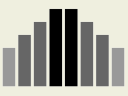

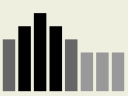

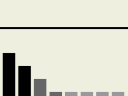
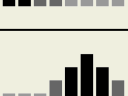

A constraint is a requirement that is set for a task's start or finish date. A constraint affects how a task's start and finish dates will be affected by other tasks in a task plan, based on the relationships between the tasks and the schedule for the task plan itself. There are two types of constraints: flexible and inflexible. A flexible constraint is one that does not require a specific start or finish date. An inflexible constraint is one that does require a specific start or finish date.

Constraint	Description
As Late As Possible	Flexible. A task with this constraint is scheduled so that it can be finished as late as possible, but without delaying any other scheduled task in the task plan. This constraint is the default when a task plan is scheduled from its finish date.
As Soon As Possible	Flexible. A task with this constraint is scheduled so that it begins as early as possible. This constraint is the default when a task plan is scheduled from its start date.
Finish No Earlier Than	Flexible. A task with this constraint must finish on or earlier than the date specified.
Finish No Later Than	Flexible. A task with this constraint type must finish on or after the date specified.
Must Finish On	Inflexible. A task with this constraint must finish on the date specified. All possible task finish date measurements (finish, early finish, and late finish) are given the same finish date.
Must Start On	Inflexible. A task with this constraint must start on the date specified. All possible task start date measurements (start, early start, and late start) are given the same start date.

Constraint	Description
Start No Earlier Than	Flexible. A task with this constraint cannot start earlier than the date specified.
Start No Later Than	Flexible. A task with this constraint cannot start later than the date specified.

Contours

A contour is used to represent a pattern for how the work related to a task will be distributed over time. For example, a flat contour indicates that resources assigned to work on that task will contribute the same amount of work every day until the task is complete.

Contour	Description
	A back loaded contour indicates that the distribution of work is weighted toward the end of the assignment.
	A bell contour indicates that the distribution is distributed toward the middle of the assignment.
	A double peak contour indicates that the distribution of work is weighted toward two major periods within the assignment.
	A early peak contour indicates that the distribution of work is weighted toward the beginning of the assignment, with a ramp-up period occurring before the peak.
	A flat contour indicates that resources assigned to work on that task will contribute the same amount of work every day until the task is complete. The distribution of work is even across the assignment. This is the default contour.
	A front loaded contour indicates that the distribution of work is weighted toward the beginning of the assignment.
	A late peak contour indicates that the distribution of work is weighted toward the end of the assignment, with a ramp-up period occurring before the peak.
	A turtle contour indicates that the distribution of work is weighted toward the middle of the assignment, with a ramp-up period occurring before the middle and a ramp-down period occurring after.

Deadlines

A deadline is a date in the task plan schedule by which a task needs to be completed. A deadline appears in a Gantt chart view as a diamond.



It is possible for a task to slip out past its deadline. When this happens, the task will extend past the deadline in the Gantt chart view, but the deadline itself will remain in place.



Durations

A duration is the total amount of time required to complete a task, based on a task's start and finish dates. A duration is always based on how a day is defined in the working calendar associated with the task plan. A day is defined (by default) as being 8 hours; therefore, a duration of 1 day in a task is 8 hours.

A duration can be entered in minutes, hours, days, weeks, or months. However, durations (once entered) are always converted to days. For example, if a duration is entered as 4 hours, it will be converted to 0.5 days in the task plan. You should try to use the same duration type (i.e. days) for all tasks in the same task plan.

A duration can be an estimated duration. When a duration is an estimated duration, a question mark (?) will appear alongside it in the task plan. For example, if a task plan has a duration of 2 days?, that means that the duration is estimated at two days.

Durations are entered in two locations: from the **Task Information** dialog box or from the spreadsheet in the Gantt chart view. You can use abbreviations when manually entering durations in a task plan. Use a question mark (?) to indicate an estimated duration:

Duration	Abbreviation
Minutes	m, min, or mins. For example, 60m, 60min, or 60mins.
Hours	h, hr, hrs, or hour. For example, 2h, 2hr, 2hrs, or 2 hour.
Days	d, dy, or day. For example, 1d, 1dy, or 1day.
Weeks	w, wk, or week. For example, 3w, 3wk, or 3week.
Months	mo, mons, or month. For example, 2mo, 2mons, or 2month.

The amount of time to associate with a specific duration is relative. It can be based on previous experience with a similar task, based on the quality of the resource (or

resources) that are assigned to the task, or it can be based on some other factor, such as an external estimate (for a contractor) or a fixed estimate (for a material resource). The important thing is to ensure that durations entered into a task plan are as accurate as possible. Any duration that is entered into a task plan should be flagged as an estimated duration until you are sure of the actual duration needed for that task in the task plan.

When you are creating the initial outline of a task plan, it can be helpful to assign each task a duration (preferably, an estimated duration), add dependencies (predecessors and successors), but not a constraint. Adding a constraint too early in the development of a task plan can make it more difficult to identify the basic schedule for the task plan. Once you have a good idea of the basic schedule in the task plan, you can then go in and fine-tune durations, dependencies, and add constraints (as needed).

As you progress with work on tasks you should update durations as more accurate information about those durations is available. When a duration in a task plan is updated, all calculations related to that duration are immediately updated.

Effort-Driven Tasks

An effort-driven task is one where the total amount of work required to complete the task is directly affected by the number of resources that have been assigned to it. In other words, the amount of effort determines the amount of work that can be done.

The effects of adding resources to an effort-driven task are determined by the task type:

- For a task with a type of fixed duration, adding resources will decrease the unit values for any resource that is assigned to the task.
- For a task with a type of fixed units, adding resources will shorten the duration of the task.
- For a task with a type of fixed work, adding resources will shorten the duration of the task.

The best way to determine whether a task can be identified as an effort-driven task is to consider whether assigning additional resources to that task will result in an increase to the rate at which the task can be finished. However, many tasks should not be identified as effort-driven tasks. For example, adding a resource to a complex task may decrease the rate at which a task can be finished. The newly-assigned resource may need a ramp-up period or may need the assistance of a currently-assigned resource in order to understand the complexity of the task. In many instances, adding a resource may not result in more work getting done or in the task being finished sooner.

Let's use a simple example to illustrate how an effort-driven task can be used to shorten the duration of a task (and, in this case, the duration of the entire task plan). You are planning to purchase some new bookcases; the following tasks would need to be done:

#	Task	Task Details
1.	Drive to furniture store from home.	1 hour.
2.	Stop to fill up gas tank. Buy gasoline.	15 minutes; 10 gallons @ \$2.50 per gallon.

#	Task	Task Details
3.	Purchase four new bookcases.	45 minutes; \$100.00 x 4 bookcases.
4.	Drive home from furniture store.	1 hour.
5.	Assemble bookcases.	8 hours?. For a single resource, each bookcase will take an estimated 2 hours to assemble.
6.	Arrange bookcases.	30 minutes.
7.	Add books to bookcases.	4 hours?. For a single resource, each bookcase will take an estimated 1 hour to fill.

There are three tasks in this list that are candidates to be identified as effort-driven tasks: 5, 6, and 7. If three friends came over and helped to assemble the bookcases, arrange, and then add books to them, then the amount of effort for each of these tasks would increase and the duration for each of these tasks would decrease. For example, it takes 2 hours to assemble each bookcase. A single resource would spend 8 hours; four resources would spend 2 hours.

Tasks 1, 3, and 4 are examples of tasks that would not benefit from being effort-driven. For example, four people riding in the same vehicle cannot drive to and from a furniture store in less time than a single person can.

Milestone Tasks

A milestone is a special task that represents an event in your project. Any task that has a duration of zero days is considered a milestone task.

Any task may be flagged as a milestone task by selecting the **Mark Task as Milestone** option in the **Task Information** dialog box. Milestone tasks are displayed as diamonds in the Gantt chart and Network diagram. You can filter views to show only milestone tasks.



Summary Task

A summary task contains data that is rolled-up from all of its child tasks. You can view rollup date for a summary task from the Gantt chart and network views, or from the work breakdown structure. A summary task appears in the Gantt chart view as a black line which spans all of its child tasks.



Work Breakdown Structure

A work breakdown structure is a way to define the relationships of tasks in a task plan. A work breakdown can be as simple as each task plan having its own work breakdown structure that is determined by the needs of the individual task plan. A work breakdown can be as complex as requiring certain types of tasks to be present in specific locations in a task plan. The former is often used by small flexible teams (such as Agile teams) that don't require a lot of organizational overhead in order for them to complete a project. The latter is often used in larger organizations that require data to be consistent across the organization.

Any work item implicitly requires effort in order to get results. The quality of effort affects the quality of every result. The importance of a work item determines the required results and also helps determine the amount of effort needed to achieve those results. One work item may have a higher level of importance than another. For any work item, effort and results are interdependent, but it is important to remember that effort and results are not equal.

A commonly asked question about work breakdown structure is "Does my organization need it?" In short: a work breakdown structure isn't optional, but the degree to which it's defined is. At a minimum, a work breakdown structure should contain all of the available work items and should define the relationship of any single work item to any other single work item.

A work breakdown structure can also be used provide a structure from which effort can be compared to results. For example, you can use work breakdown structure to help define the following:

- Effort and results in a way that allows them to be compared to each other
- Effort as a measurement of progress toward a result

As a concept, work breakdown structure is a way to place all possible work items into a heirarchy that maps not only to how your organization plans work, but also how your organization values work. In practice, there are many types of work breakdown structures and there are varying levels of complexity. Because work breakdown structures are often unique to the organization which creates and uses them, it is important to keep in mind that a work breakdown structure only defines the framework in which your organization will do work, not the actual work items.

A work breakdown structure is represented in a task plan by how the tasks in the task plan are indented. A parent task is also called a summary task (in that the parent task includes rolled-up values from all of the child tasks). Child tasks are indented under parent tasks.

Working in a Task Plan

Working in a task plan is a process that involves keeping close track of costs, resources, and time in a way that ensures that every task in the task plan is completed within the

right timeframe, with the right amount of work, and of the right level of quality. The process that is used to manage any task plan can be broken down into five major periods:

- **Initiate** Use this period to define the scope of the project, including deliverables, dates (start and finish), goals, stakeholders, team members, costs, and what the expected outcome of all work done should be.
- **Plan** Use this period to define the actual work that needs to be completed, the resources that will be required to complete that work, the individual tasks to which individual resources will be assigned, and the order in which work will need to be completed. Take steps during this phase to ensure that you have a good understanding of what it is that you want to complete. Ensure that the task plan is organized, including the sequence of tasks (the order in which they are scheduled) and that you have the right resources lined up. This will help to ensure that the task plan is completed on time, that tasks are scoped accurately, that the right resources are assigned to the right tasks, that you have the budget to complete all of the tasks, that risks are anticipated, and that there is a plan to deal with issues as they arise.
- **Execute** Use this period to finalize the plan (getting executive approval, finalizing the communication plan, saving the initial task plan baseline, and so on) and then starting work on the tasks outlined in the task plan.
- **Control** Use this period to manage the day-to-day aspects of the task plan.
- **Close** Use this period to ensure that all of the work outlined in the task plan was done to the satisfaction of stakeholders, team members, executive sponsors, and customers.

For more information, see the following topics:

- [Using the File Menu \[page 74\]](#)
- [Using the View Menu \[page 75\]](#)
- [Using the Tools Menu \[page 75\]](#)
- [Using the Icon and Right-Click Menus \[page 75\]](#)
- [Indicators \[page 75\]](#)

Using the File Menu

You can use the File menu to do the following:

- Export a task plan to Microsoft Project
- Export a task plan to PDF
- Preview a task plan before printing
- Print a task plan
- Publish a task plan
- Revert to the last published version of a task plan
- Revert to the last saved version of a task plan
- Save a task plan

Using the View Menu

You can use the View menu to do the following:

- Find a task in a task plan
- View task plan information
- View a task plan as a Gantt chart
- View a task plan as a network diagram
- View a task plan as work breakdown structure
- View a task plan with a histogram
- View a task plan with a chart
- View resource usage
- View task usage

Using the Tools Menu

You can use the Tools menu to do the following:

- Clear a baseline (for a single task or for an entire task plan)
- Reload a task plan
- Set a baseline (for a single task or for an entire task plan)
- Substitute a resource
- Update timesheet actuals




Using the Icon and Right-Click Menus







You can use the icons and right-click menu options to do the following:

- Assign resources to tasks
- Copy tasks
- Organize tasks
- Link tasks
- View task plan tables

Indicators

The first column in a Gantt spreadsheet displays graphical indicators that shows special conditions that may exist for tasks in that spreadsheet.

Indicator	Description
	The task is 100% complete.
	The task has a note.
	The task has a date constraint.

Indicator	Description
	The task has missed its deadline.
	The task uses its own calendar.
	The task does not have enough available working hours in the task and/or resource calendar. The assignment cannot be completed as originally scheduled. Rare. This is sometimes referred to as non-intersecting calendars.
	The task is a parent task to which resources are assigned.
	The task is a subproject.
	The task is a subproject that cannot be opened. Rare.

Using Task Plan Tables

A task plan table is a default grouping of data about tasks (and related information about those tasks) currently in a task plan.

For more information, see the following topics:

- [Baseline \[page 76\]](#)
- [Constraint Dates \[page 77\]](#)
- [Cost \[page 77\]](#)
- [Custom Fields \[page 78\]](#)
- [Default \[page 78\]](#)
- [Earned Value \[page 79\]](#)
- [Earned Value - Cost \[page 80\]](#)
- [Earned Value - Schedule \[page 81\]](#)
- [Name \[page 82\]](#)
- [Schedule - CPM \[page 82\]](#)
- [Schedule Variance \[page 83\]](#)
- [Summary \[page 83\]](#)
- [Task / Resource Complete Story \[page 84\]](#)
- [Tracking \[page 85\]](#)
- [Work \[page 86\]](#)

Baseline

The **Baseline** task plan table is used to view baseline data for all tasks in a task plan, including baseline costs, durations, start and finish dates, and planned work.

Baseline Fields	Description
Baseline Cost	The original, planned cost for a task (or a task plan).
Baseline Duration	The original, planned duration for a task (or a task plan).
Baseline Finish	The original, planned finish date for a task (or a task plan).
Baseline Start	The original, planned start date for a task (or a task plan).
Baseline Work	The original, planned work for a task (or a task plan).
Name	The name of a task (or a task plan).

Constraint Dates

The **Constraint Dates** task plan table is used to view the constraints that have been applied to all of the tasks in a task plan.

Constraint Dates Fields	Description
Constraint Date	The date (start or finish) upon which the constraint is based. Required for Finish No Earlier Than, Finish No Later Than, Must Finish On, Must Start On, Start No Earlier Than, or Start No Later Than . This is not used with the As Late As Possible or As Soon As Possible constraints.
Constraint Type	The constraint that has been set for a task. A constraint can be one of the following: As Late As Possible, As Soon As Possible, Finish No Earlier Than, Finish No Later Than, Must Finish On, Must Start On, Start No Earlier Than, or Start No Later Than .
Duration	A duration is the total amount of time required to complete a task, based on a task's start and finish dates. A duration is always based on how a day is defined in the working calendar associated with the task plan. A day is defined (by default) as being 8 hours; therefore, a duration of 1 day in a task is 8 hours.
Name	The name of a task (or a task plan).

Cost

The **Cost** task plan table is used to view cost data for tasks in a task plan, including baseline, actual, and remaining.

Cost Fields	Description
Actual Cost	The actual cost to complete actual work for a task (or a task plan).
Baseline Cost	The original, planned cost for a task (or a task plan).
Cost	The amount of money that is spent to produce something of value. In a task plan, a cost is the amount of money that is spent while finishing a task. For example, a resource's hourly billing rate or the cost of renting a tractor (a material resource) for a day. A cost can be associated with a task, a resource, an assignment, or a task plan.
Name	The name of a task (or a task plan).
Remaining Cost	The cost required to finish the remaining amount of work for all resources assigned to the task.

Custom Fields

The **Custom Fields** task plan table is used to view data that is available in a task plan, but created and managed as custom attributes (outside of a task plan).

Default

The **Default** task plan table is used to view the default set of data for a task plan: name, start and finish dates, durations, and the resources who have been assigned (or allocated) to work on the task.

Default Fields	Description
Duration	A duration is the total amount of time required to complete a task, based on a task's start and finish dates. A duration is always based on how a day is defined in the working calendar associated with the task plan. A day is defined (by default) as being 8 hours; therefore, a duration of 1 day in a task is 8 hours.
Finish	The date on which a task is scheduled to finish.
Name	The name of a task (or a task plan).
Predecessors	The unique ID for a predecessor task in the task plan.
Resource Names	The name of the resource (or resources) who are assigned to a task in a task plan.
Start	The date on which a task is scheduled to start.

Earned Value

The **Earned Value** task plan table is used to view earned value data, such as actual cost of work performed, budgeted costs of work performed and work scheduled, and variances.

Earned Value Fields	Description
ACWP	Actual cost of work performed. The actual cost of all completed work, including resource costs, actual work, fixed costs, and so on, up to the current date.
BAC	Budget at completion. The total planned cost to complete every scheduled task. This is sometimes called baseline cost.
BCWP	Budgeted cost of work performed. The cumulative costs of planned work that has been actually completed, and then compared to the original estimates for that work. This is sometimes called earned value (EV).
BCWS	Budgeted cost of work scheduled. The planned cost of total amount of work that has been scheduled. This is sometimes called planned value (PV).
CV	Cost variance. The difference between planned costs of work performed and the actual costs of work performed. The calculation for cost variance is as follows: $CV = BCWP - ACWP$. When the cost variance is less than 1, it is an indicator that the task plan is over budget.
EAC	Estimate at completion. The expected cost to complete all remaining work. The calculation for estimate at completion is as follows: $EAC = ACWP + (BAC - BCWP)$. BAC - BCWP represents the planned costs of all uncompleted tasks. This is sometimes referred to as the estimate to complete (ETC).
Name	The name of a task (or a task plan).
SV	Schedule variance. The difference in costs between current progress and expected progress. The calculation for schedule variance is as follows: $SV = BCWP - BCWS$. When the schedule variance is less than 0, it is an indicator that the task plan is behind schedule.
VAC	Variance at completion. The difference between the the total planned cost to complete every scheduled task and the expected cost to complete all remaining work. The calculation for variance at completion is as follows: $BAC - EAC$. When the variance at completion is negative, it is an indicator that your task plan is over budget.

Earned Value - Cost

The **Earned Value - Cost** task plan table is used to view a collection of earned value data that is targeted at the task plan's cost to help compare where task costs currently are, as opposed to where task costs should actually be.

Earned Value - Cost Fields	Description
BAC	Budget at completion. The total planned cost to complete every scheduled task. This is sometimes called baseline cost.
BCWP	Budgeted cost of work performed. The cumulative costs of planned work that has been actually completed, and then compared to the original estimates for that work. This is sometimes called earned value (EV).
BCWS	Budgeted cost of work scheduled. The planned cost of total amount of work that has been scheduled. This is sometimes called planned value (PV).
CPI	Cost performance index. The difference in value between the budgeted cost of work performed and the actual cost of work performed. The calculation for cost performance index is as follows: $CPI = BCWP / ACWP$. When the cost performance index is greater than 1, it is an indicator that the task plan is over budget.
CV	Cost variance. The difference between planned costs of work performed and the actual costs of work performed. The calculation for cost variance is as follows: $CV = BCWP - ACWP$. When the cost variance is less than 1, it is an indicator that the task plan is over budget.
CV Percent	Cost variance percentage. The percentage over or under budget, based on cost variance and the planned cost of work in the task plan. The calculation for cost variance percentage is as follows: $CV\% = CV / BCWP$. When the cost variance percentage is greater than 1, it is an indicator that the task plan is under budget.
EAC	Estimate at completion. The expected cost to complete all remaining work. The calculation for estimate at completion is as follows: $EAC = ACWP + (BAC - BCWP)$. BAC - BCWP represents the planned costs of all uncompleted tasks. This is sometimes referred to as the estimate to complete (ETC).
Name	The name of a task (or a task plan).

Earned Value - Cost Fields	Description
TCPI	To-complete performance index. A ratio of remaining work. The difference between the planned costs of all completed tasks to the to the planned costs of all remaining, uncompleted tasks. The calculation for to-complete performance index is as follows: $TCPI = [BAC - BCWP] / [BAC - ACWP]$. When the to-complete performance index is greater than 1, it is an indicator that close attention should be paid to all of the work that remains so that the task plan can stay within budget.
VAC	Variance at completion. The difference between the the total planned cost to complete every scheduled task and the expected cost to complete all remaining work. The calculation for variance at completion is as follows: $BAC - EAC$. When the variance at completion is negative, it is an indicator that your task plan is over budget.

Earned Value - Schedule

The **Earned Value - Schedule** task plan table is used to view a collection of earned value data that is targeted at the task plan's schedule to help determine how the task plan is doing in terms of cost, actual progress and to help compare where the task plan currently is, as opposed to where the task plan should actually be.

Earned Value - Schedule Fields	Description
BCWP	Budgeted cost of work performed. The cumulative costs of planned work that has been actually completed, and then compared to the original estimates for that work. This is sometimes called earned value (EV).
BCWS	Budgeted cost of work scheduled. The planned cost of total amount of work that has been scheduled. This is sometimes called planned value (PV).
CSI	Cost schedule index. The difference in value between the cost performance index and schedule performance index. The calculation for cost schedule index is as follows: $CSI = CPI \times SPI$. Cost schedule index should be as close to 1 as possible. When the cost schedule index is not one, it is an indicator that the task plan is behind schedule and over budget. The farther away from 1, the farther behind and/or over budget the task plan is.
Name	The name of a task (or a task plan).

Earned Value - Schedule Fields	Description
SPI	Schedule performance index. The difference in value between current progress and the expected progress. The calculation for schedule performance index is as follows: $SPI = BCWP / BCWS$. When the schedule performance index is less than 1, it is an indicator that the task plan is behind schedule.
SV	Schedule variance. The difference in costs between current progress and expected progress. The calculation for schedule variance is as follows: $SV = BCWP - BCWS$. When the schedule variance is less than 0, it is an indicator that the task plan is behind schedule.
SV Percent	Schedule variance percent. A percentage that shows how well the schedule is doing in relation to the cost of scheduled work. The calculation for schedule variance percent is as follows: $SV\% = (SV / BCWS) * 100$. When the schedule variance percentage is greater than 1, it is an indicator that the task plan is behind schedule.

Name

The **Name** task plan table is used to view all of the tasks in a task plan, by name.

Name Fields	Description
Name	The name of a task (or a task plan).

Schedule - CPM

The **Schedule - CPM** task plan table is used to view the schedule of a task plan so that you can identify the critical path and take steps to find room in the task plan (if needed) to help ensure that the tasks that are on the critical path are completed on-schedule.

Schedule - CPM Fields	Description
Critical	Indicates whether a task is on the critical path. The critical path is based on the longest possible sequence of tasks, factoring in their start dates, finish dates, dependencies, and constraints, and then comparing the calculated finish date of the last task in the sequence to the planned finish date for the task plan. A task on the critical path must be finished on time in order for the task plan to be finished on time.
Finish	The date on which a task is scheduled to finish.

Schedule - CPM Fields	Description
Free Slack	The amount of time in a task plan where a task can be delayed without causing a successor task (or the task plan itself) to be delayed.
Late Finish	The date by which a task must finish before it causes another task (or the task plan itself) to be delayed.
Late Start	The date by which a task must start before it causes another task (or the task plan itself) to be delayed.
Name	The name of a task (or a task plan).
Start	The date on which a task is scheduled to start.
Total Slack	The amount of time in a task plan where a task can be delayed without causing another task (or the task plan itself) to be delayed.

Schedule Variance

The **Schedule Variance** task plan table is used to compare baseline start and finish dates with current start and finish dates so that you can see how the task plan is doing in relation to where it should be.

Schedule Variance Fields	Description
Baseline Finish	The original, planned finish date for a task (or a task plan).
Baseline Start	The original, planned start date for a task (or a task plan).
Finish	The date on which a task is scheduled to finish.
Finish Offset	The difference between the baseline finish date for a task and the current, actual, scheduled finish date.
Name	The name of a task (or a task plan).
Start	The date on which a task is scheduled to start.
Start Offset	The difference between the baseline start date for a task and the current, actual, scheduled start date.

Summary

The **Summary** task plan table is used to get a quick overview of task plan details.

Summary Fields	Description
Cost	The amount of money that is spent to produce something of value. In a task plan, a cost is the amount of money that is spent while finishing a task. For example, a resource's hourly billing rate or the cost of renting a tractor (a material resource) for a day. A cost can be associated with a task, a resource, an assignment, or a task plan.
Duration	A duration is the total amount of time required to complete a task, based on a task's start and finish dates. A duration is always based on how a day is defined in the working calendar associated with the task plan. A day is defined (by default) as being 8 hours; therefore, a duration of 1 day in a task is 8 hours.
Finish	The date on which a task is scheduled to finish.
Name	The name of a task (or a task plan).
Percent Complete	The progress made against a task (or a task plan), expressed as a percentage (of 100%).
Start	The date on which a task is scheduled to start.
Work	The total amount of work that has been scheduled for a task.

Task / Resource Complete Story

The **Task / Resource Complete Story** task plan table is used to track the durations of tasks, how complete those tasks are, and whether their status has been captured in a resource's timesheet.

Task / Resource Complete Story Fields	Description
Actual Duration	The amount of time (typically measured in working days) that has been actually needed to complete actual work for a task (or a task plan).
Duration	A duration is the total amount of time required to complete a task, based on a task's start and finish dates. A duration is always based on how a day is defined in the working calendar associated with the task plan. A day is defined (by default) as being 8 hours; therefore, a duration of 1 day in a task is 8 hours.
Name	The name of a task (or a task plan).

Task / Resource Complete Story Fields	Description
Percent Complete	The progress made against a task (or a task plan), expressed as a percentage (of 100%).
Remaining Duration	The amount of time required to finish the remaining amount of work for all resources assigned to the task.
Timesheet Closed	Indicates whether the timesheet is closed.
Timesheet Complete	Indicates whether the timesheet is complete.

Tracking

The **Tracking** task plan table is used to track actuals (and progress of actuals), such as actual cost, actual duration, actual finish and actual start dates, and actual work for each task in the task plan.

Tracking Fields	Description
Actual Cost	The actual cost to complete actual work for a task (or a task plan).
Actual Duration	The amount of time (typically measured in working days) that has been actually needed to complete actual work for a task (or a task plan).
Actual Finish	The date by which work on a task (or a task plan) actually finished.
Actual Start	The date by which work on a task (or a task plan) actually started.
Actual Work	The amount of work that has been completed, to-date, by all resources who have been assigned to a task (or a task plan).
Name	The name of a task (or a task plan).
Percent Complete	The progress made against a task (or a task plan), expressed as a percentage (of 100%).

Tracking Fields	Description
Physical Percent Complete	The percentage of work completed, measured independently of a task's duration. Use physical percent complete to manually override budgeted cost of work performed values when the process of completing a task can be measured independently of the task's duration. Sometimes used as an alternative to budgeted cost of work scheduled (BCWS).
Remaining Duration	The amount of time required to finish the remaining amount of work for all resources assigned to the task.

Work

The **Work** task plan table is used to view work information, such as task durations, start and finish dates, task types, assignments, and scheduled work.

Work Fields	Description
Duration	A duration is the total amount of time required to complete a task, based on a task's start and finish dates. A duration is always based on how a day is defined in the working calendar associated with the task plan. A day is defined (by default) as being 8 hours; therefore, a duration of 1 day in a task is 8 hours.
Effort Driven	Indicates whether the total amount of work required to complete the task is directly affected by the number of resources that have been assigned to it.
Finish	The date on which a task is scheduled to finish.
Name	The name of a task (or a task plan).
Resource Names	The name of the resource (or resources) who are assigned to a task in a task plan.
Start	The date on which a task is scheduled to start.
Type	<p>The task type; used to determine how work, assignment units, and durations are calculated for this task in the task plan:</p> <ul style="list-style-type: none"> ▪ Fixed duration The values for the task's start and finish dates are fixed values. ▪ Fixed work The values for the work to be completed are fixed values. ▪ Fixed units The values for the resources assigned to the task are fixed values.

Work Fields	Description
Work	The total amount of work that has been scheduled for a task.

Dialog Boxes

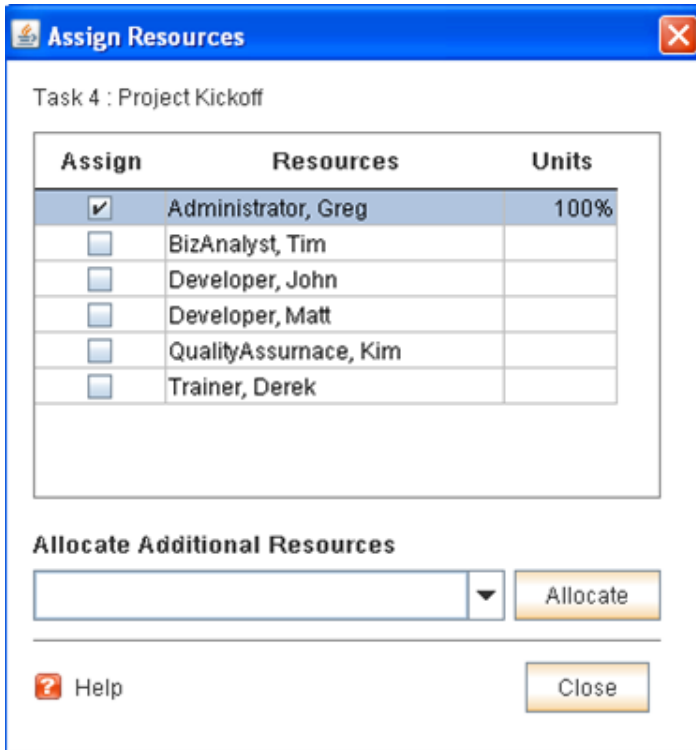
The **Task Plan** view uses dialog boxes in some places to provide access to task plan information and details.

For more information, see the following topics:

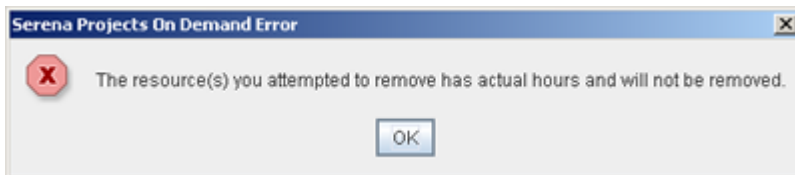
- [Assign Resources \[page 87\]](#)
- [Clear Baseline \[page 88\]](#)
- [Find \[page 88\]](#)
- [Insert Column \[page 89\]](#)
- [Print \[page 89\]](#)
- [Project Information \[page 90\]](#)
- [Resource Mapping \[page 95\]](#)
- [Set Baseline \[page 95\]](#)
- [Save \[page 96\]](#)
- [Substitute Resources \[page 96\]](#)
- [Task Dependency \[page 97\]](#)
- [Task Information \[page 97\]](#)
- [Update Projects \[page 105\]](#)
- [Update Tasks \[page 105\]](#)

Assign Resources

The **Assign Resources** dialog box is used to assign one or more resources to a task in a task plan. Only resources that have been allocated to the task plan in which you are making assignments will be available.

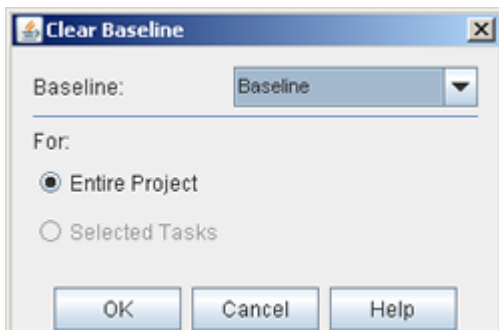


If you attempt to remove a resource, and that resource has actual hours, the resource will not be removed.



Clear Baseline

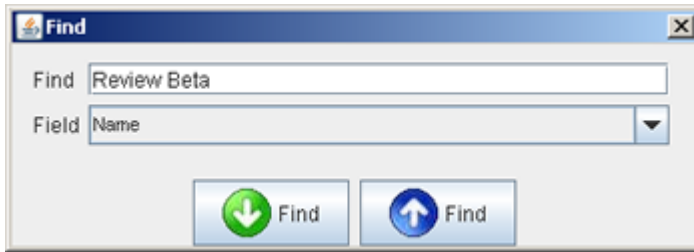
The **Clear Baseline** dialog box is used to remove a baseline that has been saved for a task or for a task plan.



Find

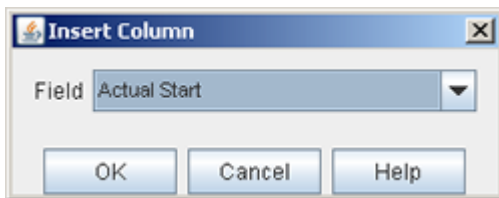
The **Find** dialog box is used to find information in a task plan. Enter the information that you want to find, select the field in which you expect to find that information, and then

click **Find**. The down-arrow **Find** button will search below your current position in the task plan; the up-arrow **Find** button will search above your current position. If you have found a work item, clicking the **Find** buttons (again) will provide previous/next functionality.



Insert Column

The **Insert Column** dialog box is used to add columns to the spreadsheet view in a task plan.

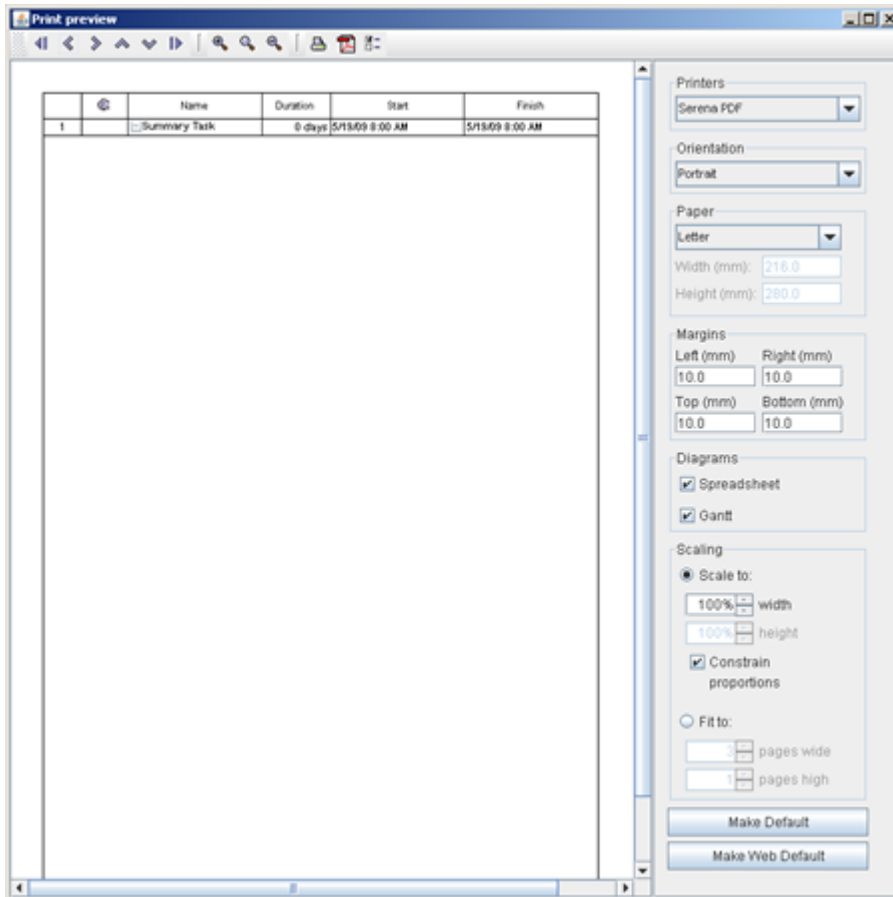


Print

The **Print** dialog box is used to print a task plan.

Print Preview

The **Print Preview** dialog box is used to preview a task plan before printing it.



Project Information

The **Project Information** dialog box is used to display information that is common to the entire task plan, such as general information like the name of the task plan, whether it's forward-scheduled, and so on, task plan statistics, and notes about that task. The dialog box can be kept open when you select different tasks; the data in the dialog box will be updated for the currently selected task.

Tab: General

The **General** tab in the **Project Information** dialog box is used to manage dates (start, finish, current, and status), the task plan priority, and to indicate if you want scheduling to be based on the task plan's start date.

The screenshot shows a 'Project Information' dialog box with three tabs: 'General', 'Statistics', and 'Notes'. The 'General' tab is active. It contains the following fields:

- Name: Update user interface
- Manager: Robert Forster
- Start: 5/19/08 8:00 AM
- Finish: 11/18/10 4:00 PM
- Current Date: 5/18/09 7:00 AM
- Status Date: 5/18/09
- Forward scheduled
- Priority: 500

At the bottom of the dialog are 'Close' and 'Help' buttons.

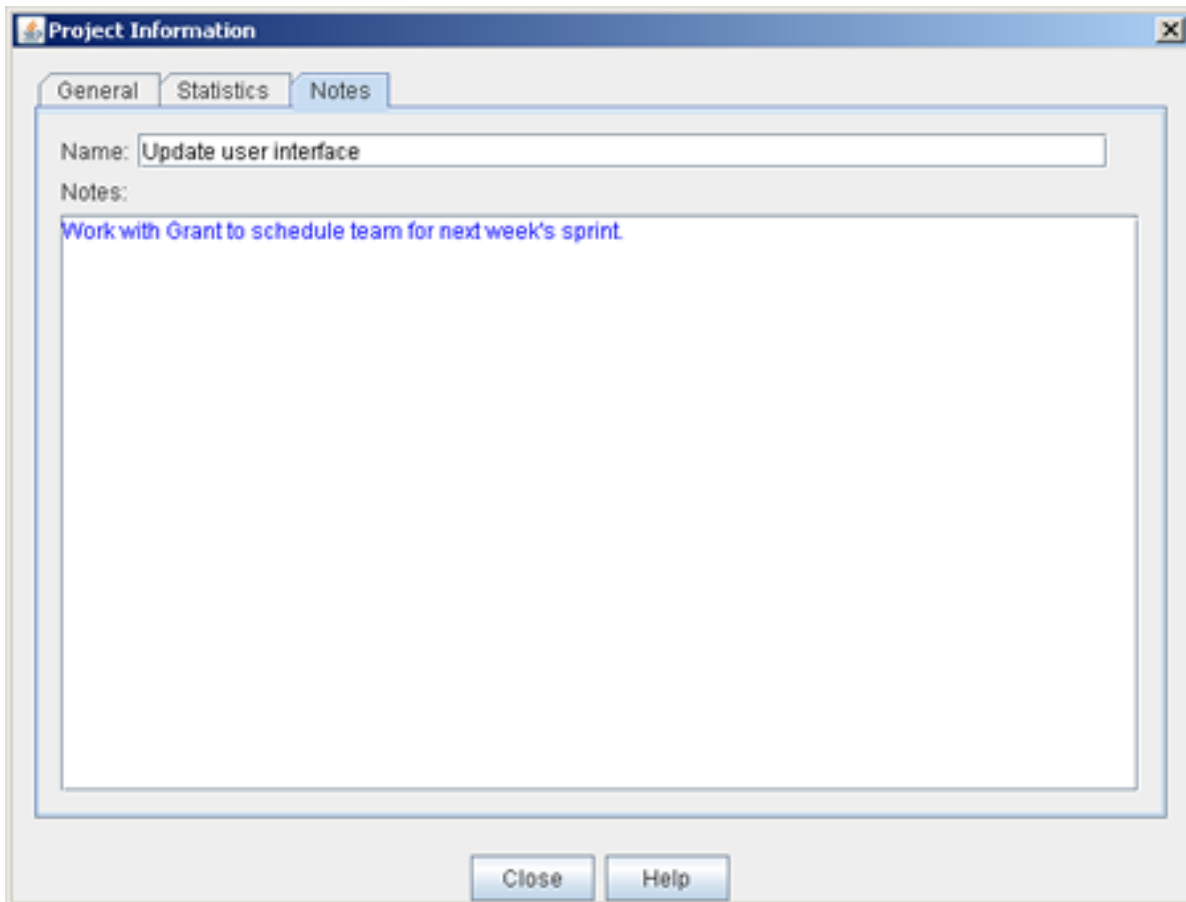
The following fields are available from the **General** tab in the **Project Information** dialog box:

Fields	Description
Current Date	The current date.
Finish	The date on which a task is scheduled to finish.
Forward Scheduled	Indicates that scheduling for the task plan should take place from the start date.
Name	The name of a task (or a task plan).
Manager	The name of the project manager who is responsible for the task plan.
Priority	Indicates the importance of the task in relation to other tasks. 500 is the default value; 1000 is the highest priority and 0 is the lowest priority. The higher the number, the higher the priority.
Start	The date on which a task is scheduled to start.

Fields	Description
Status Date	The date on which the current status of a work item, task, or project was last updated.

Tab: Notes

The **Notes** tab in the **Project Information** dialog box is used to store notes that have been entered about that task.



The following fields are available from the **Notes** tab in the **Project Information** dialog box:

Fields	Description
Name	The name of a task (or a task plan).
Notes	The notes that have been entered about a task (or a task plan).

Tab: Statistics

The **Statistics** tab in the **Project Information** dialog box is used to view project statistics for start, finish, duration, work, and cost data. Including baseline, actual, and remaining data. The information in this tab is read-only.

The screenshot shows the 'Project Information' dialog box with the 'Statistics' tab selected. The project name is 'Update user interface'. The data is as follows:

Field	Value	Field	Value
Name:	Update user interface	Start:	5/19/08 8:00 AM
Start:	5/19/08 8:00 AM	Finish:	11/18/10 4:00 PM
Baseline Start:		Baseline Finish:	
Actual Start:		Actual Finish:	
Duration:	654 days	Baseline Duration:	0 days
Actual Duration:	0 days	Remaining Duration:	654 days
Work:	12,104 hours	Baseline Work:	0 hours
Actual Work:	0 hours	Remaining Work:	12,104 hours
Cost:	\$0.00	Baseline Cost:	\$0.00
Actual Cost:	\$0.00	Remaining Cost:	\$0.00

Buttons: Close, Help

The following fields are available from the **Statistics** tab in the **Project Information** dialog box:

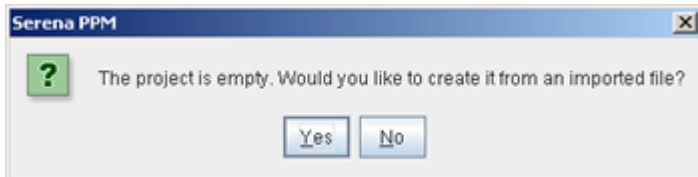
Fields	Description
Actual Cost	The actual cost to complete actual work for a task (or a task plan).
Actual Duration	The amount of time (typically measured in working days) that has been actually needed to complete actual work for a task (or a task plan).
Actual Finish	The date by which work on a task (or a task plan) actually finished.
Actual Start	The date by which work on a task (or a task plan) actually started.

Fields	Description
Actual Work	The amount of work that has been completed, to-date, by all resources who have been assigned to a task (or a task plan).
Baseline Cost	The original, planned cost for a task (or a task plan).
Baseline Duration	The original, planned duration for a task (or a task plan).
Baseline Finish	The original, planned finish date for a task (or a task plan).
Baseline Start	The original, planned start date for a task (or a task plan).
Baseline Work	The original, planned work for a task (or a task plan).
Cost	The amount of money that is spent to produce something of value. In a task plan, a cost is the amount of money that is spent while finishing a task. For example, a resource's hourly billing rate or the cost of renting a tractor (a material resource) for a day. A cost can be associated with a task, a resource, an assignment, or a task plan.
Duration	A duration is the total amount of time required to complete a task, based on a task's start and finish dates. A duration is always based on how a day is defined in the working calendar associated with the task plan. A day is defined (by default) as being 8 hours; therefore, a duration of 1 day in a task is 8 hours.
Finish	The date on which a task is scheduled to finish.
Name	The name of a task (or a task plan).
Remaining Cost	The cost required to finish the remaining amount of work for all resources assigned to the task.
Remaining Duration	The amount of time required to finish the remaining amount of work for all resources assigned to the task.
Remaining Work	The amount of time required for all resources (who are assigned to the task) to complete the task.
Start	The date on which a task is scheduled to start.
Work	The total amount of work that has been scheduled for a task.

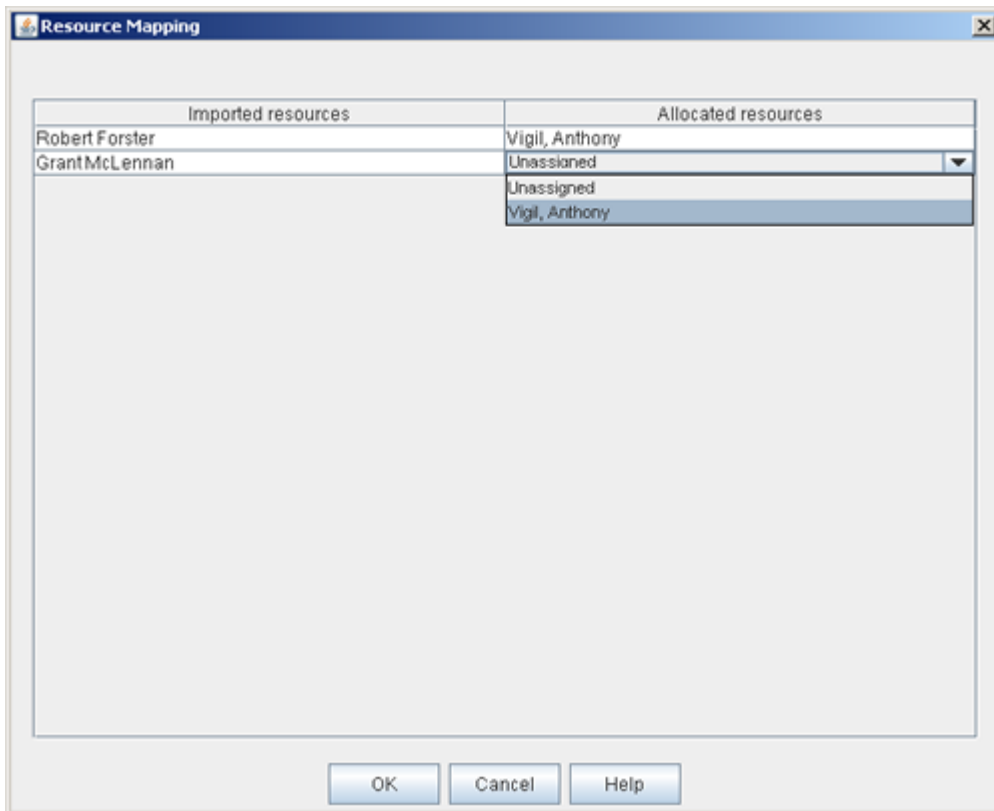
Resource Mapping

The **Resource Mapping** dialog box is used to map any resources in an imported project to resources who are already members of the project team. When you import projects from Microsoft Project that contain one or more resource assignments, you can map a resource (and all of their assignments) in the project to a single resource who belongs to the resource pool for that task plan. Resource mapping will apply all assignments to the newly-mapped resource. If you choose not to map an assignment, it will be left unassigned.

When a new project is created, and when you access the task plan for the first time, you can choose to create the task plan from an imported file.

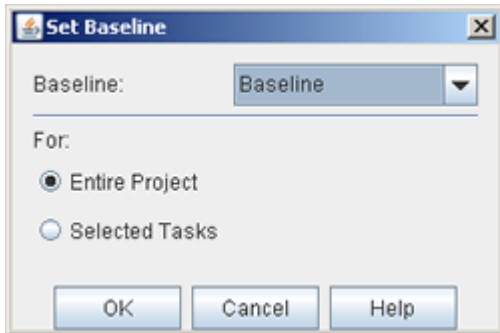


Select yes, and then associate the resource assignments in the project plan to the resources to which you want to apply the assignments.



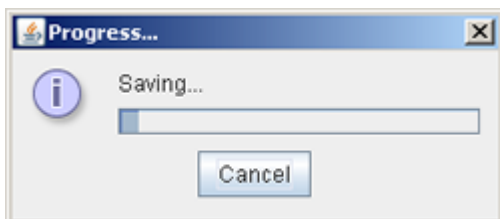
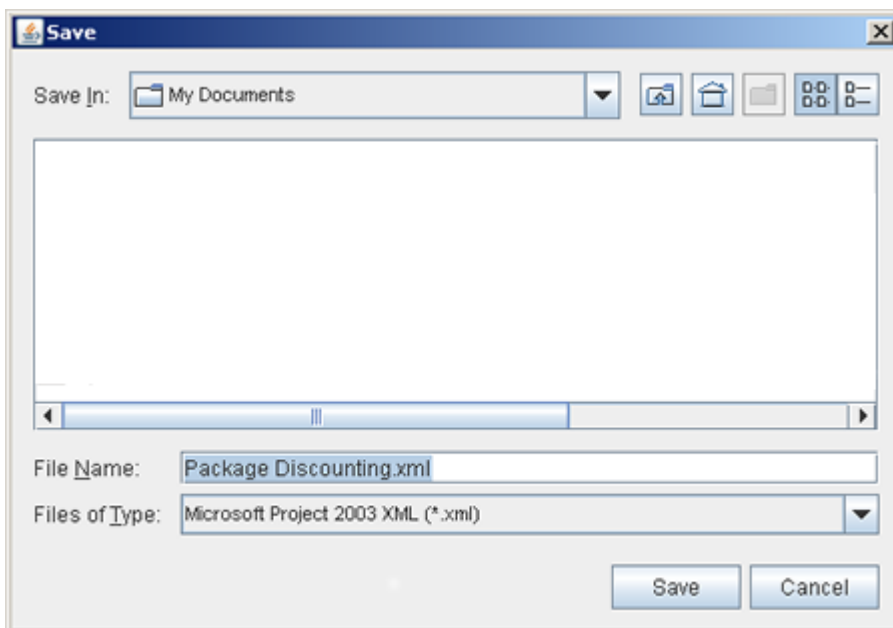
Set Baseline

The **Set Baseline** dialog box is used to save one or more baselines for a task or for an entire task plan.



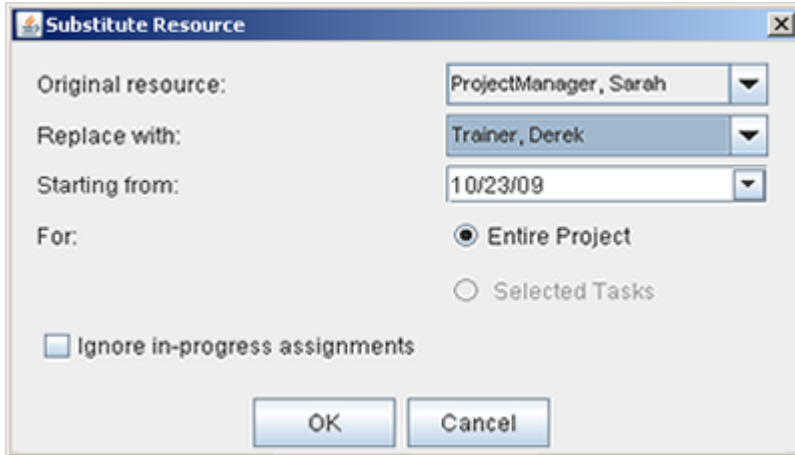
Save

The **Save** dialog box is used to save a task plan to a format (MPP) that can be used in Microsoft Project.



Substitute Resources

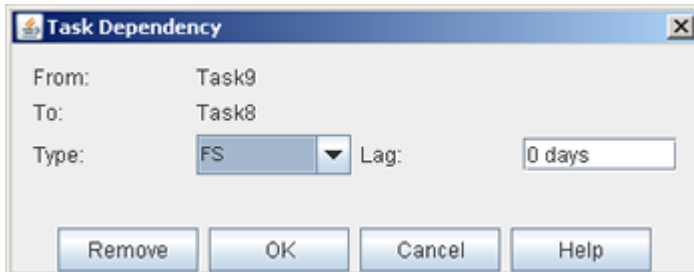
The **Substitute Resources** dialog box is used to make resource substitutions. You can only substitute resources that have been allocated to be available for work assignments in the task plan. Choose the resource you want to substitute, then select the resource you want to use as the replacement, set the starting date, and then click **OK**.



Task Dependency

A dependency (often called a linked task) determines how a task in a task plan is scheduled, in relation to all other tasks in the task plan. A dependency is based on a task's start date and/or finish date. A dependency that determines how other tasks in a task plan are scheduled is called a predecessor. A dependency that relies on another task's start date or finish date to determine how it can be scheduled is called a successor.

The **Task Dependency** dialog box is used to manage the dependency types (both predecessor and successor) that have been created within a task plan.



Task Information

The **Task Information** dialog box is used to display information that is common to any task, such as fields, predecessor and successor tasks, assignments, and notes about that task. The dialog box can be kept open when you select different tasks; the data in the dialog box will be updated for the currently selected task.

Tab: Advanced

The **Advanced** tab in the **Task Information** dialog box is used to manage constraints, work breakdown structure codes, and to indicate the task type, whether the task is displayed as a milestone, whether a task ignores a resource calendar, and so on.

The screenshot shows the 'Task Information - 5' dialog box with the 'Advanced' tab selected. The fields are as follows:

- Name: Release to GA Plan
- WBS: (empty)
- Display task as milestone:
- Constraint Type: Start No Earlier Than
- Constraint Date: 3/25/09 8:00 AM
- Deadline: 4/29/09
- Type: Fixed Duration
- Effort Driven:
- Ignore Resource Calendar:
- Earned Value Method: % Complete

The following fields are available from the **Advanced** tab in the **Task Information** dialog box:

Fields	Description
Constraint Date	The date (start or finish) upon which the constraint is based. Required for Finish No Earlier Than , Finish No Later Than , Must Finish On , Must Start On , Start No Earlier Than , or Start No Later Than . This is not used with the As Late As Possible or As Soon As Possible constraints.
Constraint Type	The constraint that has been set for a task. A constraint can be one of the following: As Late As Possible , As Soon As Possible , Finish No Earlier Than , Finish No Later Than , Must Finish On , Must Start On , Start No Earlier Than , or Start No Later Than .
Deadline	A deadline is a date in the task plan schedule by which a task needs to be completed. A deadline appears in a Gantt chart view as a diamond.
Display task as milestone	Indicates whether the task is displayed as a milestone task. A milestone is a task that has a duration of zero days.
Earned Value Method	Earned value method. This field is manually entered (and its value is not calculated). Use earned value method when there are tasks in a task plan that require physical percent complete.

Fields	Description
Effort Driven	Indicates whether the total amount of work required to complete the task is directly affected by the number of resources that have been assigned to it.
Name	The name of a task (or a task plan).
Ignore Resource Calendar	Indicates whether the task, when scheduled, ignores calendars that are associated with one or more resources who are assigned to this task (or task plan).
Type	The task type; used to determine how work, assignment units, and durations are calculated for this task in the task plan: fixed duration (values for the task's start and finish dates are fixed), fixed work (values for the work to be completed are fixed), or fixed units (values for resources assigned to the task are fixed).
WBS	Work breakdown structure. The hierarchy of tasks in a task plan. A work breakdown structure is often represented as a series of delimited numbers, letters, and/or characters, separated by period, plus, slash, and/or minus symbols. For example, 1.A.a could be the way that your organization chooses to define the sequence. When a task is the 2nd summary task in the task plan (itself with a series of summary tasks), the 3rd task for the 2nd sub-summary task would have a work breakdown structure of 2.B.c.

Tab: General

The **General** tab in the **Task Information** dialog box is used to track durations, priorities, costs, dates, and so on.

The screenshot shows the 'Task Information - 2' dialog box with the following fields and values:

- Name: Release to GA
- Duration: 5 days
- Estimated:
- Percent Complete: 100%
- Priority: 500
- Cost: 50
- Work: 5 hours
- Start: 4/27/09 8:00 AM
- Finish: 5/1/09 4:00 PM
- Baseline Start: (empty)
- Baseline Finish: (empty)
- Task visibility in other views: (empty)
- Investment Milestone: (empty)
- Externally Visible:

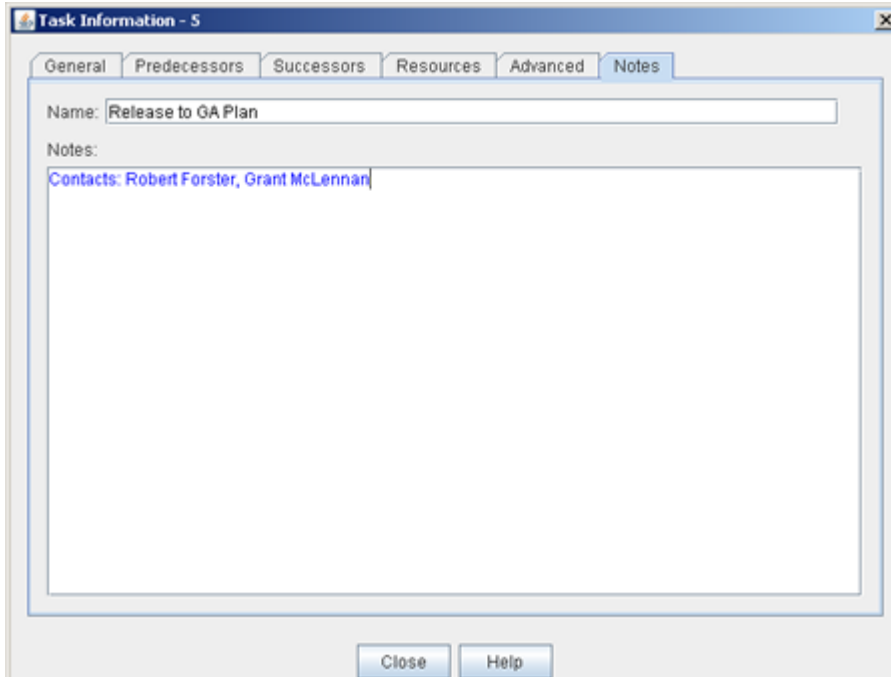
The following fields are available from the **General** tab in the **Task Information** dialog box:

Fields	Description
Baseline Finish	The original, planned finish date for a task (or a task plan).
Baseline Start	The original, planned start date for a task (or a task plan).
Cost	The amount of money that is spent to produce something of value. In a task plan, a cost is the amount of money that is spent while finishing a task. For example, a resource's hourly billing rate or the cost of renting a tractor (a material resource) for a day. A cost can be associated with a task, a resource, an assignment, or a task plan.
Duration	A duration is the total amount of time required to complete a task, based on a task's start and finish dates. A duration is always based on how a day is defined in the working calendar associated with the task plan. A day is defined (by default) as being 8 hours; therefore, a duration of 1 day in a task is 8 hours.
Estimated	Indicates whether the task's duration is an estimated duration. When a duration is an estimated duration, a question mark (?) will appear alongside it in the task plan.
Externally Visible	Indicates that this task is visible to other items within the work item hierarchy.

Fields	Description
Finish	The date on which a task is scheduled to finish.
Item Milestone	A milestone is a special task that represents an event in your project. Any task that has a duration of zero days is considered a milestone task.
Name	The name of a task (or a task plan).
Percent Complete	The progress made against a task (or a task plan), expressed as a percentage (of 100%).
Priority	Indicates the importance of the task in relation to other tasks. 500 is the default value; 1000 is the highest priority and 0 is the lowest priority. The higher the number, the higher the priority.
Start	The date on which a task is scheduled to start.
Work	The total amount of work that has been scheduled for a task.

Tab: Notes

The **Notes** tab in the **Task Information** dialog box is used to store notes that have been entered about that task.



The following fields are available from the Notes tab in the **Task Information** dialog box:

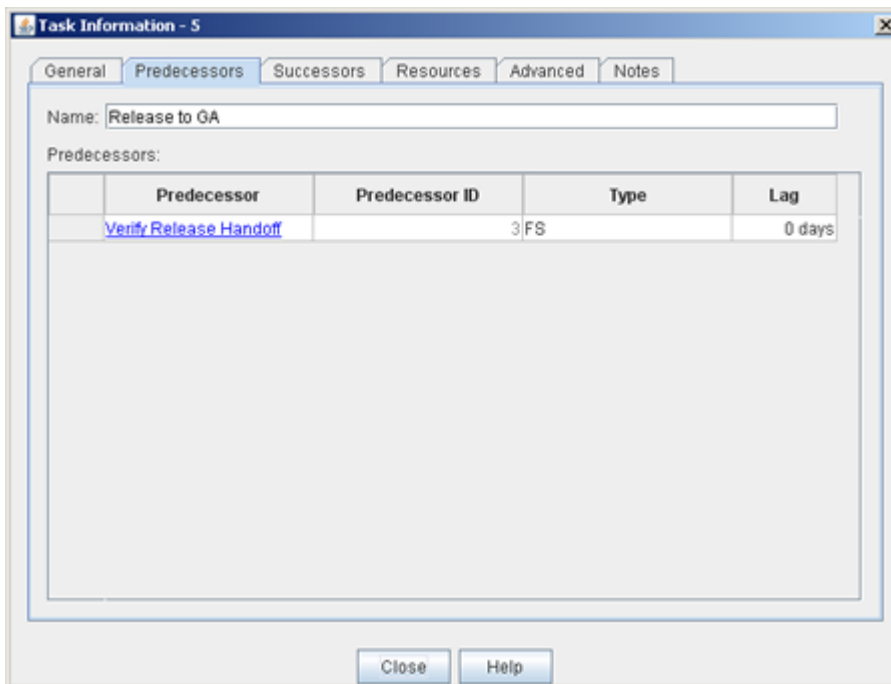
Fields	Description
Name	The name of a task (or a task plan).
Notes	The notes that have been entered about a task (or a task plan).

Tab: Predecessors

A dependency (often called a linked task) determines how a task in a task plan is scheduled, in relation to all other tasks in the task plan. A dependency is based on a task's start date and/or finish date. A dependency that determines how other tasks in a task plan are scheduled is called a predecessor. A dependency that relies on another task's start date or finish date to determine how it can be scheduled is called a successor.

A predecessor is a task that determines when another task (a successor) can be scheduled. The default link type for all links between tasks is finish-to-start (FS).

The **Predecessors** tab in the **Task Information** dialog box is used to manage predecessor tasks.



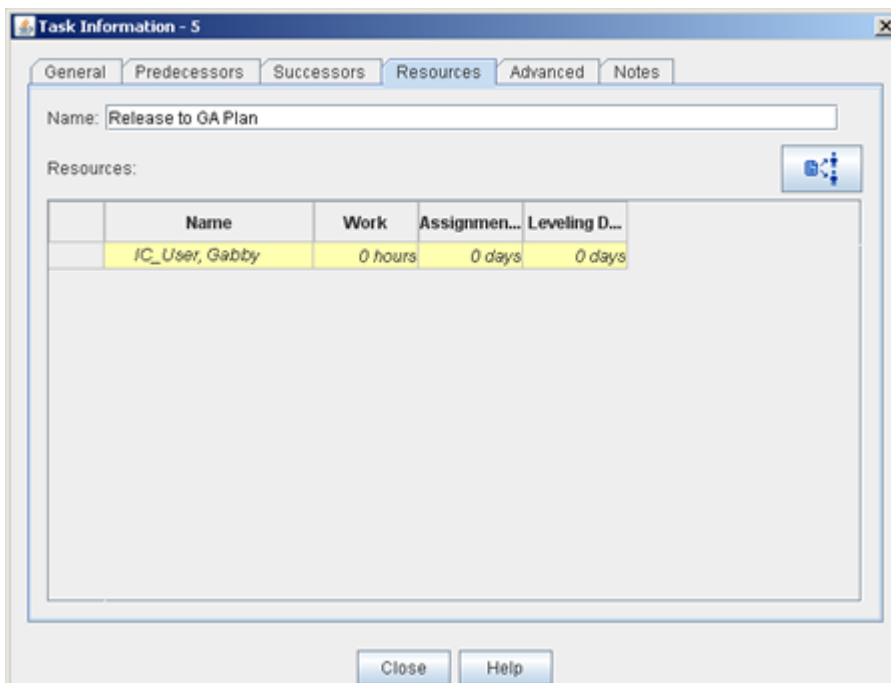
The following fields are available from the **Predecessors** tab in the **Task Information** dialog box:

Fields	Description
Lag	The amount of time in the schedule that a task can be delayed before it will affect the scheduling of other tasks. Lag occurs when there is a delay between two tasks that share a dependency.
Name	The name of a task (or a task plan).

Fields	Description
Predecessors	The unique ID for a predecessor task in the task plan.
Predecessor ID	The unique ID for a predecessor task in the task plan.
Type	The dependency relationship to the predecessor task. FS (finish to start), FF (finish to finish), SF (start to finish), or SS (start to start).

Tab: Resources

The **Resources** tab in the **Task Information** dialog box is used to view information about the resources who have been assigned to work on a task. You can add additional columns to the spreadsheet; right-click in the spreadsheet and insert a column. You can manage resource assignments by clicking the **Assign Resources** icon (to open the **Assign Resources** dialog box).



The following fields are available from the **Resources** tab in the **Task Information** dialog box:

Fields	Description
Assignment Units	The amount of units for which a resource is assigned to a task. Assignment units are a percentage, where 100% is used as the maximum value.
Levelling Delay	The amount of time that a task can be delayed, based on its early start date.

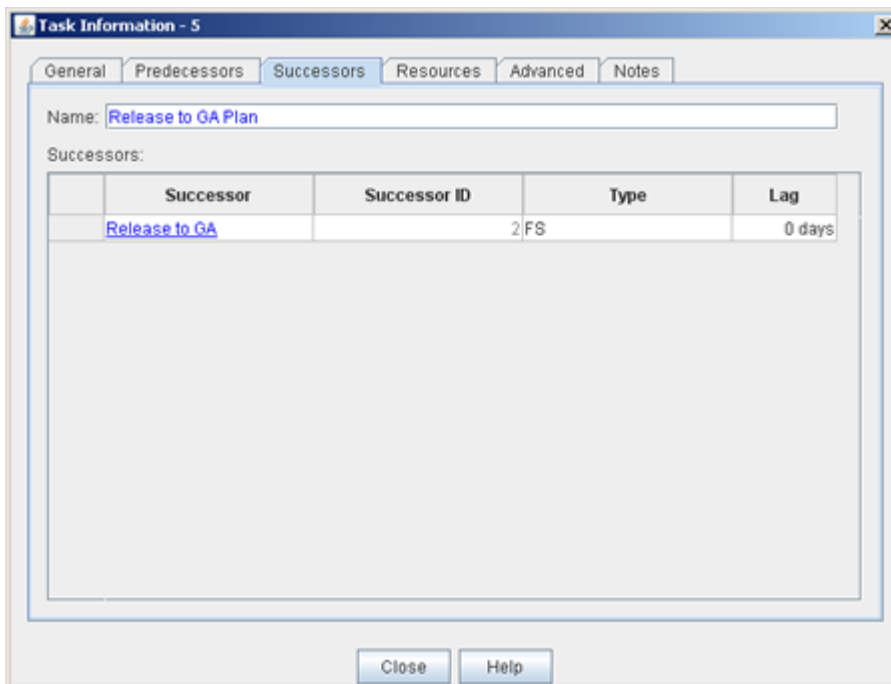
Fields	Description
Name	The name of a task (or a task plan).
Work	The total amount of work that has been scheduled for a task.

Tab: Successors

A dependency (often called a linked task) determines how a task in a task plan is scheduled, in relation to all other tasks in the task plan. A dependency is based on a task's start date and/or finish date. A dependency that determines how other tasks in a task plan are scheduled is called a predecessor. A dependency that relies on another task's start date or finish date to determine how it can be scheduled is called a successor.

A successor is a task that has its schedule determined by another task (a predecessor). The default link type for all links between tasks is finish-to-start (FS).

The **Successors** tab in the **Task Information** dialog box is used to manage successor tasks.



The following fields are available from the **Successors** tab in the **Task Information** dialog box:

Fields	Description
Lag	The amount of time in the schedule that a task can be delayed before it will affect the scheduling of other tasks. Lag occurs when there is a delay between two tasks that share a dependency.
Name	The name of a task (or a task plan).

Fields	Description
Successor	The unique ID for one or more successor tasks in the task plan.
Type	The dependency relationship to the successor task. FS (finish to start), FF (finish to finish), SF (start to finish), or SS (start to start).

Update Projects

The **Update Projects** dialog box is used to reschedule tasks that have not been completed.

Update Tasks

The **Update Tasks** dialog box is used to update tasks that have not been completed.

Fields

The following table provides a description for all of the fields that are available in a task plan:

Task Plan Fields	Description
Actual Cost	The actual cost to complete actual work for a task (or a task plan).
Actual Duration	The amount of time (typically measured in working days) that has been actually needed to complete actual work for a task (or a task plan).
Actual Finish	The date by which work on a task (or a task plan) actually finished.
Actual Fixed Cost	The actual cost to complete actual work for a task to which a fixed cost is associated.
Actual Start	The date by which work on a task (or a task plan) actually started.
Actual Work	The amount of work that has been completed, to-date, by all resources who have been assigned to a task (or a task plan).
ACWP	Actual cost of work performed. The actual cost of all completed work, including resource costs, actual work, fixed costs, and so on, up to the current date.
Assignment Units	The amount of units for which a resource is assigned to a task. Assignment units are a percentage, where 100% is used as the maximum value.
BAC	Budget at completion. The total planned cost to complete every scheduled task. This is sometimes called baseline cost.

Task Plan Fields	Description
Baseline Cost	The original, planned cost for a task (or a task plan).
Baseline Duration	The original, planned duration for a task (or a task plan).
Baseline Finish	The original, planned finish date for a task (or a task plan).
Baseline Start	The original, planned start date for a task (or a task plan).
Baseline Work	The original, planned work for a task (or a task plan).
BCWP	Budgeted cost of work performed. The cumulative costs of planned work that has been actually completed, and then compared to the original estimates for that work. This is sometimes called earned value (EV).
BCWS	Budgeted cost of work scheduled. The planned cost of total amount of work that has been scheduled. This is sometimes called planned value (PV).
CapEx	A capital expense is a cost of doing business that is typically associated with expenditures for fixed asset work item that are understood to have a benefit to the organization that exceeds one year> For example, such as buildings and equipment are considered to be capital expenses, whereas rent, office supplies, or utility expenses (such as electricity or Internet access) are not considered to be capital expenses. If an expense is not a capital expense, it is considered to be an operational expense.
Complete	Indicates whether the task is complete.
Completed Through	The date and time at which all reported actuals against a task have been reported.
Constraint Date	The date (start or finish) upon which the constraint is based. Required for Finish No Earlier Than, Finish No Later Than, Must Finish On, Must Start On, Start No Earlier Than, or Start No Later Than . This is not used with the As Late As Possible or As Soon As Possible constraints.
Constraint Type	The constraint that has been set for a task. A constraint can be one of the following: As Late As Possible, As Soon As Possible, Finish No Earlier Than, Finish No Later Than, Must Finish On, Must Start On, Start No Earlier Than, or Start No Later Than .

Task Plan Fields	Description
Cost	The amount of money that is spent to produce something of value. In a task plan, a cost is the amount of money that is spent while finishing a task. For example, a resource's hourly billing rate or the cost of renting a tractor (a material resource) for a day. A cost can be associated with a task, a resource, an assignment, or a task plan.
CPI	Cost performance index. The difference in value between the budgeted cost of work performed and the actual cost of work performed. The calculation for cost performance index is as follows: $CPI = BCWP / ACWP$. When the cost performance index is greater than 1, it is an indicator that the task plan is over budget.
Created	The date and time at which a task was added to a task plan.
Critical	Indicates whether a task is on the critical path. The critical path is based on the longest possible sequence of tasks, factoring in their start dates, finish dates, dependencies, and constraints, and then comparing the calculated finish date of the last task in the sequence to the planned finish date for the task plan. A task on the critical path must be finished on time in order for the task plan to be finished on time.
CSI	Cost schedule index. The difference in value between the cost performance index and schedule performance index. The calculation for cost schedule index is as follows: $CSI = CPI \times SPI$. Cost schedule index should be as close to 1 as possible. When the cost schedule index is not one, it is an indicator that the task plan is behind schedule and over budget. The farther away from 1, the farther behind and/or over budget the task plan is.
CV	Cost variance. The difference between planned costs of work performed and the actual costs of work performed. The calculation for cost variance is as follows: $CV = BCWP - ACWP$. When the cost variance is less than 1, it is an indicator that the task plan is over budget.
CV Percent	Cost variance percentage. The percentage over or under budget, based on cost variance and the planned cost of work in the task plan. The calculation for cost variance percentage is as follows: $CV\% = CV / BCWP$. When the cost variance percentage is greater than 1, it is an indicator that the task plan is under budget.
Deadline	A deadline is a date in the task plan schedule by which a task needs to be completed. A deadline appears in a Gantt chart view as a diamond.

Task Plan Fields	Description
Display Task As Milestone	Indicates whether the task is displayed as a milestone task. A milestone is a task that has a duration of zero days.
Duration	A duration is the total amount of time required to complete a task, based on a task's start and finish dates. A duration is always based on how a day is defined in the working calendar associated with the task plan. A day is defined (by default) as being 8 hours; therefore, a duration of 1 day in a task is 8 hours.
EAC	Estimate at completion. The expected cost to complete all remaining work. The calculation for estimate at completion is as follows: $EAC = ACWP + (BAC - BCWP)$. BAC - BCWP represents the planned costs of all uncompleted tasks. This is sometimes referred to as the estimate to complete (ETC).
Early Finish	The date by which a task can finish without having to be constrained or to be dependent on a predecessor or successor task.
Early Start	The date by which a task can start without having to be constrained or to be dependent on a predecessor or successor task.
Earned Value Method	Earned value method. This field is manually entered (and its value is not calculated). Use earned value method when there are tasks in a task plan that require physical percent complete.
Effort Driven	Indicates whether the total amount of work required to complete the task is directly affected by the number of resources that have been assigned to it.
Elapsed Duration	Indicates from where in the task plan that budgeted cost of work performed (BCWP) values are derived.
Estimated	Indicates whether the task's duration is an estimated duration. When a duration is an estimated duration, a question mark (?) will appear alongside it in the task plan.

Task Plan Fields	Description
Expense Type	<p>The way that costs are measured for a task (or a task plan). There are three types of costs:</p> <ul style="list-style-type: none"> ▪ Fixed cost A fixed cost is one that does not change regardless of a task's duration or how much actual work is completed. ▪ Per-use cost A per-use cost is one that is applied each time a resource is used. When a work resource is associated with a per-use cost, that cost is applied each time that resource is assigned work in a task plan. When a material resource is associated with a per-use cost, that cost is applied once. ▪ Rate cost A rate cost is one that is applied based on a duration (typically, per-hour). A rate cost is most often associated with a work resource and it is used to represent the units worked (typically hours) against a task in a task plan. There are two types of rates: regular and overtime.
Finish	The date on which a task is scheduled to finish.
Finish Offset	The difference between the baseline finish date for a task and the current, actual, scheduled finish date.
Finish Slack	The amount of time in a task plan where a task can be delayed without causing a predecessor task (or the task plan itself) to be delayed.
Fixed Cost	A cost that is not associated with a resource.
Fixed Cost Accrued	Indicates how a fixed cost is applied to a task. A fixed cost can be applied when the task is started, when the task ends, or as the task progresses.
Free Slack	The amount of time in a task plan where a task can be delayed without causing a successor task (or the task plan itself) to be delayed.
ID	The unique ID for a task.
Ignore Resource Calendar	Indicates whether the task, when scheduled, ignores calendars that are associated with one or more resources who are assigned to this task (or task plan).

Task Plan Fields	Description
Indicators	The indicators that are associated with this task. A graphical indicator shows special conditions that may exist for tasks in that spreadsheet, such as whether the task is 100% complete (✔), has a note (📄), has a constraint (📅), missed its deadline (⊗), uses its own calendar (📅) and not the task plan calendar, cannot be completed as scheduled (📅), has a parent task to which resources are assigned (👤), is a subproject (📁), or is a subproject that cannot be opened (🚫).
Is WBS Parent	Indicates that this task is a parent task in the work breakdown structure.
Just Modified	Indicates that the task (or task plan) has been modified since it was last saved.
Late Finish	The date by which a task must finish before it causes another task (or the task plan itself) to be delayed.
Late Start	The date by which a task must start before it causes another task (or the task plan itself) to be delayed.
Leveling Delay	The amount of time that a task can be delayed, based on its early start date.
Name	The name of a task (or a task plan).
Notes	The notes that have been entered about a task (or a task plan).
Parent ID	The unique ID for the parent task.
Percent Complete	The progress made against a task (or a task plan), expressed as a percentage (of 100%).
Percent Work Complete	The amount of work that has been completed for a task (or a task plan), expressed as a percentage (of 100%).
Physical Percent Complete	The percentage of work completed, measured independently of a task's duration. Use physical percent complete to manually override budgeted cost of work performed values when the process of completing a task can be measured independently of the task's duration. Sometimes used as an alternative to budgeted cost of work scheduled (BCWS).
Predecessors	The unique ID for a predecessor task in the task plan.

Task Plan Fields	Description
Priority	Indicates the importance of the task in relation to other tasks. 500 is the default value; 1000 is the highest priority and 0 is the lowest priority. The higher the number, the higher the priority.
Project ID	The ID for the task plan.
Remaining Cost	The cost required to finish the remaining amount of work for all resources assigned to the task.
Remaining Duration	The amount of time required to finish the remaining amount of work for all resources assigned to the task.
Remaining Work	The amount of time required for all resources (who are assigned to the task) to complete the task.
Resource Group	The name of a group to which a resource belongs. This is typically the same group names used by your organization's directory service.
Resource Initials	The initials of a resource, or an abbreviation of that resources full resource name.
Resource Names	The name of the resource (or resources) who are assigned to a task in a task plan.
Resource Phonetics	This field is not used in the Task Plan view.
Resume	The amount of time remaining for a scheduled task, based on the percent of work that has already been completed.
SPI	Schedule performance index. The difference in value between current progress and the expected progress. The calculation for schedule performance index is as follows: $SPI = BCWP / BCWS$. When the schedule performance index is less than 1, it is an indicator that the task plan is behind schedule.
Start	The date on which a task is scheduled to start.
Start Offset	The difference between the baseline start date for a task and the current, actual, scheduled start date.
Start Slack	The amount of time in a task plan where a predecessor task can be delayed without causing a successor task (or the task plan itself) to be delayed.
Stop	The date on which actual work for a task will finish.

Task Plan Fields	Description
Successors	The unique ID for one or more successor tasks in the task plan.
SV	Schedule variance. The difference in costs between current progress and expected progress. The calculation for schedule variance is as follows: $SV = BCWP - BCWS$. When the schedule variance is less than 0, it is an indicator that the task plan is behind schedule.
SV Percent	Schedule variance percent. A percentage that shows how well the schedule is doing in relation to the cost of scheduled work. The calculation for schedule variance percent is as follows: $SV\% = (SV / BCWS) * 100$. When the schedule variance percentage is greater than 1, it is an indicator that the task plan is behind schedule.
Task Calendar	The calendar that is associated with the task (or, more commonly, the entire task plan). The calendar associated with the task plan is the default calendar for all tasks and resources associated with that task plan.
TCPI	To-complete performance index. A ratio of remaining work. The difference between the planned costs of all completed tasks to the to the planned costs of all remaining, uncompleted tasks. The calculation for to-complete performance index is as follows: $TCPI = [BAC - BCWP] / [BAC - ACWP]$. When the to-complete performance index is greater than 1, it is an indicator that close attention should be paid to all of the work that remains so that the task plan can stay within budget.
Timesheet Closed	Indicates whether the timesheet is closed.
Timesheet Complete	Indicates whether the timesheet is complete.
Total Slack	The amount of time in a task plan where a task can be delayed without causing another task (or the task plan itself) to be delayed.
Total Slack End	The total amount of time in a task plan where a predecessor task can be delayed without causing a successor task (or the task plan itself) to be delayed.
Total Slack Start	The total amount of time in a task plan where a task can be delayed without causing a successor task (or the task plan itself) to be delayed.

Task Plan Fields	Description
Type	<p>The task type; used to determine how work, assignment units, and durations are calculated for this task in the task plan:</p> <ul style="list-style-type: none"> ▪ Fixed duration The values for the task's start and finish dates are fixed values. ▪ Fixed work The values for the work to be completed are fixed values. ▪ Fixed units The values for the resources assigned to the task are fixed values.
Unique ID	The unique ID for a task in a task plan.
Unique ID Predecessors	The work breakdown structure for a task in a task plan. This is used to identify a predecessor task within the work breakdown structure. For example, 1.B.c or 5.A.f.
Unique ID Successors	The work breakdown structure for a task in a task plan. This is used to identify a successor task within the work breakdown structure. For example, 1.A.a or 2.B.c.
VAC	Variance at completion. The difference between the the total planned cost to complete every scheduled task and the expected cost to complete all remaining work. The calculation for variance at completion is as follows: BAC - EAC. When the variance at completion is negative, it is an indicator that your task plan is over budget.
WBS	Work breakdown structure. The hierarchy of tasks in a task plan. A work breakdown structure is often represented as a series of delimited numbers, letters, and/or characters, separated by period, plus, slash, and/or minus symbols. For example, 1.A.a could be the way that your organization chooses to define the sequence. When a task is the 2nd summary task in the task plan (itself with a series of summary tasks), the 3rd task for the 2nd sub-summary task would have a work breakdown structure of 2.B.c.
WBS Parent	Work breakdown structure, parent. A parent task in the work breakdown structure is also known as a summary task.
WBS Predecessors	Work breakdown structure, predecessor. A predecessor task is a task that determines when another task (a successor) can be scheduled. Any predecessor task in the work breakdown structure will also have a unique ID.

Task Plan Fields	Description
WBS Successors	Work breakdown structure, successor. A successor task is a task that has its schedule determined by another task (a predecessor). Any successor task in the work breakdown structure will also have a unique ID.
Work	The total amount of work that has been scheduled for a task.

In addition to the specific fields found in the table, the following generic fields are available:

- Baseline Cost 1-10
- Baseline Duration 1-10
- Baseline Finish 1-10
- Baseline Start 1-10
- Baseline Work 1-10
- Cost 1-10
- Date 1-10
- Duration 1-10
- Finish 1-10
- Flag 1-20
- Number 1-20
- Start 1-10
- Text 1-30

Team Roster

Resource management decisions are often based around labor. How much is needed? What types of skills are required and when does it need to be done by? Who can do it? Did it get done? You can measure labor in the following ways:

- **Demand** How much is needed? Demand is the net request for labor, work, and resources for a work item.
- **Capacity** What types of skills are required and when does it need to be done by? Capacity measures what is needed for a work item and the availability of resources that can be allocated or assigned to one or more tasks. Capacity can be measured using actual resources or by using generic resources as a placeholder.
- **Allocation** Who can do it? An allocation is an agreement between a resource manager and a project manager as to the availability of a given resource (actual or generic) to work on one or more tasks in a work item's task plan.
- **Assignments** Did it get done? Assignments are tracked against the individual tasks within the task plan. Assignments are tracked in timesheets that are submitted by

the resources assigned to tasks in the task plan. Timesheets can be approved or rejected.

You can use the **Team Roster** tab to help identify the skill levels needed by a task and then to find (or request) the resources in your organization who can be assigned to work on them.

The upper pane of the **Team Roster** tab is used to view the resources that have been allocated to a work item. A project manager or resource manager can allocate actual and generic resources one resource at a time or can allocate many resources by using the **Allocation Editor**.

Select a start date and an end date to view the resources that are available; allocations that fall outside of the selected date range will not be displayed. You can also view resources in the **Team Roster** tab by dimension (such as **Plan** or **Task Baseline**), by a unit of measurement (such as currency or hours), or by a time period defined by your organization (such as a fiscal year).

The default column shown for a team roster is: *Name*. To display a resource's assigned tasks, click the plus symbol next to a resource name. You can add additional columns to the upper pane by clicking the **Properties** button. Use the **Swap/Grid Timeline** button to toggle between the timegrid and timeline views. Click the **Apply** button to recalculate the timeline or timegrid view to include your changes. Click **Show Allocations** to display allocation values instead of assignment values. Move the splitter bar to increase or decrease the size of the upper pane.

The lower pane of the **Team Roster** tab is used to view resource allocation properties. The **General** tab shows a resource's properties, such as their email address and contact information. The **Calendar** tab shows the resource's personal calendar. The **Graph** tab shows the resource's capacity, assignments, and allocations. The **Allocation** tab shows resource allocation and allows you to make changes to allocations. The **Resource Role** tab shows resource role details.

For more information, see the following topics:

- [Assignments \[page 115\]](#)
- [Allocations \[page 115\]](#)
- [Allocation Rates \[page 119\]](#)

Assignments

Allocations

An individual user resource or an entire resource team can be allocated to a work item. Generic resources can also be allocated to items. Select the resource you want to allocate, associate that resource to a work item, choose their status, assign rates, and then save your resource allocation.

A generic allocation allows you to plan the resource needs for the work item prior to determining the specific resources who will perform the actual work. For example, a generic allocation can be made for a single project manager, or for multiple project managers and actual user resources can be substituted either wholly or partially in place of the generic allocation. For example, if you have a generic allocation for project manager at 300% (essentially three project managers), you can substitute three user resources at 100% each, six resources at 50% each, or virtually any combination; you can also substitute one project manager at 100% and leave the other 200% allocated to

the generic resource. Assignments given to the generic resource for all contours are listed under Assignments. When user resources are substituted for all or part of the generic allocation, you can select the specific assignments to be assigned to the user resources.

Adding a generic allocation

A generic resource allocation is when you use a placeholder to allocate a resource instead of allocating an actual resource. When a generic resource has the same name as a resource role, it can help simplify the process of identifying the actual resource who needs to be assigned. A generic resource can be allocated to a task- or activity-based work item. For a task-based item, the generic resource needs to be allocated before a task can be assigned.

Any user with appropriate permissions can create generic resource allocations. A generic resource is a placeholder for a person or a set of people. Generic resources are always named the same as the resource role, and are helpful in establishing what resources a work item may need without specifying which particular resources are allocated.

Creating a generic allocation allows a manager to assign the pseudo-resource to a work item as a placeholder until a resource is allocated to the work item. Generic resources can be allocated to a task-based work item or activity-based work item. For task-based items, the resource needs to be allocated to the work item before it can be assigned to a task.

To add a generic resource allocation

1. Open the **Resources** module.
2. Select the **Allocations** tab.
3. Select a resource team in the resources tree, right-click and select **New Generic Allocation**.
4. In the **Resource Allocation** dialog box, select a resource role from the **Resource Role** drop-down.
5. From the **Investment** drop-down, select the work item to which the generic allocation will be made. In the Select Investments dialog box, choose the work item and click **Save**.
6. From the **Status** drop-down, indicate whether the generic allocation is *Proposed* or *Committed*.
7. Click **Plus** to define how much and when a generic resource will be allocated. For each generic resource allocation, define the percentage of full time (% FTE), the start and finish dates for the allocation, and any comments specific to the allocation. (Click **Delete** to remove a generic resource allocation definition.)
8. Click **Rates** to define the rates associated with the role.
9. Click **Save**.

Adding an allocation

A resource allocation is when you make a resource available for work on a work item. He or she can be allocated to a work item, task-based item, or activity-based work item. For task-based items, the user needs to be allocated to the work item before he or she can be assigned to a task.

The **Allocation Editor** is a dialog box that is accessible from the **Projects** module's **Tasks** and **Team Roster** tabs. This tool enables project managers to use a single interface to allocate both named and generic resources to a work item.

The **Allocation Editor** provides you with more complete view into resource allocations for a given work item. For example, when building the initial project team, you can add and remove named and generic resources in the editor, change the mix, swap out resources, and essentially look at the overall project team before actually committing the allocations. No new allocations are saved in the system until you click **OK** in the Allocation Editor.

When you open the **Allocation Editor** after allocations have been made to a work item, the existing allocations are pre-populated. Some modifications can be made to existing allocations using the **Allocation Editor**. Existing allocations can also be deleted, provided that no assignments have been made to the allocated user resource.

To add a resource allocation

1. Open the **Projects** module.
2. Select a work item.
3. Select the **Team Roster** tab.
4. Click **New Allocation**.
5. In the Resource Allocation dialog box, select a resource from the **Resource** drop-down.
6. From the **Investment** drop-down, select the work item to which the generic allocation will be made. In the Select Investments dialog box, choose the work item and click **OK**.
7. From the **Role on Investment** drop-down, select the resource role you want to associate with the allocation.
8. From the **Status** drop-down, indicate whether the generic allocation is *Proposed* or *Committed*.
9. Click **Plus** to define how much and when a resource will be allocated. For each resource allocation, define the percentage of full time (% FTE), the start and finish dates for the allocation, and any comments specific to the allocation. (Click **Delete** to remove a resource allocation definition.)
10. Click **Rates** to define the rates associated with the allocation.
11. Click **OK**.

Deleting a resource

If a resource isn't needed in the resource pool, it can be deleted.

To delete a resource

1. Open the **Projects** module.
2. Select a work item.
3. Select the **Team Roster** tab.
4. Select an allocated resource, and then click **Delete Resource Allocation**.
5. Click **OK** to confirm the deletion. The resource allocation is removed from the work item.

Deleting an allocation

If you no longer need a resource allocation, you can delete it.

To delete a resource allocation

1. Open the **Resources** module.
2. Select the **Allocations** tab.
3. Select a resource team.
4. Select a resource in the resource team and click the work item to which they are allocated. Click **Delete** to delete the resource allocation.

Editing an allocation

You can modify a resource allocation from the **Team Roster** tab.

To edit a resource allocation

1. Open the **Projects** module.
2. Select a work item.
3. Select the **Team Roster** tab.
4. Select a resource.
5. In the lower pane, make your changes and click **Save**.

Substituting a resource

You can substitute a resources who have been allocated, including substituting generic resources for actual resources. For example, if you have a generic allocation for project manager at 300% (essentially three project managers), you can substitute three user resources at 100% each, six resources at 50% each, or virtually any combination; you can also substitute one project manager at 100% and leave the other 200% allocated to the generic resource.

To substitute a resource

1. Open the **Projects** module.
2. Select a work item.
3. Select the **Team Roster** tab.
4. Select an allocated resource and click to open the **Resource Substitution** dialog box.
5. Select the **Effective Date of Substitution**. This is the date upon which the resource substitution will occur.
6. Select the resource you want to substitute. Click to open the **Find Resource** dialog box.
7. Click **OK**.

Viewing an allocation

Resource allocations can be viewed from the **Allocations** tab in the **Resources** module.

To view a resource allocation

1. Open the **Projects** module.
2. Select the **Team Roster** tab.
3. Select a resource team from the resources tree.

Allocation Rates

As your work item develops, the intercompany bill rate for a resource allocated to your work item may change. You can use the **Manage Datasheet Types** dialog box to change allocation rates for resources in your organization.

Default rates are defined for each resource role. You can change the resource rate when allocating the resource to a work item. This overwrites the default rate. You can also update the rate for a resource after it's allocated to a work item.

Adding a rate for a resource allocation

Add a rate for a resource allocation.

To add a rate

1. Open the **Projects** module.
2. Select the **Team Roster** tab.
3. Select an allocated resource.
4. In the lower pane, select the **Allocation** tab.
5. On the **Allocation** tab, click **Rates**.
6. In the **Resource Role Rates** dialog box, click **Add Rate** to add a new rate.
7. Specify the date upon which the rate takes effect, add the rate (per hour), and provide comments (if necessary).
8. Click **Save**.

Deleting a rate for a resource allocation

Delete a rate for a resource allocation.

To delete a rate

1. Open the **Projects** module.
2. Select a work item.
3. Select the **Team Roster** tab.
4. Select a resource.
5. In the lower pane, select the **Allocation** tab.
6. Click **Rates**.
7. In the **Allocation Rates** dialog box, select the rate you want to delete and click **Delete**.
8. Click **Save**.

Timesheets

Project and resource managers can use the **Timesheets** tab to approve or reject the timesheets that are submitted by team members as they complete their assigned work on items. Timesheets can be approved or rejected individually and in groups. Timesheets can be partially approved or partially rejected. Timesheets can be updated on behalf of team members. Rejected timesheets can be corrected, resubmitted, and approved as long as the time period for the timesheet is still open.

When the Submission Status column indicates that time or status has been submitted by a resource, the time or status can then be approved or rejected. Project and resource managers can use the check box in the Approval column to cycle through the timesheet approval options:

- **Approve** Use this setting to approve the submitted time.
- **Reject** Use this setting to reject the submitted time.
- **Remove** Use this setting to clear approval or rejection of the submitted time.

When timesheets are approved, the data can then be posted into parent items and into related task plans. After data from a timesheet is posted into its parent work item and related task plans, the timesheet is closed.

The **Timesheets** tab contains the following options:

- **PM Approval** Project manager approval. A check indicates that the time has been approved. An indicates that the time has been rejected. This column is not displayed if approval is not required.
- **RM Approval** Resource manager approval. A check indicates that the time has been approved. An indicates that the time has been rejected. This column is not displayed if approval is not required.
- **PM Status Approval** Task status approval. A check indicates that the status has been approved. An indicates that the status has been rejected. This column is not displayed if approval is not required.
- **Submission Status** A check in this column indicates that the timesheet has been submitted and is ready for approval.
- **Ready to Post** All required approvals are in and the time is ready to post.
- **Completed** Click in this column to mark a task as completed.
- **Comments** If this icon appears in the column, comments have been entered for that work item.
- **New Comment** If this icon appears in the column, comments have been entered for that work item.
- **New Comment in** If this icon appears in the column, new comments have been entered for a work item lower in that branch of the tree view.
- **Comments in Descendant** If this icon appears in the column, comments have been entered for a work item lower in that branch of the tree view.

Adding a comment to a timesheet

Click the comment icon to add a comment to an assignment in a timesheet.

To add a comment to a timesheet

1. Open the **Projects**, **Tools**, or **Resources** modules.
2. Select the **Timesheets** tab (if in the **Projects** or **Resources** modules) or **My Timesheet** views (if in the **Tools** module).
3. Select a resource, show details, and click **Comments** to open the **Comments** tab.
4. Add the comment.
5. Click **Submit**.

Approving tasks in a timesheet

Select the row which contains the timesheet entry you want to click and then set the **Approval** check box to **Approved**.

To approve tasks in a timesheet

1. Open the **Resources** module.
2. Select the **Timesheets** tab.
3. Expand the list to find the timesheet containing the tasks that you wish to approve.
4. Click the check-box in the approval column beside the tasks you want to approve.

Approving tasks in a group of timesheets

Approve a group of resource's time by selecting the row which contains the resource group and then setting the **Approval** column to approved.

To approve tasks in a group of timesheets

1. Open the **Resources** module.
2. Select the **Timesheets** tab.
3. Expand the list to find the timesheets containing the tasks that you wish to approve.
4. Select the row that contains the resource group whose timesheets you want to approve, and click in the **Approval** column.

Rejecting a task in a timesheet

Select the row which contains the timesheet entry you want to click and then set the **Approval** check box to rejected.

To reject a task in a timesheet

1. Open the **Projects** module.
2. Select a work item.
3. Select the **Timesheets** tab.
4. Select a task.
5. Click in the approval column for that task. This indicates that you have rejected the task.
6. Click **Save**.

Rejecting a group of timesheets

Reject a group of resource's time by selecting the row which contains the resource group and then setting the check box in the **Approval** column to rejected.

To reject a group of timesheets

1. Open the **Tools** module.
2. Select the **My Approvals** tab.
3. Select **My Approvals**.
4. In the **Project Picker** dialog box, select the items which contain the timesheets that you want to reject. Click **Add**.

5. Click **OK**.
6. Set **Period Ending** the desired time period.
7. After the correct timesheets are listed and the right time period is identified, click in the **PM Approval** column. Repeat this for any row you want to reject.
8. Click **Save**.

Homepages

A homepage is a page that contains information that may be targeted at specific user roles, such as Portfolio Manager or Team Member. User homepages are often customized to meet the specific needs of your organization, project management style, and individual team structures. Depending on your homepage, the following widgets may be available.

Agile Work Item Assignments	The Agile Work Item Assignments widget is used to show the list of work item that are currently assigned to a user.
Chart	Use the Chart control (sometimes referred to as a widget) to display a chart, such as a burndown chart.
Datasheet	The Datasheet widget is used to show a datasheet.
Image	An Image is used to add a static image to a page. The image is set using the Src property as a URL to the location of the image on your organization's intranet or to a page on the Internet. You can add use the Events property to add JavaScript that is triggered when a user clicks on the image.
Link Label	A Link Label is used to add a hyperlink to a page in the application, from which users can link out to that information. For example, you can add a external link to a website, such as Google, an internal link to a page located within your organization's intranet, or to a page that is generated by another application.
Logs	The Logs widget is used to add a log type to a page in the application.
Projects	The Projects widget is used to add a list of projects to a page in the application.
Reports	The Reports widget is used to add a list of reports to a page in the application.
Single Object Chart	A Single Object Chart is used to show values in a summary view as a chart. The Single Object Chart must be configured using the BrandXML , ConfigureXML , Data Processor , and Data Processor Assembly properties.
Task Assignments	The Task Assignments widget is used to add a list of task assignments to a page in the application.

URL Viewer	The Workflow Approvals widget is used to add workflow transition approvals to a page in the application.
Work Item Assignments	The Workflow Approvals widget is used to add workflow transition approvals to a page in the application.
Workflow Approvals	The Workflow Approvals widget is used to add workflow transition approvals to a page in the application.

Work Items

You can use the **Work Items** tab to create, track, and assign work items. Work items can help project managers track and assign work that may not fit into task plan.

The upper pane of the **Work Items** tab is used to view existing work items and information about them. New work items can be created. Existing work items can be modified. The default columns in the upper pane are: *Name*, *Start (Plan)*, *Finish (Plan)*, *Duration (Plan)*, *Work (Plan)*. You can add additional columns to the upper pane by clicking the **Properties** button. Use the **Filters** tab to select specific tasks. Use the **View Settings** tab to adjust the Gantt chart or the timeline bar.

The lower pane of the **Work Items** tab has two tabs: **Labor Assignments** and **Details**.

Adding a work item

A work item, once created, can have a resource assigned or allocated to it.

To add a work item

1. Open the **Projects** module.
2. Select the **Work Items** tab.
3. Click **New Work Item**.
4. In the **New Work Item** dialog box, enter a name. The following fields are optional: *Start (Plan)*, *Finish (Plan)*, *Duration (Plan)*, *Work (Plan)*, *Cost (Plan)*, *Remaining Work*, *Percent Work Complete*, and *Description*.
5. Click **OK**.

Deleting a work item

Any work item can be deleted. When a work item is deleted, any assignments made to that work item are also deleted.

To delete a work item

1. Open the **Projects** module.
2. Select the **Work Items** tab.
3. Select a work item.
4. Click **Delete**.

Editing a work item

You can change a work item's details, including start and finish dates, assignments, or allocations.

To edit a work item

1. Open the **Projects** module.
2. Select a work item.
3. Select the **Work Items** tab.
4. Make your changes.
5. Click **Save**.

Pulling in timesheet actuals

You can pull timesheet actuals into a task. This adds data from timesheet actuals to the selected task, such as actual start date and work.

To pull timesheet actuals into a work item

1. Open the **Projects** module.
2. Select a work item.
3. Select the **Work Items** tab.
4. Select a work item.
5. Click **Pull Timesheet Actuals**.

Viewing a work item

Work items can be viewed from in the **Work Items** tab. Select a work item to view its details, assignments, and allocations.

To view a work item

1. Open the **Projects** module.
2. Select a work item.
3. Select the **Work Items** tab.
4. From the list of work items, select a work item. The details for that work item will be available in the lower pane.

Labor Assignments

The **Labor Assignments** tab is used to help project managers track and manage work items. You can add additional columns to the **Labor Assignments** tab by clicking the **Properties** button. *Start (Plan)* and *Finish (Plan)* are derived from the values on the work item. *Start (Actual)* and *Finish (Actual)* are based on timesheet entries. *Work (Plan)* is initially derived from the value on the work item, but it can be updated when assignment values roll-up to the work item. *Cost (Plan)* is based on *Work (Plan)* plus the allocation rate. Columns for *Percent Work Complete* and *Remaining Work* may show as n/a whenever the value of actual work is greater than the value of planned work.

Allocating a generic resource to a work item

You can allocate generic resources to work items. Select a work item and then click **New Generic Allocation**.

To allocate a generic resource to a work item

1. Open the **Projects** module.

-
2. Select a work item.
 3. Select the **Work Items** tab.
 4. In the lower pane, on the **Labor Assignments** tab, click to add a generic allocation.
 5. In the **Generic Allocation** dialog box, select a resource role from the **Resource** drop-down.
 6. From the **Resource Team** drop-down, select the resource team from which the generic resource is being allocated.
 7. From the **Investment** drop-down, select the work item to which the generic allocation will be made. In the **Select Investments** dialog box, choose the work item and click **Apply**.
 8. From the **Status** drop-down, indicate whether the generic allocation is *Proposed* or *Committed*.
 9. Click the plus symbol icon to define how much and when a resource will be allocated. For each resource allocation, define the percentage of full time (% FTE), the start and finish dates for the allocation, and any comments specific to the allocation.
 10. Click **Rates** to define the rates associated with the allocation.
 11. Click **OK**.

Allocate a resource to a work item

You can allocate resources to work items. Select a work item and then click **New Allocation**.

To allocate a resource to a work item

1. Open the **Projects** module.
 2. Select a work item.
 3. Select the **Work Items** tab.
 4. In the lower pane, on the **Labor Assignments** tab, click to add a allocation.
 5. In the **Generic Allocation** dialog box, select a resource role from the **Resource** drop-down.
 6. From the **Resource Team** drop-down, select the resource team from which the resource is being allocated.
 7. From the **Investment** drop-down, select the work item to which the allocation will be made. In the **Select Investments** dialog box, choose the work item and click **OK**.
 8. From the **Status** drop-down, indicate whether the allocation is *Proposed* or *Committed*.
 9. Click to define how much and when a resource will be allocated. For each resource allocation, define the percentage of full time (% FTE), the start and finish dates for the allocation, and any comments specific to the allocation.
 10. Click **Rates** to define the rates associated with the allocation.
 11. Click **OK**.
-

Assigning a resource to a work item

You can assign resources to work items. Select a work item and then choose a resource from the list of available resources.

To assign a resource to a work item

1. Open the **Projects** module.
2. Select a work item.
3. Select the **Work Items** tab.
4. Select a work item.
5. In the lower pane, on the **Labor Assignments** tab, choose a resource from the list of resources and click **Assign**.

Deleting an assignment or an allocation to a work item

You can delete an assignment or allocation made to a work item. Select a work item and then click **Delete Assignment**.

To delete an assignment or allocation made to a work item

1. Open the **Projects** module.
2. Select a work item.
3. Select the **Work Items** tab.
4. Select an assignment or allocation.
5. In the lower pane, on the **Labor Assignments** tab, click **Delete**.
6. Click **Save**.

Details

This tab is used to capture details related to the work item. You can add additional columns to the **Details** tab by clicking the **Properties** button. Columns for *Percent Work Complete* and *Remaining Work* may show as n/a whenever the value of actual work is greater than the value of planned work.

Workflow

Item types may be changed from one type to another in two ways: an administrator can change the work item type directly or team members may initiate work item type transitions. The Workflow tab is used to track and manage how team members may transition a work item from one type to another. Using the Workflow tab can help take the guesswork out of deciding when it is appropriate to transition a work item and to which type it should be transitioned. The Workflow tab can also be used to incorporate team member feedback into the transition process by using approval lists.

Open the Workflow tab and select a work item. Transitions are displayed on the **Transition** tab. Colors are used to indicate progress along the transition path and whether the transition can proceed because it meets all criteria and has been approved. These colors will change as the transition progresses along its path. Once a transition has been started, all unused pathways will be grayed out.

- **Transition Path** A line running from the source work item type to the destination work item type. Transition paths are defined by an administrator. The portfolio work

item type may never be transitioned to another work item and items may never be transitioned to the portfolio work item type. The path can be green, red, or gray. A green line indicates that the work item may be transitioned because it meets all of the criteria defined for the work item type transition. A red line indicates that the work item may not be transitioned because it does not meet all of the criteria. A gray line is used to show transition pathways that are not being used.

- **Criteria** An icon that indicates whether individual criteria have been met. Criteria are defined by an administrator and will vary from work item type to work item type. These icons can be green, red, or gray. A green icon indicates that the criteria has been met. A red icon indicates the criteria has not been met. A gray icon indicates there are no criteria required for this transition request.
- **Approvals** An icon that indicates the approval status of the transition request. Approval lists are defined by an administrator and will vary from work item type to work item type. These icons can be green, yellow, red, or gray. A green icon indicates the transition request has been approved. A yellow icon indicates the transition request is pending approval. A red icon indicates the transition request has been rejected. A gray icon indicates there are no approvals required for this transition request.
- **Destination** Indicates the current status of the work item type transition. This rectangle can be blue, green, yellow, red, or gray. A blue rectangle indicates that the transition has not yet started. A green rectangle indicates that the transition request has been approved. A yellow rectangle indicates that the transition request is pending approval. A red rectangle indicates that the transition request has been rejected. A gray rectangle indicates that a work item will not be transitioned to this destination.

A work item transition history is displayed on the **History** tab. You can also access audit logs for any item's transition history from the same location.

For more information, see the following topics:

- [Work Item Transitions \[page 127\]](#)
- [Approvals and Rejections \[page 130\]](#)
- [Destinations \[page 133\]](#)
- [Criteria \[page 134\]](#)
- [Workflow Audit Log \[page 135\]](#)

Work Item Transitions

A work item transition (also called a workflow transition) works like this:

1. **Create work item type transitions and approval lists** A user with administrator permissions for the Workflow tab creates the work item type transitions and approval lists to be used in the Workflow tab in the **System Settings** module. Your administrator defines all of the transition possibilities that are available for each work item type. The only exceptions are that items may never be transitioned to the portfolio work item type and the portfolio work item type may never be transitioned to another work item type.
2. **Choose a transition** A user with edit-level permissions for the Workflow tab in the **Projects** module selects a work item, and then selects the Workflow. The Workflow tab opens and all the work item type transitions defined for the selected item's work

item type are displayed on the **Transition** tab. The transitions with a green pathway line are the work item type transitions the work item in its current state can make. To review the defined criteria for the transition, click the diamond in the **Criteria** column. To review a transition's required approvals, click the diamond in the Approval column. The **Target** column displays the name of each transition's destination work item type. A diamond only appears in the **Approval** column if an approval list is assigned to the transition, and a diamond only appears in the Criteria column if transition criteria are defined for the transition.

3. **Start a transition** A user with edit-level permissions for the Workflow tab selects a work item type transition for the selected work item and starts the transition. After a work item type transition is started the work item cannot be edited until the transition is finished.
4. **Approve the transition** If the transition does not require approvals, the transition creator or a user with administrator permissions for the Workflow tab finishes the work item type transition. Finishing the transition changes the item's work item type to the new work item type, and places the work item in the selected destination. If the transition requires approvals, the system generates and sends the **Approval Required** notification to the required approvers, requesting the approver review and approve the item's work item type transition.
5. **Finish the transition** If all approvers approve the work item type transition, the transition creator or a user with administrator permissions for the Workflow tab can finish the work item type transition. Finishing the transition changes the item's work item type to the new work item type, and places the work item in the selected destination. If one or more approvers reject the transition, the transition creator or a user with administrator permissions for the Workflow tab can finish the transition, override the rejection(s) and finish the transition, or they can cancel the work item type transition and return the work item to its original state. Whether a work item transition is finished or canceled, the history of a work item type transition is retained on the **History** tab in the Workflow tab for the life of the work item.

Canceling a transition

If you are the user who has started a work item type transition and the transition has not finished, you may cancel it. Click the destination work item type to which the work item will be transitioned, and select **Cancel**. This will open the **Cancel Transition** dialog box. Transitions may be canceled whether or not the approval process is complete and whether or not the transition has been approved (or rejected) by any member of the approval list. Canceling a transition will remove all approvals (and rejections), will delete any pending approval notifications, and will revert the work item type back into its original state. If you want to resubmit a canceled transition to the approval process, you must restart the transition.

To cancel a work item type transition

1. Open the **Projects** module.
2. Select a work item.
3. Select the Workflow tab.
4. In the **Target** column, click the target rectangle for the transition you want to cancel, then select **Cancel** from the menu that appears. Transitions may be canceled whether or not all required approvers have approved them. You can only finish a transition if you are the user that started the transition, or an administrator.

Finishing a transition

There are two ways to finish a work item type transition: manually after all members of an approval list have approved (or rejected) the transaction or automatically when approvals are not required. Click the destination work item type to which the work item is being transitioned, and select **Finish**. The work item will be converted into the destination work item type. If the transition is approved by all members of the approval list (or when approvals were not required), the work item is placed in the destination for approved projects; if the transition has been rejected by any member in the approval list, it is placed in the rejected destination. Only the team member who started the transition process (or an administrator) can finish a transition.

To finish a work item type transition

1. Open the **Projects** module.
2. Select a work item.
3. Select the Workflow tab.
4. In the **Target** column, click the target rectangle for the transition you want to finish, then select **Finish** from the menu that appears. Transitions may be canceled whether or not all required approvers have approved them. You can only finish a transition if you are the user that started the transition, or an administrator.

Starting a transition

When a transition path meets all of the required conditions, any user with edit-level permissions for the Workflow tab can start a transition. Click the destination work item type to which the work item will be transitioned, and select **Start**. This will open the transition **Properties** dialog box into which approval (and rejection) destinations, an expiration date, and any notes are specified. After a transition has started, notifications are sent to members of the approval list and all other possible transition paths are grayed out. After a transition has started, a work item cannot be edited until the transition is finished. Starting a transition that does not require approval also finishes the transaction.

To start a work item type transition

1. Open the **Projects** module.
2. Choose a work item.
3. Select the Workflow tab.
4. Select the **Transition** tab.
5. For a valid workflow transition path, click the rectangle in the **Target** column for the transition you want to start. Select **Start**.
6. In the transition **Properties** dialog box, select the location in the work item tree to which the work item will be placed if it is approved and if it is rejected.
7. Set the expiration date for the workflow transition. Approvals will need to be completed by this date. If the transition is not completed by this date, a **Transition Not Completed** notification will be sent to the user who started the transition. The **Transition expiration** setting is only used for tracking purposes, and it does not require follow-up action from members of the transition approval list or from the team member who started the workflow transition.
8. Click **Save**.

Viewing a transition

Item type transitions are available in the Workflow tab.

To view a work item type transition

1. Open the **Projects** module.
2. Choose a work item.
3. Select the Workflow tab.
4. Select the **History** tab.
5. Select the name of the transition you want to view in the **Transitions** list.

Viewing a transition history

Select the **History** tab to view a work item transition history. The **History** tab displays a transition's description, the action taken, the name of the user who performed the action, and any notes entered by an approver, transition creator, or Workflow tab administrator.

To view a work item transition history

1. Open the **Projects** module.
2. Choose a work item.
3. Select the Workflow tab.
4. Select the **History** tab.
5. Select the name of the transition you want to view in the **Transitions** list.

Viewing transition properties

Click the destination work item type to which the work item is being transitioned, and select **Properties**.

To view work item type transition properties

1. Open the **Projects** module.
2. Choose a work item.
3. Select the Workflow tab.
4. Select a workflow transition. In the **Target** column, click **Project** and then select **Properties**.

Approvals and Rejections

The transition **Approvals** dialog displays the approval list defined for the selected work item type transition. An approval list is a list of users and/or security roles required to approve the selected transition before the transition can be finished. Approval lists are defined and assigned to work item type transitions by your administrator in the **System Settings** module. The state of a transition determines which features are displayed in the transition **Approvals** dialog box.

The status ball next to the page title indicates the current overall status of the transition. A green ball indicates all approvers have approved the transition. A yellow ball indicates there are pending approvals, and a red ball indicates the transition has been rejected by one or more approvers.

When you open the transition **Approvals** dialog box before the selected transition has been started, the following features are displayed on the page:

- **Type** Indicates whether the required approver is a security role or user. If the approver is a role, the transition requires any user assigned to the role listed in the **Name** column to approve the transition. If the approver is a user, that specific user is required to approve the transition. This column is only displayed in the transition **Approvals** dialog box before a transition is started.
- **Name** Displays the name of the security role or user required to approve the transition.
- **# Required** This column only applies to security roles in an approval list. The **# Required** column displays the number of users assigned to the security role listed in the *Name* column that are required to approve the transition. If all members of the security role are required to approve the transition, the **# Required** column displays *All*. For users in the approval list, this column is blank. For example, if Portfolio Managers is displayed in the *Name* column, and 3 is displayed in the **# Required** column, the transition requires three users assigned to the Portfolio Managers security role on the item's portfolio to approve the selected transition.

When you open the transition **Approvals** dialog box after the selected transition has been started, the following features are displayed on the page:

- **Approval Status** Displays the transition's approval status for each user and/or member of a security role on the transition's approval list. A green ball indicates the transition has been approved, a yellow ball indicates the transition is pending approval, and a red ball indicates the transition has been rejected.
- **Approval Order** Displays the approval order for a transition's ordered approval list. A transition must be approved by the users and/or security roles in the order they are listed. The **Approval Order** column is only displayed for ordered approval lists.
- **Actions** Click in the **Actions** column next to your user name or security role to approve or click to reject the selected transition, or click to clear your approval or rejection.
- **Approver** Displays the name of the users that are required to approve or have already approved or rejected the transition. When a security role is required for approval, {approval required} is displayed under the security role name in the **Approver** column until a user assigned to the security role approves the work item transition. If all members of a security role are required to approve the transition, the members' names are displayed in the **Approver** column instead of {approval required}. Once a user has approved or rejected the transition, their user name is displayed in the **Approver** column.
- **Date** Displays the date and time the user approved or rejected the work item transition.
- **Notes** Displays any notes entered by an approver on the **Approval Notes** or **Reject Notes** page.

Approving a transition

If you belong to an approval list, you will be notified when it is your turn to approve (or reject) a transition. The notification will be available in the navigation bar or in an email notification. Open the **Approvals** dialog box and approve the transition from the **Actions** column. After everyone has submitted their approval status, a transition can be finished.

To approve a work item type transition

1. Open the **Projects** module.
2. Select a work item.
3. Select the Workflow tab.
4. Select the **Transition** tab.
5. Click the diamond in the **Approval** column for the workflow transition you want to approve.
6. In the **Approvals** dialog box, click **Approve** to approve the workflow transition.
7. In the **Approval Transition** dialog box, add any notes you want to add and click **OK**.
8. Click **OK**.

Editing the approval status of a transition

You may change your approval status any time after a transition has started and before a transition has finished. If you belong to an ordered approval list and you change (or clear) your approval status, any member of the list who appears after you will have their approval status returned to pending approval (yellow). Open the **Approvals** dialog box and change your approval status.

To edit the approval status of a work item type transition

1. Open the **Projects** module.
2. Select a work item.
3. Select the Workflow tab.
4. Select the **Transition** tab.
5. On the **Transition** tab, click the diamond in the **Approval** column to update the approval status.

Rejecting a transition

If you belong to an approval list, you will be notified when it is your turn to approve (or reject) a transition. The notification will be available in the navigation bar or in an email notification. Open the **Approvals** dialog box and reject the transition from the **Actions** column. When a transition is rejected by a member of the approval list, the team member who started the transition is sent a transition rejected notification. A transition that has been rejected by one or more members of the approval list may still be started; however, many transitions that are rejected by one or more members of a transition approval list will be canceled.

To reject a work item type transition

1. Open the **Projects** module.
2. Select a work item.
3. Select the Workflow tab.
4. Select the **Transition** tab.
5. Click the diamond in the **Approval** column for the workflow transition you want to reject.

6. In the **Approvals** dialog box, click to reject the workflow transition.
7. In the **Approval Transition** dialog box, add any notes you want to add and click **OK**.
8. Click **Save**.

Viewing a workflow transition approval list

Click the approval icon for the transition path and open the **Approvals** dialog box. The **Approvals** dialog box shows who in your organization will need to approve a work item transition, including the approval order (if ordered). After the transition has started, the **Approvals** dialog box will show the approval status for each approver, the date and time the transition was approved (or rejected), and any notes entered by an approver. If a transition does not require approval, there will not be an approval list.

To view a transition approval list

1. From the application toolbar, click **Setup**, and then select **Customization**.
2. Select the **Workflow and Approvals** tab.
3. Select the **Workflow** tab.
4. Select an approval list.

Destinations

The **Transition Properties** dialog opens after you click **Start** or **Properties** in the **Target** column on the **Transition** tab in the Workflow tab. Use the **Transition Properties** page to define the destination for the work item if the item's work item type transition is approved, and the destination if the work item type transition is rejected. You can also define the transition's expiration date, and add transition notes. Only the user that created a transition, or a user with administrator permissions for the Workflow view can access the **Transition Properties** page.

- **Destination if approved** Select the ellipses button to open the Select destination if approved page, and select where you want the work item to be placed after the item's transition is approved.
- **Destination if rejected** Select the ellipses button to open the Select destination if rejected page, and select where you want the work item to be placed after the item's transition is rejected.
- **Transition expiration** Select the item's transition expiration date. If the transition has not been completed by the date selected in the **Transition expiration** box, the system automatically generates and sends a **Transition Not Completed** notification to the user that created the transition. The notification lets the user know that the transition has not been completed by the expiration date. The **Transition expiration** box is only used for tracking purposes, and does not require any follow-up action from transition approvers or the transition creator.
- **Transition notes** Type applicable transition notes in the **Transition notes** box. Transition notes are displayed for the work item in the Notes column on the History tab in the Workflow tab.
- **OK** Click **OK** to save your changes and return to the **Transition** tab in the Workflow tab.

- **Cancel** Select this option to return to the **Transition** tab in the Workflow tab without saving your changes.

Editing the destination of a workflow transition

Workflow transition destinations are configured by an administrator; however, they can also be edited on a per-transition basis.

To edit the destination of a workflow

1. Open the **Projects** module.
2. Select a work item.
3. Select the Workflow tab.
4. Select the **Transition** tab.
5. Click a transition path and select **Properties**.
6. In the **Properties** dialog box, use the **Destination if approved** and **Destination if rejected** fields to browse and select a target work item type.
7. In **Transition Expiration**, set an expiration date.
8. Click **Save**.

Criteria

The transition **Criteria** dialog displays the criteria defined for the selected work item type transition. The ball to the left of a criterion indicates if the work item meets the criterion. Green indicates the work item meets the criterion, and red indicates the work item does not meet the criterion. Any work item type transition criteria are defined by the your administrator in the **System Settings** module.

- **Criteria Status** Displays the selected item's transition criterion status. A red ball indicates the work item does not meet the transition criterion to the right of the ball. A green ball indicates the work item does meet the transition criterion to the right of the ball.
- **Criteria** Displays each criterion defined for the work item type transition.

Viewing a workflow transition criteria list

Click the criteria icon for the transition path and open the **Criteria** dialog box. The **Criteria** dialog box shows the conditions that need to be met before a work item can follow a transition path, including the status (shown as an icon to the left of the description) of each condition. A green icon indicates that the condition has been met. A red icon indicates the condition has not been met. All conditions must be met before a transition can be started. If a transition does not have any criteria, there will not be a criteria list.

To view a transition criteria list

1. From the application toolbar, click **Setup**, and then select **Customization**.
2. Select the **Workflow and Approvals** tab.
3. Select the **Workflow and Approvals** tab.
4. Select a transition.
5. Click the criteria diamond for a workflow transition.

Workflow Audit Log

When a work item type transition is audited, an audit log is created for a work item when the transition is finished. The number of audited work item type transitions a work item finishes determines the number of audit logs created for the work item. When an audit log is created for a work item, the button is displayed in the Log column on the **History** tab in the Workflow tab next to the finished audited transition.

The **Workflow Audit Log** dialog box displays the values entered for the selected item's attributes and timephased attributes, and the item's milestone dates and statuses at the time the transition started.

Your administrator can archive and retrieve archived audit logs. When an audit log is archived, it is not longer available for viewing from the **History** tab in the Workflow tab. If you need to view an archived audit log, contact your administrator to retrieve the audit log. After an archived audit log is retrieved, you can access the audit log from the **History** tab.

- **Attributes** This section lists all of the attributes, except timephased attributes, assigned to the selected item's work item type. The attribute values entered for the items are displayed in the column to the right of the attribute name.
- **Milestones** This section lists all of the selected item's milestones and the milestone dates and statuses.
- **Timephased Attributes** This section lists all of the timephased attributes assigned to the selected item's work item type. The timephased attribute values entered for the work item are displayed in the columns to the right of the timephased attribute name. Your administrator determines which time periods are displayed in the **Timephased Attributes** section. Values can be displayed in *Calendar Month*, *Calendar Quarter*, or *Calendar Year*, or by *Fiscal Month*, *Fiscal Quarter*, or *Fiscal Year*.

Exporting an audit log

You can export a workflow transition audit to Microsoft Excel. Click the **Export** button to create a CSV file. You can use a CSV file to open an audit log in other applications, such as Microsoft Excel.

To export a workflow audit log

1. Open the **Projects** module.
2. Select a work item.
3. Select the Workflow tab.
4. Select the **History** tab.
5. Select the ellipses button to open the **Workflow Audit Log** dialog box.
6. Click **Export Datasheet** to export the workflow audit log.

Ordering attributes, milestones, and timephased attributes

You can order the list of attributes, milestones, and timephased attributes alphabetically from A-Z or from Z-A. You can also hide the list of attributes or, if they are already hidden, you can show them.

To order attributes, milestones, and timephased attributes

1. Open the **Projects** module.

2. Select a work item.
3. Select the Workflow tab.
4. Select the **History** tab.
5. Click the ellipses button to view the **Workflow Audit Log** dialog box.
6. In the workflow audit log, click column headers to sort them in ascending or descending order. You can also hide the list of attributes or, if they are already hidden, you can show them.

Printing an audit log

Click **Print** to print the information in a workflow audit log.

To print a workflow audit log

1. Open the **Projects** module.
2. Select a work item.
3. Select the Workflow tab.
4. Select the **History** tab.
5. In the **Log** column, click the ellipses button in the same row as the transition for which you want to display the audit log.
6. From the audit log, click the **Print** button.
7. Click **Print**.

Viewing an audit log

To view an audit log for a transition history, open the **Workflow Audit Log** dialog box. On the **History** tab, in the transition workflow history, click the ellipses button.

To view a workflow audit log

1. Open the **Projects** module.
2. Select a work item.
3. Select the Workflow tab.
4. Select the **History** tab.
5. Click the ellipses button in the **Log** column to open the **Workflow Audit Log** dialog box and view the audit log. An audit log created for an audited transition is not available for the transition until the transition has been finished.

User Actions

You can right click any work item in the work item tree for additional options.

For more information, see the following topics:

- [Copy Dimension \[page 137\]](#)
- [Custom Log Views \[page 138\]](#)
- [Manage Items \[page 139\]](#)
- [Manage Templates \[page 147\]](#)

- [Reconcile Now \[page 151\]](#)

Copy Dimension

The **Copy Dimension** dialog box helps you copy dimensioned attribute values from one dimension to the other. You can elect to copy all the data or copy only the data that falls within the specified date range. When data is copied data into a dimension, all data in that dimension is overwritten; if data is copied from within a specified date range, only the data in that date range is overwritten. Copying a dimension does not affect the task plan data. (You cannot copy data to the **Plan** or **Actual** dimensions.)

Copying a dimension

Use the **Copy Dimension** dialog box to copy data from one dimension to another.

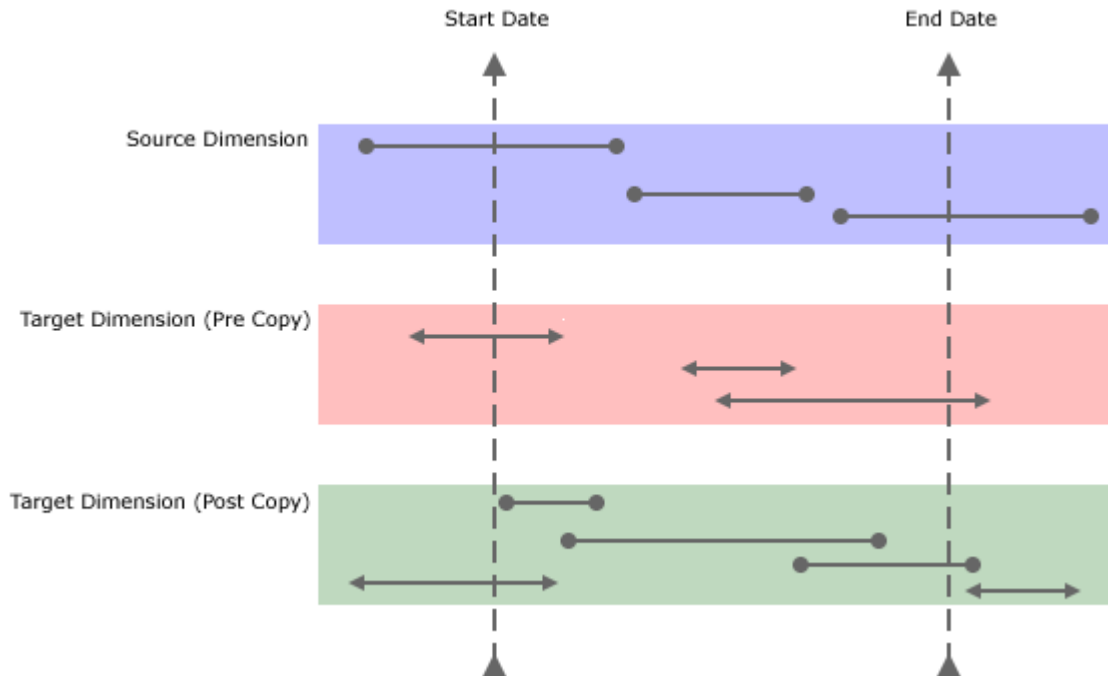
To copy a dimension

1. Open the **Projects** module.
2. Right-click a work item from the work item tree, and then click **Copy Dimension**.
3. In the **Copy Dimension** dialog box, select the dimension from where you are copying data and the dimension to where the data will be copied.
4. Select the dimension from which you want to copy data in the **Copy from** list and the dimension to which you want to copy data in the **Copy to** list. You cannot copy data to a locked dimension.
5. You can copy all data or you can copy data for a specific date range. Under **Timeframe**, specify the starting and ending dates.
6. Click **Save**.

Dimensions

Dimensions are data sets that are used to represent certain situations or goals. Dimensions enable users to group data which represents these situations or goals within a single time period, such as a project plan, a target, a budget, or actuals. There are two system dimensions:

- **Actual** This dimension contains values that represent the actual amounts of dimensioned attributes. For example, posted timesheet time is included in the **Actual** dimension for assignments. The **Actual** dimension can be renamed, but not deleted.
- **Plan** This dimension is used for more detailed project planning. Values in the plan dimension reflect a more detailed knowledge of the program and project execution requirements. The **Plan** dimension includes task plans for a task based work item, such as projects, as well as allocations for an activity-based work item. The **Plan** dimension can be renamed, but not deleted.



Dimensions can be added to some (but not all) of the views that are available in the **Projects** and **Reports** modules. There are two dimension types:

- **Roll-up** In a roll-up dimension, a parent work item displays data that is rolled-up from a child work item. Rolled-up data is read-only in the parent work item. When data in the child work item changes, data in the parent work item changes too. If a child work item becomes a parent work item, original data in the child data is replaced by rolled-up data from a child work item. Most dimensions are roll-up dimensions.
- **Static** In a static dimension, data is not rolled-up and there are no calculations. Data will be editable at any level of the parent/child hierarchy. Static dimensions are useful for top-down planning.

All security roles are given permission to view a dimension's work item data. You can prevent all users in your organization from being able to view a dimension's work item data by locking the dimension. Permission to edit a dimension's work item data is granted on a per-security role basis for each dimension. To give permission to edit a dimension's work item data, select the check box next to the security role. Permission to edit a dimension's work item data is given to all security groups for a pre-configured dimension.

Custom Log Views

A log view is essentially a list found in the **Projects** module that is intended to track certain types of information, such as risks, issues, or perhaps a custom view (such as change log). It is a way for people in your organization to enhance the communicative process used to share information. For example, say you have a log view called **Complaints** that contains a log describing a common customer problem. Several members of your team contribute discussion points about this log until the decision is made to convert this log from a **Complaint** to an **Issue**. After a meeting, the decision is made to create a work item from the issue to address the problem. The work item is assigned to a resource who then fixes the problem. Log views typically allow users to add

a new work item, edit or delete existing ones, and (in some cases) promote them to another work item type.

Manage Items

A work item is any entity within your organization to which personnel, finances, and time can be allocated. A work item is defined as a project, a portfolio, an Agile project (including backlogs, features, and sprints), a product, a program, an application, a service, a request, or an asset. A work item can be scheduled, tracked, modeled, compared, reported against, managed, analyzed, and assigned. Every work item is placed in a hierarchical structure called the work item tree that orders each work item in relation to its parent work item, any peer items, and every child work item.

Adding a new work item

When creating a work item, identify the type of work item you are creating, and define the work item summary data.

To add a new work item

1. Open the **Projects** module.
2. Select a work item from the work item tree under which you want to add a new work item. Right-click and select **New**.
3. In the **New Investment** dialog box, select the work item type.
4. Click **Save**.

Adding a new work item from a template

You can add a new work item using a work item template. Choose the type of work item that you want to create and then select the template from a list of templates. Finish entering summary details using the New Investment dialog box.

To add a new work item from a template

1. Open the **Projects** module.
2. Select a work item in the work item tree under which you want to add a work item. Right-click and select **New from Template**.
3. In the **New Investment from Template** dialog box, select the work item type, a work item template, and (if the template contains a task plan) the date on which starting and ending dates will be based.
4. Click **Save**.

Copying a work item

You can copy an existing work item, modify its summary data and properties, create a new work item, and then place it anywhere in your portfolio.

To copy a work item

1. Open the **Projects** module.
2. In the work item tree, select the work item you want to copy, right-click and select **Copy**.
3. In the **Move/Copy Investment** dialog box, under **Options**, select **Make a copy** and choose whether you want also copy any related documents, any child work

item, or tasks. If you copy tasks, select the date upon which the summary task in the copied work item will begin.

4. Click **OK**.

Deleting a work item

If you no longer need a work item, you can delete it.

To delete a work item

1. Open the **Projects** module.
2. Right-click the work item tree, select a work item, and click **Delete**.
3. In the **Delete Investment** dialog box, select the **Include Children** check box if you would like to delete the selected work item and any work item indented below it.
4. Click **OK**.

Editing a work item summary

You can modify the properties of a work item.

To edit a work item summary

1. Open the **Projects** module.
2. Select a work item.
3. Select the **Summary** tab.
4. Make your changes.
5. Click **Save**.

Moving a work item

You can move any work item around in the work item hierarchy. The simplest way to move a single work item is to drag-and-drop it into the location in the hierarchy that you want it to be.

The **Move Investment** dialog lists every work item that you are authorized to view. When you select a work item for a report or a notification, the selection applies to that work item and any work item below it in that branch of the tree view. When you select a work item for include/exclude or self-allocating activities, the selection applies only to that work item.

You can also enter in a word or phrase and click **Search** to display a list of matches for your search criteria. You can easily alternate between the tree view and the search results by clicking the **Show Tree** or **Show Search Results**, depending on the current view.

To move a work item

1. Open the **Projects** module.
2. In the work item tree, select the work item you want to move, right-click and select **Move/Copy**.
3. In the **Move/Copy Investment** dialog box, select the location in the work item tree under which the work item will be moved.
4. Click **OK**.

Viewing work item properties

Use the **Investment Properties** dialog to view and modify work item properties.

To view work item properties

1. Open the **Projects** module.
2. Right-click the work item tree and select **Properties** to open the under **Investment Properties** dialog box.

Properties

Use the **Properties** dialog box to view the properties for a project, release, sprint, task plan, or any other work item or work type that is currently in the application.

Viewing work type properties

Use the **Investment Properties** dialog to view and modify the properties of a work type.

To view work type properties

1. Open the **Projects** module.
2. Select the work type in the navigation tree.
3. Select **More**, and then choose **Properties**.

Tab: Attribute History

The **Attribute History** tab in the **Properties** dialog box is used to view the history of changes made to an attribute.

Tab: Connector

The **Connector** tab in the **Properties** dialog box is used to view connector details.

The following fields are available from the **Connector** tab in the **Properties** dialog box:

Fields	Description
Connector Name	The names of the connections that are used to provide data for this work item. A connection is made using a recurring tasks, configured from the Jobs tab in the Scheduled Services view.
Last Refreshed	The date and time when a work item was last updated. The frequency of updates is determined by the connection properties that have been configured for the recurring task.

Tab: General

The General tab in the **Properties** dialog box is used to general information about a project, release, task, task plan, or any other work item or work type in the application.

The following fields are available from the **General** tab in the **Properties** dialog box:

Fields	Description
Created By	The name of the resource who initially created the task, task plan, work item, and so on.
Created Date	The date on which a task, task plan, work item, and so on, was created.
Hide On Timesheet	Indicates whether tasks related to this work item will appear in a resource's timesheet. If selected, then the task will not appear in a resource's timesheet.
Item Name	The name of the work item.
Item Type	The the type of work item. If the work item is task-based, then the list will contain task-based work item types. If the work item is activity-based, then the list will contain activity-based work item types.
Last Modified By	The user name of the person who made the most recent changes to the task, task plan, or work item.
Last Modified Date	The date on which the most recent changes were made to the task, task plan, or work item.
Lock Completed Assignments	Indicates whether resources are prevented from submitting time against a task or work item that has been marked as complete.
Self Allocation Allowed	Indicates whether a resource is allowed to allocate themselves to a task or work item, and any activities associated with them. The default setting for this option is inherited from the work item type, but the setting can be configured on a per-work item basis. If self-allocation is allowed, then self-assignment is also allowed. Select this option when you want resources to be able to self-allocate to this work item.
Self Assignment Allowed	Indicates whether a resource is allowed to assign themselves to a task or work item, and any activities associated with them. The default setting for this option is inherited from the work item type, but the setting can be configured on a per-work item basis. If you want to allow self-assignment, but disallow self-allocation, then select this option and de-select Self Allocation Allowed.

Role Assignments

You can make role assignments for a user and/or a security group while you are creating a new work item.

Adding a role assignment

A role assignment is a way to grant to a user and/or a security group permission to access any individual work item in the work item heirarchy, including all of its associated data and any of a child work item.

To add a role assignment

1. Open the **Properties** dialog box for an work item, a work item template, a resource, or a resource team.
2. Select the under **Role Assignments** tab.
3. Choose the **Simple** or **Advanced** tab.
4. From the **Group / User** drop-down, select a security role and click **Add**.
5. Click **Save**.

Clearing a role assignment

You can clear any role assignment. Clearing a role assignment will prevent users and/or security groups from being able to edit information in any child work item; however, users and/or security groups will always be able to view data in a child work item if they have permission to view its parent.

To clear a role assignment

1. Open the **Properties** dialog box for a work item, an work item template, a resource, or a resource team.
2. Select the under **Role Assignments** tab.
3. Choose the **Simple** or **Advanced** tab.
4. From the **Group / User** drop-down, select a security role and click **Clear**.
5. Click **Save**.

Deleting a role assignment

If you are not using a role assignment, you can delete it (though it may be better to clear it).

To delete a role assignment

1. Open the **Properties** dialog box for a work item, a work item template, a resource, or a resource team.
2. Select the property under **Role Assignments** tab.
3. Choose the **Simple** or **Advanced** tab.
4. From the **Group / User** drop-down, select a security role and click **Delete**.
5. Click **Save**.

Editing a role assignment

You can modify a role assignment.

To edit a role assignment

1. Open the **Properties** dialog box for a work item, a work item template, a resource, or a resource team.

2. Select the under **Role Assignments** tab.
3. Choose the **Simple** or **Advanced** tab.
4. From the **Group / User** drop-down, make your changes.
5. Click **Save**.

Removing a security role assignment for a work item

You can remove a security role assignment made to a work item. Select a work item, view its properties, and then remove the role assignment.

To remove a security role assignment for a work item

1. Open the **Projects** module.
2. In the work item tree, select an work item, right-click and choose **Properties**.
3. Select the under **Role Assignments** tab.
4. Select the role that you want to remove and click **Remove**.
5. Click **OK**.

Viewing a role assignment

A role assignment determines who can access a work item.

To view a role assignment

1. Open the **Properties** dialog box for a work item, a work item template, a resource, or a resource team.
2. Select the under **Role Assignments** tab.
3. Choose the **Simple** or **Advanced** tab.

Security

A role assignment is a way to grant to a user and/or a security group permission to access any individual work item in the work item heirarchy, including all of its associated data and any of a child work item.

- Unless you want a user and/or security group to be granted access to every work item in the work item heirarchy, you should not make role assignments to the enterprise portfolio.
- Users and/or security groups will inherit the greatest level of permission granted to any particular work item. For example, if a security group is assigned to more than one security role and either of those security roles are given a role assignment to a work item, any user who belongs to the security group with the role assignment will have permission to access that work item and any of its associated data or child work item.
- If you do not want a user and/or a security group to have permission to edit information in a child work item, you can delete or clear the role assignment for the specific child invesment; however, users and/or security groups will always be able to view data in a child work item if they have permission to view its parent.
- It is better to create role assignments by using security groups rather than for individual users. This will simplify the process of tracking and managing role assignments made to users across your organization.

The security for any work item is defined using the **Role Assignments** tab in the Properties dialog box. The **Role Assignments** tab has two views:

- **Simple** The simple view shows you which users and/or security groups have a role assignment based on a security role and which users and/or security groups inherit permissions from a parent work item. The simple view does not show you which permissions have been inherited or which users and/or security groups have an inherited role assignment based on a security role assigned to a parent work item.
- **Advanced** The advanced view shows you which users and/or security groups have a role assignment based on a security role, which users and/or security groups inherit permissions from a parent work item, which permissions have been inherited, and which users and/or security groups have an inherited role assignment based on a security role assigned to a parent work item.

Tab: Role Assignments, Advanced

The **Role Assignments, Advanced** tab in the **Properties** dialog box is used to advanced role assignment details.

The following fields are available from the **Role Assignments, Advanced** tab in the **Properties** dialog box:

Fields	Description
Add	Click this button to add a selected user and/or security group to the role assignment for this work item. This will add the Is Assigned To Role icon in the Assignment column.
Assignments	This column indicates whether a user and/or security group has a role assignment to the selected work item. If the column shows Is Assigned To Role , the user and/or security group has been given a role assignment to the selected work item. If the column shows Inherits Assignment To Role , the user and/or security group is inheriting its role assignment from a role assignment made to a parent work item. If the column shows Does Not Inherit Assignment To Role , the user and/or security group is not inheriting its role assignment from a parent work item.
Clear	Click to clear a selected user and/or security group from the role assignment for this work item. This will remove the Is Assigned To Role or Does Not Inherit Assignment To Role icons from the Assignment column.
Group / User	Displays the users and/or security groups that are available for a role assignment to the selected work item. This list displays only security groups by default.
Manage By	Select Role to manage role assignments by security role and Group / User to manage role assignments by user and/or security group.
Parent Groups	This column indicates the security groups to which a user and/or a security group belong. This column is only visible when the Role option is selected for the Manage By selector.

Fields	Description
Remove	Click this button to move the selected attributes from the Selected Attributes box to the Available Attributes box.
Role	This column displays the security roles from which users and/or security groups can be given role assignments.
Show Unassigned	Depending on which method you choose to manage role assignments, displays security roles or displays users and/or security groups who do not have a role assignment to the selected work item.
Show Users	Select to display both users and security groups in the Group / User list.
Simple	Click to view the Role Assignments tab, simple view.

Tab: Role Assignments, Simple

The **Role Assignments, Simple** tab in the **Properties** dialog box is used to view role assignment details.

The following fields are available from the **Role Assignments, Simple** tab in the **Properties** dialog box:

Fields	Description
Add	Click this button to add a selected user and/or security group to the role assignment for this work item. This will add the Is Assigned To Role icon in the Assignment column.
Advanced	Click to view the Role Assignments tab, advanced view.
Assignments	This column indicates whether a user and/or security group has a role assignment to the selected work item. If the column shows Is Assigned To Role , the user and/or security group has been given a role assignment to the selected work item. If the column shows Inherits Assignment To Role , the user and/or security group is inheriting its role assignment from a role assignment made to a parent work item. If the column shows Does Not Inherit Assignment To Role , the user and/or security group is not inheriting its role assignment from a parent work item.
Clear	Click to clear a selected user and/or security group from the role assignment for this work item. This will remove the Is Assigned To Role or Does Not Inherit Assignment To Role icons from the Assignment column.

Fields	Description
Group / User	Displays the users and/or security groups that are available for a role assignment to the selected work item. This list displays only security groups by default.
Remove	Click this button to move the selected attributes from the Selected Attributes box to the Available Attributes box.
Role	This column displays the security roles from which users and/or security groups can be given role assignments.
Show Users	Select to display both users and security groups in the Group / User list.

Manage Templates

A work item template helps you to quickly create a new work item by applying default values, copying associated documents and logs, and using predefined task plans that are already defined for an existing work item. Template settings can include: work item attributes, documents, task plans, and log types. Templates do not include resource information, such as assignments or allocations.

Templates can also be used in conjunction with workflows as a method for applying business processes. When a template is associated with a workflow transition and that transition is finished, the template settings are copied to the work item. Applying a template as part of a workflow transition will not overwrite or delete anything that is already in the work item.

Adding a work item template

A work item template can help save users in your organization time, by allowing them to quickly create a new work item that is pre-loaded with default values, associated documents and log types, and predefined task plans.

To add a work item template

1. Open the **Projects** module.
2. Right-click and select **Manage Templates** to open the **Manage Templates** dialog box.
3. In the **Manage Templates** dialog box, click **New from Template**.
4. In the **New Investment** dialog box, select the work item type.
5. On the **Summary** tab, name and describe the work item. If your organization has added custom tabs, complete the information required for each of them (if required).
6. Click **Save**.

Copying a work item template

You can copy a work item template and use it to create a new work item template, applying default values, associating documents and log types, and using predefined task plans.

To copy a work item type

1. Open the **Projects** module.
2. In the work item tree, right-click and select **Templates**.
3. In the **Manage Templates** dialog box, select the template you want to copy and click **Copy**. A new template is added to the list as a copy of the original template.

Deleting a work item template

If your organization is not using a work item template, you can delete it.

To delete a work item template

1. Open the **Projects** module.
2. In the work item tree, select a work item, right-click, and then click **Manage Templates**.
3. In the **Manage Templates** dialog box, click **Delete**.
4. Click **OK**.

Editing a work item template

You can modify any work item template.

To edit a work item template

1. Open the **Projects** module.
2. In the work item tree, right-click and select **Manage Templates**.
3. In the **Manage Templates** dialog box, select the template you want to modify, right-click and select the view you want to modify.
4. Make your changes.
5. Click **Save**.

Editing work item template global properties

You can define the security settings for all templates from the **Global Template Properties** dialog. You can determine who has access to the templates and what they can do with the templates. The security settings for templates, security groups, or users are assigned to specific security roles. The security roles determine the permissions the members of a security group or individual users have for the templates. The **Global Template Properties** dialog has two views, the simple view and the advanced view. When you open the **Global Template Properties** dialog, the page defaults to the simple view. To open the advanced view, click the **Advanced** link on the page. To return to the simple view, click the **Simple** link in the advanced view. There are two ways you can assign security groups and/or users to security roles. You can assign security groups and/or users to security roles by individual group or user, or by security role. In the simple view, you can only assign security groups and/or users to security roles by group or user. In the advanced view you can assign by group, user, or security role. It is best practice to assign most of your users to security roles using security groups, instead of individually assigning each of your users to security roles. Using groups simplifies the tracking and managing of security role permissions for users.

To edit work item template global properties

1. Open the **Projects** module.

2. In the work item tree, right-click and select **Manage Templates**.
3. In the **Manage Templates** dialog box, select **Global Properties**.
4. Make your changes.
5. Click **Save**.

Saving a work item as a template

If your organization prefers a particular type of work item, you can save its values, associated documents and log types, and predefined tasks as a template.

To save a work item as a template

1. Open the **Projects** module.
2. In the work item tree, choose the work item you want to save as a template, right-click and select **Save as Template**.

Viewing a work item template

You can view all of the work item templates that are available in your organization from the **Manage Templates** dialog box.

To view a work item template

1. Open the **Projects** module.
2. In the work item tree, right-click and select **Manage Templates**.
3. A work item template can be viewed from the **Manage Templates** dialog box.

Role Assignments

You can user and/or a security group role assignments to a work item template. When a work item is created from a work item template with a role assignment, all users and/or security groups assigned to the work item template will have access to the work item (after it is created) and, depending on how the role assignments are made, associated data and any child work item.

Adding a role assignment for a work item template

A role assignment is a way to grant to a user and/or a security group permission to access any individual work item in the work item heirarchy, including all of its associated data and any child work item.

To add a role assignment for an work item template

1. Open the **Properties** dialog box for a work item, a work item template, a resource, or a resource team.
2. Select the under **Role Assignments** tab.
3. Choose the **Simple** or **Advanced** tab.
4. From the **Group / User** drop-down, select a security role and click **Add**.
5. Click **Save**.

Clearing a role assignment for a work item template

You can clear any role assignment. Clearing a role assignment will prevent users and/or security groups from being able to edit information in any child work item; however, users

and/or security groups will always be able to view data in a child work item if they have permission to view its parent.

To clear a role assignment for a work item template

1. Open the **Properties** dialog box for a work item, a work item template, a resource, or a resource team.
2. Select the under **Role Assignments** tab.
3. Choose the **Simple** or **Advanced** tab.
4. From the **Group / User** drop-down, select a security role and click **Clear**.
5. Click **Save**.

Deleting a role assignment for a work item template

If you are not using a role assignment, you can delete it (though it may be better to clear it).

To delete a role assignment for an investment template

1. Open the **Properties** dialog box for a work item, a work item template, a resource, or a resource team.
2. Select the property under **Role Assignments** tab.
3. Choose the **Simple** or **Advanced** tab.
4. From the **Group / User** drop-down, select a security role and click **Delete**.
5. Click **Save**.

Editing a role assignment for a work item template

You can modify a role assignment.

To edit a role assignment for a work item template

1. Open the **Properties** dialog box for a work item, a work item template, a resource, or a resource team.
2. Select the under **Role Assignments** tab.
3. Choose the **Simple** or **Advanced** tab.
4. From the **Group / User** drop-down, make your changes.
5. Click **Save**.

Viewing a role assignment for a work item template

A role assignment determines who can access a work item.

To view a role assignment for a work item template

1. Open the **Properties** dialog box for a work item, a work item template, a resource, or a resource team.
2. Select the under **Role Assignments** tab.
3. Choose the **Simple** or **Advanced** tab.

Reconcile Now

You can use the **Reconcile Now** action to refresh all of the labor attribute maps associated with a single work item (and any child work item). After the labor attribute maps are refreshed, additional recalculations will be performed for any calculated attribute that includes a mapped attribute and for any calculated attribute that is affected by any of the refreshed or recalculated data.

Users will be locked out until this operation completes. Because of labor intensive nature of this process, and its effect on all other users, this type of action should be done as a regular, nightly job that is scheduled in the **Scheduled Services** tab in the **System Settings** module.

Refreshing labor attribute maps

Refreshing labor attribute maps updates allocation, assignment, and timesheet data in the selected work item (and any child work item). Refreshing attribute maps can be a lengthy process (and should be done as a scheduled job). During a refresh operation, any work item in the work item heirarchy will not be accessible.

To refresh labor attribute maps

1. Open the **Projects** module.
2. In the work item tree, select a work item, right-click and choose **Reconcile Now**.
3. In the **Refresh Labor Attributes** dialog box, click **Yes**. A large hierarchy may take a long time to refresh.

Reports

The **Reports** module enables you to view and analyze work item data at the portfolio level. This high-level view helps provide your organization both portfolio planning and portfolio monitoring capabilities. Portfolio managers and analysts can perform "what-if" analysis and comparisons, aggregate data across a portfolio to facilitate better decision-making, as well as track portfolio performance over time. This allows you to analyze and monitor your organization's portfolio data using datasheets. Datasheets are read-only spreadsheets in the **Reports** module that display data about any work item in the associated portfolio.

Portfolio managers arrange columns on datasheets to provide logical data calculations, comparisons, and roll-ups. A datasheet can be used to analyze entire portfolios, or any work item in a similar grouping, and can display different dimensions, units, and periods of data. Portfolios can have more than one datasheet, and any datasheet can be copied or moved to another portfolio.

You can use the **Datasheets**, **Timegrid**, and **Timeline** tabs to build and work with datasheets that illustrate the performance of your organization's portfolios at various levels.

For more information, see the following topics:

- [Datasheets \[page 152\]](#)
- [Charts \[page 157\]](#)
- [Demand vs Capacity \[page 163\]](#)
- [Timegrid \[page 165\]](#)
- [Timeline \[page 166\]](#)
- [Datasheet Options \[page 167\]](#)

Datasheets

You can use the **Datasheets** tab to track and manage rolled-up values that reflect the current display of the view. Data can be displayed with the portfolio hierarchy, or it can be grouped by a specific box:

- When displaying data using the portfolio hierarchy, rolled up data on a parent row reflects the values of all child data indented below the parent row. Data for a portfolio row is rolled up from any work item within the portfolio.
- When displaying data grouped by a specific box, the parent row represents the value that all of the child rows indented below the parent row have in common. Data for a parent row displaying a grouped value is rolled up from any work item that contains that value.

Datasheet rows can be excluded from the roll-up values by clearing the check box to the left of the row.

You can create datasheets in two ways: from scratch or basing one on a datasheet type. When you assign a datasheet to a datasheet type, all of the datasheet's properties and charts are defined for the datasheet by the datasheet type you select.

You can make any datasheet or datasheet type that you create a private datasheet, and you have the option of sharing your private datasheet with other users and/or members

of a security group. When a datasheet is private, only the user that created the datasheet can view and modify the datasheet, unless you are sharing the datasheet. When you share a datasheet, the users and/or members of the security groups you assigned to the datasheet can also view and modify the datasheet.

For more information, see the following topics:

- [Define Dashesheets \[page 153\]](#)
- [Define Snapshots \[page 155\]](#)
- [Custom Log View Reporting in Dashesheets \[page 157\]](#)

Define Dashesheets

Portfolio managers can define which columns are displayed in a datasheet from the Columns tab of the New Dashesheet, Dashesheet Properties, and Dashesheet Type Properties dialog boxes.

You can set up a datasheet to group data by a specific box's values, and sort data by each value in a specific column on the Organize tab of the New Dashesheet, Dashesheet Properties, and Dashesheet Type Properties dialog boxes. For example, you select *Status* from the **Group By** list, **Start** from the **Sort By** list, and then select the *Descending* option.

The groups specified on the Organize tab of the New Dashesheet, Dashesheet Properties, and New Dashesheet dialog boxes are used to create the layers of drill-down on charts in the **Charts** tab.

If you are creating or editing a datasheet that is assigned to a datasheet type, you cannot edit any of the datasheet properties on the Columns, Filters, Organize, Time Views, or Dashboard tabs on the New Dashesheet or Dashesheet Properties dialog boxes.

Adding a datasheet

Add a datasheet for most work item types.

To add a datasheet

1. Open the **Reports** module.
2. Select the **Dashesheets** tab.
3. Right-click the navigation tree and click **New Dashesheet**.
4. Enter a name and select the datasheet type from which this datasheet will be based.
5. On the **General** tab, define general datasheet properties.
6. On the **Columns** tab, identify datasheet columns and column order.
7. On the **Filters** tab, set up a filter for focusing the information displayed on a datasheet.
8. On the **Organize** tab, determine how data is grouped and sorted on the datasheet.
9. On the **Time Views** tab, define the properties for the **Timeline** and **Timegrid** tabs.
10. On the **Demand vs Capacity Filters** tab, define the resource-based filters for the datasheet.
11. On the **Dashboard** tab, set up the dashboard for the datasheet.
12. Click **Save**.

Copying a datasheet

As you review a datasheet that displays data in a portfolio, you may decide that you want to see the same datasheet columns, but with different data, in a different portfolio. Copying a datasheet will also copy any charts associated with that datasheet.

To copy a datasheet

1. Open the **Reports** module.
2. Select an datasheet.
3. Select the **Charts** tab.
4. Click **Copy** to copy a datasheet.
5. In the **Move/Copy** dialog box, select **Make a copy**.
6. In the **Destination** box, choose the destination datasheet for the new chart.
7. Click **Save**.

Deleting a datasheet

When a datasheet is no longer useful for portfolio data analysis, delete it.

To delete a datasheet

1. Open the **Reports** module.
2. In the navigation tree, right-click the datasheet you want to delete and click **Delete**.
3. Click **Save**.

Moving a datasheet

You can move a datasheet between portfolios. Moving a datasheet will also move any charts that are associated with that datasheet.

To move a datasheet

1. Open the **Reports** module.
2. Select a datasheet.
3. Select the **Datasheets** tab.
4. Click **Move/Copy Datasheet** to move a datasheet.
5. In the **Move/Copy Datasheet** dialog box, select the location to which you are moving the datasheet.
6. Click **OK**.

Sharing a datasheet

Use the Datasheet Shared Access dialog box to share a private datasheet with a specific user and/or security group. When a datasheet is private, it is not viewable by anyone except the owner of the datasheet. You can create exceptions and allow some users in your organization to view a private datasheet. On the General tab of the Datasheet Properties dialog box, click **Share** to open the Datasheet Shared Access dialog box. You can filter the users that are available in the Datasheet Shared Access dialog box by selecting or de-selecting the **Users**, **Groups**, and **Unselected** check boxes under **Show**.

Click **Add** to share the datasheet. Click **Clear** to stop sharing the datasheet. Only selected users and/or groups will be able to view the datasheet.

To share a datasheet

1. Open the **Reports** module.
2. Select a datasheet.
3. Right-click and select **Datasheet Properties**.
4. On the **General** tab, enable the **Private** check box and click **Share**.
5. Select the users and/or security groups to whom you want to grant access.
6. Click **Save**.

Viewing a datasheet

A datasheet can be viewed from the **Datasheets** tab in the **Reports** module.

To view a datasheet

1. Open the **Reports** module.
2. Select a datasheet.
3. In the action pane, select a snapshot from the **Data** drop-down.

Define Snapshots

Datasheet snapshots are used in each of the **Reports** module views. **Datasheets**, **Timegrid**, **Timeline**, and **Charts** tabs contain a datasheet snapshot list on the view toolbar.

Selecting a snapshot from the list on the view toolbar displays the data from the snapshot of the datasheet selected in the view and on the datasheet's dashboard (if the dashboard is set up to synchronize with the current datasheet selection). A datasheet snapshot list is available in three places: the navigation bar, the History list on generated charts, and the Chart Settings tab.

Adding a datasheet snapshot

Datasheet snapshots capture the data on a datasheet from a specific time period. Datasheet snapshots allow you to analyze and compare portfolio data on a datasheet from different moments in the portfolio's lifecycle to help determine its progress and health. When you schedule a datasheet snapshot, snapshots will be automatically created at the scheduled time.

To add a datasheet snapshot

1. Open the **Reports** module.
2. In the navigation tree, right-click a datasheet and click **Snapshots** to open the **Snapshots** dialog box.
3. In the **Snapshots** dialog box, select a datasheet snapshot and click **New Datasheet Snapshot**.
4. In the **New Snapshot** dialog box, name the snapshot.
5. Select **Include Timegrid Data** to include timephased data from the **Timegrid** tab in the datasheet snapshot.

6. Select **Include Timeline Data** to include milestone data from the **Timeline** tab in the datasheet snapshot.
7. Select **Include Demand vs Capacity Data** to include resource-based data from the **Demand vs Capacity** tab.
8. Under **Schedule**, select **Schedule Snapshot** to create recurring updates to the snapshot. They can be updated on a daily, weekly, or monthly basis.
9. Click **Save**.

Adding a datasheet snapshot that contains current data

You can create datasheet snapshots that contain data that is current to the datasheet for which you want to create a datasheet snapshot.

To add a datasheet snapshot that contains current data

1. Open the **Reports** module.
2. In the navigation tree, right-click a datasheet and click **Snapshots** to open the **Snapshots** dialog box.
3. In the **Snapshots** dialog box, select a datasheet snapshot and click **Snapshot Now**.

Deleting a datasheet snapshot

You can remove any datasheet snapshot that is no longer needed. Once a snapshot is removed, the snapshot (and its history) will no longer be available in the snapshot list on the view toolbar throughout the **Reports** module or the **Charts** tab.

To delete a datasheet snapshot

1. Open the **Reports** module.
2. In the navigation tree, right-click a datasheet and click **Manage Snapshots** to open the **Snapshots** dialog box.
3. In the **Snapshots** dialog box, select a datasheet snapshot and click **Delete**.
4. Click **OK**.

Deleting a datasheet snapshot history

You can remove the snapshot history for any datasheet.

To delete a datasheet snapshot history

1. Open the **Reports** module.
2. In the navigation tree, right-click a datasheet and click to open the **Snapshots** dialog box.
3. In the **Snapshots** dialog box, select a datasheet snapshot and then select the **History** tab.
4. Click **Remove** to delete the selected snapshot or click **Remove All** to delete all snapshots. Confirm.

Scheduling a datasheet snapshot

You can create a schedule for capturing snapshots on an on-going basis, or capture a single snapshot of a datasheet's current data. A datasheet snapshot captures the data on a datasheet from a specific time period.

To schedule a datasheet snapshot

1. From the application toolbar, click **Setup**, and then select **System Settings**.
2. Select the **Scheduled Services** tab.
3. Select the **Jobs** tab.
4. Click **New** to add a new attribute.
5. In the **Scheduled Job Properties** section, enter a name and description for the job.
6. Select *Datasheet History* from the **Job Type** list.
7. Set the frequency, date, and time options.
8. Click **Save**.

Viewing a datasheet snapshot

Select a datasheet that contains the snapshot you want to view and click **Snapshots**.

To view a datasheet snapshot

1. Open the **Reports** module.
2. Select a datasheet.
3. In the action pane, select a snapshot from the **Data** drop-down.

Custom Log View Reporting in Datasheets

You can present reports on a datasheet that show a project's risks and issues, and any other custom log views you have configured. These reports can contain data from view log items, can be shown as charts or lists. Report item details can be investigated by right-clicking.

Custom log view datasheets can be added to a Project in the same way as other datasheets. From the Reports module, select the folder in which to place the custom log view, then click Add and click New Log View Datasheet.

To report on custom log views, user must have the "Create new Log View datasheets" permission enabled for their security role. To set this role, click the **Setup** menu, then open the **Security** tab on the **System Settings** module. On this page, click the **Projects** permissions tab, and associate the **Edit"Create new Log View datasheets"** permission for the appropriate security role.

A video tutorial demonstrating custom log view reporting is available at <http://help.serena.com/alm/vat/2010/ReportingOnCustomLogViews.html>.

Charts

You can use the **Charts** tab to create and maintain charts for datasheets. You can add new charts, edit charts, move or copy charts, remove charts, and view chart properties. Charts can be saved as datasheet types, printed, or sent via email. Charts belonging to a

datasheet type cannot be edited in the **Charts** tab, even if you have permissions for editing charts in the **Charts** tab.

The view toolbar in the **Charts** tab contains a datasheet snapshot list, and displays the name of the snapshot you are viewing. If you are viewing the current datasheet data or snapshots are not enabled, **Live** is displayed on the toolbar.

The **Charts** tab helps you view portfolio data visually by using the following chart types:

- Advanced Bubble
- Bar
- Bubble
- Burndown
- Column
- Gauge
- Pie
- Range Column
- Stacked Bar
- Stacked Column
- Timephased Area
- Timephased Stacked Column

Adding a chart

Create a chart to view data for any datasheet that has been saved and to which you have access.

To add a chart

1. Open the **Reports** module.
2. Select a datasheet.
3. Select the **Charts** tab.
4. Click **New Chart**.
5. In the **New Chart** dialog box, select a chart.
6. In the **New Chart** dialog box, choose a chart: **Advanced Bubble, Bar, Bubble, Burndown, Column, Gauge, Pie, Range Column, Stacked Bar, Stacked Column, Timephased Area, or Timephased Stacked Column**.
7. Enter a name and a description.
8. On the **Attributes** tab, specify what you want to compare.
9. On the **Chart Settings** tab, select how you want to view data in the chart.
10. On the **Gauge Settings** tab, define the gauge properties and the scale with which you want to present data. This tab is only available for the **Gauge** chart type.
11. On the **Timephase Settings** tab, choose from start and end dates, time periods, or if you want to sync the chart with a datasheet. This tab is only available for the **Burndown, Timephased Area, and Timephased Stacked Column** chart types.

12. On the **Axis Settings** tab, choose major and minor grid lines. This tab is available for all of the chart types except **Gauge** and **Pie**.
13. Click **Save**.

Copying a chart

You can create new charts based on charts that are already there.

To copy a chart

1. Open the **Reports** module.
2. Select an datasheet.
3. Select the **Charts** tab.
4. Click **Copy** to copy a chart.
5. In the **Move/Copy Chart** dialog box, select **Make a copy**.
6. In **Destination**, choose the destination datasheet for the new chart.
7. Click **Save**.

Deleting a chart

If you don't need a chart, you can delete it.

To delete a chart

1. Open the **Reports** module.
2. Select an datasheet.
3. Select the **Charts** tab.
4. Click **Copy** to copy a chart.
5. In the **Move/Copy Chart** dialog box, select **Make a copy**.
6. In **Destination**, choose the destination datasheet for the new chart.
7. Click **Save**.

Editing a chart

Make changes to a chart. Change the axis options or the properties. A datasheet type chart can only be edited by a user with specific permission to do so.

To edit a chart

1. Open the **Reports** module.
2. Select a datasheet.
3. Select the **Charts** tab.
4. Select a chart and click **Edit Chart**.
5. In the **Chart Properties** dialog box, make your changes.
6. Click **Save**.

Moving a chart

If you want to associate a chart with another datasheet, you can move it.

To move a chart

1. Open the **Reports** module.
2. Select a datasheet.
3. Select the **Charts** tab.
4. Select a chart and click **Edit Chart**.
5. In the **Chart Properties** dialog box, make your changes.
6. Click **Save**.

Saving a chart

You can save any chart.

To save a chart

1. Open the **Reports** module.
2. Select a datasheet.
3. Select the **Charts** tab.
4. Select a chart.
5. Click **View** to view the chart.
6. Click **Save** to save the picture.
7. Select a file format, a location to which the chart will be saved, and click **OK**.

Viewing chart properties

Charts belonging to a datasheet type cannot be created or edited in the **Charts** tab, even if you have permissions for editing charts in the **Charts** view. When you select a datasheet type chart in the **Charts** tab, the only actions available for the chart is view, regardless of your security role permissions. Users with the appropriate permissions can create and edit charts for datasheet types from the Datasheet Type Charts page.

The Chart Properties dialog describes information about a chart. This dialog appears when creating a new chart or when modifying the properties for an existing chart. Depending on the chart you are creating or have selected, different options will be available.

The following types of charts are available:

- Advanced Bubble
- Bar
- Bubble
- Burndown
- Column
- Gauge
- Pie
- Range Column
- Stacked Bar
- Stacked Column

- Timephased Area
- Timephased Stacked Column

Chart properties vary from chart to chart. Every chart has a name (required) and a description (optional). Depending on the chart, the following tabs may be available:

- **Attributes** This tab allows you to define the attributes that display in the chart.
- **Axis** This tab is used to determine whether major and minor grid lines are displayed on a chart for both the X axis and the Y axis.
- **Chart** This tab is used to define general settings for the chart.
- **Timephase** This tab is used to define a chart's timephase settings.
- **Gauge** This tab enables you to set the properties for the attributes selected on the Attributes tab.

To view chart properties

1. Open the **Reports** module.
2. Select a datasheet.
3. Select the **Charts** tab.
4. Right-click the datasheet and select **Chart Properties**.

Datasheet Type Charts

When you select a datasheet type chart in the **Charts** tab, the only actions available for the chart is view, regardless of your security role permissions. Users with the appropriate permissions can create and edit charts for datasheet types from the **Datasheet Type Charts** dialog. The **Datasheet Type Charts** dialog has the same functionality as the **Charts** tab, except that it is only used for managing datasheet type charts, and you cannot view charts from the **Datasheet Type Charts** dialog.

The **Manage Datasheet Types** dialog is used to edit, copy, and delete datasheet types, as well as create and manage datasheet type charts. When you click **Promote to Datasheet Type** in the **Reports** module, the **Promote to Datasheet Type** dialog opens, offering the same functionality as the **Manage Datasheet Types** dialog.

- **Datasheet Types** This list displays all of the datasheet types.
- **Edit** Select a datasheet type from the **Datasheet Types** list and click the **Edit** button to open the **Datasheet Type Properties** dialog box for the selected datasheet type.
- **Charts** Select a datasheet type from the **Datasheet Types** list and click the **Charts** button to open the **Datasheet Type Charts** dialog box for the selected datasheet type. Datasheet type charts cannot be created or edited from the **Charts** tab. Datasheet type charts must be created and edited from the **Datasheet Type Charts** dialog box.
- **Copy** Select a datasheet type from the **Datasheet Types** list and click the **Copy** button to copy the selected datasheet type. The copy of the datasheet type appears in the **Datasheet Types** list on the **Manage Datasheet Types** dialog box and the **Datasheet Types** list on the **New Datasheet, Datasheet Properties**, and the **Datasheet Type Properties** pages.

- **Deleting a datasheet type** Any datasheet type that is no longer needed can be deleted. When you delete only a datasheet type, any datasheets that were assigned to the datasheet type become standard datasheets, and can be edited. The datasheet will retain the datasheet properties and charts defined for the datasheet type.

Adding a datasheet type chart

Create a a datasheet type chart based on a datasheet type. When a chart is created for a datasheet type. the chart is automatically added to all of the datasheets assigned to the datasheet type.

To add a datasheet type chart

1. Open the **Reports** module.
2. Select a datasheet.
3. Select the **Charts** tab.
4. Select a chart.
5. Right-click the navigation tree and select **Promote to Datasheet Type Chart** to promote that chart to a datasheet type chart.

Copying a datasheet type chart

You can create new datasheet type charts based on datasheet type charts that are already there. A datasheet type chart can only be copied to datasheets that are not assigned to a datasheet type. A datasheet type chart cannot be copied to other datasheet types.

To copy a datasheet type chart

1. Open the **Reports** module.
2. Select a datasheet.
3. Select the **Charts** tab.
4. Right-click and select **Manage Datasheet Types**.
5. In the **Manage Datasheet Types** dialog box, select a datasheet type from the **Datasheet Types** list, and click **Charts**.
6. In the **Datasheet Type Charts** dialog box, select a chart.
7. Click **Copy**.
8. In the **Move/Copy Chart** dialog box, select **Make a copy**.
9. In **Destination**, choose the destination datasheet for the new chart.
10. Click **OK**.

Deleting a datasheet type chart

If you don't need a datasheet type chart, you can delete it.

To delete a datasheet type chart

1. Open the **Reports** module.
2. Right-click the datasheet and select **Manage Datasheet Types**.

3. In the **Manage Datasheet Types** dialog box, select a datasheet type from the **Datasheet Types** list, and click **Delete**.
4. In the **Datasheet Type Charts** dialog box, select a chart and click **Charts**.
5. Click **OK**.

Editing a datasheet type chart

Make changes to a datasheet type chart. Change the axis options or the properties. When a datasheet type chart is edited, the chart is automatically edited on any datasheet to which the datasheet type is associated.

To edit a datasheet type chart

1. Open the **Reports** module.
2. In the datasheets tree, right-click a datasheet and select **Manage Datasheets**.
3. In the **Manage Datasheet Types** dialog box, select a datasheet type and then select **Edit Datasheet Type Chart**.
4. In the **Datasheet Properties** dialog box, make your changes. Click **OK**.
5. Click **Save**.

Moving a datasheet type chart

While working with a datasheet type chart, you may determine that it belongs in a datasheet. A datasheet type chart can be moved to another datasheet within the same portfolio or to a datasheet in another portfolio. A datasheet type chart can only be moved to a datasheet that is not assigned to a datasheet type. A datasheet type chart cannot be moved to another datasheet type, and a standard datasheet type chart cannot be moved to a datasheet type.

To move a datasheet type chart

1. Open the **Reports** module.
2. In the datasheets tree, select a datasheet, right-click and select **Move/Copy Datasheet**.
3. In the **Move/Copy Datasheet** dialog box, select the location in the datasheets tree under which you want to move the datasheet.
4. Click **OK**.

Viewing a datasheet type chart

A datasheet type chart can be viewed from **Charts** tab.

To view a datasheet type chart

1. Open the **Reports** module.
2. Right-click the navigation tree and select **Manage Datasheet Types** to view datasheet types.

Demand vs Capacity

You can use the **Demand vs Capacity** tab to see relationships between resource demand and resource capacity for a selected work item in your organization's portfolio. The left side of the **Demand vs Capacity** tab lists the selected work item and its attributes. The

right side of the **Demand vs Capacity** tab displays the demand and capacity values for the selected time period. Each time period contains the total demand and capacity values for the work item and may contain individual columns for selected resource roles or the total values for each time frame. The lower pane aggregates totals from the portfolio, showing total demand and capacity, and the variance between.

One of the key benefits to using the **Demand vs Capacity** tab is the ability to identify potential resource constraints within a work item portfolio. The **Demand vs Capacity** tab assumes that resource demand for your most important work item will be filled first and that they will be sorted according to importance or strategic value. The sort order can be specified using the Organize tab in the Datasheet **Properties** dialog box. As you move down a work item list, capacity will be consumed by each work item in turn, until, potentially, the demand for resources exceeds resource capacity.

The resource demand values display in the right part of the view. When resource demand is less than capacity, demand values for each corresponding work item is displayed in black (positive variance). When resource demand is greater than capacity, demand values for each corresponding work item is displayed in red (negative variance). When the overall demand values are calculated in the lower pane, and compared with capacity, you will see the total variance for the portfolio by time period and by role. In addition to colors, you can enable a watermark, which adds a red line and a watermark that uses a graphical representation when demand exceeds capacity. The watermark will appear at the first point where capacity is exceeded.

You can change the information available in the **Demand vs Capacity** tab by changing the starting or ending dates, by adjusting the calendar period, or by changing the units upon which the analysis is based. Click **Apply** to recalculate the information.

Datasheet demand values for each work item is equal to the sum of all allocations in the specified time frame. Demand is represented by rows, which correspond to each work item in the datasheet. Demand for a work item can be viewed over time and for each resource role allocated to that work item. Datasheet capacity values for each work item is derived from the calendar settings for all resources on all resource teams included in the **Demand vs Capacity Filters** tab in the **Datasheet Properties** dialog box in the specified time frame. Capacity is displayed in the **Capacity** row at the lower part of the view. The total demand displays in the **Total Demand** row, which includes both demand in the datasheet. **Other Demand** includes demand for any work item not included in the datasheet, such as those outside the selected work item hierarchy level, or those filtered out in the Datasheet Properties dialog.

Including values for resource roles

If you want to include demand and capacity values for each resource role as well as the time period total, select the **Show Resource Roles** check box.

To include demand and capacity values for resource roles

1. Open the **Reports** module.
2. Select a datasheet.
3. Select the **Demand vs Capacity** tab.
4. Select the datasheet for which you will display demand vs. capacity.
5. Select Show **Resource Roles** and click **Save**.

Using a watermark

In addition to the text coloring, you can select the **Show Watermark** dialog check box on the view toolbar to add a red line and watermark that provides a more graphical representation when demand exceeds capacity. The watermark appears at the first point in a work item list, from top to bottom, where capacity is exceeded.

To use a watermark to indicate when demand exceeds capacity

1. Open the **Reports** module.
2. Select a datasheet.
3. Select the **Demand vs Capacity** tab.
4. Select **Show Watermark** dialog.
5. Click **Save**.

Viewing demand vs. capacity

Demand vs capacity information can be viewed from the **Demand vs Capacity** tab in the **Reports** module.

To view demand vs. capacity

1. Open the **Reports** module.
2. Select a datasheet.
3. Select the **Demand vs Capacity** tab.

Timegrid

You can use the **Timegrid** tab to view datasheet summary information (in the left pane) and timephased allocation of costs and benefits to a collection of items (in the right pane). Data in the **Timegrid** tab is read-only. Rolled-up data is displayed for each work item listed on the datasheet; individual costs and benefits are not listed.

You can change the information available in the **Timegrid** tab by changing the starting or ending dates, by adjusting the calendar period, or by changing the dimension upon which the analysis is based. Click **Apply** to recalculate the information.

Users who have access to the **Timegrid** tab can select and clear the check box to the left of each row to include and exclude the corresponding row from the rollup data. By excluding rows, you can determine impact throughout the organization, including costs, benefits, and resources. The **Show All Roles** check box on the **General** tab of the **New Datasheet** and **Datasheet Properties** dialog boxes determine whether all rows, including excluded rows, are displayed on the datasheet.

The view toolbar in each of the **Reports** module views contains a datasheet snapshot list. In the **Timegrid** and **Timeline** tabs, select a snapshot from the list to display the data from the snapshot in the view. The navigation toolbar also displays the name of the snapshot you are viewing. If you are viewing the current datasheet data or snapshots are not enabled, **Live** is displayed on the toolbar.

When you are viewing live data in the **Timegrid** tab, you can drill-down into the **Projects** module views for a work item on a datasheet. When you click on a work item name in the **Timegrid** tab, a drop-down list of the **Projects** module views opens. Select a view from the list to open the **Projects** module's view for the selected work item on a datasheet. The drill-down feature is not available when viewing data from a datasheet snapshot.

Viewing a timegrid

A timegrid can be viewed from the **Timegrid** tab in the **Reports** module.

To view a timegrid for a datasheet

1. Open the **Reports** module.
2. Select a datasheet.
3. Select the **Timegrid** tab.
4. Select starting and ending date for the timegrid you want to view.
5. Select a dimension.
6. Select a major and a minor timescale.
7. Click **Apply**. This will recalculate the roll-up and calculated values in the timegrid.

Timeline

You can use the **Timeline** tab to view datasheet summary information (in the left pane) and timeline details for a datasheet (in the right pane). Milestones are displayed as diamonds in the timeline. You can change the information available in the **Timeline** tab by changing the starting or ending dates, by adjusting the timescale, or by changing the dimension upon which the analysis is based. Click **Apply** to recalculate the information.

Users who have access to the **Timeline** tab can select and clear the check box to the left of each row to include and exclude the corresponding row from the rollup data. By excluding rows, you can determine impact throughout the organization, including costs, benefits, and resources. The **Show All Roles** check box on the General tab of the **New Datasheet** and **Datasheet Properties** dialog box determines whether all rows, including excluded rows, are displayed on the datasheet.

The view toolbar in the **Timeline** tab contains a datasheet snapshot list. Select a snapshot from the list to display the data from the snapshot in the view. The navigation toolbar also displays the name of the snapshot you are viewing. If you are viewing the current datasheet data or snapshots are not enabled, **Live** is displayed on the toolbar.

When you are viewing live data in the **Timeline** tab, you can drill down to the **Projects** module views for a work item on a datasheet. When you click on a work item name in the **Timeline** tab, a drop-down list of the **Projects** module views opens. Select a view from the list to open the **Projects** module's view for the selected work item on a datasheet. The drill-down feature is not available when viewing data from a datasheet snapshot.

Viewing a timeline

A timeline can be viewed from the **Timeline** tab in the **Reports** module.

To view a timeline for a datasheet

1. Open the **Reports** module.
2. Select a datasheet.
3. Select the **Timeline** tab.
4. Select starting and ending date for the timeline you want to view.
5. Select a dimension.
6. Select a major and a minor timescale.

7. Click **Apply**. This will recalculate the roll-up and calculated values in the timeline.

Datasheet Options

You can right-click any resource in the resource tree for additional options:

- **Move/Copy Datasheet**
- **Delete Datasheet**
- **Datasheet Properties**
- **Export Datasheet**
- **Manage Snapshots**
- **Manage Datasheet Types**
- **Promote to Datasheet Type**

For more information, see the following topics:

- [Manage Datasheets \[page 167\]](#)
- [Manage Snapshots \[page 169\]](#)
- [Manage Types \[page 172\]](#)
- [Properties \[page 172\]](#)

Manage Datasheets

As progress is made on a work item, users with appropriate permissions can create datasheets in the **Reports** module to analyze work item data.

There are two kinds of datasheets you can create: you can create a datasheet from scratch, or you can create a datasheet that is based on a datasheet type. When you assign a datasheet to a datasheet type, all of the datasheet's properties and charts are defined for the datasheet by the datasheet type you select.

You can make any datasheet or datasheet type that you create a private datasheet, and you have the option of sharing your private datasheet with other users and/or members of a security group. When a datasheet is private, only the user that created the datasheet can view and modify the datasheet, unless you are sharing the datasheet. When you share a datasheet, the users and/or members of the security groups you assigned to the datasheet can also view and modify the datasheet.

To make your datasheet private, select the **Private** check box on the **General** tab. To share your private datasheet, select the **Share** button next to the **Private** check box.

Use the **Add**, **Delete**, **Edit**, and **More** options in the navigation pane (or use the right-click options in the work item heirarchy) to manage datasheets.

Adding a datasheet

Add a datasheet for most work item types.

To add a datasheet

1. Open the **Reports** module.
2. Select the **Datasheets** tab.
3. Right-click the navigation tree and click **New Datasheet**.

4. Enter a name and select the datasheet type from which this datasheet will be based.
5. On the **General** tab, define general datasheet properties.
6. On the **Columns** tab, identify datasheet columns and column order.
7. On the **Filters** tab, set up a filter for focusing the information displayed on a datasheet.
8. On the **Organize** tab, determine how data is grouped and sorted on the datasheet.
9. On the **Time Views** tab, define the properties for the **Timeline** and **Timegrid** tabs.
10. On the **Demand vs Capacity Filters** tab, define the resource-based filters for the datasheet.
11. On the **Dashboard** tab, set up the dashboard for the datasheet.
12. Click **Save**.

Copying a datasheet

As you review a datasheet that displays data in a portfolio, you may decide that you want to see the same datasheet columns, but with different data, in a different portfolio. Copying a datasheet will also copy any charts associated with that datasheet.

To copy a datasheet

1. Open the **Reports** module.
2. Select an datasheet.
3. Select the **Charts** tab.
4. Click **Copy** to copy a datasheet.
5. In the **Move/Copy** dialog box, select **Make a copy**.
6. In the **Destination** box, choose the destination datasheet for the new chart.
7. Click **Save**.

Deleting a datasheet

When a datasheet is no longer useful for portfolio data analysis, delete it.

To delete a datasheet

1. Open the **Reports** module.
2. In the navigation tree, right-click the datasheet you want to delete and click **Delete**.
3. Click **Save**.

Moving a datasheet

You can move a datasheet between portfolios. Moving a datasheet will also move any charts that are associated with that datasheet.

To move a datasheet

1. Open the **Reports** module.
2. Select a datasheet.
3. Select the **Datasheets** tab.

4. Click **Move/Copy Datasheet** to move a datasheet.
5. In the **Move/Copy Datasheet** dialog box, select the location to which you are moving the datasheet.
6. Click **OK**.

Exporting a datasheet

You can export the information in a datasheet as a CSV file.

To export a datasheet

1. Open the **Reports** module.
2. In the datasheet tree, select the datasheet you want to export, right-click and choose **Export Datasheet**.
3. Save the datasheet as a CSV file type and select the location you want to save it.
4. Click **Save**.

Sharing a datasheet

Use the **Datasheet Shared Access** dialog box to share a private datasheet with a specific user and/or security group. When a datasheet is private, it is not viewable by anyone except the owner of the datasheet. You can create exceptions and allow some users in your organization to view a private datasheet. On the **General** tab of the **Datasheet Properties** dialog box, click **Share** to open the **Datasheet Shared Access** dialog box. You can filter the users that are available in the **Datasheet Shared Access** dialog box by selecting or de-selecting the **Users**, **Groups**, and **Unselected** check boxes under **Show**. Click **Add** to share the datasheet. Click **Clear** to stop sharing the datasheet. Only selected users and/or groups will be able to view the datasheet.

To share a datasheet

1. Open the **Reports** module.
2. Select a datasheet.
3. Right-click and select **Datasheet Properties**.
4. On the **General** tab, enable the **Private** check box and click **Share**.
5. Select the users and/or security groups to whom you want to grant access.
6. Click **Save**.

Viewing a datasheet

Datasheets can be viewed from the **Datasheets** tab in the **Reports** module.

To view a datasheet

1. Open the **Reports** module.
2. Select a datasheet.

Manage Snapshots

The **Snapshots** dialog displays the existing datasheet snapshots for the datasheet selected in the portfolios pane. Use the Snapshots page to create new snapshots, edit existing snapshots, or delete snapshot you no longer need. If you want to delete snapshot history, snapshot history is deleted on the History tab on the **Edit Snapshots** page.

- **Snapshot Now** Select a snapshot from the snapshot list and click this button to create a snapshot of current data displayed on the selected datasheet.
- **New** Click this button to open the **New Snapshot** page and add a new snapshot to the datasheet.
- **Edit** Select a snapshot from the snapshot list and click this button to open the **Edit Snapshots** page and edit the selected snapshot.
- **Delete** Select a snapshot from the snapshot list and click **Delete**, to delete the selected snapshot.

Adding a datasheet snapshot

Datasheet snapshots capture the data on a datasheet from a specific time period. Datasheet snapshots allow you to analyze and compare portfolio data on a datasheet from different moments in the portfolio's lifecycle to help determine its progress and health. When you schedule a datasheet snapshot, snapshots will be automatically created at the scheduled time.

To add a datasheet snapshot

1. Open the **Reports** module.
2. In the navigation tree, right-click a datasheet and click **Snapshots** to open the **Snapshots** dialog box.
3. In the **Snapshots** dialog box, select a datasheet snapshot and click **New Datasheet Snapshot**.
4. In the **New Snapshot** dialog box, name the snapshot.
5. Select **Include Timegrid Data** to include timephased data from the **Timegrid** tab in the datasheet snapshot.
6. Select **Include Timeline Data** to include milestone data from the **Timeline** tab in the datasheet snapshot.
7. Select **Include Demand vs Capacity Data** to include resource-based data from the **Demand vs Capacity** tab.
8. Under **Schedule**, select **Schedule Snapshot** to create recurring updates to the snapshot. They can be updated on a daily, weekly, or monthly basis.
9. Click **Save**.

Adding a datasheet snapshot with current data

You can create datasheet snapshots that contain data that is current to the datasheet for which you want to create a datasheet snapshot.

To add a datasheet snapshot that contains current data

1. Open the **Reports** module.
2. In the navigation tree, right-click a datasheet and click **Snapshots** to open the **Snapshots** dialog box.
3. In the **Snapshots** dialog box, select a datasheet snapshot and click **Snapshot Now**.

Deleting a datasheet snapshot

You can remove any datasheet snapshot that is no longer needed. Once a snapshot is removed, the snapshot (and its history) will no longer be available in the snapshot list on the view toolbar throughout the **Reports** module or the **Charts** tab.

To delete a datasheet snapshot

1. Open the **Reports** module.
2. In the navigation tree, right-click a datasheet and click **Manage Snapshots** to open the **Snapshots** dialog box.
3. In the **Snapshots** dialog box, select a datasheet snapshot and click **Delete**.
4. Click **OK**.

Deleting a datasheet snapshot history

You can remove the snapshot history for any datasheet.

To delete a datasheet snapshot history

1. Open the **Reports** module.
2. In the navigation tree, right-click a datasheet and click to open the **Snapshots** dialog box.
3. In the **Snapshots** dialog box, select a datasheet snapshot and then select the **History** tab.
4. Click **Remove** to delete the selected snapshot or click **Remove All** to delete all snapshots. Confirm.

Editing a datasheet snapshot

A datasheet snapshot is a collection of saved parameters from which you can take real-time snapshots of data for a datasheet. Save them over time to compare snapshots. If the snapshot doesn't contain the data you want it to, edit it.

To edit a datasheet snapshot

1. Open the **Reports** module.
2. In the datasheets tree, right-click a datasheet and select **Manage Datasheets**.
3. In the **Manage Datasheet Types** dialog box, select a datasheet type and then select **Edit Datasheet Type Chart**.
4. In the **Snapshots** dialog box, select a datasheet snapshot and click **Edit Snapshot**.
5. In the **Edit Snapshots** dialog box, make your changes and then click **Save**.

Scheduling a datasheet snapshot

You can create a schedule for capturing snapshots on an on-going basis, or capture a single snapshot of a datasheet's current data. A datasheet snapshot captures the data on a datasheet from a specific time period.

To schedule a datasheet snapshot

1. From the application toolbar, click **Setup**, and then select **System Settings**.
2. Select the **Scheduled Services** tab.

3. Select the **Jobs** tab.
4. Click **New** to add a new attribute.
5. In the **Scheduled Job Properties** section, enter a name and description for the job.
6. Select *Datasheet History* from the **Job Type** list.
7. Set the frequency, date, and time options.
8. Click **Save**.

Viewing a datasheet snapshot

Select a datasheet that contains the snapshot you want to view and click **Snapshots**.

To view a datasheet snapshot

1. Open the **Reports** module.
2. Select a datasheet.
3. In the action pane, select a snapshot from the **Data** drop-down.

Manage Types

The **Manage Datasheet Types** dialog is used to edit, copy, and delete datasheet types, as well as create and manage datasheet type charts. When you click **Promote to Datasheet Type** in the **Reports** module, the **Promote to Datasheet Type** dialog opens, offering the same functionality as the **Manage Datasheet Types** dialog.

Properties

The **Datasheet Properties** dialog box, the **New Datasheet** page, and the **Datasheet Type Properties** page are used to describe either a datasheet or a datasheet type.

- **Datasheet Name** Type the name of the selected datasheet.
- **Datasheet Type** Select a datasheet type from the **Datasheet Type** list to assign the datasheet to a datasheet type. Select **None** from the Datasheet Type box if you do not want to assign the datasheet to a datasheet type, or have no datasheet types saved.

Once you have provided a name for the datasheet, you can filter the displayed portfolio data using the settings on the following tabs:

- **General** This tab contains basic information about a datasheet.
- **Columns** This tab defines which columns appear on the datasheet, and in what order they are displayed.
- **Filters** This tab defines which columns appear on the datasheet, and the order in which they are displayed.
- **Time views** This tab shows how data is grouped and sorted on the datasheet.
- **Demand vs Capacity** This tab shows the resource demand against capacity for selected resources.
- **Dashboard** This tab shows how the charts are displayed on the datasheet's dashboard, and whether the data displayed on the charts reflects the current data.

Columns

This tab is used to define which columns appear on the datasheet, and in what order they are displayed. If you are creating or editing a datasheet that is assigned to a datasheet type, you cannot edit any of the datasheet properties on the **Columns, Filters, Organize, Time Views,** or **Dashboard** tabs:

Fields	Description
Add	Click this button to move the selected attributes from the Available Attributes box to the Selected Attributes box.
Available Attributes	The attributes that have been assigned to the work item types listed on the General tab.
Custom Header	The custom display name for the attribute, as it will appear in the datasheet. If this field is empty, the Default Header will be used.
Datasheet Name	The name of the datasheet.
Default Header	The default display name for the attribute, as it will appear in the datasheet.
Move Down	Columns are displayed from left to right in a datasheet. Click this button to move the column for this attribute to the right in the datasheet.
Move Up	Columns are displayed from left to right in a datasheet. Click this button to move the column for this attribute to the left in the datasheet.
Remove	Click this button to move the selected attributes from the Selected Attributes box to the Available Attributes box.
Selected Attributes	The attributes that are displayed as columns in the datasheet. Columns are displayed from left to right in the order listed here.

Dashboard

This tab is used to define the charts displayed on the datasheet's dashboard, and determine whether the data displayed on the charts reflects the data currently displayed on the datasheet. You can also determine whether users can display the other charts created for the datasheet from the dashboard on the **Dashboard** tab. If you are creating or editing a datasheet that is assigned to a datasheet type, you cannot edit any of the datasheet properties on the **Columns, Filters, Organize, Time Views,** or **Dashboard** tabs:

Fields	Description
Allow users to change chart	Select the Allow users to change chart check box to allow users to view the other charts created for the datasheet on the dashboard. If this check box is selected the user can select one of the datasheet's other charts from the chart list on the dashboard. Clear the check box if you only want the chart you selected from the Left Chart or Right Chart chart list to be displayed on the dashboard for the datasheet.
Datasheet Name	The name of the datasheet.
Left Chart	Select the chart you want to be displayed on the left side of the datasheet's dashboard. The charts displayed in the chart list, are the charts created for the datasheet in the Charts tab.
Right Chart	Select the chart you want to be displayed on the right side of the datasheet's dashboard. The charts displayed in the chart list, are the charts created for the datasheet in the Charts tab.
Synchronize with datasheet	Select the Synchronize with datasheet check box to have the data displayed in the selected chart reflect the data displayed in the datasheet. For example, if a snapshot is selected on the datasheet, the chart would display the data from the selected snapshot. Clear the check box if you want the selected chart to only display live data from the datasheet. When the Synchronize with datasheet check box is cleared, the chart on the dashboard displays the data from the snapshot selected in the View chart using this data box in the New Chart or Chart Properties page in the Charts tab.

Demand vs. Capacity

This tab is used to display the relationship between resource capacity and demand by filtering on resource teams and roles, allocation status and other demand. Using this tab, you can specify the resource-related information that is included in the datasheet:

Fields	Description
Allocation Status	This tab enables you to select the type of allocation that is included on the datasheet. Proposed and Committed are selected by default. This will include both types of allocation status on the datasheet. If you want to filter out one type or the other, clear the appropriate check box. For example, if you want to filter out soft allocations, clear the Proposed check box.

Fields	Description
Other Demand	This tab enables you to define the attributes that constitute "other demand." This demand comes from work item allocations that are outside the scope of the current datasheet, but are contained within the same portfolio hierarchy. For example, you can include demand data from only a work item with a specific project status. Other demand can also be a work item filtered out of the datasheet.
Resource Role	This tab enables you to select the resource roles that are included on the datasheet. Resource roles display as columns on the datasheet within the specified time period. For example, if you have 5 resource roles and the selected time period is Calendar Month from January to December, the datasheet displays 12 time periods, each of which contains five resource role columns. To display a subset of available resource roles, clear the appropriate check box.
Resource Team	This tab enables you to select the resource teams that is included on the datasheet. In the Resource Team column, select the resource teams to include their resource demand and capacity data on the datasheet. All resource teams are selected by default. To display a subset of available resource teams, clear the appropriate check box.

Filters

This tab is used to define which columns appear on the datasheet, and in what order they are displayed. If you are creating or editing a datasheet that is assigned to a datasheet type, you cannot edit any of the datasheet properties on the **Columns, Filters, Organize, Time Views,** or **Dashboard** tabs:

Fields	Description
Add	Click this button to move the selected attributes from the Available Attributes box to the Selected Attributes box.
And	Select this option to indicate that the work item on the datasheet must meet the conditions of the selected filter rule and all other filter rules that do not begin with Or . For example, if multiple rules use the And option, and one rule uses the Or option, the rules containing the And option are grouped together, and the rule containing the Or option is considered separately. The work item on the datasheet must either meet all of the And conditions, or at least the Or condition.
Attribute	Select the datasheet column that you are building a filter rule around from this list.

Fields	Description
Compare To	Select what the filter rule should compare the attribute to. Select the this specific value option and type a value in the box below the options to filter the datasheet so that only work item with the Comparison relationship with the value you specified for the selected attribute are displayed. Select the another attribute option and select an attribute from the list below the options to filter the datasheet so that only work item with the Comparison relationship between the two selected attributes are displayed.
Comparison	Select the test you want to apply to the column selected in the Attribute list.
Datasheet Name	The name of the datasheet.
Delete	Removes the selected rule from the Filter Rules box.
Down	Moves the selected rule down in the list.
Filter Rules	Lists all of the current rules set up to filter the datasheet.
Or	Select this option to indicate that the work item on the datasheet must meet the conditions of the selected filter rule, or all the filter rules that do not begin with Or , or another filter rule that begins with Or .
Up	Moves the selected rule up in the list.
Update	Click this button to update the selected filter rule.

General

This tab is used to identify the basic information about a datasheet. If you are creating or editing a datasheet that is assigned to a datasheet type, you cannot edit the work item types included on the datasheet type on the **General** tab. You cannot edit any of the datasheet properties on the **Columns**, **Filters**, **Organize**, **Time Views**, or **Dashboard** tabs:

Fields	Description
Associate With	You can associate the datasheet with a specific location in the work item hierarchy. This enables you to define the root work item for the datasheet; the work item you select is the top-level work item in the datasheet. By default, datasheets are associated with the enterprise portfolio.
Created By	Displays the user name of the person who initially created the datasheet, and the date and time it was created. This box is read-only.

Fields	Description
Default Expansion Level	Select the default expansion level for the datasheet from the Default Expansion Level list. The Default Expansion Level list determines how many levels of the datasheet are opened on the datasheet by default.
Description	Type a brief description of what the datasheet can be used for, or what data it includes.
Display Levels	Select how many levels of data you want to view on the datasheet from the Display Levels list.
Last Modified By	Displays the user name of the person who made the most recent changes to the datasheet, and the date and time they modified it. This box is read-only.
Location	Displays the location of the datasheet within your organization's portfolios.
Private	Select this check box if you want the datasheet to only be available to you. Clear the check box if you want the datasheet to be available to all users that have access to datasheets for the portfolio. When the Private check box is selected, only the user that created the datasheet can view and modify the datasheet, unless you are sharing the datasheet.
Share	This button is only available if the Private check box is selected on a datasheet that you created. If you selected the Private check box, but would like to share the datasheet with specific users and/or security groups, you can share the datasheet. When you share a datasheet, the users and/or members of the security groups you assigned to the datasheet can also view and modify the datasheet. Click the Share button on the General tab on the New Datasheet, Datasheet Properties, or Datasheet Type Properties page to assign users and/or security groups to the datasheet on the Datasheet Shared Access page.
Show All Roles	Select this check box check box to display excluded rows on the datasheet. A row is excluded on a datasheet when the check box to the left of the row is cleared. Excluded rows are displayed in gray on the datasheet. If the Show All Roles check box is cleared, the excluded rows are not displayed on the datasheet.
Show Unallocated	Select the Show Unallocated check box to display the differences between a parent work item and its child work item for roll-up attributes in non-roll-up dimensions, such as the target dimension.

Fields	Description
Work Items	Select the Include All Types option to include all work item types on the datasheet. Select the Include Only These Types option and select the work item types you want to include on the datasheet. To select more than one work item type from the list, press CTRL while selecting each work item type.

Organize

The **Organize** tab is used to determine how data is grouped and sorted on the datasheet. If you are creating or editing a datasheet that is assigned to a datasheet type, you cannot edit any of the datasheet properties on the **Columns, Filters, Organize, Time Views, or Dashboard** tabs on the **New Datasheet** or **Datasheet Properties** page:

Fields	Description
Ascending	Select this option if you would like the corresponding column sorted in ascending order.
Descending	Select this option if you would like the corresponding column sorted in descending order.
Group By	Select the column's attribute name that will be used for the first grouping of data on the datasheet.
Sort By	Select the column's attribute name that the datasheet's data will sort by first.
Then By	Select the column's attribute name that will be used for each of the consecutive groups of data. You do not need to select an attribute for each of the Then By lists.

Time Views

This tab is used to group and sort data for a datasheet.

Fields	Description
Add	Click this button to move the selected attributes from the Available Attributes box to the Selected Attributes box.
Available Attributes	The attributes that have been assigned to the work item types listed on the General tab.
Dimension 1	Select the type of dimension to display in the Timegrid tab.
Dimension 2	Select the type of dimension to display in the Timegrid tab.

Fields	Description
Move Down	Columns are displayed from left to right in a datasheet. Click this button to move the column for this attribute to the right in the datasheet.
Move Up	Columns are displayed from left to right in a datasheet. Click this button to move the column for this attribute to the left in the datasheet.
Remove	Click this button to move the selected attributes from the Selected Attributes box to the Available Attributes box.
Selected Attributes	The attributes that are displayed as columns in the datasheet. Columns are displayed from left to right in the order listed here.
Show Milestones	Select this check box to display milestones in the Timeline tab.

Resources

Resource management decisions are often based around labor. How much is needed? What types of skills are required and when does it need to be done by? Who can do it? Did it get done? You can measure labor in the following ways:

- **Demand** How much is needed? Demand is the net request for labor, work, and resources for a work item.
- **Capacity** What types of skills are required and when does it need to be done by? Capacity measures what is needed for a work item and the availability of resources that can be allocated or assigned to one or more tasks. Capacity can be measured using actual resources or by using generic resources as a placeholder.
- **Allocation** Who can do it? An allocation is an agreement between a resource manager and a project manager as to the availability of a given resource (actual or generic) to work on one or more tasks in task plan.
- **Assignments** Did it get done? Assignments are tracked against the individual tasks within the task plan. Assignments are tracked in timesheets that are submitted by the resources assigned to tasks in the task plan. Timesheets can be approved or rejected.

Resources are people (labor) that can be used by a work item. This includes generic labor resources and a TBH (to-be-hired or unknown) resource. A resource manager is allowed to add resources and to create resource teams for actual and generic resources (a placeholder). The **Resources** module helps provide tools to resource managers for creating, managing, allocating, and securing your resources.

For more information, see the following topics:

- [Allocations \[page 180\]](#)
- [Assignments \[page 184\]](#)
- [Resource Pool \[page 185\]](#)
- [Resource Roles \[page 188\]](#)
- [Resource Timesheets \[page 191\]](#)
- [Team Summary \[page 193\]](#)
- [Resource Options \[page 195\]](#)

Allocations

You can use the **Allocations** tab to initiate and manage the commitment of resources to a work item, which are tracked as resource allocations. You can also allocate and assign resources directly from a project task plan. A resource allocation is an agreement between a resource manager and a project manager as to a resource's availability to work on a work item. There are two types of resource allocations:

- **User** An actual resource that is available to work.
- **Generic** A placeholder that represents an actual resource or a group of actual resources. You can use generic resource allocations to plan for the resource needs of a work item prior to assigning actual resources. For example, if you have a generic allocation for a project manager at 300% (essentially three project

managers), you can substitute three user resources at 100% each, six resources at 50% each, and so on. Assignments can be made against a generic resource that are then transferred to the user resource, once named.

The upper pane of the **Allocations** tab is used to view existing resources, the work item to which they are allocated, and the timegrid/timeline views of their allocation over a period of time. Select a resource team. The default column shown for resources is: *Name*. You can add additional columns to the upper pane by clicking the **Properties** button. Use the **Filters** tab to select specific resources. Use the **Organize** tab to sort and group resources.

Use the **Swap/Grid Timeline** button to toggle between the timegrid and timeline views. **Timegrid** and **Timeline** tabs can be optimized for starting and ending dates, units (FTE, currency, or hours), time period (*Calendar Week, Calendar Month, Calendar Quarter, Calendar Year, Fiscal Month, Fiscal Quarter, or Fiscal Year*), and timescale. Click the **Apply** button to recalculate the timeline or timegrid view to include your changes. Move the splitter bar to increase or decrease the size of the upper pane.

The lower pane of the **Allocations** tab is used to view resource allocations. Select a resource team in the upper pane to view a resource allocation graph in the lower pane. A resource allocation graph displays a resource team's capacity, net allocation, and net assignments. Settings for timegrid and timeline views (such as date range, dimension, etc.) are tracked in the resource allocation graph. Select a work item allocated to a resource to view and modify resource allocations using the **General** tab.

The resource allocation graph is a time-phased graph. It displays several details for the selected work item on the upper pane. The selected work item can be a resource, resource team, resource allocation, or an arbitrary group defined in the view settings. Resource capacity is shown as a horizontal line. The allocations are displayed as stacked bars with different colors for each work item. The units (FTE, hours, currency) and time period of the graph track the units selected in the upper pane.

Adding an allocation

A resource allocation is when you make a resource available for work on a work item. He or she can be allocated to a work item, a task-based work item, or an activity-based work item. For a task-based work item, the user needs to be allocated to the work item before he or she can be assigned to a task.

To add a resource allocation

1. Open the **Resources** module.
2. Select the **Allocations** tab.
3. Click **New Allocation**.
4. In the **Resource Allocation** dialog box, select a resource from the **Resource** drop-down.
5. From the **Investment** drop-down, select the work item to which the generic allocation will be made. In the **Select Investments** dialog box, choose the work item and click **OK**.
6. From the **Role on Investment** drop-down, select the resource role you want to associate with the allocation.
7. From the **Status** drop-down, indicate whether the generic allocation is *Proposed* or *Committed*.

8. Click **Plus** to define how much and when a resource will be allocated. For each resource allocation, define the percentage of full time (% FTE), the start and finish dates for the allocation, and any comments specific to the allocation. (Click **Delete** to remove a resource allocation definition.)
9. Click **Rates** to define the rates associated with the allocation.
10. Click **OK**.

Adding a generic allocation

A generic resource allocation is when you use a placeholder to allocate a resource instead of allocating an actual resource. When a generic resource has the same name as a resource role, it can help simplify the process of identifying the actual resource who needs to be assigned. A generic resource can be allocated to a task- or an activity-based work item. For a task-based work item, the generic resource needs to be allocated before a task can be assigned.

To add a generic resource allocation

1. Open the **Resources** module.
2. Select the **Allocations** tab.
3. Select a resource team in the resources tree, right-click and select **New Generic Allocation**.
4. In the **Resource Allocation** dialog box, select a resource role from the **Resource Role** drop-down.
5. From the **Investment** drop-down, select the work item to which the generic allocation will be made. In the **Select Investments** dialog box, choose the work item and click **Save**.
6. From the **Status** drop-down, indicate whether the generic allocation is *Proposed* or *Committed*.
7. Click **Plus** to define how much and when a generic resource will be allocated. For each generic resource allocation, define the percentage of full time (% FTE), the start and finish dates for the allocation, and any comments specific to the allocation. (Click **Delete** to remove a generic resource allocation definition.)
8. Click **Rates** to define the rates associated with the role.
9. Click **Save**.

Adding a team allocation

A resource team allocation is when you make an entire resource team available for work on a work item. The primary resource role of each person in the team is selected by default and cannot be edited. The resource team can be allocated to a task-based work item or an activity-based work item. For a task-based work item, the resource team needs to be allocated to the work item before resources can be assigned tasks.

To add a resource team allocation

1. Open the **Resources** module.
2. Select the **Allocations** tab.
3. Select a resource team in the resources tree, right-click and select **New Team Allocation**.

4. In the **New Team Allocation** dialog box, select a resource role from the **Resource Team** drop-down.
5. From the **Investment** drop-down, select the work item to which the generic allocation will be made. In the **Select Investments** dialog box, choose the work item and click **OK**.
6. From the **Status** drop-down, indicate whether the generic allocation is *Proposed* or *Committed*.
7. Click **Plus** to define how much and when a resource will be allocated. For each resource allocation, define the percentage of full time (% FTE), the start and finish dates for the allocation, and any comments specific to the allocation. (Click **Delete** to remove a resource allocation definition.)
8. Click **Rates** to define the rates associated with the allocation.
9. Click **OK**.

Deleting an allocation

If you no longer need a resource allocation, you can delete it.

To delete a resource allocation

1. Open the **Resources** module.
2. Select the **Allocations** tab.
3. Select a resource team.
4. Select a resource in the resource team and click the work item to which they are allocated. Click **Delete** to delete the resource allocation.

Editing an allocation

You can modify a resource allocation.

To edit a resource allocation

1. Open the **Resources** module.
2. Select the **Allocations** or **Assignments** tab.
3. Select a resource.
4. In the lower pane, make your changes and click **Save**.

Substituting a resource

You can substitute a resources who have been allocated, including substituting generic resources for actual resources. For example, if you have a generic allocation for project manager at 300% (essentially three project managers), you can substitute three user resources at 100% each, six resources at 50% each, or virtually any other combination; you can also substitute one project manager at 100% and leave the other 200% allocated to the generic resource.

To substitute a resource

1. Open the **Resources** module.
2. Select a work item.
3. Select the **Allocations** tab.

4. Select a resource from the resource tree and right-click to open the **Resource Substitution** dialog box.
5. Select the **Effective Date of Substitution**. This is the date upon which the resource substitution will occur.
6. Select the resource you want to substitute. Click to open the **Find Resource** dialog box.
7. From the **Resource Role to Use** drop-down, select the resource role you want to associate with the allocation.
8. Click **OK**.

Viewing an allocation

Resource allocations can be viewed from the **Allocations** tab in the **Resources** module.

To view a resource allocation

1. Open the **Resources** module.
2. Select the **Allocations** tab.
3. Select a resource team from the resources tree.

Auto-Updating an allocation

Resource allocations can be automatically updated within the Task Plan view in the **Resources** module.

In order for Project Managers in your organization to take advantage of this feature they must first have "Edit and Delete Resource Allocation" permissions enabled for their security role.

A video tutorial demonstrating auto-updates is available at <http://help.serena.com/alm/vat/ppm2010/AutoUpdateResourceAllocations.html>.

Note that only future task assignment start and end date dates will affect the project resource allocations for team members. This means that allocation contours from when auto-update is applied, and allocations in the past will not be affected. Future allocation contours will be updated to match the task plan assignments.

To view a resource allocation

1. Open the **Resources** module.
2. Select the **Task Plan** view.
3. Click the **Update Allocations** option on the **Tools** menu of the Task Plan.

Assignments

You can use the **Assignments** tab to track how project managers have assigned resources to individual tasks within a work item and to help load balance resource allocations across any work item.

The upper pane of the **Assignments** tab is used to view existing resources, any work item to which they are allocated, and the timegrid/timeline views of their workload over a period of time. Select a resource team. The default column shown for resources is: *Name*. You can add additional columns to the upper pane by clicking the **Properties** button. Use

the **Filters** tab to select specific resources. Use the **Organize** tab to sort and group resources.

Use the **Swap/Grid Timeline** button to toggle between the timegrid and timeline views. **Timegrid** and **Timeline** tabs can be optimized for starting and ending dates, dimensions (**Plan**, target, baseline, **Actual**, or **Task Baseline**), units (FTE, currency, or hours), time period (*Calendar Week, Calendar Month, Calendar Quarter, Calendar Year, Fiscal Month, Fiscal Quarter, or Fiscal Year*), and timescale. Click the **Apply** button to recalculate the timeline or timegrid view to include your changes. Move the splitter bar to increase or decrease the size of the upper pane.

The lower pane of the **Assignments** tab is used to view resource allocations. Select a resource team in the upper pane to view a resource allocation graph in the lower pane. A resource allocation graph displays a resource team's capacity, net allocation, and net assignments. Settings for timegrid and timeline views (such as date range, dimension, etc.) are tracked in the resource allocation graph. Select a work item that is allocated to a resource to view and modify resource allocations using the **General** tab.

Editing a resource allocation

You can modify a resource allocation.

To edit a resource allocation

1. Open the **Resources** module.
2. Select the **Allocations** or **Assignments** tab.
3. Select a resource.
4. In the lower pane, make your changes and click **Save**.

Resource Pool

You can use the **Resource Pool** tab to create resources, organize resource teams and manage the resources in them, and to track and update an individual resource's skills. Any member of the Resource Managers security role can modify resources. The nodes on the Resource Breakdown Structure (RBS) are the individual resource teams. Individual resource are the leaf nodes in the resource breakdown structure, although the resources pane does not display the individual resources. In the **Resource Pool, Allocations, Assignments**, and **Demand vs Capacity** tabs, individual resources are displayed in the view pane.

The upper pane of the **Resource Pool** tab is used by a resource manager to display resources, their roles, and the skills associated with them. Select a resource team. The default column shown for resources is: *Name*. Click the plus symbol next to a resource name to view the list of resource roles and skills associated with that resource. You can add additional columns to the upper pane by clicking the **Properties** button. Use the **Filters** tab to select specific resources. Use the **Organize** tab to sort and group resources.

The lower pane of the **Resource Pool** tab is used to view and modify a resource's details. Select a resource in the upper pane to view details, resource roles, and resource calendars in the lower pane.

Adding a resource

A new resource can be added. When a new resource is created, that resource is not assigned to a user account, is not assigned to a license, and is inactive. To assign a license and activate the account, please contact your administrator.

To add a resource

1. Open the **Resources** module.
2. Select the **Resource Pool** tab.
3. Click **New Resource**.
4. In the **New Resource** dialog box, type the first name, last name, user name, email address, and contact information for the new resource.
5. Enter starting and ending dates for the resource.
6. Select the resource type from the **Resource Type** drop-down.
7. Click **OK**. The resource will be inactive until a license is assigned to the user account. Please work with an administrator to assign a license to the new resource.

Adding a resource role

You can associate a resources role to a resource. From the **Resource Pool** view, select a resource. In the lower pane, choose the **Resource Role** tab.

To add a resource role to a resource

1. Open the **Resources** module.
2. Select the **Resource Pool**, **Allocations**, or **Assignments** tab.
3. Select a resource.
4. In the lower pane, select the **Resource Roles** tab.
5. Under **Available Resource Roles**, select a role and click **Add**.
6. Click **Save**. Confirm.

Adding a resource from a user account

In order for a resource to be assigned to tasks, report time against those tasks, manage projects, manage resources, or otherwise perform work against items, that resource must also have a user account. If your administrator has imported resources, when you add a new resource, they may already have a user account. Use the **New Resource from User** option to create a new resource based on an existing user account.

To add a resource who already has a user account

1. Open the **Resources** module.
2. Right-click the navigation tree and select **New Resource from User** to create a new resource based on an existing user account.
3. In the **New Resource from User** dialog box, select a user.
4. Click **Save**. The resource will be an active resource.

Applying security to a team

When you create a resource team you can determine who has access to the resource team, and what they can do with the resource team and individual resources. Resource team security is defined on the **Resource Team Properties** page. To define resource team security for a resource team, security groups and/or users are assigned to specific security roles on the resource team. The security roles determine the permissions the

members of a security group or individual users have for the resource team and its resources.

To apply security to a resource team

1. Open the **Resources** module.
2. Select a resource team in the resources tree, right-click and select **Resource Team Properties** to open the **Resource Team Properties** dialog box
3. On the **Role Assignments** tab, from the **Group / User** drop-down, select a security role.
4. Select a security role and click **Add**.
5. Click **OK**.

Deleting a resource

If a resource isn't needed in the resource pool, it can be deleted.

To delete a resource

1. Open the **Resources** module.
2. Select the **Resource Pool** tab.
3. Select a resource team.
4. Select a resource and click **Delete**.

Moving a resource

Open the **Move Resources** dialog box to move a resource or a resource team to a different location in the Resource Breakdown Structure (RBS).

To move a resource

1. Open the **Resources** module.
2. Select the **Resource Pool** tab.
3. Select a resource team.
4. Select a resource.
5. Click **Move/Copy**.
6. In the **Move Resources** dialog box, click a resource team into which the resource will move.
7. Click **OK**.

Viewing a resource

Resources can be viewed from the **Resource Pool** tab in the **Resources** module.

To view a resource

1. Open the **Resources** module.
2. Select the **Resource Pool**, **Allocations**, or **Assignments** tab.
3. Select a resource team from the resources tree.
4. Click the resource you want to view. The resource's details appear in the lower pane.

Resource Roles

You can use the **Resource Roles** tab to create and manage resource roles. The upper pane of the **Resource Roles** tab is used to view resource roles and the skills associated with each role. Click the plus symbol next to a resource role to view the skills associated with that resource role. The lower pane of the **Resource Roles** tab is used to view resource role properties. Select a resource role in the upper pane. A resource role can be associated with a security role. A resource role can contain one or more skills. Labor attribute mapping (and the calculations that are needed to create them) are highly dependent on resource roles. It is recommended that the permission to create and modify resource roles be granted carefully.

Adding a resource role

A new resource role can be added. You can associate a list of skills to a resource role. When creating a new resource role, the associated skills and rates are added to the resource role. Labor attribute mappings and the calculations the often accompany them are highly dependent on resource roles. It is recommended that the permission to create and modify resource roles be granted carefully.

To add a resource role

1. Open the **Resources** module.
2. Select the **Resource Roles** tab.
3. Click **New Resource Role**.
4. Type the name of the new resource role and add a description.
5. Under **Default Security Role and Rate**, select the security role to which the resource role is associated and click **Rates** to define the rates associated with the role.
6. Under **Skill Membership**, move the skills you want to associate with the resource role to the right column.
7. Click **OK**.

Deleting a resource role

Any resource role that is not assigned to a resource can be deleted.

To delete a resource role

1. Open the **Resources** module.
2. Select the **Resource Roles** tab.
3. Select the resource role that you want to delete, and then click **Delete**. You cannot delete a resource role that is assigned to a resource.
4. Click **OK**.

Editing a resource role

You can edit the properties of a resource role.

To edit the properties of a resource role

1. Open the **Resources** module.
2. Select the **Resource Roles** tab.

3. Select a resource role.
4. Make your changes. Modify resource rates. Modify skills.
5. Click **Save**.

Rates

You can use the **Rate Editor** dialog box to add, modify, and delete resource rates used for resource allocations. Add an attribute rate for a *Timephased - FTE* or a *Timephased - UNITS* attribute. If you add a new rate, the rate for the resource will be the new rate starting at the selected date. Click the **Rates** button to open the **Rate Editor** dialog box. If you are allocating a resource to a work item, the default rate for that resource can be changed during the allocation.

It may be important for your organization to limit access to who can define resource role rates. They affect resource costs when resources are allocated to items and every calculation that is based on those resource allocations. Any change to a resource rate may also require changes to labor attribute mapping.

Adding a rate

Open the **Resource Role Rates** dialog box to associate rates with resource roles. The default rates (\$ per hour) are defined for each resource role. It's important to limit access who in your organization can add, modify, or delete a resource role rate, since they affect resource costs when they are allocated to items. All calculations based on resource role rates; therefore, changes to resource rates may also require changes to labor attribute mapping.

To add a rate

1. Open the **Resources** module.
2. Select the **Resource Roles** tab.
3. Select a resource role.
4. In the lower pane, click **Rates**.
5. In the **Resource Role Rates** dialog box, click **New Rate** to add a new rate.
6. Specify the date upon which the rate takes effect, add the rate (per hour), and provide comments (if necessary).
7. Click **Save**.

Deleting a rate

Delete a rate for a resource allocation.

To delete a rate

1. Open the **Projects** module.
2. Select a work item.
3. Select the **Team Roster** tab.
4. Select a resource.
5. In the lower pane, select the **Allocation** tab.
6. Click **Rates**.

7. In the **Allocation Rates** dialog box, select the rate you want to delete and click **Delete**.
8. Click **OK**.

Skills

You can use the **Manage Skills** dialog box to manage the list of skills used in your organization. Project managers and resource managers can use skills to help find the best resources in your organization to work on a work item based on the needs of that work item. Resource roles are associated with a set of skills. And resources who are associated with a resource role can be given proficiency and experience levels for each skill.

Adding a skill

Select a resource role and define a rate. The default rate (\$s per hour) is defined for each resource role and the rate must include a date with which the rate is to take effect and the rate (in \$) per hour. Open the **Manage Skills** dialog box to work with the list of skills available in your organization. Enter the name of a skill and click **Add**. If you add a new rate, the rate for the resource will be the new rate starting at the selected date.

To add a skill

1. Open the **Resources** module.
2. Select the **Resource Roles** tab.
3. Click **New Skill** to open the **Manage Skills** dialog box.
4. In the **Manage Skills** dialog box, add the name of a skill and click **Add**.
5. Click **Save**.

Deleting a skill

If your organization is not using a skill, you can delete it. Pick a skill from the list of skills and click **Delete**.

To delete a skill

1. Open the **Resources** module.
2. Select the **Resource Roles** tab.
3. In the resources tree, right-click and select **Manage Skills**.
4. In the **Manage Skills** dialog box, under **Skill List**, select a skill and click **Remove**.
5. Click **Save**.

Editing a skill

You can modify an existing skill. If you modify an existing rate, the allocation associated with that rate will use the modified rate.

To edit a skill

1. Open the **Resources** module.
2. Select the **Resource Roles** tab.
3. Open the **Manage Skills** dialog box. Right-click a resource role in the navigation pane and select **Manage Skills**; or click **Manage Skills** in the view pane.

4. In the **Manage Skills** dialog box, select a skill, rename the skill, and then click **Update**.
5. Click **Save**.

Renaming a skill

Skills can be renamed. Pick a skill from the list of skills, rename it, and then click **Update**.

To rename a skill

1. Open the **Resources** module.
2. Select the **Resource Roles** tab.
3. In the resources tree, right-click and select **Manage Skills**.
4. In the **Manage Skills** dialog box, under **Skill List**, select a skill, rename it, and then click **Update**.
5. Click **Save**.

Resource Timesheets

Project and resource managers can use the **Timesheets** tab to approve or reject the timesheets that are submitted by team members as they complete their assigned work on items. Timesheets can be approved or rejected individually and in groups. Timesheets can be partially approved or partially rejected. Timesheets can be updated on behalf of team members. Rejected timesheets can be corrected, resubmitted, and approved as long as the time period for the timesheet is still open.

When the **Submission Status** column indicates that time or status has been submitted by a resource, the time or status can then be approved or rejected. Use the check box in the **Approval** column to cycle through the timesheet approval options:

- *Approve* Use this setting to approve the submitted time.
- *Reject* Use this setting to reject the submitted time.
- *Remove* Use this setting to clear approval or rejection of the submitted time.

Timesheet Options

The **Timesheets** tab contains the following options:

- **PM Approval** Project manager approval. A check indicates that the time has been approved. An indicates that the time has been rejected. This column is not displayed if approval is not required.
- **RM Approval** Resource manager approval. A check indicates that the time has been approved. An indicates that the time has been rejected. This column is not displayed if approval is not required.
- **PM Status Approval** Task status approval. A check indicates that the status has been approved. An indicates that the status has been rejected. This column is not displayed if approval is not required.
- **Submission Status** A check in this column indicates that the timesheet has been submitted and is ready for approval.
- **Ready to Post** All required approvals are in and the time is ready to post.
- **Completed** Click in this column to mark a task as completed.

- **Comments** If this icon appears in the column, comments have been entered for that work item.
- **New Comment** If this icon appears in the column, comments have been entered for that work item.
- **New Comment in** If this icon appears in the column, new comments have been entered for a work item lower in that branch of the tree view.
- **Comments in Descendant** If this icon appears in the column, comments have been entered for a work item lower in that branch of the tree view.

Adding a comment to a resource's timesheet

Click to add a comment to an assignment in a timesheet.

To add a comment to a timesheet

1. Open the **Resources** module.
2. Select the **Timesheets** tab (if in the **Projects** or **Resources** modules) or **My Timesheet** views (if in the **Tools** module).
3. Select a resource, show details, and click **Comments** to open the **Comments** tab.
4. Add the comment.
5. Click **Submit**.

Approve tasks in a timesheet

Select the row which contains the timesheet entry you want to click and then set the **Approval** check box to approved. When timesheets are approved, the data can then be posted into parent items and into related task plans. After data from a timesheet is posted into its parent work item and related task plans, the timesheet is closed.

To approve tasks in a resource timesheet

1. Open the **Resources** module.
2. Select the **Assignments** tab.
3. Expand or collapse the tree view to show the assignment or group of assignments that you want to work on.
4. Click the check box in the **RM Approval** column to cycle through the three available states and choose the one you want: *Remove* (clear) approval, *Approve* or *Reject* time.
5. Click **OK**.

Approving tasks in a group of resource timesheets

Approve a group of resource's time by selecting the row which contains the resource group and then setting the Approval column to approved. When timesheets are approved, the data can then be posted into parent items and into related task plans. After data from a timesheet is posted into its parent work item and related task plans, the timesheet is closed.

To approve tasks in a group of resource timesheets

1. Open the **Resources** module.
2. Select the **Timesheets** tab.

3. Expand the list to find the timesheets containing the tasks that you wish to approve.
4. Select the row that contains the resource group whose timesheets you want to approve, and click in the **Approval** column.

Rejecting a task in a timesheet

Select the row which contains the timesheet entry you want to click and then set the **Approval** check box to rejected.

To reject a task in a timesheet

1. Open the **Projects** module.
2. Select a work item.
3. Select the **Timesheets** tab.
4. Select a task.
5. Click in the approval column for that task. This indicates that you have rejected the task.
6. Click **Save**.

Rejecting a group of timesheets

Reject a group of resource's time by selecting the row which contains the resource group and then setting the check box in the **Approval** column to rejected.

To reject a group of timesheets

1. Open the **Tools** module.
2. Select the **My Approvals** tab.
3. Select **My Approvals**.
4. In the **Project Picker** dialog box, select the items which contains the timesheets you want to reject. Click **Add**.
5. Click **OK**.
6. Set **Period Ending** the desired time period.
7. After the correct timesheets are listed and the right time period is identified, click in the **PM Approval** column. Repeat this for any row you want to reject.
8. Click **Save**.

Team Summary

You can use the **Team Summary** tab to manage a resource team. A resource team is an arbitrary node in your organization's Resource Breakdown Structure (RBS). You can select a resource team to view and edit the resource team name and description. You can add resources and resource teams, delete resources, apply security to the resources in a resource team, move resources and resource teams within the Resource Breakdown Structure (RBS), and so on.

Adding a resource team

New resource teams can be added, into which new resources can be placed, creating a new resource team.

To add a resource team

1. Open the **Resources** module.
2. Select the **Resource Pool** tab.
3. In the navigation tree, under the location in which you want to add a resource team, right-click and select **New Resource Team**.
4. In the **New Resource Team** dialog box, type the name of the new resource team and add a description.
5. Click **OK**.

Deleting a resource team

A resource manager can delete a resource team from the resource pool. A resource team cannot be deleted if it contains resources.

To delete a resource team

1. Open the **Resources** module.
2. Select the **Resource Pool** tab.
3. In the resources tree, right-click the resource team that you want to delete, and then click **Delete**. Only empty resource teams can be deleted.
4. Click **OK** to confirm.

Moving a resource team

Open the **Move Resources** dialog box to move a resource or a resource team to a different location in the Resource Breakdown Structure (RBS).

To move a resource team

1. Open the **Resources** module.
2. Select the **Resource Pool** tab.
3. Select a resource team.
4. Select a resource.
5. Click **Move/Copy**.
6. In the **Move Resources** dialog box, click a resource team into which the resource will move.
7. Click **OK**.

Viewing a resource team

A resource team can be viewed from the **Team Summary** tab.

To view a resource team

1. Open the **Resources** module.
2. Select the **Resource Pool** tab.
3. Click a resource team to view a list of team members who belong to the resource team. The resource team's details appear in the lower pane.

Resource Options

You can add, edit, delete, and move resources and resource teams.

For more information, see the following topics:

- [Resources \[page 195\]](#)
- [Resource Teams \[page 198\]](#)
- [Role Assignments \[page 200\]](#)
- [Team Security \[page 201\]](#)

Resources

Resources are people (labor) that can be associated with any work item. This includes generic labor resources and a TBH (to-be-hired or unknown) resource. A resource manager is allowed to add resources and to create resource teams for actual and generic resources (a placeholder). The **Resources** module helps provide tools to resource managers for creating, managing, allocating, and securing your resources.

Adding a resource

A new resource can be added. When a new resource is created, that resource is not assigned to a user account, is not assigned to a license, and is inactive. To assign a license and activate the account, please contact your administrator.

To add a resource

1. Open the **Resources** module.
2. Select the **Resource Pool** tab.
3. Click **New Resource**.
4. In the **New Resource** dialog box, type the first name, last name, user name, email address, and contact information for the new resource.
5. Enter starting and ending dates for the resource.
6. Select the resource type from the **Resource Type** drop-down.
7. Click **OK**. The resource will be inactive until a license is assigned to the user account. Please work with an administrator to assign a license to the new resource.

Adding a resource with a user account

In order for a resource to be assigned to tasks, report time against those tasks, manage projects, manage resources, or otherwise perform work against any work item, that resource must also have a user account. If your administrator has imported resources, when you add a new resource, they may already have a user account. Use the **New Resource from User** option to create a new resource based on an existing user account.

To add a resource who already has a user account

1. Open the **Resources** module.
2. Right-click the navigation tree and select **New Resource from User** to create a new resource based on an existing user account.
3. In the **New Resource from User** dialog box, select a user.
4. Click **Save**. The resource will be an active resource.

Deleting a resource

If a resource isn't needed in the resource pool, it can be deleted.

To delete a resource

1. Open the **Resources** module.
2. Select the **Resource Pool** tab.
3. Select a resource team.
4. Select a resource and click **Delete**.

Editing a resource

You can edit (or update) the properties of a resource. However, if your organization is using a Lightweight Directory Access (LDAP) provider to maintain user account data, some resource data should not be edited and/or updated manually.

To edit a resource






1. Open the **Resources** module.
2. Select the **Resource Pool**, **Allocations**, or **Assignments** tabs.
3. Select a resource team in the resources tree.
4. Select a resource.
5. In the lower pane, make your changes and click **Save**.

Finding a resource

Find a resource and assign or allocate that resource to a task or work item. In the **Find Resource** dialog box you can search for resources by the name, role, or skills. You also have the option of sorting the candidates by availability, based on the criteria of your choosing. When you select a possible candidate, you can view the resource's availability in the time-phased graph.

The **Find Resource** dialog enables you to search for resources from specific resource teams by name, role, or skill, and search from specific resource teams. This search will return all the resources meeting the identified criteria, and list them alphabetically under **Candidates**. Clicking a resource displays an associated capacity and availability graph in the lower pane.

The **Find Resource** dialog also enables you to sort the returned list of resources according a weighted availability score. You can define the value attribute used to calculate availability for the candidate scoring. The availability score displays a graphical indication of a resources availability, from most available to least.

-  **5 bars**—Most available, score of 81-100.
-  **4 bars**—Score of 61-80
-  **3 bars**—Score of 41-60
-  **2 bars**—Score of 21-40
-  **1 bars**—Least available, and possibly over-allocated, score of 0-20

You can determine the exact availability score by positioning your mouse pointer over the candidate score graphic. These values are derived using a resource availability algorithm.

Essentially, for each resource that matches the search criteria and selected timeframe, availability is calculated in the following way:

- Straight availability resources with the most non-allocated hours.
- Earliest availability resources with the most non-allocated hours that are the closest to the specified time period.
- Value of non-availability resources who are allocated to a high-value work item may be considered less available than those who are allocated to a lower-value work item.

The period availability score is a resource's capacity minus any planned hours for any work item to which the resource will be assigned work. Each planned hour is adjusted by the value of the work item so that resources on a high value work item that are scored as less available than resources on a lower value work item. Candidates with availability on or closer to the specified time period are more desirable than candidates with availability in the future, even if their overall availability in terms of non-allocated hours may be higher. If you select a specific **Investment Value Attribute** to sort against, the relative value of the availability scores for all candidates will likely vary.

To find a resource

1. When allocating or assigning resources, click to open the **Find Resource** dialog box.
2. In the **Search** dialog box, type the string for which you want to search.
3. Select the *Name* attribute.
4. For **Match**, select any word to have the search results include any of the text you typed or select all words to have the search results include all of the text you typed. To search for a specific phrase, put quotation marks around the word(s) for which you are searching.
5. From the **Display** drop-down, select *Documents*.
6. Click **Advanced** to set up a more detailed search, including defining rules, searching by keyword, title, and description, and any selected work item.
7. Click **OK**.

Moving a resource

Open the **Move Resources** dialog box to move a resource or a resource team to a different location in the Resource Breakdown Structure (RBS). The **Move Resources** dialog lists every work item that you are authorized to view. A work item is displayed by default in a tree view that you can navigate just like the navigation pane in the **Projects** module. When you select a work item for a report or a notification, the selection applies to that work item and any work item below it in that branch of the tree view. When you select a work item for include/exclude or self-allocating activities, the selection applies only to that work item.

To move a resource

1. Open the **Resources** module.
2. Select the **Resource Pool** tab.
3. Select a resource team.
4. Select a resource.

5. Click **Move/Copy**.
6. In the **Move Resources** dialog box, click a resource team into which the resource will move.
7. Click **OK**.

Viewing a resource

Resources can be viewed from the **Resource Pool** tab in the **Resources** module.

To view a resource

1. Open the **Resources** module.
2. Select the **Resource Pool, Allocations, or Assignments** tab.
3. Select a resource team from the resources tree.
4. Click the resource you want to view. The resource's details appear in the lower pane.

Viewing resource properties

You can view the properties of a resource from the **Resource Pool, Allocations, and Assignments** tabs.

To view resource properties

1. Open the **Resources** module.
2. Select the **Resource Pool, Allocations, or Assignments** tab.
3. Select a resource.
4. The resource's properties will appear in the lower pane.

Resource Teams

A resource team is a group of resources who work together to complete a collection of assigned tasks. All members of a resource team are given the same role assignments as the resource team to which they belong.

Adding a team

New resource teams can be added, into which new resources can be placed, creating a new resource team. Use the **New Resource Team** dialog box to add a resource team.

To add a resource team

1. Open the **Resources** module.
2. Select the **Resource Pool** tab.
3. In the navigation tree, under the location in which you want to add a resource team, right-click and select **New Resource Team**.
4. In the **New Resource Team** dialog box, type the name of the new resource team and add a description.
5. Click **OK**.

Deleting a team

A resource manager can delete a resource team from the resource pool. A resource team cannot be deleted if it contains resources.

To delete a resource team

1. Open the **Resources** module.
2. Select the **Resource Pool** tab.
3. In the resources tree, right-click the resource team that you want to delete, and then click **Delete**. Only empty resource teams can be deleted.
4. Click **OK** to confirm.

Moving a team

Open the **Move Resources** dialog box to move a resource or a resource team to a different location in the Resource Breakdown Structure (RBS).

To move a resource team

1. Open the **Resources** module.
2. Select the **Resource Pool** tab.
3. Select a resource team.
4. Select a resource.
5. Click **Move/Copy**.
6. In the **Move Resources** dialog box, click a resource team into which the resource will move.
7. Click **OK**.

Viewing a team

A resource team can be viewed from the **Team Summary** tab.

To view a resource team

1. Open the **Resources** module.
2. Select the **Resource Pool** tab.
3. Click a resource team to view a list of team members who belong to the resource team. The resource team's details appear in the lower pane.

Viewing team properties

You can view the properties of any resource team to which you have access.

When you create a resource team you can determine who has access to the resource team, and what they can do with the resource team and individual resources. Resource team security is defined on the **Resource Team Properties** page. To define resource team security for a resource team, security groups and/or users are assigned to specific security roles on the resource team. The security roles determine the permissions the members of a security group or individual users have for the resource team and its resources.

The **Resource Team Properties** page has two views, the simple view and the advanced view. When you open the **Resource Team Properties** page, the page defaults to the

simple view. To open the advanced view, click the **Advanced** link on the page. To return to the simple view, click the **Simple** link in the advanced view.

There are two ways you can assign security groups and/or users to security roles on resource teams. You can assign security groups and/or users to security roles by individual group or user, or by security role. In the simple view, you can only assign security groups and/or users to security roles by group or user. In the advanced view you can assign by group, user, or security role.

It is best practice to assign most of your users to security roles on resource teams using security groups, instead of individually assigning each of your users to security roles on resource teams. Using groups simplifies the tracking and managing of security role permissions for users.

When you assign a user or security group to a security role on a resource team with child resource teams, the permissions assigned to the parent resource team cascade down to the resource team's child resource teams.

To view resource team properties

1. Open the **Resources** module.
2. Select the **Resource Pool** tab.
3. Right-click the resource tree and select a resource team.
4. The resource's properties will appear in the lower pane.

Role Assignments

Role assignments grant individual resources and/or resource teams access to a work item and their related views.

Adding a role assignment

A role assignment is a way to grant to a user and/or a security group permission to access any individual work item in the work item heirarchy, including all of its associated data and any of any child work item.

To add a role assignment for a resource

1. Open the **Properties** dialog box for a work item, a work item template, a resource, or a resource team.
2. Select the under **Role Assignments** tab.
3. Choose the **Simple** or **Advanced** tab.
4. From the **Group / User** drop-down, select a security role and click **Add**.
5. Click **Save**.

Clearing a role assignment

You can clear any role assignment. Clearing a role assignment will prevent users and/or security groups from being able to edit information in any child work item; however, users and/or security groups will always be able to view data in a child work item if they have permission to view its parent.

To clear a role assignment for a resource

1. Open the **Properties** dialog box for a work item, a work item template, a resource, or a resource team.

2. Select the under **Role Assignments** tab.
3. Choose the **Simple** or **Advanced** tab.
4. From the **Group / User** drop-down, select a security role and click **Clear**.
5. Click **Save**.

Deleting a role assignment

If you are not using a role assignment, you can delete it (though it may be better to clear it).

To delete a role assignment for a resource

1. Open the **Properties** dialog box for a work item, a work item template, a resource, or a resource team.
2. Select the property under **Role Assignments** tab.
3. Choose the **Simple** or **Advanced** tab.
4. From the **Group / User** drop-down, select a security role and click **Delete**.
5. Click **Save**.

Editing a role assignment

You can modify a role assignment.

To edit a role assignment for a resource

1. Open the **Properties** dialog box for a work item, a work item template, a resource, or a resource team.
2. Select the under **Role Assignments** tab.
3. Choose the **Simple** or **Advanced** tab.
4. From the **Group / User** drop-down, make your changes.
5. Click **Save**.

Viewing a role assignment

A role assignment determines who can access a work item.

To view a role assignment for a resource

1. Open the **Properties** dialog box for a work item, a work item template, a resource, or a resource team.
2. Select the under **Role Assignments** tab.
3. Choose the **Simple** or **Advanced** tab.

Team Security

You can assign users and/or security groups to security roles at the resource team level. Security groups are a collection of users and/or other groups with similar roles in your organization and similar needs for accessing resource data.

Users and/or security groups are assigned to resource team security roles in the **Resource Team Properties** page in the **Resources** module. Security roles define the permissions for the actions in each module and view.

If a user or security group is assigned to more than one security role, the user or users assigned to the security group can access all of the actions allowed by the security roles to which a user or group is assigned.

When you assign a user or security group to a security role on a resource team with child resource teams, the permissions assigned to the parent resource team cascade down to any child work item that may be associated with a resource team. For example, if you assign a user to the **Resource Manager** security role on a resource team, the user is automatically assigned to the **Resource Manager** security role on each of the resource team's child resource teams.

When you assign a user or security group to a security role on a resource team with child resource teams, but you do not want the user or group to have permissions for some of the child resource teams, you can remove the all of the security role permissions for the user or group from the individual child resource teams, except for view permissions. When a user or security group is assigned to security roles on a resource team with child resource teams, the user or group will always have view permissions for the parent and its child resource teams, even when you unassign the user or group from a security role for one of the child resource teams.

For example, there is a resource team with the following folder structure:

- Resource Team 1
- Resource Team 1A
- Resource Team 1B
- Resource Team 1C

Resource Team 1 is the parent of Resource Team 1A, 1B, and 1C, and Resource Team 1A, 1B, and 1C are siblings to each other.

A group is assigned to a security role on Resource Team 1 that allows the members of the group to edit resource allocations. Because Resource Team 1A, 1B, and 1C are children of Resource Team 1, members of the group can automatically edit resource allocations for Resource Team 1A, 1B, and 1C.

If you want to remove the group from the security role on Resource Team 1B, when you remove the group from the security role on Resource Team 1B, all of the permissions from the security role are removed from the group except for the view permissions. Members of the groups will no longer be able to edit resource allocations on Resource Team 1B, but they will be able to view the resource and its allocations. If Resource Team 1B has child resource teams, the group will also be able to view the child resource teams and their allocations.

When you remove the security group from the security role on Resource Team 1B, members of the group will still be assigned to the security role, and have all the permissions allowed by the security role on Resource Team 1, 1A, and 1C.

Tab: Role Assignments, Advanced

The **Role Assignments, Advanced** tab in the **Properties** dialog box is used to advanced role assignment details.

The following fields are available from the **Role Assignments, Advanced** tab in the **Properties** dialog box:

Fields	Description
Add	Click this button to add a selected user and/or security group to the role assignment for this work item. This will add the Is Assigned To Role icon in the Assignment column.
Assignments	This column indicates whether a user and/or security group has a role assignment to the selected work item. If the column shows Is Assigned To Role , the user and/or security group has been given a role assignment to the selected work item. If the column shows Inherits Assignment To Role , the user and/or security group is inheriting its role assignment from a role assignment made to a parent work item. If the column shows Does Not Inherit Assignment To Role , the user and/or security group is not inheriting its role assignment from a parent work item.
Clear	Click to clear a selected user and/or security group from the role assignment for this work item. This will remove the Is Assigned To Role or Does Not Inherit Assignment To Role icons from the Assignment column.
Group / User	Displays the users and/or security groups that are available for a role assignment to the selected work item. This list displays only security groups by default.
Manage By	Select Role to manage role assignments by security role and Group / User to manage role assignments by user and/or security group.
Parent Groups	This column indicates the security groups to which a user and/or a security group belong. This column is only visible when the Role option is selected for the Manage By selector.
Remove	Click this button to move the selected attributes from the Selected Attributes box to the Available Attributes box.
Role	This column displays the security roles from which users and/or security groups can be given role assignments.
Show Unassigned	Depending on which method you choose to manage role assignments, displays security roles or displays users and/or security groups who do not have a role assignment to the selected work item.
Show Users	Select to display both users and security groups in the Group / User list.
Simple	Click to view the Role Assignments tab, simple view.

Tab: Role Assignments, Simple

The **Role Assignments, Simple** tab in the **Properties** dialog box is used to view role assignment details.

The following fields are available from the **Role Assignments, Simple** tab in the **Properties** dialog box:

Fields	Description
Add	Click this button to add a selected user and/or security group to the role assignment for this work item. This will add the Is Assigned To Role icon in the Assignment column.
Advanced	Click to view the Role Assignments tab, advanced view.
Assignments	This column indicates whether a user and/or security group has a role assignment to the selected work item. If the column shows Is Assigned To Role , the user and/or security group has been given a role assignment to the selected work item. If the column shows Inherits Assignment To Role , the user and/or security group is inheriting its role assignment from a role assignment made to a parent work item. If the column shows Does Not Inherit Assignment To Role , the user and/or security group is not inheriting its role assignment from a parent work item.
Clear	Click to clear a selected user and/or security group from the role assignment for this work item. This will remove the Is Assigned To Role or Does Not Inherit Assignment To Role icons from the Assignment column.
Group / User	Displays the users and/or security groups that are available for a role assignment to the selected work item. This list displays only security groups by default.
Remove	Click this button to move the selected attributes from the Selected Attributes box to the Available Attributes box.
Role	This column displays the security roles from which users and/or security groups can be given role assignments.
Show Users	Select to display both users and security groups in the Group / User list.

Tools

The **Tools** module is used to view and edit information that you work with on a daily basis, such as your timesheet, notifications, reports, and calendar. You can also open your homepage to displays a collection of important information in a single view.

For more information, see the following topics:

- [Advanced Approvals \[page 205\]](#)
- [Import Data \[page 206\]](#)
- [My Calendar \[page 219\]](#)
- [My Homepage \[page 220\]](#)
- [My Notifications \[page 220\]](#)
- [Advanced Reports \[page 222\]](#)
- [My Timesheet \[page 227\]](#)
- [Define Notifications \[page 233\]](#)

Advanced Approvals

You can use the **My Approvals** tab to approve and reject time and view approval status across more than one work item. This view provides the same functionality as the **Timesheets** tab in the **Projects** module, but is not tied to a selection in the work item hierarchy.

In this view, you can select all of the projects and work item for which you have time approval responsibility and display them in a common interface. You can approve time for individual assignments or for all assignments across any work item and anywhere in between.

- The view does not contain any time submissions. You select the work item for which you want to display user-submitted timesheets. You can choose to display the time submissions by work item or by resource.
- The **My Approvals** tab sorts by work item. To sort by resources instead, select the **Display By Resource** check box.
- The view shows only the assigned task (or activity). To display the assignment in context, that is with associated summary tasks to, select the **Hierarchy** check box. You can also filter out those resources with un-submitted timesheets.
- Un-submitted timesheets still display in the **My Approvals** tab and show 0.00 time. To filter out these timesheets from displaying, select the **Hide No Submission** check box.

Approving time in the Advanced Approvals view

You can approve time in a resource's timesheet using the **My Approvals** tab.

To approve time in the Advanced Approvals Tab

1. Open the **Tools** module.
2. Select the **My Approvals** tab.

3. Click **Select** to choose any work item for which you want to display timesheets.
4. Expand or collapse the tree view to show the project, resource, or assignment that you want to approve.
5. Click the check box in the **PM Approval** column to cycle through the three available states and choose the one you want.
6. To approve or reject all submissions across all resources or a work item, click the check box in the top summary row.
7. Click **OK**.

Clearing time in the Advanced Approvals view

You can clear time approvals in a resource's timesheet using the **My Approvals** tab.

To clear time in the Advanced Approvals tab

1. Open the **Tools** module.
2. Select the **My Approvals** tab.
3. Click **Select** to choose a work item for which you want to display timesheets.
4. Expand or collapse the tree view to show the project, resource, or assignment from which you want to clear approval.
5. Click the check box in the **PM Approval** column until it is clear.
6. Click **Save**.

Rejecting time in the Advanced Approvals view

You can reject time in a resource's timesheet using the **My Approvals** tab.

To reject time in the Advanced Approvals view

1. Open the **Tools** module.
2. Select the **My Approvals** tab.
3. Click **Select** to choose a work item for which you want to display timesheets and click **OK**.
4. In the **My Approvals** tab, expand or collapse the tree view to show the project, resource, or assignment that you want to reject.
5. Click the check box in the **PM Approval** column to cycle through the options. (To reject all submissions across all resources or every work item, click the check box in the top summary row.)
6. Click **Save**.

Import Data

You can use the **Import Data** tab to download the template (a Microsoft Excel file) into which you can enter data about items, resources, resource roles, and resource teams, and then bulk import that data. Only users with the Import Data (View/Edit) permission will be allowed to import work item and resource data.

In the template, there is a tab for each of the types of data that you can import: Investments, Resource Roles, Resource Teams, and Resources. On each tab, a row represents a single item, resource role, resource team, or resource that will be imported.

This is a feature that can be a useful way to add data, especially during the configuration phase of your deployment. However, this feature, when used carelessly, can add a lot of unnecessary data into your environment. Permission to use this feature should be granted carefully and only to people who are capable of removing unwanted data, should it get imported.

Some important things to remember:

- This is a feature that should not be viewed as a way to manage data on a day-to-day basis.
- The tabs are imported in the following order: **Resource Teams, Resource Roles, Resources, and Investments**. It can be easier to import data one tab at a time; if you import data one tab at a time, you should use the same order.
- Do not use characters in the template that are commonly used in Microsoft Excel as calculation indicators. For example, the ampersand symbol (&) may create a calculated cell and a calculated cell will fail upon import.
- You cannot have spaces in user names.
- Importing data should be done at times when there are no other users from your organization logged-in. The import process will fail when conflicts are caused by other work being done.
- There is no preview function.

Downloading the Import Data template

Download the Import Data template (a Microsoft Excel file) from which you can import data.

To download the Import Data template

1. Open the **Tools** module.
2. Select the **Import Data** tab.
3. Click **Download Template**.

Importing data using the Import Data template

You can import data by using a template (a Microsoft Excel file). You should keep the file size below 3 MB while importing data; files larger than 3 MB may not import successfully or may require multiple attempts.

To import data using the Import Data template

1. Open the **Tools** module.
2. Select the **Import Data** tab.
3. Enter project information into the template.
4. After you are finished entering project data on the projects tab in the template, click **Browse** and choose the file on your local computer from which you want to import data.
5. Click **Upload and Check**.
6. Click **Finish**.

Template Details

The import data template has the following tabs:

- Agile Work Items
- Projects
- Resource Roles
- Resource Teams
- Resources

In addition, you may receive messages that describe the current state of the import data process as you are importing items.

Agile Work Items

A work item is a user story, defect, epic, goal story, impediment, or task. A work item can be associated with projects, releases, sprints, and backlogs. Any work item can be part of a hierarchical structure called the project tree, which orders every work item in relation to its parent, peers, and children.

You can use the import data template to import a work item. Each row on the **Agile Work Types** tab represents a work item that you want to import. Each column on the **Agile Work Types** tab represents an attribute (required or optional) that is used to define where the imported work item will be placed in the project hierarchy, what its name will be, and so on.

The **Agile Work Items** tab has the following columns:

Column	Description
Import	Required. Values: <i>True</i> , <i>False</i> . Set this column to <i>True</i> to import the data contained in the row.
Agile Work Item Type	Required. The following work item types may be imported: impediment, tasks, or user stories. Use the system name for the user story. This can be found in the <i>System Name</i> field on the Agile Work Types tab in the Types Setup tab of the Customization module.
Name	Required. The name of the work item.
Description	Optional. The description of the work item.
Product	Required. The name of the project under which the work item will be placed.
Release	Optional. The name of the release under which the work item will be placed.
Team	Optional. The name of the team under which the work item will be placed.

Column	Description
Sprint	Optional. The name of the sprint under which the work item will be placed.
Parent Agile Work Item	Optional. The name of a parent work item in the work item hierarchy. This is valid only for assignable tasks, and tasks must be associated with a user story.
Attributes	<p>Optional. The system name and value of an attribute that can appear in a view for the work item being imported. This must be a valid attribute for the work item type. Valid attributes can be found in the Attributes tab on the Agile Work Types tab in the Types Setup tab of the Customization module.</p> <p>For each attribute that you want to appear in a view, add a column in the template using the system name for the attribute as the column header. The system name of an attribute can be found on the Attributes tab in the Attributes Setup tab of the Customization module.</p> <p>Enter the value that you want to import in the column. This must be a valid value for the attribute. List values associated with attribute lists can be found on the Lists tab in the Attributes Setup tab of the Customization module.</p>

Work Items

A work item is any entity within your organization to which personnel, finances, and time can be allocated. Items can be scheduled, tracked, modeled, compared, reported against, managed, analyzed, and assigned.

Items are represented by projects, portfolios, projects (including backlogs, features, and sprints), products, programs, applications, and by custom items that your organization may have created.

All items are part of a hierarchical structure called the work item tree, which orders every work item in relation to its parent, peers, and children.

You can use the template to import work item data. Each row on the **Investments** tab of the template represents work item that you want to import. Each column on the **Investments** tab represents an attribute (required or optional) that is used to define where the imported work item will be placed in the work item hierarchy, what its name will be, and so on.

The **Items** tab has the following columns:

Column	Description
Import	Required. Values: True, False. Set this column to True to import the data contained in the row.

Column	Description
Item	Required. The name of the work item as it will appear in the work item hierarchy and also in the Name field of the item's Summary view.
Item Types	Required. The name of the work item type for the work item being imported. The name for a work item type can be found in the System Name field on the Item Types tab of the Types Setup view in the Configuration module.
Description	Optional. The description of the work item as it will appear in the Description field of the item's Summary view.
Parent Item	Optional. The name of a parent work item in the work item hierarchy. This name must be a valid parent of the work item type. A valid work item type parent can be found in the Containment tab of the Item Types tab in the Types Setup view of the Configuration module.
Attributes	<p>Optional. The system name and value of an attribute that can appear on the Summary view for the work item being imported. This must be a valid attribute for the work item type. Valid attributes can be found in the Attributes tab on the Item Types tab in the Types Setup view of the Configuration module.</p> <p>For each attribute that you want to appear on the item's Summary view, add a column in the template using the system name for the attribute as the column header. The system name of an attribute can be found on the Attributes tab in the Custom Attributes view of the Configuration module.</p> <p>Enter the value that you want to import in the column. This must be a valid value for the attribute. List values associated with attribute lists can be found on the Lists tab in the Custom Attributes view of the Configuration module.</p>

Resource Roles

A resource role is a way of grouping resources by skills, by cost, by security roles, by position titles, or by functional roles within your organization. Such as developers with C++ skills, technical writers that can create programming samples in C#, or project managers who have experience with Agile or Scrum. Resource roles should be created so that they accurately reflect two things:

- How your organization functions. What are the roles of the people in your organization? Where do they fit within your organization's hierarchy? To which security roles and groups do users need to belong?
- As a way of organizing secondary data about a resource role (such as skills and costs). How much (per hour) does a resource cost (once allocated)? Do the rates (per hour) change over time? What proficiency levels do people have in your

organization (low, medium, high)? Programming skills (C++, AJAX, JavaScript, and so on). Writing experience (Jr., Sr., and so on).

You can use the template to import resource role data. Each row on the **Resource Roles** tab of the template represents a resource role that you want to import. Each column on the **Resource Roles** tab represents an attribute (required or optional) that is used to define where the imported resource role will be placed in the enterprise resource pool, what its name will be, and so on.

The **Resource Roles** tab has the following columns:

Column	Description
Import	Required. Values: <i>True</i> , <i>False</i> . Set this column to <i>True</i> to import the data contained in the row.
Role Name	Required. The name of the resource role. This must be a unique name.
Description	Optional. The description of the resource role.
Rate	Required. The rate per-hour of the resource role that is being imported. This should be entered as a per-hour rate (with the default currency used by your organization implied). For example, if you are using United States dollars, then if you enter 10, that will be imported as \$10 per hour.
Rate Effective Date	Required. The date the rate becomes effective for the resource role that is being imported. This should be entered as day/month/year. For example, to import June 04, 2008, enter 04/06/2008.

Resource Teams

All resource teams are part of a hierarchical structure called the enterprise resource pool, which orders every resource (and resource team) in relation to its parent, peers, and children. Resources can be added to resource teams, which are nodes in the enterprise resource pool. Resources that belong to resource teams can be assigned and/or allocated to a log item and to tasks.

You can use the template to import resource team data. Each row on the **Resource Teams** tab of the template represents a resource team that you want to import. Each column on the **Resource Teams** tab represents an attribute (required or optional) that is used to define where the imported resource team will be placed in the enterprise resource pool, what its name will be, and so on.

The **Resource Teams** tab has the following columns:

Column	Description
Import	Required. Values: <i>True</i> , <i>False</i> . Set this column to <i>True</i> to import the data contained in the row.

Column	Description
Team	Required. The name of the resource team.
Description	Optional. The description of the work item as it will appear in the <i>Description</i> field of the item's Summary tab.
Parent Team	Optional. The name of a parent resource team in the enterprise resource pool.

Resources

A resource is a user (people -- labor) that can be used by items. This includes generic labor resources and a TBH (to-be-hired or unknown) resource. A resource manager is allowed to add resources and to create resource teams for actual and generic resources (a placeholder). The **Resources** module helps provide tools to resource managers for creating, managing, allocating, and securing your resources.

All resources are part of a hierarchical structure called the enterprise resource pool, which orders every resource (and resource team) in relation to its parent, peers, and children. All resources belong to resource teams. You should first import resource roles and resource teams before importing resources.

You can use the template to import resource data. Each row on the Resources tab of the template represents a resource that you want to import. Each column on the Resources tab represents an attribute (required or optional) that is used to define where the imported resource will be placed in the enterprise resource pool, what its name will be, and so on.

The **Resources** tab has the following columns:

Column	Description
Import	Required. Values: <i>True</i> , <i>False</i> . Set this column to <i>True</i> to import the data contained in the row.
User Name	Required. The logon name for the user. For customers who are using an on-demand version, this must include the domain, for example: egrant@serena.com.
Resource Team	Optional. A resource team to which this resource belongs.
Resource Type	Optional. The type of resource.
Primary Resource Role	Required. The resource's primary resource role.
Assign License	Optional. Values: <i>True</i> , <i>False</i> . Set this column to <i>True</i> to assign a license to this user during import.
Security Group	Optional. The name of the security group to which you want the user to belong.

Column	Description
First Name	Required.
Last Name	Required.
Email	Required. The email address of the user. For on-demand customers, this column is identical to the User Name column.
Start Date	Optional.
Address 1	Optional.
Address 2	Optional.
City	Optional.
State	Optional.
Zip	Optional.

Messages

As you are importing data, the **Results** window will report back information as the import process progresses, including information about which part of the import process is occurring and information about which part of the import process may have gone wrong. Before you click the **Finish** button and complete the data import process, you should review the messages and attempt to address any issues noted in the spreadsheet, and then re-import the data. You cannot import data when errors are present.

In the table below, brackets {} are used as placeholders for variables that you may see in the error messages. For example, the message *Row {row} was skipped because the following columns had invalid values: {value}*. could appear in the **Results** pane like this: *Row 2 was skipped because the following columns had invalid values: C.*

The following error messages may be returned during data import:

Error Message	Description
Exception when the server attempted to open {filename}.	This is a general error message. If you continue to get this error message, re-download the template and try again. If the error persists, please call Serena Support.

Error Message	Description
Could not open server copy of the workbook file {filename}. The file does not exist or this user does not have access.	Make sure that you are opening the template and that you have the appropriate permissions to import data. Only users with the Import Data (View/Edit) permission will be allowed to import work item and resource data. Users must also have permission to add resources (Create Resource), add items (Create Project Items), add resource teams (Create New Resource Team), and add resource roles (Create Resource Role).
Row {row} was skipped because the following columns had invalid values: {value}.	Verify the information in the row and column indicated. Ensure that the columns have valid values and re-import the data.
There was an unexpected error processing file. {filename}	This is a general error message. If you continue to get this error message, re-download the template and try again. If the error persists, please contact Serena Support.
A worksheet with the name of {worksheet tab name} was already processed.	The names of the tabs in the template should not be modified. New tabs should not be added. Verify that only four tabs exist (Items, Resource Roles, Resource Teams, and Resources) in the copy of the template you are using to import data.
The worksheet with the name of {worksheet tab name} did not have all the required columns.	Each tab in the template has required columns: <ul style="list-style-type: none"> ▪ Items tab: Import, Item, and Item Type. ▪ Resource Roles tab: Import, Role Name, Rate, and Rate Effective. ▪ Resource Teams tab: Import and Team. ▪ Resources tab: Import, User Name, Primary Resource Role, and Email.
There was an error opening the Microsoft Excel file. The file may be corrupt or of the wrong format.	Verify that you have attempted to import data using a copy of the template. If you continue to get this error, re-download the template.

Error Message	Description
The user does not have sufficient permissions to create {name of resource, item, resource team, or resource role}.	Only users with the Import Data (View/Edit) permission will be allowed to import work item and resource data. Users must also have permission to add resources (Create Resource), add items (Create Project Items), add resource teams (Create New Resource Team), and add resource roles (Create Resource Role).
Row {row} was skipped because the following values created a duplicate key {value}.	Verify the information in the row and column indicated. Duplicate user names, work item names, resource role names, and resource team names will not be imported.
Row {row}, Column {column} contained resource type {invalid resource type} which is invalid.	Verify the information in the row and column indicated. There are three valid resource types: Contractor, Permanent, and Part Time.
Row {row}, Column {column} contained role name {duplicate role name} which is already in the system.	Verify the information in the row and column indicated. Duplicate resource role names are not allowed.
Row {row}, Column {column} contained work item type {invalid work item type} which is either not a work item, not in the system, or is not creatable.	Verify the information in the row and column indicated. The work item type is incorrect. It may be misspelled, it may not exist, or it may not be a valid child work item of the parent work item.
Row {row}, Column {column} contained resource team {invalid resource team} which is not in the system.	Verify the information in the row and column indicated. The list of resource teams currently available can be found in the Resources module.
Column {column} was ignored because it was a duplicate.	An attribute can have only one value.
Row {row}, Column {column} contained user name {duplicate user name} which is already in the system.	Verify the information in the row and column indicated. Duplicate user names are not allowed.
Column {column} was ignored because they attribute key specified was not valid for importing.	Verify that the correct system name for the attribute is being used. The system name of an attribute can be found on the Attributes tab in the Custom Attributes view of the Configuration module.

Error Message	Description
<p>Row {row}, Column {column} contained list value {invalid list value} which is invalid.</p>	<p>Verify the information in the row and column indicated. List values associated with attribute lists can be found on the Lists tab in the Custom Attributes view of the Configuration module.</p>
<p>Row {row} was skipped because it contained parent {invalid parent} which is not in the system or in the spreadsheet.</p>	<p>Verify the information in the row and column indicated. If you are importing a parent, be sure that it's a valid parent for the resource team or work item.</p>
<p>Row {row}, Column {column} contained resource role {invalid resource role} which is not in the system.</p>	<p>Verify the information in the row and column indicated. Resources can only be assigned to an existing resource role. Verify that you are importing the resource with the correct resource role name. If that role is not present, add it, and then re-import the resource.</p>
<p>There was an error assigning license to user {user name}. User was imported with no license.</p>	<p>A license could not be assigned to the user. Verify that the license is the correct license or that your organization has enough licenses.</p>
<p>Row {row} was skipped because parent work item type cannot contain this work item type.</p>	<p>Verify the information in the row indicated. Information for a work item can only have a child that is valid for the work item type being imported. Valid children can be found in the Containment tab on the Item Types tab in the Types Setup view in the Configuration module.</p>
<p>Row {row} was skipped because parent had same name as self.</p>	<p>Parent-child relationships for resources, resource teams, and items must have the correct parent-child relationships:</p> <ul style="list-style-type: none"> ▪ Resource information must conform to the hierarchy defined in the Resource Breakdown Structure. ▪ Item information can only have a parent that is valid for the work item type being imported. Valid parents can be found in the Containment tab on the Item Types tab in the Types Setup view in the Configuration module.

Error Message	Description
<p>The parser detected a recursion error. Please check the parent-child relationships of your {parent of resource team name or parent of work item name}. All processing will be stopped and nothing was imported!</p>	<p>See the previous entry.</p>
<p>Row {row}, Column {column} contained value {invalid attribute type value} which is not valid for the attribute type.</p>	<p>Verify the information in the row and column indicated. When importing attribute data, the value must be an appropriate value for the attribute's data type. If it is a list value, it must be one of the list values associated with that attribute type.</p>
<p>Errors occurred during processing file or there were no valid rows for importing.</p>	<p>Verify that you have selected an template, that there is data in at least one tab in the template, and that the Import column is set to True.</p>
<p>Row {row}, Column {column} contained user name {invalid email address} which is not a valid email address.</p>	<p>Verify the information in the row and column indicated. An email address must be the full email address. For example: rforster@serena.com.</p>
<p>Row {row}, Column {column} contained security group {security group name} which is not in the system.</p>	<p>The user was not imported. Verify the information in the row and column indicated, and then re-import the user. The list of security groups available can be found in the Administration module, Users and Security view, on the Groups tab. The name of the security group in the should identical to the name of the security group shown in the Name field.</p>
<p>There was an error assigning user {row} to security group {column}. User was imported with no security group.</p>	<p>The user was imported, but without an associated security group. Verify the name of the security group and that it is the name of a valid security group. The list of security groups available can be found in the Administration module, Users and Security view, on the Groups tab. The name of the security group in the should identical to the name of the security group shown in the Name field.</p>

Error Message	Description
Row {row} was skipped because it contained a ParentAgileWorkItem {name of parent work item} which is not in the system or in the spreadsheet.	Verify the information in the row and column indicated. A parent work item must exist in order for a work item to be associated to it.
Row {row}, Column {column} contained AgileWorkItem {name of work item} which is either not an AgileWorkItem, not in the system, or is not creatable.	Verify the information in the row and column indicated. Valid work item types that are already in the system (and that can be imported) can be found in the Attributes tab on the Work Types tab in the Data Model Setup view of the Configuration module.
Row {row} was skipped because a Product had same name as self.	Verify the information in the row and column indicated. Owning work item names must be unique. Verify the name of the owning items in the template and re-import the data.
Row {row} was skipped because it contained a Product {name of owning item} which is not in the system or in the spreadsheet.	Verify the information in the row and column indicated. Ensure that the owning work item name is in the system or in the spreadsheet.
Row {row} was skipped because the work hierarchy was not found.	Verify the information in the row indicated. Ensure that a work hierarchy is available for the work item you are trying to import.
Row {row} was skipped because the AgileWorkItemType cannot exist without a parent under the work hierarchy.	Verify the information in the row indicated. Ensure that the work item you are trying to import has a parent that exists in the work hierarchy. The parent is defined in the ParentAgileWorkItem column.
Row {row} was skipped because the AgileWorkItemType of the parent is not supported by the work hierarchy.	Verify the information in the row indicated. Verify that the work item's parent work item type exists in the existing work hierarchy.
Row {row} was skipped because the AgileWorkItemType is not a valid type under its parent AgileWorkItemType.	Verify the information in the row indicated. Verify that the work item's parent work item type is a valid parent based on the existing work hierarchy.
Moved {row} from parent {row} to parent {row}.	Verify the information in the rows indicated. Ensure that the work item's new parent is the one you want it to be.

The following status messages may be returned during data import:

Status Message	Description
Finished parsing of worksheet named {worksheet tab name}.	The validation process for data import has finished.
The following rows were parsed successfully: {row}.	Status message. Each row that was parsed successfully will be listed. For example, <i>The following rows were parsed successfully: 2, 3, 4, 5, 9.</i>
Starting parse of worksheet named {worksheet tab name}.	Status message.
User {user name} already had a license. No action was taken.	Status message.
The import job has finished.	Status message.
The import job has started.	Status message.
Finished assigning licenses.	Status message.
Attempting to assign license named {license name} to users.	Status message. Indicates the license type being assigned to users during import.
License was assigned to user {user name}.	Status message. Each user that was successfully assigned a license will be listed. For example: <i>License was assigned to user gmclennan, rforster, lbalcom.</i>

My Calendar

A resource's starting and ending dates can affect his or her availability and capacity. You can use the **My Calendar** tab to view your personal calendar. A personal calendar is based on the company calendar. A user with appropriate permission can modify their personal calendar, including the working and non-working, the days of the week, and working hours per day.

Defining your personal calendar

Your calendar is based on the company calendar and modifying your calendar overrides the settings in the company calendar. You can modify the working and non-working days, the days in the work week, and the working hours per day. These settings help determine the your availability and capacity for their assigned tasks.

To define your personal calendar

1. Open the **Tools** module.
2. Select the **My Calendar** tab.

3. To mark a day as a vacation day select the date on the calendar and click **Non-working**.
4. To mark a non-working day, such as a Saturday or Sunday, as a working day, select the date on the calendar and then click **Working**.
5. To define a work week that is different than the company's work week, click **Custom**. Then select the days included in your work week and enter your working hours per day.
6. Click **Save** to save your changes. The days selected in the calendar are marked according to the color grid.

Viewing your personal calendar

Your personal calendar can be viewed from the **My Calendar** tab in the **Tools** module.

To view your personal calendar

1. Open the **Tools** module.
2. Select the **My Calendar** tab.

My Homepage

You can use the **My Homepage** tab to display important information in a single view. Your administrator designs the layout of the **My Homepage** tab by defining the size, position, and type of content that appears. For example, if you are a team member, you might have a homepage that lists your work item assignments and projects. You can choose to log on directly to the **My Homepage** view. Some homepage views contain a link to an actual view (for example, homepage view may have content about your timesheet, and it can also contain a link to the **My Timesheet** tab).

Displaying your homepage

Open the **Tools** module and click the **My Homepage** tab.

To display your homepage from the action pane

1. On the application toolbar, click **Global Properties**. Your homepage displays within the interface.

My Notifications

You can use the **My Notifications** tab to display your list of notifications. The **My Notifications** tab displays a list of notifications (custom and system) and associated information for each. You can create new, copy existing, delete, and modify notifications. This view can be found in the **Tools** module.

Acknowledging a notification

A notification that is marked in bold has not been acknowledged. Use the **Acknowledged** check box to keep track.

To acknowledge a notification

1. Open the **Tools** module.
2. Select the **My Notifications** tab.

3. Select the notification you want to acknowledge from the list. Acknowledged notifications are shown as plain text; un-acknowledged notifications are shown as bold.
4. Click **Acknowledge**.

Canceling an acknowledgement

You can cancel a notification acknowledgement.

To cancel a notification acknowledgement

1. Select the **My Notifications** tab.
2. Select a notification and click **Unmark Acknowledge** to un-mark a notification acknowledgement.

Deleting a notification

If you don't need a notification, you can delete it.

To delete a notification

1. Open the **Tools** module.
2. Select the **My Notifications** tab.
3. Click **Delete Notification** to delete the notification.

Viewing a notification

Notification definitions can be viewed from the **My Notifications** tab in the **Tools** module.

To view a notification

1. Open the **Tools** module.
2. Select the **My Notifications** tab.
3. Select a notification.

Notification Settings

If your administrator has enabled it, you can manage your system notification settings from the **My Notifications** tab in the **Tools** module. You will only see notifications listed in this dialog box that have been enabled by your administrator. You are automatically subscribed to those notifications that the administrator has set as default notifications. However, you must subscribe to any enabled notification that is not set as default.

If the administrator modifies a system notification's default status, your subscription choices may be overwritten. If you suddenly find that you are not receiving notifications to which you previously subscribed, you may need to subscribe again.

Subscribing to a system notification

Open the **System Notification Settings** dialog box to subscribe to them. If an administrator modifies a system notification's default status, your subscription choices may be overwritten. If you suddenly find that you are not receiving notifications to which you previously subscribed, you may need to subscribe again.

To subscribe to a system notification

1. Open the **Tools** module.
2. Click **System Notifications** to open the **System Notification** Settings dialog box.
3. Select the **My Notifications** tab.
4. For each notification you want to receive, select the check box in the **Subscribe** column.
5. Click **Save**.

Advanced Reports

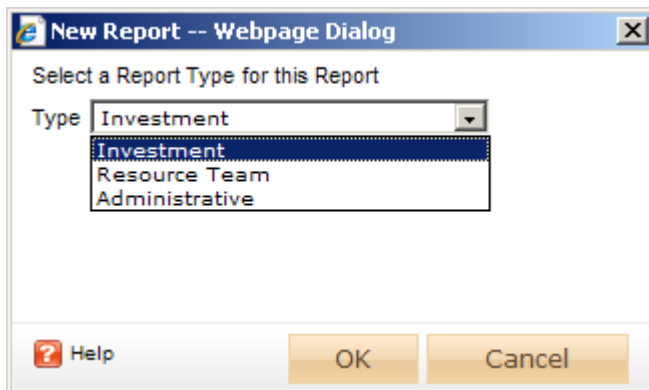
You can use the **My Reports** tab to display a list the reports available for a work item. The **My Reports** tab is available from two modules: **Tools** and **Projects**. The **My Reports** tab in the **Tools** module displays all the work item and resource reports that are associated with the team member using the **My Reports** tab. The **My Reports** tab in the **Projects** module displays only work item-based reports and only those associated with the selected work item. This view is identical to the **Reports** tab that is available from the **Projects** module.

Adding a report

Add a new report. Open the **New Report** dialog box. Name the report. Set the parameters and define its update frequency.

To add a report

1. Open the **Tools** module.
2. Select the **My Reports** tab.
3. Click **New Report**, select a report type (**Investment**, **Resource Team**, or **Administrative**) and then click **OK**.



4. In the **New Report** dialog box, type a name for the report.
5. On the **General** tab, from the **Report Template** drop-down, select a report, enter a description (optional), and indicate whether you want to run the report immediately (after you are finished creating it).

General Schedule

Run this report immediately

Report Template

Description

Associate Report With

Investment: IT Hardware Upgrade

6. Under **Associate Report With**, click the ellipses button and then use the **Select Investments** dialog box to identify the work items that will be included in the report data.

General Schedule

Run this report immediately

Report Template

Description

Associate Report With

Investment: IT Hardware Upgrade

7. On the **Schedule** tab, select **Run this report on a schedule** if you want the report to be run on a periodic basis. Once selected, you can define how frequently you want the report to be run, the format in which the report will be presented, and how many previous instances of the report you want to store.

General **Schedule** Recipients Template

Run this report on a schedule

Schedule

Frequency: Daily Weekly
 Monthly

Time of Day:

Day of Week:

Day of Month:

Output

Format:

Store: instances of the report.

Report Parameters

Start Date: Sch. date +

End Date: Sch. date +

Status:

Priority:

8. If you have chosen to run the report on a scheduled basis, you can use the **Recipients** tab to select the users, security groups, and security roles who will receive a notification when this report is run. After you have chosen the recipients, click **Add**.
9. If you have chosen to run the report on a scheduled basis, you can use the **Template** tab to define parameters for the email notification. You can define the title (as it will appear in the subject line). You can add the **Timestamp** and **Report Name** attributes into the title or the template (the message body). You can add a URL link into the message body that will allow any recipient to link directly to the report.

General Schedule Recipients **Template**

* Title:

Insert Attribute:

Insert URL Link:

<<Report_Name>> ran as scheduled at <<Timestamp>>

10. Click **Save**.

Copying a report

Add a new report by copying one that already exists.

To copy a report

1. Open the **Tools** module.
2. Select the **My Reports** tab.
3. Select a report.
4. Click **Copy Report**.
5. In the **Copy Report** dialog box, name the report.
6. Click **OK**.

Deleting a report

If you're not using a report, you can delete it.

To delete a report

1. Open the **Tools** module.
2. Select the **My Reports** tab.
3. Select a report.
4. Click **Delete**.

Editing a report

You can change the parameters that are included in the report and you can change the schedule frequency for how often the report is generated.

To edit a report

1. Open the **Tools** module.
2. Select the **My Reports** tab.
3. Select a report.
4. Click **Edit Report**.
5. In the **Edit Report** dialog box, make your changes.
6. Click **Save**.

Exporting a report

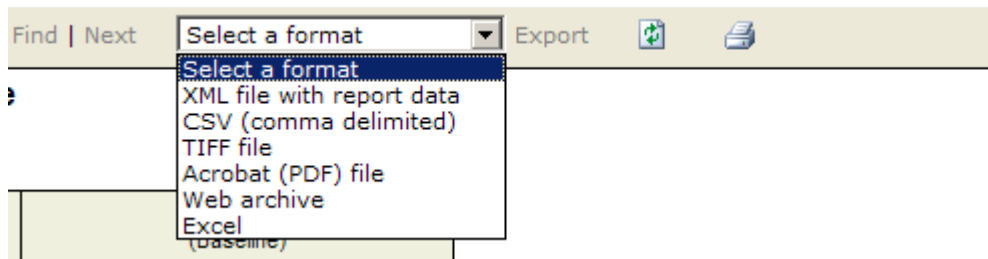
Reports can be exported to the following formats:

- XML
- CSV
- TIFF
- PDF
- Web Archive (MHTML)
- Microsoft Excel

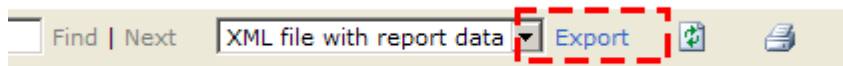
To export a report

1. Open the **Projects** module.
2. Select a work item.

3. Select the **Reports** tab.
4. Select a report.
5. Click **View Report**.
6. After the report has been generated, select the format to which you want to export the report: **XML file with report data**, **CSV (comma delimited)**, **TIFF file**, **Acrobat (PDF) file**, **Web archive**, or **Excel**.



7. Click Export.



1ce

8. Save the exported file to the location of your choice.

Sharing a report

Reports can be shared with other team members. Shared reports will be available in the **My Reports** tab of the team members with whom the reports is shared. Only the current instance of a report is shared and a report must be re-shared every time it is updated. A shared report can be modified by any user and/or member of a security group that has been given access to the report. A report that is not shared can only be modified by the user who created it.










To share a report

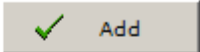
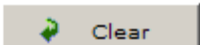
1. Open the **Tools** module.
2. Select the **My Reports** tab.
3. Select a report.
4. Click **Share Report**.
5. In the **Share Report** dialog box, select whether you want to show users, groups, and/or unselected resources.

Select users to share report with

Show Users Groups Unselected

6. Select a user or group, and then click **Add**.

Name	Groups
 Dhanashankar, Venkatesh	Administrator, Administrator Group
 Edwards, Richard	Administrator, Administrator Group
 Eng, Ching	Administrator, Administrator Group
 Everyone Group	
 Executive	
 Executive Group	Everyone Group
 Executive, John	Executive, Executive Group
 Farc, Wayne	Individual Contributor Group
 Generic Resource Allocation On	

 Add
 Clear

7. Click **OK**.

Viewing a report

Reports can be viewed from the **Reports** tab in the **Projects** or **Tools** modules.

To view a report from the My Reports tab

1. Open the **Tools** module.
2. Select the **My Reports** tab.
3. Select a report.
4. Click **View Report**.

My Timesheet

You can use the **My Timesheet** tab to report time against your assigned tasks, a work item, and other activities. This time reflects the number of hours spent working on a particular task or activity, and is independent from the status of the task or activity as a result. Your organization may require that you account for your time more granularly. In those cases, timesheet detail can be enabled on your timesheet to provide additional specificity for time spent on individual tasks and activities. If detailed time entry is enabled for the work item to which you are assigned, you can provide more granular time tracking information in the lower pane. If your organization has enabled a timesheet status approval policy, you will see the status approval icon in your timesheet.

When you report time against a task, you can mark the task complete, at which point you can still submit time against that task on the current timesheet. Tasks marked as resource complete will not appear in subsequent timesheets. Once reported, your manager can approve or reject the reported time. Your project manager can assign a task to you that is already marked as complete. This may prevent you from entering time against that task, even within the current timesheet period, and even if you have outstanding time to submit.

The right side of your timesheet displays a column for each day in the period. If you select to display Show/Hide column, **Add**, **Remove**, and **Clear** buttons beneath the timesheet grid. These buttons enable you to select check boxes in the corresponding to your assignments. Clicking in the check boxes in the Show/Hide column provides the same functionality.

Timesheet Options

The **My Timesheet** tab contains the following options:

- **PM Approval** Project manager approval. A check indicates that the time has been approved. An indicates that the time has been rejected. This column is not displayed if approval is not required.
- **PM Status Approval** Task status approval. A check indicates that the status has been approved. An indicates that the status has been rejected. This column is not displayed if approval is not required.
- **RM Approval** Resource manager approval. A check indicates that the time has been approved. An indicates that the time has been rejected. This column is not displayed if approval is not required.
- **Ready to Post** All required approvals are in and the time is ready to post.
- **Completed** Click in this column to mark a task as completed.
- **Comments** If this icon appears in the column, comments have been entered for that work item.
- **New Comment** If this icon appears in the column, comments have been entered for that work item.
- **New Comment in** If this icon appears in the column, new comments have been entered for a work item lower in that branch of the tree view.
- **Comments in Descendant** If this icon appears in the column, comments have been entered for a work item lower in that branch of the tree view.

Add time to your timesheet

Enter time for assignments. When you are reporting time against a task, you can mark the task complete, at which point you can still submit time against that task on the current timesheet; tasks marked as resource complete do not appear for users in subsequent timesheet periods. If your organization has enabled a timesheet status approval policy, you will see the status approval icon on your timesheet. This allows your project manager to track the time spent on a task separately from the actual completion status. A project manager also has the ability to mark a task that is assigned to you as complete. This may restrict you from entering time against that task, even within the current timesheet period and even if you have outstanding time to submit.

To add time to your timesheet

1. Open the **Projects**, **Tools**, or **Resources** modules.
2. Select the **Timesheets** tab (if in the **Projects** or **Resources** modules) or **My Timesheet** views (if in the **Tools** module).
3. In the **Assignment** column, select a task or activity.
4. Click the cell for the date you want to submit time against.
5. Enter the number of hours.
6. Click **Submit**.

Editing your timesheet

If a timesheet has been submitted with errors, it can be corrected as long as the timesheet period is still open, even if the timesheet has already been approved and

posted. Just go back into the timesheet and make the correction. If the timesheet period is closed, a timesheet administrator must reopen the timesheet before you can make corrections.

To edit your submitted or approved timesheet

1. Open the **Projects** module.
2. Select a work item.
3. Select the **Timesheets** tab.
4. Use the **Period Ending** control to find the period when the timesheet was submitted.
5. When you find the timesheet, select it.
6. In the **Timesheet** dialog box, make your changes.
7. Click **Save**.

Marking a task as complete

You can mark tasks in a timesheet as complete.

To mark a task in a timesheet as complete

1. Open the **Tools** module.
2. Select the **My Timesheet** tab.
3. Select a task.
4. Select the check box for that task in the **Completed** column.
5. Click **Submit**.

Printing your timesheet

You can print your timesheet to a PDF file and save it for future reference or you can print your timesheet to a printer.

To print your timesheet

1. Open the **Tools** module.
2. Select the **My Timesheet** tab.
3. From **Period Ending**, select the timesheet period to display.
4. Click **Print**.

Submitting your timesheet

After you have entered time for all of the dates in your timesheet, you can submit it. To submit your timesheet, click **Submit**.

To submit your timesheet

1. Open the **Tools** module.
2. Select the **My Timesheet** tab.
3. Click the row in the timesheet that you want to update.
4. In the **Timesheet** dialog box, enter the time and click **Submit**.

Reporting Periods

Timesheets are organized by reporting periods. The length and starting day of a timesheet reporting period is determined by your organization and is often configured so that timesheet reporting is consistent with your organization's pay periods.

Viewing your current timesheet

Your timesheet shows the dates for a single timesheet period. By default, the **My Timesheet** tab displays your timesheet for the current timesheet period.

To view your current timesheet

1. Open the **Projects** module.
2. Select a work item.
3. Select the **Timesheets** tab.
4. In **Period Ending**, select the current time period.

Viewing your future timesheets

Your timesheet shows the dates for a single timesheet period. By default, the **My Timesheet** tab displays your timesheet for the current timesheet period.

To view your future timesheet

1. Open the **Projects** module.
2. Select a work item.
3. Select the **Timesheets** tab.
4. In **Period Ending**, select the time period in the future.

Viewing your past timesheets

Your timesheet shows the dates for a single timesheet period. By default, the **My Timesheet** tab displays your timesheet for the current timesheet period.

To view your past timesheets

1. Open the **Projects** module.
2. Select a work item.
3. Select the **Timesheets** tab.
4. In **Period Ending**, select the time period in which the timesheet was submitted.

Timesheet Details

The lower pane of the **My Timesheet** tab is used to view timesheet details. By default, only your timesheet displays in the timesheet view. However, by selecting any assignment in the timesheet and clicking the **Show details** button on the **My Timesheet** tab toolbar, you can display the lower pane view. The lower pane of the timesheet view contains the following tabs:

- **Comments** Timesheet comments allow you to contribute to an online conversation about the timesheet.
- **Details** If detailed time entry is enabled for the work item to which you are assigned, you can provide more granular time tracking information. The columns

displayed in this tab are customizable by your administrator and may be different for each work item type.

- **Status** The Status tab enables you to communicate with a project manager about estimates for start and finish dates, total and remaining work, and percent complete. You can improve performance in the **My Timesheet** view by closing the lower pane when it is not in use. To do so, click **Close**.

Right-click on a row in the timesheet table to open a shortcut menu and navigate to other views. For example, right-click on a task assignment to open the **Task Details** or **Assignment Details**. The view opens in a read-only pop-up window. You can also right-click on a work item (task or activity based) to open the views for which you have permissions.

Adding a comment to a timesheet

Click the comment icon to add a comment to an assignment in a timesheet.

To add a comment to a timesheet

1. Open the **Projects**, **Tools**, or **Resources** modules.
2. Select the **Timesheets** tab (if in the **Projects** or **Resources** modules) or **My Timesheet** views (if in the **Tools** module).
3. Select a resource, show details, and click **Comments** to open the **Comments** tab.
4. Add the comment.
5. Click **Submit**.

Adding detailed time to a timesheet

If detailed time entry is enabled for the work item to which you are assigned, you can provide more granular time tracking information in the lower pane.

To add detailed time to your timesheet

1. Open the **Projects**, **Tools**, or **Resources** modules.
2. Select the **Timesheets** tab (if in the **Projects** or **Resources** modules) or **My Timesheet** views (if in the **Tools** module).
3. In the **Assignment** column, select a task or activity.
4. In the lower pane, select the **Details** tab.
5. Click **Add** to create new detail entries.
6. Enter time details as necessary. The information available in the timesheet detail is customizable and may be different for each work item type.
7. Click **Submit**.

Viewing the status of a timesheet

The status pane in a resource's timesheet displays the same **Plan** and **Actual** dimension information as shown in the project manager's view of the same timesheet, however, the **Estimates** information can be entered and modified by the resource. This is a way for the resource to communicate estimates for start and finish dates, total and remaining work, and percent complete. Timesheet status can be viewed from the **My Timesheet** tab in the **Projects** module.

To view the status of your timesheet

1. Open the **Tools** module.
2. Select the **My Timesheet** tab.
3. Select a task or work item.
4. Select the **Status** tab.

Self Assignments

If the project manager has enabled it, you can use the Assignments dialog to allocate yourself to tasks, a work item, and activities without the involvement of a manager.

Allocating yourself in this way enables you to capture both task- and non-task-based work and provides a more complete picture of your overall workload. Self-allocation is useful when you need to report time for work performed that is outside of scheduled context or when you are asked to perform work that was not originally assigned to you.

For example, if you need to respond to a help desk service request, such as a work item, you can assign yourself to that work item and record your time against it. This work is not part of your scheduled project-based assignments. If enabled, a notification will be sent to your manager informing them of the self-allocation, and the task, work item, or activity can also be included on your timesheet.

Assigning yourself to a task

You can assign yourself to a task. Self-assignment is useful when you need to report time for work performed that is outside of scheduled context or when you are asked to perform work that was not originally assigned to you.

To assign yourself to a task

1. Open the **Tools** module.
2. Select the **My Timesheet** tab.
3. On the view toolbar, click **Assignments**.
4. In the **Assignments** dialog box, click the **Tasks** tab, depending on the type of work to which you are self-assigning. The first time you use the **Assignments** dialog box, there will not be any assignments listed. In subsequent visits, existing assignments are pre-populated.
5. Click the **Browse** button.
6. In the **Select Investments** dialog box, enter a search term and click **Search**, or expand the tree view. You can toggle between the search results and the tree view.
7. Select a work item from the search results or from the tree, and then click **OK**.
8. Any available items that are already assigned to you are listed. To see all items that are available for self-assignment, clear the **Show My Tasks Only** check box, and then search for available items. If there are no items available to which you can self-assign, the **Self assignment is not available** icon displays. Mouse over, or click this icon for an explanation as to why no items are available for the selected work item. Possible reasons could be that the work item is checked out, you don't have permission to self-assign, or you don't have permissions on the work item.
9. For any items that you want to self-assign, select the check box in the **Assigned** column, or click the **Add** button.
10. Click **OK**.

Assigning yourself to a work item

You can assign yourself to a work item. Self-assignment is useful when you need to report time for work performed that is outside of scheduled context or when you are asked to perform work that was not originally assigned to you.

To assign yourself to a work item

1. Open the **Tools** module.
2. Select the **My Timesheet** tab.
3. On the view toolbar, click **Assignments**.
4. In the under **Assignments** dialog box, click the **Work Items** tab, depending on the type of work to which you are self-assigning. The first time you use the **Assignments** dialog box, there will not be any assignments listed. In subsequent visits, existing assignments are pre-populated.
5. Click the **Browse** button.
6. In the **Select Investments** dialog box, select a work item and click **OK**.
7. Select a work item from the search results or from the tree, and then click **OK**.
8. Select a work item to which you want to assign yourself and in the **Assigned** column, click **Add**.
9. Click **Save**.

Assigning yourself to an activity

You can assign yourself to an activity. Self-assignment is useful when you need to report time for work performed that is outside of scheduled context or when you are asked to perform work that was not originally assigned to you.

To assign yourself to an activity

1. Open the **Tools** module.
2. Select the **My Timesheet** tab.
3. On the view toolbar, click **Assignments**.
4. In the under **Assignments** dialog box, click the **Activities** tab, depending on the type of work to which you are self-assigning. The first time you use the **Assignments** dialog box, there will not be any assignments listed. In subsequent visits, existing assignments are pre-populated.
5. Click the **Browse** button.
6. In the **Select Investments** dialog box, select a work item and click **OK**.
7. Select a work item from the search results or from the tree, and then click **OK**.
8. Select a work item to which you want to assign yourself and in the **Assigned** column, click **Add**.
9. Click **OK**.

Define Notifications

A notification is an automated way of being notified when specific actions occur within the application, such as when a resource submits their timesheet, when a new work item is

added, updated, and so on. Some notifications--system notifications--are available to all users; some notifications--custom notifications--can be configured by each user from the **Define Notifications** tab in the **Tools** module.

You can use the **Define Notifications** tab to create and edit user notifications. The **Define Notifications** tab displays a list of notification definitions and associated information for each. You can create new, copy existing, delete, and modify any notification definition.

You can create custom notifications for several types of events; for each type, you can select a trigger from a list of available triggers that defines the action whereupon the notification is sent. A notification can only have one trigger. If you want to configure notifications to fire based on several actions, you must create multiple notifications.

For example, you can create a notification that is sent any time a log (such as a risk or an issue) is escalated. The available notification types and associated triggers are as follows:

- Investment: **On Add, On Delete, On Move, On Schedule, On Task Plan Checkin, On Resource Substituted, On Update**
- Log Type (such as a risk, an issue, or a custom log type): **On Add, On Assign, On Delete, On Escalate, or On Update**
- Work Item: **On Add, On Delete, or On Update**
- Workflow: **On Approved or On Rejected**

Once you define the notification type and trigger, you can further define the notification details, such as the work item to which the notification is associated, recipient list, criteria, and so on.

You can create, delete, edit, and copy definitions. Copying a definition is useful if you want to create a new one that is similar to an existing one. You can copy the first definition and edit it to make the new one.

Adding a definition

In the **Tools** module, the **Define Notifications** tab displays a list of notification definitions and associated information for each. Defining a notification enables you to augment out-of-the-box system notifications with organization-specific notifications. Users cannot subscribe to these custom notifications in the same way they can subscribe to system notifications; however, users can specify a set of recipients.

You can create custom notifications for several types of events; for each type, you can select a trigger from a list of available triggers that defines the action whereupon the notification is sent. A notification can only have one trigger. If you want to configure notifications to fire based on several actions, you must create multiple notifications. For example, you can create a notification that is sent any time a log (such as a risk or issue) is escalated. The available notification types and associated triggers are as follows:

- **Item** This type can use the following triggers: **On Add, Delete, Move, Schedule, Task Plan Check In, Resource Substituted, or Update.**
- **Item** This type can use the following triggers: **On Add, Assign, Delete, Escalate, or Update.**
- **Work Item** This type can use the following triggers: **On Add, Delete, or Update.**
- **Workflow** This type can use the following triggers: **On Approved or Rejected.**

Once you define the notification type and trigger, you can further define the notification details, such as the work item to which the notification is associated, recipient list, criteria, and so on. You can create, delete, edit, and copy definitions. Copying a definition is useful if you want to create a new one that is similar to an existing one. You can copy the first definition and edit it to make the new one.

To add a notification definition

1. Open the **Tools** module.
2. Select the **Define Notifications** tab.
3. Click **New Definition**.
4. In the **New Definition** dialog box, select a notification type and the trigger by which a notification is sent. Click **OK**.
5. Name the notification, add a description, and set its priority.
6. Select **Definition Active** to start sending notifications based on this notification definition.
7. On the **Investment Types** tab, you can choose the types of items and the location of these items in your organization's work item tree for which notifications will be sent.
8. On the **Criteria** tab, you can define a filter to narrow down the items identified in the **Investment Types** tab for which notifications will be sent.
9. On the **Recipients** tab, select the users, security groups, or security roles who will receive the notification and click **Add**.
10. On the **Template** tab, enter the notification's subject line in **Title**. Add custom attributes into the message body and subject line. Choose an attribute from the **Insert Attribute** drop-down and then click **Into Template** (for the message body) or **Into Title** (for the subject line). Click **Into Template** next to **Insert URL Link** to insert the URL of the summary view for the work item type from which the notification is sent.
11. On the **Mashup Event** tab, you can link the notification to a Serena Business Mashups. Select **Send Mashup Event**, type a name for the event, and enter the URL for the location of the Serena Mashup Manager that will process the event.
12. Click **Save**.

Copying a definition

Click to copy a notification definition.

To copy a notification definition

1. Open the **Tools** module.
2. Select the **Define Notifications** tab.
3. Select a notification definition and click **Copy Notification**. A copy of the notification appears in the list.
4. Click **Edit** and modify the copy of the notification as required.

Deleting a definition

Click to delete a notification definition.

To delete a notification definition

1. Open the **Tools** module.
2. Select the **Define Notifications** tab.
3. Select a notification definition and click **Delete Notification**.

Editing a definition

Click to modify a notification definition.

To edit a notification definition

1. Open the **Tools** module.
2. Select the **Define Notifications** tab.
3. Select an notification and click **Manage Notifications** to open the **Edit Definition** dialog box.
4. Make your changes.
5. Click **Save**.

Viewing a definition

Notification definitions can be viewed from the **Define Notifications** tab in the **Tools** module.

To view a notification definition

1. Open the **Tools** module.
2. Select the **Define Notifications** tab.
3. Select a notification definition.

Manage Users

This module is used to define the individual users and groups of users (security groups) who will be working. If you already have users set up in an existing Microsoft Windows server or Lightweight Directory Access (LDAP) server, you can import them. A resource can also be created from the **Resource Pool** tab in the **Resources** module. This automatically creates a user in the **Security** tab. Resources created from the **Resources** module will need to be activated and assigned a license before they can be allocated or assigned.

For more information, see the following topics:

- [Users \[page 237\]](#)

Users

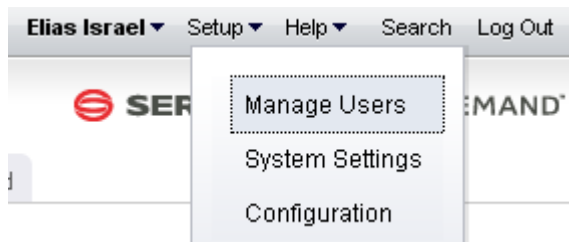
This tab is used to define the individual users and groups of users (security groups) who will be working. If you already have users set up in an existing Microsoft Windows server or Lightweight Directory Access (LDAP) server, you can import them. A resource can also be created from the **Resource Pool** tab in the **Resources** module. This automatically creates a user in the **Security** tab. Resources created from the **Resources** module will need to be activated and assigned a license before they can be allocated or assigned.


Adding a user

There are two ways to add users. You can import them from a directory service such as Active Directory or Novell eDirectory. The other way to add users from the **Manage Users** module.

To add a user

1. From the application toolbar, click **Setup**, and then choose **Manage Users**.



2. Click  Add.
3. Under **User Properties**, enter the first name, last name, email address, and user name for the user.

User Properties

First Name	<input type="text" value="Robert"/>	*
Last Name	<input type="text" value="Forster"/>	*
Email	<input type="text" value="rforster@serena.com"/>	*
User Name	<input type="text" value="rforster@serena.com"/>	*

Active

4. Click  Save.

Assigning a user to a license

After you have created or imported a user, you must assign the user to a license and then assign the user to the applicable security roles and security groups. Users are assigned to licenses. Users should then be assigned to a security group before being assigned to a security role. Using a security group to assign groups of users to a security role can simplify the tracking and management of permissions for users.

To assign a user to a license

1. From the application toolbar, click **Setup**, and then select **Manage Users**.
2. Select the **Security** tab.
3. Select the **Users** tab.
4. Select a user.
5. Under **Licenses**, select the check box next to each license you want to assign to the user. The license you assign the user to should be appropriate to the user's responsibilities in your organization.
6. Click **OK**.

Deleting a user

If the user is no longer needed, you can delete it. It is recommended that you inactivate a user instead of deleting it.

To delete a user

1. From the application toolbar, click **Setup**, and then select **Manage Users**.
2. Select the **Security** tab.
3. Select the **Users** tab.
4. Select a user.
5. Click **Delete**. Confirm. It is recommended that you inactivate users instead of deleting them.

Editing a user

Make your changes and then save them.

To edit a user

1. From the application toolbar, click **Setup**, and then select **Manage Users**.
2. Select the **Security** tab.
3. Select the **Users** tab.
4. Make your changes.
5. Click **Save**.

Importing users and groups

You can import users from an existing network directory service, such as Active Directory or Novell eDirectory. You must first set up the authentication provider, which determines which users and/or security groups will be imported. You can configure the authentication provider to be run periodically. When the authentication provider is re-run, only new or changed data will be imported. First name, last name, status, and email address are used to determine which users are new and/or have been changed. A user's username, password, domain, and authentication provider will remain unchanged.

To import users

1. From the application toolbar, click **Setup**, and then select **System Settings**.
2. In the **Import Users** dialog box, select the authentication provider from which you are importing.
3. The **Import Users** dialog box displays your authentication provider settings as read-only.
4. Type the following in the *Name* and **Password** boxes: If the authentication provider you selected uses the Application authentication type, type the database user name and password in the corresponding boxes. If the authentication provider you selected uses the Active Directory authentication type, type the domain user name (such as user name), a qualified domain name (such as domain/username), or a full distinguished name (such as cn=username,ou=pretend, dc=domain, dc=com) and password in the corresponding boxes. If the authentication provider you selected uses the Novell eDirectory authentication type, type a full distinguished name and password in the corresponding boxes.
5. Click **Import**. When users are imported, their user name and password are lowercase. When the import completes, click **OK**. If the import returns an error, check the authentication provider to ensure it is configured properly. Also ensure that the user context running the import has sufficient rights on the directory services server. If the user context does not have sufficient rights, the query will return null strings for those parts of the query the user cannot access. Once you have imported the users and groups, you can edit their information on the **Users** tab and **Groups** tab in the **Security**.

Inactivating a user

If the user is no longer needed, you can inactivate it.

To inactivate a user

1. From the application toolbar, click **Setup**, and then select **Manage Users**.
2. Select the **Security** tab.
3. Select the **Users** tab.

4. Select the name of the user you want to deactivate.
5. De-select **Active**.
6. Click **Save**.

Viewing a user

Users can be viewed from the **Users** tab in the **Manage Users** module.

To view a user

1. From the application toolbar, click **Setup**, and then select **Manage Users**.
2. Select the **Security** tab.
3. Select the **Users** tab.

Administrator

An administrator is a user who has been granted access to the **Manage Users**, **System Settings**, and **Customization** modules within the application.

Changing the Administrator password

Serena on premise customers should change their Administrator password from its default. (The default administrator password is KEYSTONE.) Use a strong password of 8 (or more) characters, with at least one capital letter, one numeral, and one symbol.

To change the Administrator password

1. From the application toolbar, click **Setup**, and then select **System Settings**.
2. Select the **Security** tab.
3. Select the **Users** tab.
4. Select the Administrator user from the **Users** tab.
5. In **Password**, enter the new password.
6. Click **Save**.

Users

A license determines what users in your organization can do once in the application. A license provides up to three actions: view, edit, and administer. These three actions are used to give access to modules, views, dialog boxes, and other areas within the application. Actions are often associated to security roles. Licenses are different for each Serena application and may vary between on premise and on demand deployment options.

Assigning a user to a license

After you have created or imported a user, you must assign the user to a license and then assign the user to the applicable security roles and security groups. Users are assigned to licenses. Users should then be assigned to a security group before being assigned to a security role. Using a security group to assign groups of users to a security role can simplify the tracking and management of permissions for users.

To assign a user to a license

1. From the application toolbar, click **Setup**, and then select **Manage Users**.

-
2. Select the **Security** tab.
 3. Select the **Users** tab.
 4. Select a user.
 5. Under **Licenses**, select the check box next to each license you want to assign to the user. The license you assign the user to should be appropriate to the user's responsibilities in your organization.
 6. Click **OK**.

Notifications

A notification is an automated way of being notified when specific actions occur within the application, such as when a resource submits their timesheet, when a new work item is added, updated, and so on. Some notifications--system notifications--are available to all users; some notifications--custom notifications--can be configured by each user from the **Define Notifications** tab in the **Tools** module.

Managing who receives email notifications

There are two ways to manage who receives email notifications. You can manage it on a per-user basis using the **Send Email Notifications** check box on the Users tab. Or you can manage it on a multiple-user basis by clicking the **Manage Email Notifications** button.

To manage who receives email notifications

1. From the application toolbar, click **Setup**, and then select **Manage Users**.
2. Select the **Security** tab.
3. Select the **Users** tab.
4. Below the list of users, click the **Manage Email Notifications** button to display the **Select Users to Receive Notifications** dialog box.
5. Move the names of users that you want to receive notifications to the right list box. Only users in the right list box will receive email notifications. You can **CTRL**-click or **SHIFT**-click to select multiple users.
6. Click **OK**, then click **Save**.

System Settings

The **System Settings** module is used to set up and configure financial settings, scheduled services, calendar settings, localization settings, system notifications, licenses, and security configuration for your organization.

For more information, see the following topics:

- [Company Calendar \[page 242\]](#)
- [Financial Settings \[page 243\]](#)
- [Licenses \[page 247\]](#)
- [Localization Settings \[page 249\]](#)
- [Report Templates \[page 250\]](#)
- [Scheduled Services \[page 346\]](#)
- [System Notifications \[page 349\]](#)
- [Security \[page 351\]](#)

Company Calendar

You can use the **Company Calendar** tab to customize the calendar being used by your organization. You can define your organization's working and non-working days, you can define the days in your organization's working week, and you can define the number of hours in a day that makes up a full working day. These settings are used to determine resource capacity and scheduling for resources that are used in task plans or for the number of days that can appear in a sprint burndown chart. Individual resources have their own calendars and they may override company calendar settings in their local calendar (if they are given permission to do so).

Defining working days in the company calendar

Working days are the days in a week, month, and year that count towards resource allocation and resource capacity.

To define working days

1. From the application toolbar, click **Setup**, and then select **System Settings**.
2. Select the **Company Calendar** tab.
3. Under **Select Day Value**, specify whether the day is defined by the default calendar, is a working day for your organization, or is a non-working day for your organization.
4. Click **Save**.

Defining working hours in the company calendar

The default number of working hours per day is eight.

To define working hours per day

1. From the application toolbar, click **Setup**, and then select **System Settings**.
2. Select the **Company Calendar** tab.

3. Under **Working Hours Per Day**, enter the number of hours that make up a resource's working day. The default is 8.
4. Click **Save**.

Defining working weeks in the company calendar

Working weeks are the weeks in a year, typically grouped by month (within quarters).

To define working weeks

1. From the application toolbar, click **Setup**, and then select **System Settings**.
2. Select the **Company Calendar** tab.
3. Under **Select Work Week**, choose the days of the week that comprise your organization's working week.
4. Click **Save**.

Viewing the company calendar

Your organization's calendar can be viewed from the **Company Calendar** view in the **Customization** module.

To view the company calendar

1. From the application toolbar, click **Setup**, and then select **System Settings**.
2. Select the **Company Calendar** tab.

Financial Settings

You can use the **Financial Settings** tab to manage financial settings, such as when the fiscal year starts, whether the use of multiple currencies is enabled, or whether a fiscal provider is associated with your organization's fiscal calendar. The default currency is the United States dollar (USD); the default currency can only be changed when there are zero resources, resource teams, roles, or items. When multiple currencies are enabled (and after currency rates are defined for each added currency), users will be able to view currency data that is converted to the preferred currency.

If you enable multi-currency support, you can add the currencies that your organization uses, and define the currency exchange rates at regular intervals, or whenever necessary. The first exchange rate added defaults to an effective date of 1/1/1900, which cannot be changed. This is done to allow for an exchange rate to be in effect for historical analysis. Each time you add a currency to the list of supported currencies, you need to provide a rate of exchange for each effective date defined.

The **Financial Settings** tab helps you define the fiscal year, including when it starts and how the numbering for that year is handled. Typically, a fiscal year is numbered by the current year, that is, the year of the ending month. For example, if the fiscal year ends in June 2008, the fiscal year is 2008. You can also select to number your fiscal year by the following or previous years. For example, using the previous year setting, if a fiscal year ends in June 2008, the fiscal year is 2007. The numbering for your fiscal year should be defined by your organization's fiscal reporting policies.

Users in your organization may have trouble viewing currency symbols. This is often because of font settings in the user's browser that don't support the currency symbol associated with their preferred currency. Having users change their font settings usually

resolves the issue; sometimes adding specific font support for currency symbols is necessary.

Adding a currency

If your organization needs to use multiple currencies, enable the multi-currency option, and then choose from the list of available currencies. After you have added a currency, you can associate an exchange rate with it.

To add a currency

1. From the application toolbar, click **Setup**, and then select **System Settings**.
2. Select the **Financial Settings** tab.
3. Enable multiple currencies: select **Multi-currency**.
4. From the list of available currencies, move the ones that you want into the list of supported currencies.
5. Click **Save**.

Adding an exchange rate

If your organization has added currencies, you will need to define a currency exchange rate for each of them. The first exchange rate added defaults to an effective date of 1/1/1900, which cannot be changed. This is done to allow for an exchange rate to be in effect for historical analysis.

To add a currency exchange rate

1. From the application toolbar, click **Setup**, and then select **System Settings**.
2. Select the **Financial Settings** tab.
3. Ensure that multiple currencies are enabled and that the currencies your organization want to use are supported.
4. For each supported currency, enter an exchange rate.
5. Click **Save**.

Copying an exchange rate

You can create a new currency exchange rate by copying one that is already there.

To copy a currency exchange rate

1. From the application toolbar, click **Setup**, and then select **System Settings**.
2. Select the **Financial Settings** tab.
3. Ensure that the **Multi-currency** check-box is enabled.
4. Select the exchange rate contour row you want to copy.
5. Click the **Copy Contour** button.
6. A new exchange rate contour row is created with the exchange rates copied from the selected row.
7. Enter a new date in the **Effective Date** column, and edit the required figures for the currency exchange value(s).
8. Click the **Save** button.

Deleting an exchange rate

An exchange rate contour can be deleted, if it was created by mistake. For historical puposes, if the exchange rates change, a new exchange rate contour should be added rather than deleting the existing contour.

To delete a currency exchange rate

1. From the application toolbar, click **Setup**, and then select **System Settings**.
2. Select the **Financial Settings** tab.
3. Select the exchange rate contour row you want to delete.
4. Click **Delete**. The row is deleted from the list.
5. Click **OK**.

Editing the default currency

If your organization has added currencies, you will need to define a default currency for the system. Individual users can overwrite this default to select the currency they would like to use.

To edit the default currency

1. From the application toolbar, click **Setup**, and then select **System Settings**.
2. Select the **Financial Settings** tab.
3. From the **Default Currency** drop-down, select a currency.
4. Click **Save**.

Setting the fiscal year

Enter your organization's fiscal year settings. If your organization's fiscal months, quarters, and/or years do not correspond to a calendar month, quarter and year, you may want to enter a fiscal pattern.

To set the fiscal year

1. From the application toolbar, click **Setup**, and then select **System Settings**.
2. Select the **Financial Settings** tab.
3. From the **Fiscal Year Starts** drop-down, pick the month with which the fiscal year for your organization begins.
4. From the **Fiscal Year Numbering** drop-down, choose the year with which the fiscal year for your organization ends.
5. Click **Save**.

Fiscal Patterns

A fiscal pattern is used to define date formats and calculations in relation to your how your organization has defined its fiscal calendar. Fiscal patterns divide fiscal years into periods (usually quarters), and then define the number of weeks for each of the three months that fall within. All fiscal patterns rely on a fixed calendar date from which all past and future dates and calculations are based. However, a fiscal pattern's start date and a fiscal calendar's start date do not need to be identical. Fiscal patterns generally do not

account for one or two days per year (depending on leap years); an additional week is periodically added to the final month (typically January) to account for the extra days.

The format for defining a fiscal pattern is a comma delimited row of 12 digits (or 13, if your organization's fiscal calendar has 13 periods). Commas separate each quarter in the fiscal year. Rows separate each fiscal year. Each digit in a row represents the number of weeks in a month for the position of the month in the fiscal pattern. The number of weeks in a month used in the fiscal pattern should match the number of weeks that have already been defined for each month in your organization's fiscal calendar.

Common methods of defining a fiscal pattern include:

- **445, 445, 445, 445** This method is the default fiscal pattern and follows the most common breakdown: years are broken into quarters, quarters into thirteen weeks (two four-week months followed by a single five-week month), all anchored to a specific date in the fiscal calendar.
- **454, 454, 454, 454** This method is common in retail accounting and it helps to maintain consistent patterns for weekends and holidays across reporting periods and months across reporting years. Every month within this fiscal pattern begins on a Sunday and ends on a Saturday. Every month across the pattern (year-to-year) is identical. A retail accounting fiscal pattern typically configures its calendar to begin on the first Sunday in February.
- **544, 544, 544, 544** This method is a variation on the 445 fiscal pattern. Each quarter is divided into thirteen weeks (a single five-week month followed by two four-week months).
- **4444, 444, 444, 444** This method uses thirteen fiscal periods instead of four fiscal quarters. Each period has four weeks; each week has seven days. One advantage of using this fiscal pattern is that every reporting period is identical. One disadvantage of using this fiscal pattern is that it does not contain fiscal quarters, which are a requirement for some types of financial reporting methods.

Some examples:

- A typical fiscal pattern:

445, 445, 445, 445

- A fiscal pattern that includes 13 periods:

4444, 444, 444, 444

- A multi-year fiscal pattern. In this example, the fiscal year is configured to begin on the first Saturday in February, repeats, and then catches the extra week in January during the fifth year:

445, 445, 445, 445

445, 445, 445, 445

445, 445, 445, 445

445, 445, 445, 445

445, 445, 445, 446

When a fiscal pattern is applied to your organization's fiscal calendar, users will be able to view the date range defined by the fiscal pattern in areas where fiscal dates are visible, such as in the **Financials** tab in the **Projects** module. Hovering over a date column in a

grid will show the date range that is being used to define the fiscal year being shown. For example:

The screenshot shows the 'Financials View' interface. At the top, there are currency symbols (\$, €, £) and the text 'Stage 1 Financials View'. Below this, there are input fields for 'Start Date: 1/1/2007', 'End Date: 12/31/2010', and a dropdown menu for 'Period: Fiscal Year'. Below the date fields, there are tabs for 'Calculations', 'Currency', 'Hours', 'FTE', 'Units', 'PacificEdge Projects', and 'Ne'. The 'Calculations' tab is selected, and a table is displayed with columns for 'FY 2006', 'FY 2007', 'FY 2008', and 'FY 2009'. A tooltip is visible over the 'FY 2006' column, showing the date range '7/17/2006 - 8/12/2007'. The table contains various calculation rows with values like NaN, 0.00, and \$0.

	FY 2006	FY 2007	FY 2008	FY 2009
Calculations	NaN	NaN	NaN	NaN
CumulativeCalendarQuarter	NaN	NaN	NaN	NaN
CumulativeCTPA	0.00	0.00	0.00	0.00
CumulativeEndOfTime (FTE)	NaN	NaN	NaN	NaN
CumulativeFiscalQuarter (FTE)	0.00	0.00	0.00	0.00
CumulativeFiscalYear (FTE)	0.00	0.00	0.00	0.00
TestCTPA (FTE)	\$0	\$0	\$0	\$0
TestCTPA2 (FTE)	\$0	\$0	\$0	\$0
TestCTPA3	0.00	0.00	0.00	0.00
TestCTPA4	0.00	0.00	0.00	0.00
TestCTPA5	\$0	\$0	\$0	\$0

At the bottom of the screenshot, there are input fields for 'Name:' and 'Dimension: (not selected) Start Milestone:'.

Adding a fiscal pattern

Add a fiscal pattern that is based on your organization's fiscal calendar.

To add a fiscal pattern

1. From the application toolbar, click **Setup**, and then select **System Settings**.
2. Select the **Financial Settings** tab.
3. From the **Fiscal Pattern Start** calendar, select the day upon which the fiscal pattern will begin.
4. Under **Fiscal Pattern**, enter the pattern format.
5. Click **Save**.

Licenses

Licenses determine what users in your organization can do once they have been given access to modules, views, and tasks. You can use the **Licenses** tab to add licenses and then assign them to users in your organization. When your organization purchased a Serena license, a PEL file was included. The PEL file contains the registered user licenses your organization has purchased. The **Licenses** tab displays a list of available licenses (trial and purchased), plus license properties, such as the license name, a description, the license type, the permissions available to the license type, the number of license seats included with the license, the number of remaining license seats that can be assigned to users in your organization, and the expiration date (if a trial license). Trial licenses (once expired) can be upgraded to purchased licenses.

A license provides up to three actions: view, edit, and administer. The security roles to which a user belongs will determine whether they can access a given module, view, or task. For example, users that are assigned to a license that allows them to edit the

Charts tab in the **Reports** module and who belong to a security group that allows them to access the **Reports** module will be able to view and update information contained within the **Charts** tab.

Adding licenses

A Serena license PEL file contains the user licenses that are available to your organization. First import the PEL file and then assign users to licenses.

To add licenses

1. In the desktop **System Settings** module, under **Actions**, click **Manage Providers**.
2. Click **Add Licenses**.
3. Navigate to the location where the new licenses are located. Click **Open**.

Assigning users to licenses

After licenses have been added, you can assign license seats to individual users in your organization. Users can be assigned to more than once license. Each seat can be assigned to only one user. Before assigning a security group to a license, be sure there are enough seats remaining.

To assign users to licenses

1. From the application toolbar, click **Setup**, and then select **System Settings**.
2. Select the **Security** tab.
3. Under **Licenses**, select the license to which the user will be assigned.
4. Click **Save**.

Removing licenses

If there are no users in your organization assigned to a license (for example, trial licenses), you can remove them.

To remove licenses

1. In the desktop **System Settings** module, under **Actions**, click **Licenses**.
2. Select the license you want to remove and click **Remove**.
3. Click **OK**.

Removing users from licenses

You may need to remove users from license assignments, for example when a user leaves your organization or when users change roles within your organization. If a user is currently logged on when you remove them from a license, the change will go into effect the next time the user logs on.

To remove users from licenses

1. In the desktop **System Settings** module, under **Actions**, click **Licenses**.
2. Select the license you want to remove and click **Remove**.
3. Click **OK**.

Viewing licenses

Licenses can be viewed from the **Security** tab in the **System Settings** module (for on demand customers) as well as from the desktop **Administration** console (for on premise customers).

To view licenses

1. In the desktop **System Settings** module, under **Actions**, click **Manage Providers**.
2. Select the **Licenses** tab.

Placeholder

This topic is a placeholder designed to catch any unmapped help call.

If you are reading this topic as a result of clicking a help button, you have caused the help launcher to send a message to the documentation team about this unmapped help topic.

Thank you for your help!

Localization Settings

You can use the **Localization Settings** tab to modify the strings that appear in the application's user interface. This can help your organization address any localized language requirements that you may have. If you add new elements, such as views, attributes, forms, or charts, you will be able to localize the strings associated with the new elements.

You can filter the text strings available in the user interface by language and by string type. English (United States) is the default language; any new element created will be associated with an English (United States) value. Strings must be modified individually. Default text strings are associated with the English (United States) string values. Updating the English (United States) string values will update the default text string values.

Localizing text strings

Select the language for which you want to create localized text strings, select the string type, and then search. For each string result, you can enter the localized text string in the **String Value** column.

To localize text strings

1. From the application toolbar, click **Setup**, and then select **System Settings**.
2. Select the **Localization Settings** tab.
3. Select the language for which you want to create localized strings from the **Language Locale** drop-down.
4. Select a string grouping from the **String Type** drop-down.
5. Click **Search**.
6. In the results, for each row you want to localize, enter the localized text in the **String Value** column.
7. Click **Save**.

Viewing localized text strings

Localized text strings can be viewed from the **Localization Settings** tab.

To view localized text strings

1. From the application toolbar, click **Setup**, and then select **System Settings**.
2. Select the **Localization Settings** tab.
3. Select the language for which you want to view localized strings from the **Language Locale** drop-down.
4. Select a string grouping from the **String Type** drop-down.
5. Click **Search**.

Report Templates

You can use the **Report Templates** tab to track and manage the reports that are available, including adding custom reports. Only users with the Manage Reports (View/Edit) permission can view and manage reports or can access the link from which the OLE DB Provider is downloaded. Only enabled reports will be available to users when they are working in the **My Reports** view.

System reports may not be customized, but they can be used as templates for the creation of custom reports. To build custom reports, download the OLE DB Provider and then create the custom reports using the Business Intelligence Development Studio that is included with Microsoft SQL Server 2005 Reporting Services.

To build a custom report definition, first establish a connection to the OLE DB Provider in Microsoft SQL Server 2005 Reporting Services services, use Microsoft SQL Server 2005 Reporting Services to define the report, and then add the custom report. When working with custom reports, note the following:

- Custom reports associated with items must have at least one string parameter, named *investmentId*, which is the internal unique ID of the work item in the application.
- Custom reports associated with resources must have at least one string parameter, named *resourceId*.

For more information, see the following topics:

- [System Reports \[page 250\]](#)
- [Custom Reports \[page 337\]](#)

System Reports

System reports are built to address the most common reporting scenarios. There are three general types of system reports: work item (also known as investment), administrative, and resource. Most report templates contain filters that need to be specified before the data in the report can be viewed, such as specifying a date range or choosing whether to show or hide weekends.

For more information, see the following topics:

- [Assignments by Resource by Investment \[page 251\]](#)
- [Attributes by Investments by View \[page 255\]](#)
- [Attributes by Investment Type \[page 259\]](#)
- [Change Requests by Investment \[page 263\]](#)

- [Discussions Log by Investment \[page 267\]](#)
- [Incoming Demand Screening and Prioritization \[page 271\]](#)
- [Issues by Investment \[page 275\]](#)
- [Missing Timesheets \[page 280\]](#)
- [Monthly Timesheets \[page 284\]](#)
- [Program Planning and Operational Tracking \[page 289\]](#)
- [Project Portfolio Operational Tracking and Variance \[page 294\]](#)
- [Project Portfolio Progress \[page 298\]](#)
- [Project Status \[page 302\]](#)
- [Resources by Resource Team \[page 308\]](#)
- [Rights by Investment by User \[page 314\]](#)
- [Rights by Resource Team by User \[page 317\]](#)
- [Risks by Investment \[page 321\]](#)
- [Tasks by Investment \[page 325\]](#)
- [User Licenses \[page 330\]](#)
- [Weekly Timesheets \[page 333\]](#)

Assignments by Resource by Investment

This report helps you see all of the resource assignments for a specified group of resources for a selected date range. Resources are sorted by resource team, and then by each resource, by parent investment, and then by assignment. The report shows the planned starting and finish dates, plus the planned amount of work, and then shows the actual starting and finish dates, plus the actual amount of work completed. The variance between the planned and actual amounts of work is also shown.

The user configurable parameters in this report are:

- **Date Range Begin** Use this calendar picker to select the starting date for the report.
- **Date Range End** Use this calendar picker to select the ending date for the report.
- **Show Self Assignment** Select this option to show assignments to which resources have assigned themselves.

Fields

Descriptions for the fields that are available in this report can be found in the following table.







Field	Description
Assignment	The name of the work item to which the resource is assigned.
Finish (Actual)	The date by which work on a task (or a task plan) actually finished.

Field	Description
Investment	The name of the work item, log item, or discussion.
Resource	The name of the resource.
Self-Assigned?	Indicates whether a resource has assigned themselves to a work item.
Start (Actual)	The date on which work on a task (or a task plan) actually started.
Start (Plan)	The date on which a task is scheduled to start.
Team	Depending on the report, the name of the team, resource, resource team, or task.
Work (Actual)	The amount of work that has been completed, to-date, by all resources who have been assigned to a task (or a task plan).
Work (Plan)	The total amount of work that has been scheduled for a task.
Work Variance	The amount of work that still needs to be completed.

Screen Shot

Assignments by Resource by Investment

For 9/6/2009 through 11/29/2009

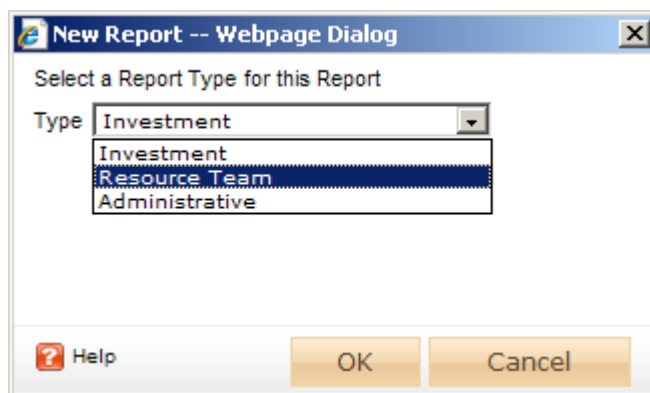
Team	Resource	Investment	Assignment	Self-Assigned?	Start (Plan)	Finish (Plan)	Work (Plan)	Start (Actual)	Finish (Actual)	Work (Actual)
Application Development										0.00
Developer, John										0.00
			IT Hardware Upgrade		11/3/2009	7/13/2011	3,624.00			0.00
			Order Servers		11/13/2009	7/13/2011	3,464.00			0.00
			Development		11/3/2009	12/1/2009	160.00			0.00
			Website Monitoring Service		11/9/2009	11/27/2009	120.00			0.00
			Design Monitoring Tool Integration		11/9/2009	11/27/2009	120.00			0.00
Developer, Matt										0.00
			Website Monitoring Service		11/9/2009	11/27/2009	120.00			0.00
			Design Monitoring Tool Integration		11/9/2009	11/27/2009	120.00			0.00
Business Analysis										0.00
BizAnalyst, Tim										0.00
			Website Monitoring Service		8/24/2009	11/6/2009	440.00			0.00
			Analyze Current Monitoring Capabilities		8/24/2009	9/25/2009	200.00			0.00
			Define Future Monitoring State		9/28/2009	11/6/2009	240.00			0.00

Adding a report that uses the Assignments by Resource by Investment report template

To add a report that uses the **Assignments by Resource by Investment** report template, open the **New Report** dialog box from the **My Reports** tab and then follow the steps below.

To add a report that uses the Assignments by Resource by Investment template

1. Open the **Tools** module.
2. Select the **My Reports** tab.
3. Click **New Report**, select **Resource Team**, and then click **OK**.



4. In the **New Report** dialog box, type a name for the report.
5. On the **General** tab, from the **Report Template** drop-down, select **Assignments by Resource by Investment**, enter a description (optional), and indicate whether you want to run the report immediately (after you are finished creating it).

6. Under **Associate Report With**, click the ellipses button and then use the **Select Resource Team** dialog box to identify the groups of resources that will be included in the report data.

General **Schedule**

Run this report immediately

Report Template:

Description:

Associate Report With:

Resource: None Selected

7. On the **Schedule** tab, select **Run this report on a schedule** if you want the report to be run on a periodic basis. Once selected, you can define how frequently you want the report to be run, the format in which the report will be presented, and how many previous instances of the report you want to store.

General **Schedule** Recipients Template

Run this report on a schedule

Schedule

Frequency: Daily Weekly Monthly

Time of Day:

Day of Week:

Day of Month:

Output

Format:

Store: instances of the report.

Report Parameters

Start Date: Sch. date +

End Date: Sch. date +

Status:

Priority:

8. If you have chosen to run the report on a scheduled basis, you can use the **Recipients** tab to select the users, security groups, and security roles who will receive a notification when this report is run. After you have chosen the recipients, click **Add**.
9. If you have chosen to run the report on a scheduled basis, you can use the **Template** tab to define parameters for the email notification. You can define the title (as it will appear in the subject line). You can add the **Timestamp** and **Report Name** attributes into the title or the template (the message body). You can add a URL link into the message body that will allow any recipient to link directly to the report.

General Schedule Recipients **Template**

* Title


Insert Attribute

Insert URL Link

<<Report_Name>> ran as scheduled at <<Timestamp>>

10. When finished, click **OK**.

View

You can view the **Assignments by Resource by Investment** report directly after adding it by selecting the **Run this report immediately** option in the **New Report** dialog box. (Reports can also be run from the **My Reports** tab in the **Tools** module or the **Reports** tabs in the **Projects** module.) Set the filter options and click  Apply.

Date Range Begin: Date Range End: Show Self Assignment:

Filter options:

Filter	Description
Date Range Begin	The date from which the reporting period begins. Use the calendar picker to select this date.
Date Range End	The date on which the reporting period ends. Use the calendar picker to select this date.
Show Self Assignment	Indicates whether work items to which resources have assigned themselves will be shown.

Attributes by Investments by View

This report lists the attributes that currently appear on each view for each work item type. There are no parameters for this report.

Fields

Descriptions for the fields that are available in this report can be found in the following table.

Field	Description
Attribute Name	The name of the attribute. This is the same name that is found in the Name field on the Attributes tab in the Custom Attributes view.
Attribute XML Name	The system name for the attribute. This is the same name that is found in the System Name field on the Attributes tab in the Custom Attributes view.
Dimensioned?	Indicates whether the data is associated with a dimension, such as Actual , Baseline , Plan , or Target .
Form	The name of the form in the view on which the field is located.
View	The name of the view in the application. This can be an out-of-the-box view, such as Summary or Discussion , or it can be the name of a custom view that your organization has added.

Screen Shot

Attributes by View by Investment Type

Change Log			
View	Form	Attribute XMLName	Attribute Name
Summary	Details	Resolution-Date	Resolution Date
Summary	Details	CreationDate	Created Date
Summary	Details	Name	Name
Summary	Details	Resolution	Resolution
Summary	Details	obj_LogPriority	Log Priority
Summary	Details	PES_User_Assigned_To	User Assigned To
Summary	Details	obj_LogStatus	Log Status
Summary	Details	Approved	Approved
Summary	Details	Approved-By	Approved By
Summary	Details	Description	Description
Summary	Details	Change-Reason	Change Reason
Summary	Details	ChangeImpact	Change Impact
Summary	Details	LogURLLink	LogURLLink

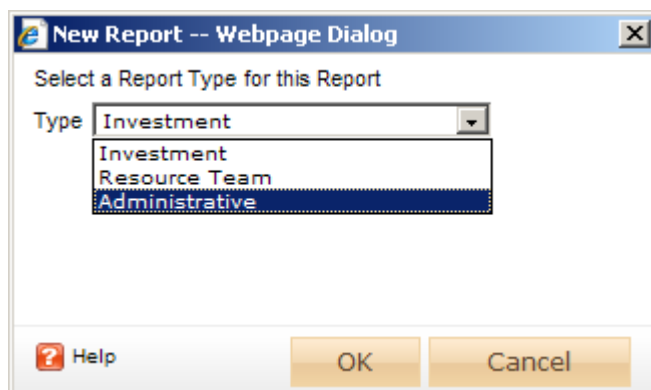
Discussion			
View	Form	Attribute XMLName	Attribute Name
Summary	Details	Name	Name
Summary	Details	LogURLLink	LogURLLink

Adding a report that uses the Attributes by Investment by View report template

To add a report that uses the **Attributes by Investment by View** report template, open the **New Report** dialog box from the **My Reports** tab and then follow the steps below.

To add a report that uses the **Attributes by Investment by View** template

1. Open the **Tools** module.
2. Select the **My Reports** tab.
3. Click **New Report**, select **Administrative**, and then click **OK**.



4. In the **New Report** dialog box, type a name for the report.
5. On the **General** tab, from the **Report Template** drop-down, select **Attributes by Investment by View**, enter a description (optional), and indicate whether you want to run the report immediately (after you are finished creating it).

6. On the **Schedule** tab, select **Run this report on a schedule** if you want the report to be run on a periodic basis. Once selected, you can define how frequently you want the report to be run, the format in which the report will be presented, and how many previous instances of the report you want to store.

General Schedule Recipients Template

Run this report on a schedule

Schedule

Frequency: Daily Weekly
 Monthly

Time of Day: 1:00 PM

Day of Week: Monday

Day of Month: 1

Output

Format: Acrobat (PDF) File

Store: 5 instances of the report.

Report Parameters

Start Date: Sch. date + 0 days End Date: Sch. date + 0 days

Status: Show all Priority: Show all

7. If you have chosen to run the report on a scheduled basis, you can use the **Recipients** tab to select the users, security groups, and security roles who will receive a notification when this report is run. After you have chosen the recipients, click **Add**.
8. If you have chosen to run the report on a scheduled basis, you can use the **Template** tab to define parameters for the email notification. You can define the title (as it will appear in the subject line). You can add the **Timestamp** and **Report Name** attributes into the title or the template (the message body). You can add a URL link into the message body that will allow any recipient to link directly to the report.

General Schedule Recipients Template

* Title: _____

Insert Attribute: Timestamp

Insert URL Link:

<<Report_Name>> ran as scheduled at <<Timestamp>>

9. When finished, click **OK**.

View

You can view the **Attributes by Investment by View** report directly after adding it by selecting the **Run this report immediately** option in the **New Report** dialog box. (Reports can also be run from the **My Reports** tab in the **Tools** module or the **Reports** tabs in the **Projects** module.) Administrative reports do not have filter options.

Attributes by Investment Type

This report lists all of the attributes that are available for each work item type.

Fields

The **Properties** section of the **View Designer** and **Module Designer** views displays the properties that are available for the selected attribute, control, or widget. The list of available properties will vary, depending on the selected attribute, control, or widget.

Field	Description
Attribute Name	The name of the attribute. This is the same name that is found in the Name field on the Attributes tab in the Custom Attributes view.
Attribute Type	The type of attribute. An attribute must be one of the following attribute types: <i>constant, date, flag, integer, large text, milestone, money, percent, ranged calculation, resource, text, time, Timephased - CURRENCY, Timephased - FTE, Timephased - NonLabor, Timephased - Units, Timephased Calc - CURRENCY, Timephased Calc - FTE, Timephased Calc - HOURS, Timephased Calc - UNITS, or url link.</i>
Investment Type	The work item type. Work item types (in this report) can be defined in two locations: the Item Types tab of the Types Setup view and the Item Views tab of the View Management view.
XML Name	The system name for the attribute. This is the same name that is found in the System Name field on the Attributes tab in the Custom Attributes view.

Screen Shot

Attributes by Investment Type Report

Sorted by Investment Type

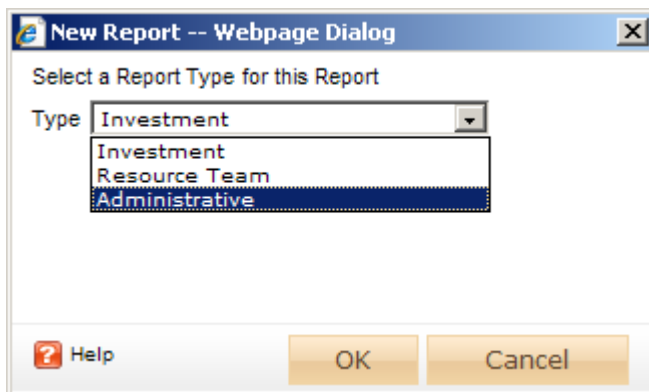
Investment Type	Attribute Name	XML Name	Attribute Type
Change Log			
	Approved	Approved	flag
	Approved By	Approved-By	resource
	Change Impact	ChangeImpact	integer
	Change Reason	Change-Reason	text
	Concurrency Modified By	LastModifiedBy	text
	Concurrency Timestamp Date	LastModifiedDate	date
	Created By	CreateBy	text
	Created Date	CreationDate	date
	Description	Description	text
	Investment ID	id	integer
	Investment Type	PES-Investment-Type	text
	Last User Modified By	LastUserModifiedBy	text
	Last User Modified Date	LastUserModifiedDate	date
	Log Priority	obj_LogPriority	integer
	Log Status	obj_LogStatus	integer
	LogURLLink	LogURLLink	url link
	Name	Name	text
	Owning Investment	obj_OwningInvestment	integer
	Resolution	Resolution	text
	Resolution Date	Resolution-Date	date
	User Assigned To	PES_User_Assigned_To	text
	User Assigned To ID	usr_AssignedTo	integer

Adding a report that uses the Attributes by Investment Type report template

To add a report that uses the **Attributes by Investment Type** report template, open the **New Report** dialog box from the **My Reports** tab and then follow the steps below.

To add a report that uses the Attributes by Investment Type template

1. Open the **Tools** module.
2. Select the **My Reports** tab.
3. Click **New Report**, select **Administrative**, and then click **OK**.



4. In the **New Report** dialog box, type a name for the report.
5. On the **General** tab, from the **Report Template** drop-down, select **Attributes by Investment Type**, enter a description (optional), and indicate whether you want to run the report immediately (after you are finished creating it).

6. On the **Schedule** tab, select **Run this report on a schedule** if you want the report to be run on a periodic basis. Once selected, you can define how frequently you want the report to be run, the format in which the report will be presented, and how many previous instances of the report you want to store.

General **Schedule** Recipients Template

Run this report on a schedule

Schedule

Frequency: Daily Weekly
 Monthly

Time of Day: 1:00 PM

Day of Week: Monday

Day of Month: 1

Output

Format: Acrobat (PDF) File

Store: 5 instances of the report.

Report Parameters

Start Date: Sch. date + 0 days End Date: Sch. date + 0 days

Status: Show all Priority: Show all

7. If you have chosen to run the report on a scheduled basis, you can use the **Recipients** tab to select the users, security groups, and security roles who will receive a notification when this report is run. After you have chosen the recipients, click **Add**.
8. If you have chosen to run the report on a scheduled basis, you can use the **Template** tab to define parameters for the email notification. You can define the title (as it will appear in the subject line). You can add the **Timestamp** and **Report Name** attributes into the title or the template (the message body). You can add a URL link into the message body that will allow any recipient to link directly to the report.

General Schedule Recipients **Template**

* Title: _____

Insert Attribute: Timestamp

Insert URL Link:

<<Report_Name>> ran as scheduled at <<Timestamp>>

9. When finished, click **OK**.

View

You can view the **Attributes by Investment Type** report directly after adding it by selecting the **Run this report immediately** option in the **New Report** dialog box. (Reports can also be run from the **My Reports** tab in the **Tools** module or the **Reports** tabs in the **Projects** module.) Administrative reports do not have filter options.

Change Requests by Investment

This report shows items that have been entered into the change request log, sorted by investment.

The user configurable parameters in this report are:

- **Start Date** The date on which the reporting period begins.
- **End Date** The date on which the reporting period ends.
- **Status** Users can limit the report to show change requests with any or all of the following status options: **Show All, Open, Assigned, or Resolved.**
- **Priority** Users can limit the report to show change requests with any or all of the following priority options: **Show All, High, Medium, Low.**

Fields

Descriptions for the fields that are available in this report can be found in the following table.

Field	Description
Approved	Indicates whether the change request has been approved.
Approved By	The resource who approved the change request.
Assigned To	The name of the resource to whom a task or work item has been assigned.
Escalated?	Indicates whether a log item has been escalated to its parent work item. A log item that has been escalated is visible in the parent work item as well as in the original work item. When notifications are enabled for an escalated log item, all users that are subscribed to the Can receive issue/risk notifications are notified.
Escalation?	Indicates whether a log item has been escalated from a child work item. A log item that has been escalated is visible in the parent work item as well as in the original work item. When notifications are enabled for an escalated log item, all users that are subscribed to the Can receive issue/risk notifications are notified.
Priority	The priority of the log type, such as an issue, a risk, or a change request.

Field	Description
Requested Date	The date the change request was submitted.
Resolution Date	The date the change request was resolved.
Status	The current status of the log type, such as an issue, a risk, or a change request.
Title	The name of the work item, log item, or discussion.
URL Link	The URL for the log item, such as an issue, a risk, or a change request.

Screen Shot

Log Report: Change Log by Investment

From 8/23/2009 to 11/15/2009 (Status = All, Priority = All)

Investment Title	Status	Priority	Assigned to	Approved	Approved By	Requested Date	Resolution Date
------------------	--------	----------	-------------	----------	-------------	----------------	-----------------

Alerting Services

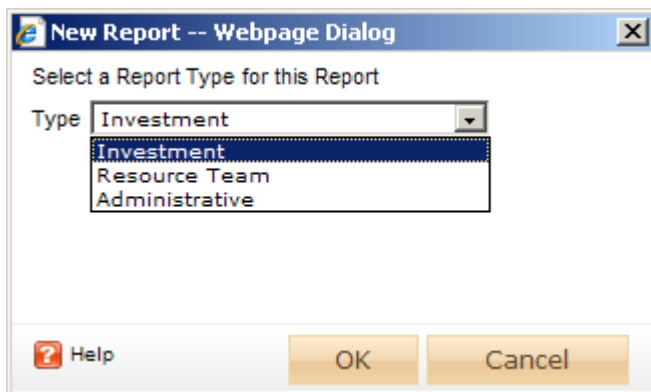
<input type="checkbox"/> Add new servers to purchase list	Open	Medium				11/12/2009	11/18/2009
<i>Description:</i>							
<i>Change Reason:</i>							
<i>Resolution:</i>							

Adding a report that uses the Change Requests by Investment report template

To add a report that uses the **Change Requests by Investment** report template, open the **New Report** dialog box from the **My Reports** tab and then follow the steps below.

To add a report that uses the Change Requests by Investment template

1. Open the **Tools** module.
2. Select the **My Reports** tab.
3. Click **New Report**, select **Investment**, and then click **OK**.



4. In the **New Report** dialog box, type a name for the report.
5. On the **General** tab, from the **Report Template** drop-down, select **Change Requests by Investment**, enter a description (optional), and indicate whether you want to run the report immediately (after you are finished creating it).

General Schedule

Run this report immediately

Report Template

Description

Associate Report With

Investment: IT Hardware Upgrade

6. Under **Associate Report With**, click the ellipses button and then use the **Select Investments** dialog box to identify the work items that will be included in the report data.

General Schedule

Run this report immediately

Report Template

Description

Associate Report With

Investment: IT Hardware Upgrade

- On the **Schedule** tab, select **Run this report on a schedule** if you want the report to be run on a periodic basis. Once selected, you can define how frequently you want the report to be run, the format in which the report will be presented, and how many previous instances of the report you want to store.

General
Schedule
Recipients
Template

Run this report on a schedule

Schedule

Frequency: Daily Weekly
 Monthly

Time of Day:

Day of Week:

Day of Month:

Output

Format:

Store: instances of the report.

Report Parameters

Start Date: Sch. date +

End Date: Sch. date +

Status:

Priority:

- If you have chosen to run the report on a scheduled basis, you can use the **Recipients** tab to select the users, security groups, and security roles who will receive a notification when this report is run. After you have chosen the recipients, click **Add**.
- If you have chosen to run the report on a scheduled basis, you can use the **Template** tab to define parameters for the email notification. You can define the title (as it will appear in the subject line). You can add the **Timestamp** and **Report Name** attributes into the title or the template (the message body). You can add a URL link into the message body that will allow any recipient to link directly to the report.

General
Schedule
Recipients
Template

* Title:

Insert Attribute:



Insert URL Link:

```
<<Report_Name>> ran as scheduled at <<Timestamp>>
```

10. When finished, click **OK**.

View

You can view the **Change Requests by Investment** report directly after adding it by selecting the **Run this report immediately** option in the **New Report** dialog box. (Reports can also be run from the **My Reports** tab in the **Tools** module or the **Reports** tabs in the **Projects** module.) Set the filter options and click  **Apply**.

Start Date:  End Date:  Status: Priority:

Filter options:

Filter	Description
End Date	The date on which the reporting period ends. Use the calendar picker to select this date.
Priority	The priority of the log item. Filter options: Blank, High, Low, Medium, and Show All .
Start Date	The date from which the reporting period begins. Use the calendar picker to select this date.
Status	Indicates which work items will be shown, based on the current status of the work item. Filter options: Assigned, Blank, Open, Resolved, and Show All .

Discussions Log by Investment

This report shows details of the Discussions tab. The report lists discussions for a specific work item or a group. It shows the discussion title, creation (created by, created on) and modification details (last modified by, last modified on). Each discussion has a plus sign in front of its title, to represent availability of details. If a user clicks this plus sign, the screen expands to reveal description field content for the specific discussion. The only userconfigurable parameters in this report are the start and end dates.

Fields

Descriptions for the fields that are available in this report can be found in the following table.

Field	Description
Created By	The name of the resource who initially created the task, task plan, work item, and so on.
Created On	The date on which a task, task plan, work item, and so on, was created.
Investment/ Title	The name of the work item, log item, or discussion.

Field	Description
Last Modified By	The user name of the person who made the most recent changes to the task, task plan, or work item.
Last Modified On	The date on which the most recent changes were made to the task, task plan, or work item.

Screen Shot

Log Report: Discussion by Investment

From 9/6/2009 to 11/29/2009

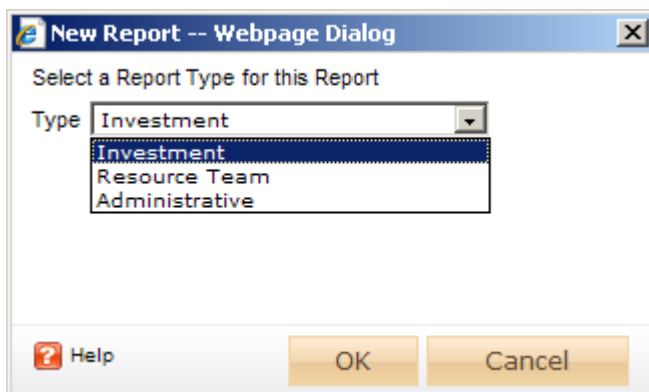
Investment/Discussion Title	Created by	Created on	Last Modified by	Last Modified on
Website Monitoring Service				
<input type="checkbox"/> Competitive Analysis References?	Tim Administrator	9/8/2009	Tim Administrator	9/8/2009
<i>Description:</i> Can anyone share a good reference for competitive analysis?				
<input type="checkbox"/> Sample Competitive Analysis Doc	Tim Administrator	9/8/2009	Tim Administrator	9/8/2009
<i>Description:</i> Shows website Statistics				
Business Process Re-engineering				

Adding a report that uses the Discussions by Investment report template

To add a report that uses the **Discussions by Investment** report template, open the **New Report** dialog box from the **My Reports** tab and then follow the steps below.

To add a report that uses the Discussions by Investment template

1. Open the **Tools** module.
2. Select the **My Reports** tab.
3. Click **New Report**, select **Investment**, and then click **OK**.



4. In the **New Report** dialog box, type a name for the report.
5. On the **General** tab, from the **Report Template** drop-down, select **Discussions by Investment**, enter a description (optional), and indicate whether you want to run the report immediately (after you are finished creating it).

General Schedule

Run this report immediately

Report Template

Description

Associate Report With

Investment: IT Hardware Upgrade

6. Under **Associate Report With**, click the ellipses button and then use the **Select Investments** dialog box to identify the work items that will be included in the report data.

General Schedule

Run this report immediately

Report Template

Description

Associate Report With

Investment: IT Hardware Upgrade

7. On the **Schedule** tab, select **Run this report on a schedule** if you want the report to be run on a periodic basis. Once selected, you can define how frequently you want the report to be run, the format in which the report will be presented, and how many previous instances of the report you want to store.

General **Schedule** Recipients Template

Run this report on a schedule

Schedule

Frequency: Daily Weekly
 Monthly

Time of Day: 1:00 PM

Day of Week: Monday

Day of Month: 1

Output

Format: Acrobat (PDF) File

Store: 5 instances of the report.

Report Parameters

Start Date: Sch. date + 0 days End Date: Sch. date + 0 days

Status: Show all Priority: Show all

8. If you have chosen to run the report on a scheduled basis, you can use the **Recipients** tab to select the users, security groups, and security roles who will receive a notification when this report is run. After you have chosen the recipients, click **Add**.
9. If you have chosen to run the report on a scheduled basis, you can use the **Template** tab to define parameters for the email notification. You can define the title (as it will appear in the subject line). You can add the **Timestamp** and **Report Name** attributes into the title or the template (the message body). You can add a URL link into the message body that will allow any recipient to link directly to the report.

General Schedule Recipients **Template**

* Title: _____


Insert Attribute: Timestamp

Insert URL Link:

<<Report_Name>> ran as scheduled at <<Timestamp>>

10. When finished, click **OK**.

View

You can view the **Discussions by Investment** report directly after adding it by selecting the **Run this report immediately** option in the **New Report** dialog box. (Reports can also be run from the **My Reports** tab in the **Tools** module or the **Reports** tabs in the **Projects** module.) Set the filter options and click  Apply.

Start Date: End Date:

Filter options:

Filter	Description
End Date	The date on which the reporting period ends. Use the calendar picker to select this date.
Start Date	The date from which the reporting period begins. Use the calendar picker to select this date.

Incoming Demand Screening and Prioritization

This report shows work items for an enterprise portfolio in terms of rank, objective, financial benefit, NPV, strategic and risk scoring, as well as costs for labor, non-labor, and FTE demand. While setting up the report, users can choose to associate the report with a single work item or a group of work items in the investment hierarchy..

The user configurable parameters in this report are:

- **Request State** Users can choose the investment state that is included in the report. Some users will want to see only active investments and some will review both active (tracking) and proposed (program and project requests).
- **Investment Type** Users can define what type of investments, such as programs and projects, are included in the report.

Fields

Descriptions for the fields that are available in this report can be found in the following table.

Field	Description
Business Priority	The priority of the project. High, Medium, Low, or N/A.
Investment	The name of the work item, log item, or discussion.
Investment Objective	The reason for doing the work associated with the project.
Net Benefits	The difference between the value in the Total Benefit field and the value in the Total Cost field.

Field	Description
NPV	The net present value (NPV) for the project.
Rank	Indicates the rank of a work item, in relation to other work items in the same list. The lower the number, the higher the rank.
Request State	The request state for a work item.
ROI	The return on investment (ROI) for the project.
Sponsoring Organization	The sponsor of the project.
Total Benefit	The total amount of money that is allocated to completion of the project.
Total Cost	The total costs of all labor and non-labor in the project.

Screen Shot

Incoming Demand Screening and Prioritization

For All

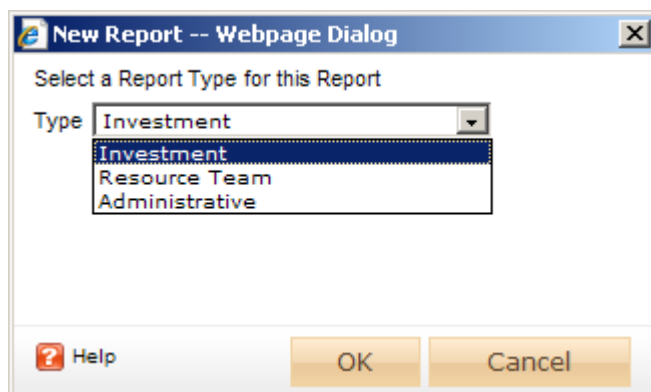
Investment	Request State	Rank	Business Priority	Sponsoring Organization	Investment Objective	NPV	ROI	Total Cost (Plan)	Total Benefit (Plan)	Net Benefits (Plan)
Project Requests										
Pending										
Automated Billing and Invoicing System	Deferred	47.5	2 - Medium	Finance	Run	\$0		\$0	\$0	\$0
Qualified										
Asynchronous Revenue Inventory Tracking	Ready for Approval	47.5	2 - Medium	Audit	Innovate	\$88,246		\$761,754	\$850,000	\$88,246
Bartered Payroll	Ready for Approval	47.5	3 - Low	HR	Innovate	\$88,246		\$761,754	\$850,000	\$88,246
Cash Loss Detection	Ready for Approval	47.5	3 - Low	Audit	Improve	\$88,246		\$761,754	\$850,000	\$88,246
Compliance Project Request	Ready for Approval	46.8	1 - High	Business	Comply	\$28,886	9.22 %	\$821,114	\$850,000	\$28,886
Exotic Alloy Stabilization	Ready for Approval	48.1	2 - Medium	HR	Improve	\$88,246	10.24 %	\$761,754	\$850,000	\$88,246
Faster HR System	N/A	47.5	1 - High	HR	Improve	\$0		\$0	\$0	\$0
Financial Boundary Condition Alert	Ready for Approval	40.4	1 - High	Finance	Grow	\$88,246		\$761,754	\$850,000	\$88,246
Improvement Project Request	Ready for Approval	38.3	2 - Medium	Business Unit	Improve	\$34,560	6.54 %	\$365,440	\$400,000	\$34,560
Innovate Project Request	Ready for Approval	64.9	1 - High	Business Unit	Innovate	\$291,160	67.60 %	\$408,840	\$700,000	\$291,160
Misappropriation Suppression	Ready for Approval	22.5	2 - Medium	Security	Improve	\$88,246		\$761,754	\$850,000	\$88,246

Adding a report that uses the Incoming Demand Screening and Prioritization report template

To add a report that uses the **Incoming Demand Screening and Prioritization** report template, open the **New Report** dialog box from the **My Reports** tab and then follow the steps below.

To add a report that uses the Incoming Demand Screening and Prioritization template

1. Open the **Tools** module.
2. Select the **My Reports** tab.
3. Click **New Report**, select **Investment**, and then click **OK**.



4. In the **New Report** dialog box, type a name for the report.
5. On the **General** tab, from the **Report Template** drop-down, select **Incoming Demand Screening and Prioritization**, enter a description (optional), and indicate whether you want to run the report immediately (after you are finished creating it).

6. Under **Associate Report With**, click the ellipses button and then use the **Select Investments** dialog box to identify the work items that will be included in the report data.

General **Schedule**

Run this report immediately

Report Template

Description

Associate Report With Investment: IT Hardware Upgrade

7. On the **Schedule** tab, select **Run this report on a schedule** if you want the report to be run on a periodic basis. Once selected, you can define how frequently you want the report to be run, the format in which the report will be presented, and how many previous instances of the report you want to store.

General **Schedule** Recipients Template

Run this report on a schedule

Schedule

Frequency Daily Weekly
 Monthly

Time of Day

Day of Week

Day of Month

Output

Format

Store instances of the report.

Report Parameters

Start Date: Sch. date +

End Date: Sch. date +

Status:

Priority:

8. If you have chosen to run the report on a scheduled basis, you can use the **Recipients** tab to select the users, security groups, and security roles who will receive a notification when this report is run. After you have chosen the recipients, click **Add**.
9. If you have chosen to run the report on a scheduled basis, you can use the **Template** tab to define parameters for the email notification. You can define the title (as it will appear in the subject line). You can add the **Timestamp** and **Report Name** attributes into the title or the template (the message body). You can add a URL link into the message body that will allow any recipient to link directly to the report.

General Schedule Recipients **Template**

* Title

Insert Attribute

Insert URL Link

<<Report_Name>> ran as scheduled at <<Timestamp>>

10. When finished, click **OK**.

View

You can filter the **Incoming Demand Screening and Prioritization** report directly after adding it by selecting the **Run this report immediately** option in the **New Report** dialog box. (Reports can also be run from the **My Reports** tab in the **Tools** module or the **Reports** tabs in the **Projects** module.)

Request State: Investment Type:

Descriptions for these filters that are available in the **Incoming Demand Screening and Prioritization** report can be found in the following table.

Filter options:

Filter	Description
Investment Type	The type of new work request. Filter options: Project Only , Project Request Only , and Show All .
Request State	The current state of work item requests, such as requests for IT hardware upgrades, improved alerting services, rollouts of new software upgrades, and so on. The work items in the report will be unique to your organization. Filter options: All , New , Ready for Approval , and Rejected .

Issues by Investment

This report shows the details of the **Issues** tab. The report lists issues for a specific work item or a group. It shows the issues title as well as information about priority, status, escalations, user assignments, and so on. Expand the plus symbol in the report to view the details for any issue contained in the report.

The user-configurable parameters in this report are:

- **Status** Users can limit the report to show issues with any or all of the following statuses: **Show All**, **Open**, **Assigned**, **Resolved**, or **Blank**.

- **Priority** Users can limit the report to show issues with any or all of the following priority statuses: **Show All, High, Medium, Low, or Blank.**
- **Date Range** Users must specify a start and end date for the report.

Fields

Descriptions for the fields that are available in this report can be found in the following table.

Field	Description
Assigned To	The name of the resource to whom a task or work item has been assigned.
Escalated?	Indicates whether a log item has been escalated to its parent work item. A log item that has been escalated is visible in the parent work item as well as in the original work item. When notifications are enabled for an escalated log item, all users that are subscribed to the Can receive issue/risk notifications are notified.
Escalation?	Indicates whether a log item has been escalated from a child work item. A log item that has been escalated is visible in the parent work item as well as in the original work item. When notifications are enabled for an escalated log item, all users that are subscribed to the Can receive issue/risk notifications are notified.
Investment Title	The name of the work item, log item, or discussion.
Priority	The priority of the log type, such as an issue, a risk, or a change request.
Request Date	The date the change request was submitted.
Resolution Date	The date the change request was resolved.
Status	The current status of the log type, such as an issue, a risk, or a change request.
URL Link	The URL for the log item, such as an issue, a risk, or a change request.

Screen Shot

Log Report: Issue by Investment

From 7/5/2009 to 11/15/2009 (Status = All, Priority = All)

Investment Title	Status	Priority	Assigned to	Requested Date	Resolution Date	Escalation?	Escalated?	URL Link
------------------	--------	----------	-------------	----------------	-----------------	-------------	------------	----------

Template Test

Alert Distribution Assigned Medium 8/13/2009 8/28/2008

Description:

Mitigation Strategy:

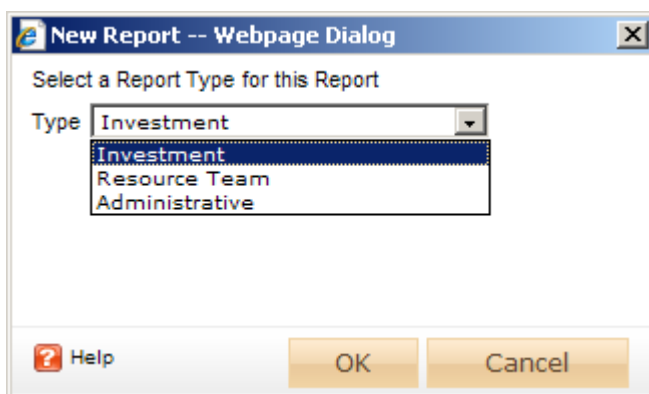
Contingency Plan:

Adding a report that uses the Issues by Investment report template

To add a report that uses the **Issues by Investment** report template, open the **New Report** dialog box from the **My Reports** tab and then follow the steps below.

To add a report that uses the Issues by Investment template

1. Open the **Tools** module.
2. Select the **My Reports** tab.
3. Click **New Report**, select **Investment**, and then click **OK**.



4. In the **New Report** dialog box, type a name for the report.
5. On the **General** tab, from the **Report Template** drop-down, select **Issues by Investment**, enter a description (optional), and indicate whether you want to run the report immediately (after you are finished creating it).

General Schedule

Run this report immediately

Report Template

Description

Associate Report With

... Investment: IT Hardware Upgrade

6. Under **Associate Report With**, click the ellipses button and then use the **Select Investments** dialog box to identify the work items that will be included in the report data.

General Schedule

Run this report immediately

Report Template

Description

Associate Report With

... Investment: IT Hardware Upgrade

7. On the **Schedule** tab, select **Run this report on a schedule** if you want the report to be run on a periodic basis. Once selected, you can define how frequently you want the report to be run, the format in which the report will be presented, and how many previous instances of the report you want to store.

General **Schedule** Recipients Template

Run this report on a schedule

Schedule

Frequency: Daily Weekly
 Monthly

Time of Day: 1:00 PM

Day of Week: Monday

Day of Month: 1

Output

Format: Acrobat (PDF) File

Store: 5 instances of the report.

Report Parameters

Start Date: Sch. date + 0 days End Date: Sch. date + 0 days

Status: Show all Priority: Show all

8. If you have chosen to run the report on a scheduled basis, you can use the **Recipients** tab to select the users, security groups, and security roles who will receive a notification when this report is run. After you have chosen the recipients, click **Add**.
9. If you have chosen to run the report on a scheduled basis, you can use the **Template** tab to define parameters for the email notification. You can define the title (as it will appear in the subject line). You can add the **Timestamp** and **Report Name** attributes into the title or the template (the message body). You can add a URL link into the message body that will allow any recipient to link directly to the report.

General Schedule Recipients **Template**

* Title: _____


Insert Attribute: Timestamp





Insert URL Link:

<<Report_Name>> ran as scheduled at <<Timestamp>>

10. When finished, click **OK**.

View

You can view the **Issues by Investment** report directly after adding it by selecting the **Run this report immediately** option in the **New Report** dialog box. (Reports can also be run from the **My Reports** tab in the **Tools** module or the **Reports** tabs in the **Projects** module.) Set the filter options and click  **Apply**.

Start Date:  7/5/2009 End Date:  11/15/2009 Status: Show all  Priority: Show all 

Filter options:

Filter	Description
End Date	The date on which the reporting period ends. Use the calendar picker to select this date.
Priority	The priority of the log item. Filter options: Blank, High, Low, Medium, and Show All .
Start Date	The date on which the reporting period ends. Use the calendar picker to select this date.
Status	Indicates which work items will be shown, based on the current status of the work item. Filter options: Assigned, Blank, Open, Resolved, and Show All .

Missing Timesheets

This report shows timesheets that were not submitted or saved for a user-defined date range and specified resource team. Only open timesheet periods are displayed.

The user-configurable parameters in this report are:

- **Group by** Users can view the report sorted by resource team for the entire date range or by resources broken down into timesheet periods.
- **Start and End Date** Users must define the timesheet period to run the report. Regardless of what day they choose, the report period will start at the beginning of the period.
- **Based on Capacity** Selecting this check box changes the nature of the report. Rather than displaying unsubmitted timesheets, the report displays submitted timesheets and the variance between reported hours and overall resource capacity. Using this option, for each timesheet period the report displays reported hours, capacity hours, and hours not yet posted for each resource.

Fields

Descriptions for the fields that are available in this report can be found in the following table.

Field	Description
Capacity Hours	The amount of planned hours that could be reported during the missing timesheet reporting period.
Hours Not Yet Posted	The variance between the actual hours and planned hours in the missing timesheet reporting period.
Period End	The date on which the missing timesheet reporting period ends.
Period Start	The date on which the missing timesheet reporting period begins.
Reported Hours	The name of the work item, log item, or discussion.
Timesheet Period / Resource Team / Resource	The name of the timesheet period, resource team, and resource.

Screen Shot

Missing Timesheets

Resources who have not submitted timesheets for timesheet periods in 10/18/2009 to 11/1/2009

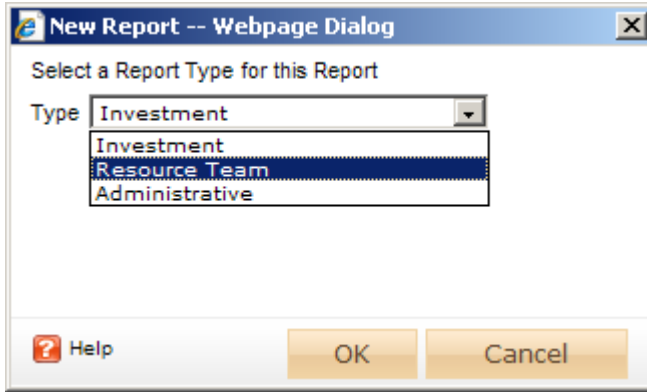
Resource Team / Resource	Period Start	Period End	Reported Hours	Capacity Hours	Hours Not Yet Posted
Quality Assurance					
QualityAssurance, Randy	10/19/2009	10/25/2009		56.00	56.00
QualityAssurance, Randy	10/26/2009	11/1/2009		40.00	40.00
QualityAssurance, Randy	10/12/2009	10/18/2009		56.00	56.00
QualityAssurance, Eric	10/19/2009	10/25/2009		56.00	56.00
QualityAssurance, Eric	10/26/2009	11/1/2009		40.00	40.00
QualityAssurance, Eric	10/12/2009	10/18/2009		56.00	56.00
QualityAssurance, Jill	10/19/2009	10/25/2009		56.00	56.00
QualityAssurance, Jill	10/26/2009	11/1/2009		40.00	40.00
QualityAssurance, Jill	10/12/2009	10/18/2009		56.00	56.00
QualityAssurance, Kim	10/19/2009	10/25/2009		56.00	56.00
QualityAssurance, Kim	10/26/2009	11/1/2009		40.00	40.00
QualityAssurance, Kim	10/12/2009	10/18/2009		56.00	56.00

Adding a report that uses the Missing Timesheets report template

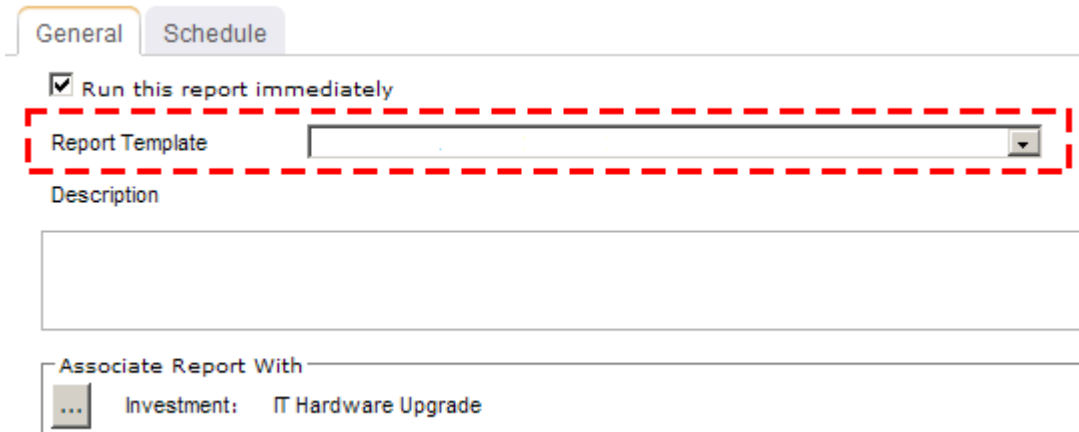
To add a report that uses the **Missing Timesheets** report template, open the **New Report** dialog box from the **My Reports** tab and then follow the steps below.

To add a report that uses the Missing Timesheets template

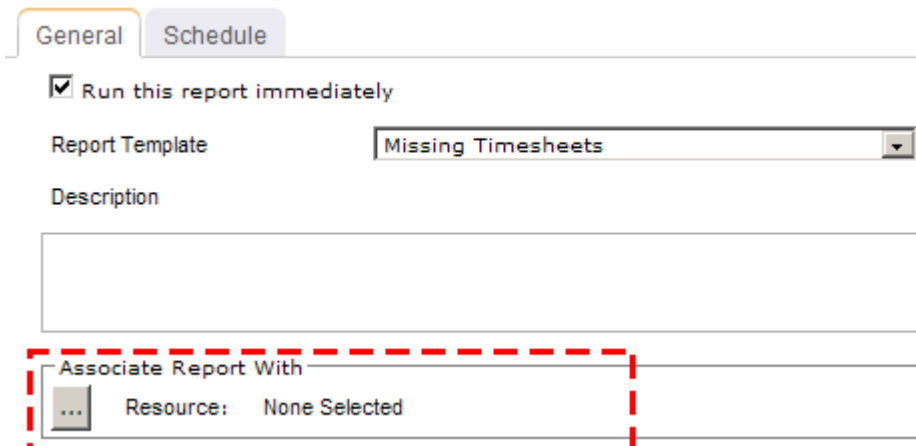
1. Open the **Tools** module.
2. Select the **My Reports** tab.
3. Click **New Report**, select **Resource Team**, and then click **OK**.



4. In the **New Report** dialog box, type a name for the report.
5. On the **General** tab, from the **Report Template** drop-down, select **Missing Timesheets**, enter a description (optional), and indicate whether you want to run the report immediately (after you are finished creating it).



6. Under **Associate Report With**, click the ellipses button and then use the **Select Resource Team** dialog box to identify the groups of resources that will be included in the report data.



- On the **Schedule** tab, select **Run this report on a schedule** if you want the report to be run on a periodic basis. Once selected, you can define how frequently you want the report to be run, the format in which the report will be presented, and how many previous instances of the report you want to store.

General Schedule Recipients Template

Run this report on a schedule

Schedule

Frequency: Daily Weekly Monthly

Time of Day: 1:00 PM

Day of Week: Monday

Day of Month: 1

Output

Format: Acrobat (PDF) File

Store: 5 instances of the report.

Report Parameters

Start Date: Sch. date + 0 days

End Date: Sch. date + 0 days

Status: Show all

Priority: Show all

- If you have chosen to run the report on a scheduled basis, you can use the **Recipients** tab to select the users, security groups, and security roles who will receive a notification when this report is run. After you have chosen the recipients, click **Add**.
- If you have chosen to run the report on a scheduled basis, you can use the **Template** tab to define parameters for the email notification. You can define the title (as it will appear in the subject line). You can add the **Timestamp** and **Report Name** attributes into the title or the template (the message body). You can add a URL link into the message body that will allow any recipient to link directly to the report.

General Schedule Recipients Template

* Title

Insert Attribute: Timestamp


Into Template Into Title

Insert URL Link: Into Template

<<Report_Name>> ran as scheduled at <<Timestamp>>

10. When finished, click **OK**.

View

You can view the **Missing Timesheets** report directly after adding it by selecting the **Run this report immediately** option in the **New Report** dialog box. (Reports can also be run from the **My Reports** tab in the **Tools** module or the **Reports** tabs in the **Projects** module.) Set the filter options and click  **Apply**.

Start Date:  10/18/2009 End Date:  11/1/2009 Group By: Resource Team Based on Capacity:

Filter options:

Filter	Description
Based on Capacity	Indicates whether submitted or unsubmitted timesheets will be shown. If this option is selected, reported hours, capacity hours, and hours not yet posted will be shown for each resource in the report, including the variance between reported and capacity hours. If this option is not selected, only unsubmitted timesheets will be shown.
End Date	The date on which the reporting period ends. Use the calendar picker to select this date.
Group By	For any report that includes both investment and resource data, you can choose to filter the report by investment or by resource, and then by the other. For investment reports, users can view the report sorted by item and then by resource team. They can also sort the report by resource team, resource and then by item. For resource team reports, users can view the report sorted by resource team for the entire date range or by resources broken down into timesheet periods. Filter options: <ul style="list-style-type: none"> Investment reports: Investment / Resource Team or Resource Team / Investment Resource Team reports: Role / Resource Team, or Resource Team / Role
Start Date	The date from which the reporting period begins. Use the calendar picker to select this date.

Monthly Timesheets

This report shows monthly posted time, as well as the time saved but not submitted for a specific work item. The maximum number of months displayed in this report is twelve. If a user defines a larger time range (13 months and over), the report period only includes information for 12 months and starts at the beginning of the month for the selected start date, regardless of the specified start day. The report shows this information by work item and then by resource team and resource.

The user-configurable parameters in this report are:

- **Group by** Users can view the report sorted by item and then by resource team. They can also sort the report by resource team, resource and then by item.
- **Start and End Date** Users must define the timesheet period to run the report. Regardless of what day they choose, the report period will start at the beginning of the month.
- **Show** Users can choose to show unsubmitted time and posted time.

Fields

Descriptions for the fields that are available in this report can be found in the following table.

Field	Description
Investment	The name of the work item, log item, or discussion.
Rate	The standard rate for the resource, per unit of work. For example, \$100.00 per hour.
Team / Resource / Tasks	Depending on the report, the name of the team, resource, resource team, or task.
Total Hours	The number of hours worked.

Screen Shot

Monthly Timesheets: By Resource Team by Investment

2 months ending October 2009, Submitted Time

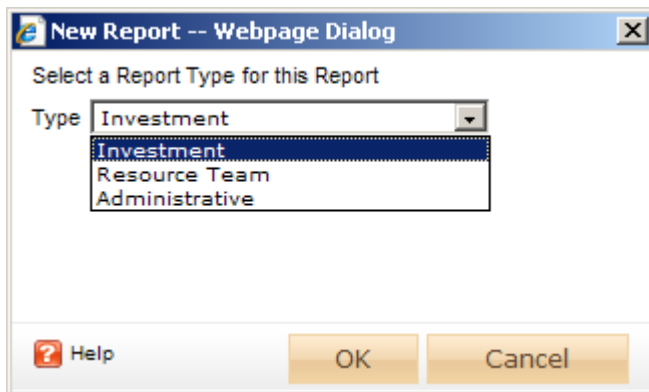
Team	Team / Resource / Tasks	Rate	Sep-09	Oct-09	Total Hours
Training			0	10	10
	Trainer, Derek		0	10	10
	Business Process Re-engineering		0	5	5
	Deliver training	\$100	0	5	
	Competitive Monitoring Service		0	5	5
	Deliver training	\$100	0	5	
Vickie			0	32	32
	Kay		0	32	32
	Competitive Monitoring Service		0	32	32
	New Task 1	\$100	0	28	
	New Task 2	\$100	0	4	

Adding a report that uses the Monthly Timesheets report template

To add a report that uses the **Monthly Timesheets** report template, open the **New Report** dialog box from the **My Reports** tab and then follow the steps below.

To add a report that uses the Monthly Timesheets template

1. Open the **Tools** module.
2. Select the **My Reports** tab.
3. Click **New Report**, select **Investment**, and then click **OK**.



4. In the **New Report** dialog box, type a name for the report.
5. On the **General** tab, from the **Report Template** drop-down, select **Monthly Timesheets**, enter a description (optional), and indicate whether you want to run the report immediately (after you are finished creating it).

6. Under **Associate Report With**, click the ellipses button and then use the **Select Investments** dialog box to identify the work items that will be included in the report data.

General **Schedule**

Run this report immediately

Report Template

Description

Associate Report With Investment: IT Hardware Upgrade

7. On the **Schedule** tab, select **Run this report on a schedule** if you want the report to be run on a periodic basis. Once selected, you can define how frequently you want the report to be run, the format in which the report will be presented, and how many previous instances of the report you want to store.

General **Schedule** Recipients Template

Run this report on a schedule

Schedule

Frequency Daily Weekly
 Monthly

Time of Day

Day of Week

Day of Month

Output

Format

Store instances of the report.

Report Parameters

Start Date: Sch. date +

End Date: Sch. date +

Status:

Priority:

8. If you have chosen to run the report on a scheduled basis, you can use the **Recipients** tab to select the users, security groups, and security roles who will receive a notification when this report is run. After you have chosen the recipients, click **Add**.
9. If you have chosen to run the report on a scheduled basis, you can use the **Template** tab to define parameters for the email notification. You can define the title (as it will appear in the subject line). You can add the **Timestamp** and **Report Name** attributes into the title or the template (the message body). You can add a URL link into the message body that will allow any recipient to link directly to the report.

General Schedule Recipients **Template**

* Title


Insert Attribute

Insert URL Link

`<<Report_Name>> ran as scheduled at <<Timestamp>>`

10. When finished, click **OK**.

View

You can view the **Monthly Timesheets** report directly after adding it by selecting the **Run this report immediately** option in the **New Report** dialog box. (Reports can also be run from the **My Reports** tab in the **Tools** module or the **Reports** tabs in the **Projects** module.) Set the filter options and click  **Apply**.

Start Date: End Date: Show: Group By:

Filter options:

Filter	Description
End Date	The date on which the reporting period ends. Use the calendar picker to select this date.
Group By	<p>For any report that includes both investment and resource data, you can choose to filter the report by investment or by resource, and then by the other. For investment reports, users can view the report sorted by item and then by resource team. They can also sort the report by resource team, resource and then by item. For resource team reports, users can view the report sorted by resource team for the entire date range or by resources broken down into timesheet periods. Filter options:</p> <ul style="list-style-type: none"> Investment reports: Investment / Resource Team or Resource Team / Investment Resource Team reports: Role / Resource Team, or Resource Team / Role

Filter	Description
Show	Indicates whether the report will show posted time (time that has been entered into a timesheet by a resource and then submitted) or unsubmitted time (time that has been entered into a timesheet by a resource, but not submitted). Users can choose to show unsubmitted time and posted time. Filter options: Posted Time and Unsubmitted Time .
Start Date	The date from which the reporting period begins. Use the calendar picker to select this date.

Program Planning and Operational Tracking

This report helps users plan and track work items. The report shows planning and operational costs and variances for a specific work item or a group of work items in the hierarchy.

The user configurable parameters for the report are:

- **Cost Dimension 1** and **Cost Dimension 2** The two dimensions that the user wants to compare.
- **Variance** Users can choose to show or hide the variance between the dimensions chosen. If the purpose of the report is planning more than operational tracking, some users may choose not to display the variance. Unless an investment is tracking actuals, there may not be any meaningful basis for variance analysis.
- **Current State** Users can choose the investment state that is included in the report. Some users will want to see only active investments and some will review both active (tracking) and proposed (program and project requests).

Fields

Descriptions for the fields that are available in this report can be found in the following table.

Field	Description
Investment / Title	The name of the work item, log item, or discussion.
Labor	The amount of money that is spent to produce something of value.
Non Labor	The total non-labor costs for all non-labor hours in the project.
State	The current state of the project, such as Cancelled or In Process .
Total	The total costs of all labor and non-labor in the project.

Field	Description
Variance	Variance is the difference between two data points, such as the difference between the amount of planned work and the amount of actual work. Users can choose to show or hide the variance between the dimensions chosen. If the purpose of the report is planning more than operational tracking, some users may choose not to display the variance. Unless an investment is tracking actuals, there may not be any meaningful basis for variance analysis. Filter options: Hide , and Show .

Screen Shot

Program Planning and Operational Tracking

For All, 9/6/2009 - 11/29/2009

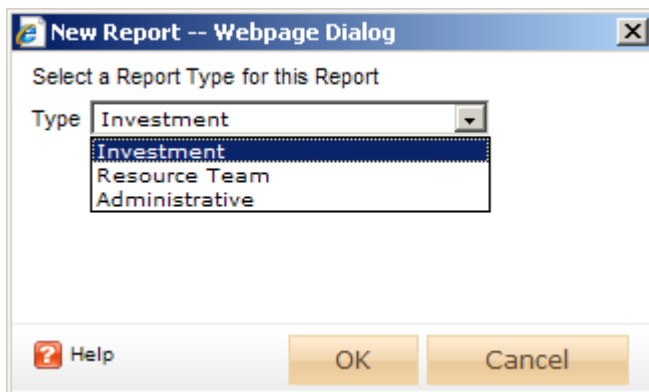
Investment	State	Cost (Plan)			Cost (Baseline)			Variance		
		Labor	Non Labor	Total	Labor	Non Labor	Total	Labor	Non Labor	Total
SerenaCo Company										
test		\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Active Test Projects										
ProjectTest		\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Eric's Portfolio QASRV011										
Non-Project Work										
PTO		\$95,040	\$0	\$95,040	\$0	\$0	\$0	\$95,040	\$0	\$95,040
Support		\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Administrative		\$109,440	\$0	\$109,440	\$0	\$0	\$0	\$109,440	\$0	\$109,440
Training		\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Financials Test Portfolio										
Financials Test Project		\$17,600	\$0	\$17,600	\$0	\$0	\$0	\$17,600	\$0	\$17,600
Active Projects Changed										
Package Discounting	In Process	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Salesforce Integration	In Process	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Portfolio Disruption Mitigation	Not Started	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Website Monitoring Service	In Process	\$72,000	\$38,705	\$110,705	\$0	\$0	\$0	\$72,000	\$38,705	\$110,705
Trigger Event Notification	Deferred	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0

Adding a report that uses the Program Planning and Operational Tracking report template

To add a report that uses the **Program Planning and Operational Tracking** report template, open the **New Report** dialog box from the **My Reports** tab and then follow the steps below.

To add a report that uses the Program Planning and Operational Tracking template

1. Open the **Tools** module.
2. Select the **My Reports** tab.
3. Click **New Report**, select **Investment**, and then click **OK**.



4. In the **New Report** dialog box, type a name for the report.
5. On the **General** tab, from the **Report Template** drop-down, select **Program Planning and Operational Tracking**, enter a description (optional), and indicate whether you want to run the report immediately (after you are finished creating it).

General Schedule

Run this report immediately

Report Template

Description

Associate Report With

Investment: IT Hardware Upgrade

6. Under **Associate Report With**, click the ellipses button and then use the **Select Investments** dialog box to identify the work items that will be included in the report data.

General Schedule

Run this report immediately

Report Template

Description

Associate Report With

Investment: IT Hardware Upgrade

- On the **Schedule** tab, select **Run this report on a schedule** if you want the report to be run on a periodic basis. Once selected, you can define how frequently you want the report to be run, the format in which the report will be presented, and how many previous instances of the report you want to store.

General
Schedule
Recipients
Template

Run this report on a schedule

Schedule

Frequency: Daily Weekly Monthly

Time of Day:

Day of Week:

Day of Month:

Output

Format:

Store: instances of the report.

Report Parameters

Start Date: Sch. date +

End Date: Sch. date +

Status:

Priority:

- If you have chosen to run the report on a scheduled basis, you can use the **Recipients** tab to select the users, security groups, and security roles who will receive a notification when this report is run. After you have chosen the recipients, click **Add**.
- If you have chosen to run the report on a scheduled basis, you can use the **Template** tab to define parameters for the email notification. You can define the title (as it will appear in the subject line). You can add the **Timestamp** and **Report Name** attributes into the title or the template (the message body). You can add a URL link into the message body that will allow any recipient to link directly to the report.

General
Schedule
Recipients
Template

* Title


Insert Attribute:

Insert URL Link:

```
<<Report_Name>> ran as scheduled at <<Timestamp>>
```

10. When finished, click **OK**.

View

You can view the **Program Planning and Operational Tracking** report directly after adding it by selecting the **Run this report immediately** option in the **New Report** dialog box. (Reports can also be run from the **My Reports** tab in the **Tools** module or the **Reports** tabs in the **Projects** module.) Set the filter options and click  Apply.

Current State: Variance: Cost Dimension 1:

Cost Dimension 2: CapEx/OpEx: Start Date: End Date:

Filter options:

Filter	Description
Capex / OpEx	A capital expense is a cost of doing business that is typically associated with expenditures for fixed asset work item that are understood to have a benefit to the organization that exceeds one year> For example, such as buildings and equipment are considered to be capital expenses, whereas rent, office supplies, or utility expenses (such as electricity or Internet access) are not considered to be capital expenses. If an expense is not a capital expense, it is considered to be an operational expense. Filter options: Hide , and Show .
Cost Dimension	The dimension for which you want to view data. Reports require two dimensions to be selected so that data for each dimension can be compared, such as comparing the amount of planned work to the amount of actual work. Filter options: Actual , Baseline , None , Plan , Target , or any custom dimension that your organization may have added.
Current State	The working state for the work items that will be shown in the report. Filter options: Active , Active and Proposed , All , and Proposed .
End Date	The date on which the reporting period ends. Use the calendar picker to select this date.
Start Date	The date from which the reporting period begins. Use the calendar picker to select this date.
Variance	Variance is the difference between two data points, such as the difference between the amount of planned work and the amount of actual work. Users can choose to show or hide the variance between the dimensions chosen. If the purpose of the report is planning more than operational tracking, some users may choose not to display the variance. Unless an investment is tracking actuals, there may not be any meaningful basis for variance analysis. Filter options: Hide , and Show .

Project Portfolio Operational Tracking and Variance

This report shows the cost variance between two dimensions, such as between the **Plan** and **Baseline** dimensions.

Fields

Descriptions for the fields that are available in this report can be found in the following table.

Field	Description
Investment	The name of the work item, log item, or discussion.
Labor	The amount of money that is spent to produce something of value.
Non Labor	The total non-labor costs for all non-labor hours in the project.
Total	The total costs of all labor and non-labor in the project.

Screen Shot

Project Portfolio Operational Tracking and Variance

For Active and Proposed, 5/3/2009 - 11/8/2009

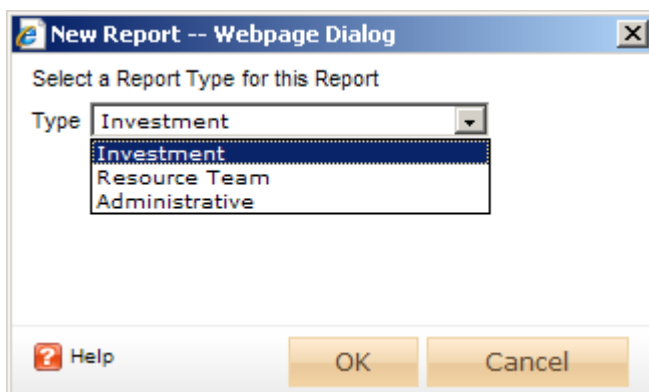
Investment	Cost (Plan)			Cost (Baseline)		
	Labor	Non Labor	Total	Labor	Non Labor	Total
Qualified						
Short Term Deposits	\$87,838	\$87,165	\$175,003	\$0	\$0	\$0
Misappropriation Suppression	\$87,838	\$87,165	\$175,003	\$0	\$0	\$0
Bartered Payroll	\$87,838	\$87,165	\$175,003	\$0	\$0	\$0
Financial Boundary Condition Alert	\$87,838	\$87,165	\$175,003	\$0	\$0	\$0
Pan Financial Reconciliation	\$87,838	\$87,165	\$175,003	\$0	\$0	\$0
Asynchronous Revenue Inventory Tracking	\$87,838	\$87,165	\$175,003	\$0	\$0	\$0
Cash Loss Detection	\$87,838	\$87,165	\$175,003	\$0	\$0	\$0
Exotic Alloy Stabilization	\$87,838	\$87,165	\$175,003	\$0	\$0	\$0
Faster HR System	\$0	\$0	\$0	\$0	\$0	\$0
Improvement Project Request	\$0	\$0	\$0	\$0	\$0	\$0
Innovate Project Request	\$0	\$0	\$0	\$0	\$0	\$0
Pan Financial Reconciliation	\$87,838	\$87,165	\$175,003	\$0	\$0	\$0

Adding a report that uses the Project Portfolio Operational Tracking and Variance report template

To add a report that uses the **Project Portfolio Operational Tracking and Variance** report template, open the **New Report** dialog box from the **My Reports** tab and then follow the steps below.

To add a report that uses the Project Portfolio Operational Tracking and Variance template

1. Open the **Tools** module.
2. Select the **My Reports** tab.
3. Click **New Report**, select **Investment**, and then click **OK**.



4. In the **New Report** dialog box, type a name for the report.
5. On the **General** tab, from the **Report Template** drop-down, select **Project Portfolio Operational Tracking and Variance**, enter a description (optional), and indicate whether you want to run the report immediately (after you are finished creating it).

6. Under **Associate Report With**, click the ellipses button and then use the **Select Investments** dialog box to identify the work items that will be included in the report data.

General **Schedule**

Run this report immediately

Report Template

Description

Associate Report With Investment: IT Hardware Upgrade

7. On the **Schedule** tab, select **Run this report on a schedule** if you want the report to be run on a periodic basis. Once selected, you can define how frequently you want the report to be run, the format in which the report will be presented, and how many previous instances of the report you want to store.

General **Schedule** Recipients Template

Run this report on a schedule

Schedule

Frequency Daily Weekly
 Monthly

Time of Day

Day of Week

Day of Month

Output

Format

Store instances of the report.

Report Parameters

Start Date: Sch. date +

End Date: Sch. date +

Status:

Priority:

8. If you have chosen to run the report on a scheduled basis, you can use the **Recipients** tab to select the users, security groups, and security roles who will receive a notification when this report is run. After you have chosen the recipients, click **Add**.
9. If you have chosen to run the report on a scheduled basis, you can use the **Template** tab to define parameters for the email notification. You can define the title (as it will appear in the subject line). You can add the **Timestamp** and **Report Name** attributes into the title or the template (the message body). You can add a URL link into the message body that will allow any recipient to link directly to the report.

General Schedule Recipients **Template**

* Title

Insert Attribute

Insert URL Link

<<Report_Name>> ran as scheduled at <<Timestamp>>

10. When finished, click **OK**.

View

You can view the **Project Portfolio Operational Tracking and Variance** report directly after adding it by selecting the **Run this report immediately** option in the **New Report** dialog box. (Reports can also be run from the **My Reports** tab in the **Tools** module or the **Reports** tabs in the **Projects** module.) Set the filter options and click  **Apply**.

Current State: Variance: Cost Dimension 1: Cost Dimension 2:

CapEx/OpEx: Start Date: End Date:

Filter options:

Filter	Description
Capex / OpEx	A capital expense is a cost of doing business that is typically associated with expenditures for fixed asset work item that are understood to have a benefit to the organization that exceeds one year> For example, such as buildings and equipment are considered to be capital expenses, whereas rent, office supplies, or utility expenses (such as electricity or Internet access) are not considered to be capital expenses. If an expense is not a capital expense, it is considered to be an operational expense. Filter options: Hide , and Show .
Cost Dimension	The dimension for which you want to view data. Reports require two dimensions to be selected so that data for each dimension can be compared, such as comparing the amount of planned work to the amount of actual work. Filter options: Actual , Baseline , None , Plan , Target , or any custom dimension that your organization may have added.
Current State	The working state for the work items that will be shown in the report. Filter options: Active , Active and Proposed , All , and Proposed .

Filter	Description
End Date	The date on which the reporting period ends. Use the calendar picker to select this date.
Start Date	The date from which the reporting period begins. Use the calendar picker to select this date.
Variance	Variance is the difference between two data points, such as the difference between the amount of planned work and the amount of actual work. Users can choose to show or hide the variance between the dimensions chosen. If the purpose of the report is planning more than operational tracking, some users may choose not to display the variance. Unless an investment is tracking actuals, there may not be any meaningful basis for variance analysis. Filter options: Hide , and Show .

Project Portfolio Progress

This report shows overall health and cost status of all projects in the report..

The user-configurable parameters in this report are:

- **Overall Health** Users can quickly view the overall health of each project in the report, using a stoplight (red, yellow, and green).
- **Costs** Users can compare planned and actual costs.
- **Remaining** Users can view the remaining costs.

Fields










Descriptions for the fields that are available in this report can be found in the following table.

Field	Description
Investment	The name of the work item, log item, or discussion.
Labor	The amount of money that is spent to produce something of value.
Labor Hours	The total labor hours (labor and non-labor) for the project.
Non-Labor	The total non-labor costs for all non-labor hours in the project.
Overall Health	The health of the project, shown as a stoplight. Green for costs coming in better than planned, yellow for costs coming in near the plan, and red for costs coming in worse than planned.
Total	The total costs of all labor and non-labor in the project.

Field	Description
% Labor Complete	The amount of work that has been completed for a task (or a task plan), expressed as a percentage (of 100%).
% Total Complete	The amount of work that has been completed for a project, expressed as a percentage (of 100%). If the percentage is over 100%, then the amount of actual work exceeds the amount of planned work.

Screen Shot

Project Portfolio Progress Report

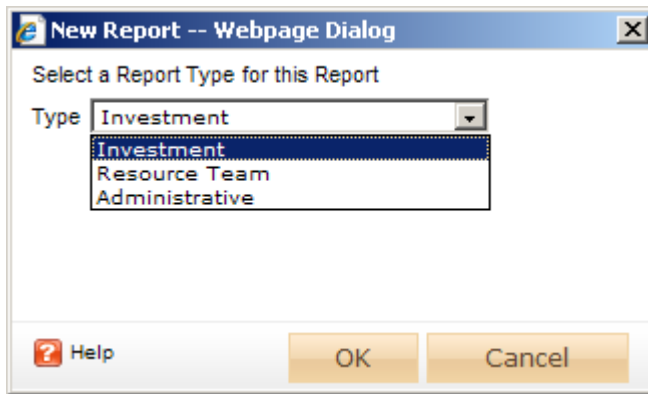
Investment	Overall Health	Cost (Plan)				Cost (Actual)				Labor Hrs
		Labor Hrs	Labor	Non-Labor	Total	Labor Hrs	Labor	Non-Labor	Total	
SerenaCo Company										
Active Projects Changed										
Alerting Service New		2,568	\$256,800			0	\$0			2,5
Business Process Re-engineering		2,646	\$589,600			14	\$1,400			2,6
IT Hardware Upgrade		1,192	\$119,200			269	\$26,900			9
Metrics Monitoring and Reporting		960	\$96,000			0	\$0			9
My New Project		0	\$0			0	\$0			
New Schedule Project		0	\$0			0	\$0			
New Test										
Package Discounting		0	\$0			0	\$0			
Portfolio Disruption Mitigation		0	\$0			0	\$0			
Salesforce Integration		0	\$168,741			0	\$0			
Test Project on Schedule										
Test Test										
Trigger Event Notification		1,296	\$129,600			0	\$0			1,2
Website Monitoring Service		2,627	\$171,600			0	\$0			2,6

Adding a report that uses the Project Portfolio Progress Report report template

To add a report that uses the **Project Portfolio Progress Report** report template, open the **New Report** dialog box from the **My Reports** tab and then follow the steps below.

To add a report that uses the Project Portfolio Progress Report template

1. Open the **Tools** module.
2. Select the **My Reports** tab.
3. Click **New Report**, select **Investment**, and then click **OK**.



4. In the **New Report** dialog box, type a name for the report.
5. On the **General** tab, from the **Report Template** drop-down, select **Project Portfolio Progress Report**, enter a description (optional), and indicate whether you want to run the report immediately (after you are finished creating it).

General Schedule

Run this report immediately

Report Template

Description

Associate Report With

Investment: IT Hardware Upgrade

6. Under **Associate Report With**, click the ellipses button and then use the **Select Investments** dialog box to identify the work items that will be included in the report data.

General Schedule

Run this report immediately

Report Template

Description

Associate Report With

Investment: IT Hardware Upgrade

- On the **Schedule** tab, select **Run this report on a schedule** if you want the report to be run on a periodic basis. Once selected, you can define how frequently you want the report to be run, the format in which the report will be presented, and how many previous instances of the report you want to store.

General Schedule Recipients Template

Run this report on a schedule

Schedule

Frequency: Daily Weekly Monthly

Time of Day: 1:00 PM

Day of Week: Monday

Day of Month: 1

Output

Format: Acrobat (PDF) File

Store: 5 instances of the report.

Report Parameters

Start Date: Sch. date + 0 days

End Date: Sch. date + 0 days

Status: Show all

Priority: Show all

- If you have chosen to run the report on a scheduled basis, you can use the **Recipients** tab to select the users, security groups, and security roles who will receive a notification when this report is run. After you have chosen the recipients, click **Add**.
- If you have chosen to run the report on a scheduled basis, you can use the **Template** tab to define parameters for the email notification. You can define the title (as it will appear in the subject line). You can add the **Timestamp** and **Report Name** attributes into the title or the template (the message body). You can add a URL link into the message body that will allow any recipient to link directly to the report.

General Schedule Recipients Template

* Title

Insert Attribute: Timestamp


Into Template Into Title

Insert URL Link: Into Template

<<Report_Name>> ran as scheduled at <<Timestamp>>

10. When finished, click **OK**.

View

You can view the **Project Portfolio Progress** report directly after adding it by selecting the **Run this report immediately** option in the **New Report** dialog box. (Reports can also be run from the **My Reports** tab in the **Tools** module or the **Reports** tabs in the **Projects** module.) Set the filter options and click  Apply.

% Complete:

Filter options:

Filter	Description
% Complete	The progress made against a task (or a task plan), expressed as a percentage (of 100%). Filter options: Hide and Show .

Project Status

This report shows the current status of a single project in your portfolio. This report has the following sections:

- **Overview** This section shows an overview of the project, including dates (target, planned, and actual), overall health, status (cost, labor, schedule, and scope), the name of the project manager, and the project sponsor.
- **Project Issues** This section shows any issues that have been identified by team members.
- **Project Risks** This section shows any risks that have been identified by team members.
- **Project Schedule** This section shows the dates (baseline, actual, plan, and status) for all phases of the project, such as **Start**, **Design**, **Deploy**, or **Finish**.
- **Financial Plan Status Snapshot** This section compares planned and actual labor costs, non-labor costs, and total costs for the project and shows the variance (and variance %) between them.
- **Project Total Costs** This section contains data (**CapEx Labor**, **CapEx NonLabor**, **OpEx Labor**, **OpEx NonLabor**, **Total CapEx**, **Total OpEx** and **Total Costs**) sorted by dimension (**Actual**, **Baseline**, **Plan**, and **Target**).
- **Project Status** This section contains a list of achievements for the current period plus a list of objectives for the next period.

Fields

Descriptions for the fields that are available in this report can be found in the following table.

Field	Description
Created By	The name of the resource who initially created the task, task plan, work item, and so on.
Created On	The date on which a task, task plan, work item, and so on, was created.
Investment/ Title	The name of the work item, log item, or discussion.
Last Modified By	The user name of the person who made the most recent changes to the task, task plan, or work item.
Last Modified On	The date on which the most recent changes were made to the task, task plan, or work item.

Screen Shot

Project Status Report: Portfolio Disruption Mitigation

Report Date: 11/12/2009

Lifecycle: Design

Project Manager:

Sponsor: Werke Stopp

Project Statistics

Target Start Date:	Plan Start Date: 7/1/2008	Actual Start Date:
Target End Date:	Plan End Date: 3/28/2009	Actual End Date:

Description:

Project Health: **Yellow**Cost Status: **Green**Labor Status: **Green**Schedule Status: **Green**Scope Status: **Yellow****Project Issues**

Priority	Description	Resolution	Status/Escalation
Medium	WF for notification needs SMTP		Resolved

Project Risks

Priority	Impact	Likelihood	Description	Resolution	Status
High	Catastrophic	Almost Certain	Assign disruption process to IT		Open
Low	Moderate	Moderate	Identify disruption mitigation process		Resolved

Project Schedule

Phase	Baseline	Plan	Actual	Status
Start		7/1/2008		
Initiate				
Requirements				
Design				
Development				
Deploy				
Close-out				
Finish		3/28/2009		

Financial Plan Status Snapshot

	Plan to Date	Actual to Date	Variance	Variance %
Labor	0.00	0.00	0.00	NaN
Non-Labor	613,433.36	0.00	613,433.36	100.00 %
Total	613,433.36	0.00	613,433.36	100.00 %

Project Total Costs

	Target	Plan	Baseline	Actual
CapEx Labor	0.00	0.00	0.00	0.00
CapEx Non-Labor	0.00	588,937.94	588,937.94	0.00
Total CapEx	0.00	588,937.94	588,937.94	0.00
OpEx Labor	0.00	0.00	0.00	0.00
OpEx Non-Labor	0.00	24,495.42	24,495.42	0.00
Total OpEx	0.00	24,495.42	24,495.42	0.00
TOTAL Costs	0.00	613,433.36	613,433.36	0.00

Project Status (Last updated by)

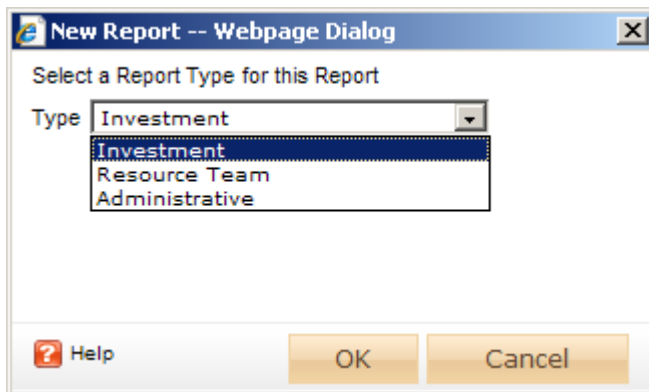
Achievements This Period

Adding a report that uses the Project Status Report report template

To add a report that uses the **Project Status Report** report template, open the **New Report** dialog box from the **My Reports** tab and then follow the steps below.

To add a report that uses the Project Status Report template

1. Open the **Tools** module.
2. Select the **My Reports** tab.
3. Click **New Report**, select **Investment**, and then click **OK**.



4. In the **New Report** dialog box, type a name for the report.
5. On the **General** tab, from the **Report Template** drop-down, select **Project Status Report**, enter a description (optional), and indicate whether you want to run the report immediately (after you are finished creating it).

6. Under **Associate Report With**, click the ellipses button and then use the **Select Investments** dialog box to identify the work items that will be included in the report data.

General **Schedule**

Run this report immediately

Report Template

Description

Associate Report With Investment: IT Hardware Upgrade

7. On the **Schedule** tab, select **Run this report on a schedule** if you want the report to be run on a periodic basis. Once selected, you can define how frequently you want the report to be run, the format in which the report will be presented, and how many previous instances of the report you want to store.

General **Schedule** Recipients Template

Run this report on a schedule

Schedule

Frequency Daily Weekly
 Monthly

Time of Day

Day of Week

Day of Month

Output

Format

Store instances of the report.

Report Parameters

Start Date: Sch. date +

End Date: Sch. date +

Status:

Priority:

8. If you have chosen to run the report on a scheduled basis, you can use the **Recipients** tab to select the users, security groups, and security roles who will receive a notification when this report is run. After you have chosen the recipients, click **Add**.
9. If you have chosen to run the report on a scheduled basis, you can use the **Template** tab to define parameters for the email notification. You can define the title (as it will appear in the subject line). You can add the **Timestamp** and **Report Name** attributes into the title or the template (the message body). You can add a URL link into the message body that will allow any recipient to link directly to the report.

10. When finished, click **OK**.

View

You can view the **Project Status Report** report directly after adding it by selecting the **Run this report immediately** option in the **New Report** dialog box. (Reports can also be run from the **My Reports** tab in the **Tools** module or the **Reports** tabs in the **Projects** module.)

There are no filter options for the **Project Status Report**. You should create a report for each project in your portfolio for which you want to use this report or you should use the **Edit Report** option to change the project from which report data is generated before viewing the report.

Resources by Resource Team

This report lists resources by resource team for a user-configured duration of time. It lists resources by primary resource role, resource type, capacity, availability, standard rate, and e-mail. The report contains a flag column that acknowledges if a particular resource has more than one role. The information shown for that resource pertains to his or her primary resource role.

The user-configurable parameters in this report are:

- **Group by** Users can select to show the report content by resource team and role, or by role and resource team.
- **Available Capacity Units** Users can select to display available capacity as a percentage or by hours.
- **Date and Period** Users must define the report start date and the duration it should cover.
- **Email** Users can select to show or hide the resource e-mail address in the report.
- **Rate** Users can select to show or hide the resource hourly rate in the report.

Fields

Descriptions for the fields that are available in this report can be found in the following table.

Field	Description
Available Capacity	The total availability for a resource for the selected time period. Depending on how the Avail/Capacity Unit filter option is set, resource capacity is shown by hours available or by percentage of total time.
Email	The email address of a resource.
Maximum Capacity	The total capacity for a resource for the selected time period. Depending on how the Avail/Capacity Unit filter option is set, resource capacity is shown by hours available or by percentage of total time.
Multiple Roles	Indicates whether a resource is associated with more than one resource role.
Resource Name	The name of the resource.
Resource Team / Primary Role	The name of the resource team and the name of the role. This report can be sorted by resource team and by role, with either being selected as the primary filtering option. You can change the sort order from the Group By drop-down.
Resource Type	The type of resource.
Standard Rate	The standard rate for the resource, per unit of work. For example, \$100.00 per hour.

Screen Shot

Resources by Resource Team by Resource Role

For 10/25/2009 - 11/7/2009

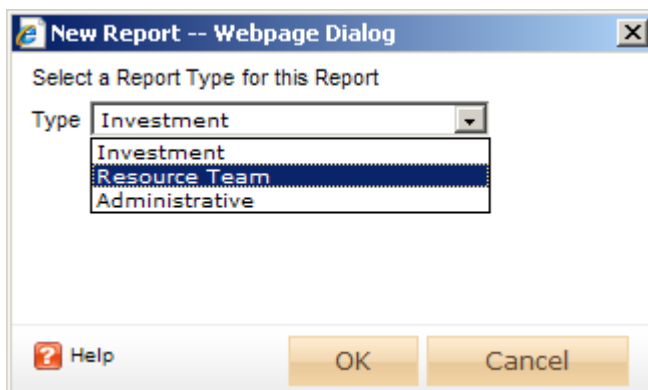
Resource Team / Primary Role	Resource Name	Multiple Roles	Resource Type	Maximum Capacity (Hours)	Available Capacity (Hours)	Standard Rate
Application Development						
	Support, HCL			88	88	\$0
Developer - Database						
	1, Test1		Permanent	88	80	\$0
	2, Test2		Permanent	88	88	\$0
Business Analysis - Contractor						
	GM, Kirubakaran	✓		88	-8	\$100
Development - Employee						
	Developer, Chris	✓	Permanent	88	-109	\$100
	Developer, John	✓		88	67	\$100
	Developer, Matt			88	-85	\$100

Adding a report that uses the Resources by Resource Team report template

To add a report that uses the **Resources by Resource Team** report template, open the **New Report** dialog box from the **My Reports** tab and then follow the steps below.

To add a report that uses the Resources by Resource Team template

1. Open the **Tools** module.
2. Select the **My Reports** tab.
3. Click **New Report**, select **Resource Team**, and then click **OK**.



- In the **New Report** dialog box, type a name for the report.
- On the **General** tab, from the **Report Template** drop-down, select **Resources by Resource Team**, enter a description (optional), and indicate whether you want to run the report immediately (after you are finished creating it).

General Schedule

Run this report immediately

Report Template [Dropdown Menu]

Description

Associate Report With

... Investment: IT Hardware Upgrade

- Under **Associate Report With**, click the ellipses button and then use the **Select Resource Team** dialog box to identify the groups of resources that will be included in the report data.

General Schedule

Run this report immediately

Report Template Missing Timesheets

Description

Associate Report With

... Resource: None Selected

- On the **Schedule** tab, select **Run this report on a schedule** if you want the report to be run on a periodic basis. Once selected, you can define how frequently you want the report to be run, the format in which the report will be presented, and how many previous instances of the report you want to store.

General **Schedule** Recipients Template

Run this report on a schedule

Schedule

Frequency: Daily Weekly
 Monthly

Time of Day: 1:00 PM

Day of Week: Monday

Day of Month: 1

Output

Format: Acrobat (PDF) File

Store: 5 instances of the report.

Report Parameters

Start Date: Sch. date + 0 days End Date: Sch. date + 0 days

Status: Show all Priority: Show all

8. If you have chosen to run the report on a scheduled basis, you can use the **Recipients** tab to select the users, security groups, and security roles who will receive a notification when this report is run. After you have chosen the recipients, click **Add**.
9. If you have chosen to run the report on a scheduled basis, you can use the **Template** tab to define parameters for the email notification. You can define the title (as it will appear in the subject line). You can add the **Timestamp** and **Report Name** attributes into the title or the template (the message body). You can add a URL link into the message body that will allow any recipient to link directly to the report.

General Schedule Recipients **Template**

* Title: _____


Insert Attribute: Timestamp


Insert URL Link:

<<Report_Name>> ran as scheduled at <<Timestamp>>

10. When finished, click **OK**.

View

You can view the **Resources by Resource Team** report directly after adding it by selecting the **Run this report immediately** option in the **New Report** dialog box. (Reports can also be run from the **My Reports** tab in the **Tools** module or the **Reports** tabs in the **Projects** module.) Set the filter options and click  **Apply**.

Date:  10/25/2009 Period: Group By:

Rate: Email: Avail/Capacity Unit: Resource Effective Dates:

Filter options:

Filter	Description
Avail / Capacity Unit	Indicates whether to show a resource's available capacity by number of hours available or by percentage of total time. Filter options: % and Hours .
Date	The date from which the reporting period begins. Use the calendar picker to select this date.
Email	Indicates whether to show the email address for a resource. Filter options: Hide and Show .
Group By	For any report that includes both investment and resource data, you can choose to filter the report by investment or by resource, and then by the other. For investment reports, users can view the report sorted by item and then by resource team. They can also sort the report by resource team, resource and then by item. For resource team reports, users can view the report sorted by resource team for the entire date range or by resources broken down into timesheet periods. Filter options: <ul style="list-style-type: none"> ▪ Investment reports: Investment / Resource Team or Resource Team / Investment ▪ Resource Team reports: Role / Resource Team, or Resource Team / Role
Period	The duration of the reporting period, based on the date on which the reporting period begins. Filter options: 1 week , 2 weeks , 1 month , 2 months , and 3 months .
Rate	The standard rate for the resource, per unit of work. For example, \$100.00 per hour. Filter options: Hide and Show .
Resource Effective Dates	The dates on which a resource started and ended their work on a task, as related to a specific resource team, resource role, and standard rate. Filter options: Hide and Show .

Rights by Investment by User

This report lists all of the rights a user has on any work item. Further, you can see where the rights are granted, from where they are inherited, and whether permission is denied at any level. This report can be run on only one user at a time.

Fields

Descriptions for the fields that are available in this report can be found in the following table.

Field	Description
Action	The actions that are allowed.
Deny	Indicates whether permission is denied.
Group	The name of the group to which the user belongs that gives the user permission to access the investment or resource team.
Inherit	Indicates whether permissions are inherited from the parent investment.
Investment	The name of the work item, log item, or discussion.
Parent	The name of the parent investment or resource team.
Rights	The rights granted to the user.
Role	The name of the role to which the user belongs that gives the user permission to access the investment or resource team.
User Name	The name of the user.

Screen Shot

Rights by Investment for peadmin

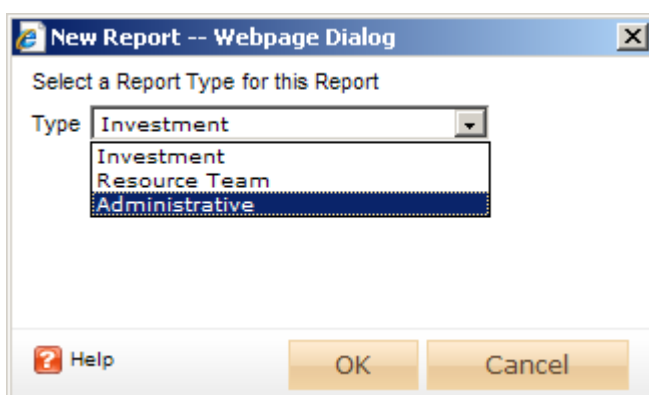
User Name							
peadmin	Administrator,						
Investment	Parent	Group	Role	Rights	Action	Inherit	Deny
SerenaCo Company	System Root Object			Full			
			Mariner Administrator	Full	Grant		
Active Projects Changed	SerenaCo Company			Full			
			Mariner Administrator	Full	Grant		
Active Test Projects	SerenaCo Company			Full			
			Mariner Administrator	Full		↑	
Eric's Portfolio QASRV011	SerenaCo Company			Full			
			Mariner Administrator	Full		↑	
Financials Test Portfolio	SerenaCo Company			Full			
			Mariner Administrator	Full		↑	
Non-Project Work	SerenaCo Company			Full			
			Mariner Administrator	Full		↑	
Project Requests	SerenaCo Company			Full			
			Mariner Administrator	Full	Grant		
test	SerenaCo Company			Full			
			Mariner Administrator	Full		↑	

Adding a report that uses the Rights by Investment by User report template

To add a report that uses the **Rights by Investment by User** report template, open the **New Report** dialog box from the **My Reports** tab and then follow the steps below.

To add a report that uses the Rights by Investment by User template

1. Open the **Tools** module.
2. Select the **My Reports** tab.
3. Click **New Report**, select **Administrative**, and then click **OK**.



4. In the **New Report** dialog box, type a name for the report.

- On the **General** tab, from the **Report Template** drop-down, select **Rights by Investment by User**, enter a description (optional), and indicate whether you want to run the report immediately (after you are finished creating it).

General Schedule

Run this report immediately

Report Template [Dropdown]

Description

Associate Report With

... Investment: IT Hardware Upgrade

- On the **Schedule** tab, select **Run this report on a schedule** if you want the report to be run on a periodic basis. Once selected, you can define how frequently you want the report to be run, the format in which the report will be presented, and how many previous instances of the report you want to store.

General Schedule Recipients Template

Run this report on a schedule

Schedule

Frequency Daily Weekly Monthly

Time of Day 1 00 PM

Day of Week Monday

Day of Month 1

Output

Format Acrobat (PDF) File

Store 5 instances of the report.

Report Parameters

Start Date: Sch. date + 0 days

End Date: Sch. date + 0 days

Status: Show all

Priority: Show all

- If you have chosen to run the report on a scheduled basis, you can use the **Recipients** tab to select the users, security groups, and security roles who will receive a notification when this report is run. After you have chosen the recipients, click **Add**.
- If you have chosen to run the report on a scheduled basis, you can use the **Template** tab to define parameters for the email notification. You can define the title (as it will appear in the subject line). You can add the **Timestamp** and **Report Name** attributes into the title or the template (the message body). You can add a

URL link into the message body that will allow any recipient to link directly to the report.

The screenshot shows the 'Template' tab of a configuration window. It includes a 'Title' field, an 'Insert Attribute' dropdown menu currently showing 'Timestamp', and three buttons: 'Into Template' and 'Into Title' positioned below the dropdown, and another 'Into Template' button below the 'Insert URL Link' field. The main text area displays the template code: <<Report_Name>> ran as scheduled at <<Timestamp>>.

9. When finished, click **OK**.

View

You can view the **Rights by Investment by User** report directly after adding it by selecting the **Run this report immediately** option in the **New Report** dialog box. (Reports can also be run from the **My Reports** tab in the **Tools** module or the **Reports** tabs in the **Projects** module.) Administrative reports do not have filter options.

Rights by Resource Team by User

This report lists all of the rights a user has on all resource teams. Further, you can see where the rights are granted, from where they are inherited, and whether permission is denied at any level. This report can be run on only one user at a time.

Fields

Descriptions for the fields that are available in this report can be found in the following table.

Field	Description
Action	The actions that are allowed.
Denied?	Indicates whether permission is denied.
Group	The name of the group to which the user belongs that gives the user permission to access the investment or resource team.
Inherited?	Indicates whether the rights are inherited from the parent investment or from the resource team.
Parent	The name of the parent investment or resource team.

Field	Description
Resource Team	The name of the resource team and the name of the role. This report can be sorted by resource team and by role, with either being selected as the primary filtering option. You can change the sort order from the Group By drop-down.
Rights	The rights granted to the user.
Role	The name of the role to which the user belongs that gives the user permission to access the investment or resource team.
User Name	The name of the user.

Screen Shot

Rights by Resource Team for padmin

User Name

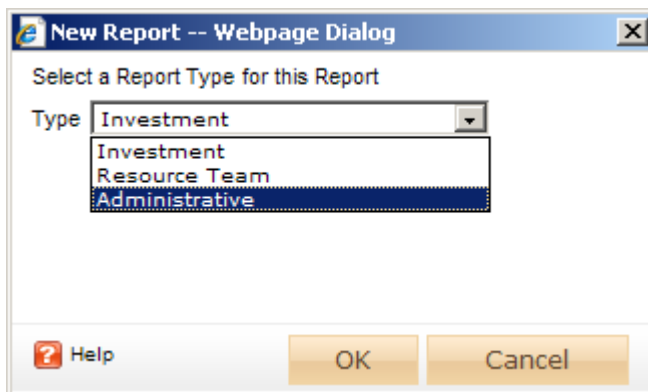
padmin	Administrator,					
Resource Team	Parent	Group	Role	Rights	Action	Inherited?
SerenaCo Resource Teams	System Resource Team Root		Mariner Administrator	Full	Grant	
Application Development	SerenaCo Resource Teams		Mariner Administrator	Full		↑
Business Analysis	SerenaCo Resource Teams		Mariner Administrator	Full		↑
Project Management	SerenaCo Resource Teams		Mariner Administrator	Full		↑
Quality Assurance	SerenaCo Resource Teams		Mariner Administrator	Full		↑
Serena (Bellevue Office)	SerenaCo Resource Teams		Mariner Administrator	Full		↑
Consulting	Serena (Bellevue Office)		Mariner Administrator	Full		↑
Developers	Serena (Bellevue Office)		Mariner Administrator	Full		↑

Adding a report that uses the Rights by Resource Team by User report template

To add a report that uses the **Rights by Resource Team by User** report template, open the **New Report** dialog box from the **My Reports** tab and then follow the steps below.

To add a report that uses the Rights by Resource Team by User template

1. Open the **Tools** module.
2. Select the **My Reports** tab.
3. Click **New Report**, select **Administrative**, and then click **OK**.



4. In the **New Report** dialog box, type a name for the report.
5. On the **General** tab, from the **Report Template** drop-down, select **Rights by Resource Team by User**, enter a description (optional), and indicate whether you want to run the report immediately (after you are finished creating it).

6. On the **Schedule** tab, select **Run this report on a schedule** if you want the report to be run on a periodic basis. Once selected, you can define how frequently you want the report to be run, the format in which the report will be presented, and how many previous instances of the report you want to store.

General **Schedule** Recipients Template

Run this report on a schedule

Schedule

Frequency: Daily Weekly
 Monthly

Time of Day: 1:00 PM

Day of Week: Monday

Day of Month: 1

Output

Format: Acrobat (PDF) File

Store: 5 instances of the report.

Report Parameters

Start Date: Sch. date + 0 days End Date: Sch. date + 0 days

Status: Show all Priority: Show all

7. If you have chosen to run the report on a scheduled basis, you can use the **Recipients** tab to select the users, security groups, and security roles who will receive a notification when this report is run. After you have chosen the recipients, click **Add**.
8. If you have chosen to run the report on a scheduled basis, you can use the **Template** tab to define parameters for the email notification. You can define the title (as it will appear in the subject line). You can add the **Timestamp** and **Report Name** attributes into the title or the template (the message body). You can add a URL link into the message body that will allow any recipient to link directly to the report.

General Schedule Recipients **Template**

* Title: _____

Insert Attribute: Timestamp

Insert URL Link:

<<Report_Name>> ran as scheduled at <<Timestamp>>

9. When finished, click **OK**.

View

You can view the **Rights by Resource Team by User** report directly after adding it by selecting the **Run this report immediately** option in the **New Report** dialog box. (Reports can also be run from the **My Reports** tab in the **Tools** module or the **Reports** tabs in the **Projects** module.) Administrative reports do not have filter options.

Risks by Investment

This report shows the details of the **Risks** tab. The report lists risks for a specific work item or a group. It shows the risk title as well as the following fields: priority, status, escalation status, impact, likelihood, user assignments, and creation (created by, created on) details. Each risk has a plus sign in front of its title, to represent availability of details. If a user clicks this plus sign, the screen expands to reveal the issue's description and mitigation strategy.

The user configurable parameters for the report are:

- **Status** Users can limit the report to show issues with any or all of the following statuses: **Show All, Open, Assigned, Resolved, or Blank.**
- **Priority** Users can limit the report to show issues with any or all of the following priority statuses: **Show All, High, Medium, Low, or Blank.**
- **Date Range** Users must specify a start and end date for the report.

Fields

Descriptions for the fields that are available in this report can be found in the following table.

Field	Description
Assigned To	The name of the resource to whom a task or work item has been assigned.
Created On	The date on which a task, task plan, work item, and so on, was created.
Escalated?	Indicates whether a log item has been escalated to its parent work item. A log item that has been escalated is visible in the parent work item as well as in the original work item. When notifications are enabled for an escalated log item, all users that are subscribed to the Can receive issue/risk notifications are notified.
Escalation?	Indicates whether a log item has been escalated from a child work item. A log item that has been escalated is visible in the parent work item as well as in the original work item. When notifications are enabled for an escalated log item, all users that are subscribed to the Can receive issue/risk notifications are notified.
Impact	The impact on a log item, such as an issue or a risk.
Investment / Risk Title	The name of the work item, log item, or discussion.

Field	Description
Priority	The priority of the log type, such as an issue, a risk, or a change request.
Status	The current status of the log type, such as an issue, a risk, or a change request.

Screen Shot

Log Report: Risk by Investment

From 10/19/2008 to 11/16/2009 (Status = All, Priority = All)

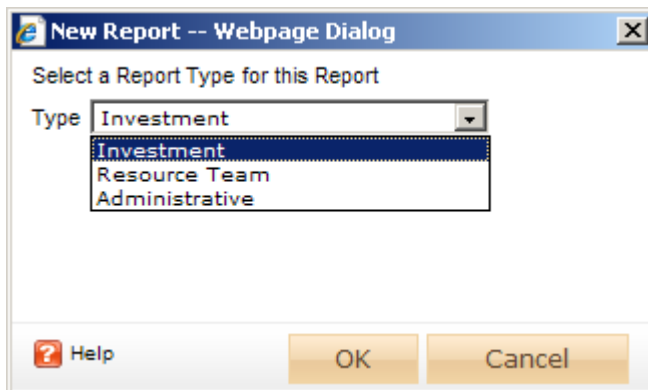
Investment Title	Status	Impact	Priority	Assigned to	Created on	Resolution Date	Escalation?	Escalated?	URL Link
Active Projects									
<input type="checkbox"/> Assign disruption process to IT	Open	Catastrophic	High		11/12/2009				
Portfolio Disruption Mitigation									
<input type="checkbox"/> Identify disruption mitigation process	Resolved	Moderate	Low		11/12/2009				
<i>Description:</i>									
<i>Mitigation Strategy:</i>									
<i>Contingency Plan:</i>									
<input type="checkbox"/> Assign disruption process to IT	Open	Catastrophic	High		11/12/2009				
<i>Description:</i>									
<i>Mitigation Strategy:</i>									
<i>Contingency Plan:</i>									

Adding a report that uses the Risks by Investment report template

To add a report that uses the **Risks by Investment** report template, open the **New Report** dialog box from the **My Reports** tab and then follow the steps below.

To add a report that uses the Risks by Investment template

1. Open the **Tools** module.
2. Select the **My Reports** tab.
3. Click **New Report**, select **Investment**, and then click **OK**.



4. In the **New Report** dialog box, type a name for the report.

- On the **General** tab, from the **Report Template** drop-down, select **Risks by Investment**, enter a description (optional), and indicate whether you want to run the report immediately (after you are finished creating it).

General Schedule

Run this report immediately

Report Template [Dropdown Menu]

Description

Associate Report With

... Investment: IT Hardware Upgrade

- Under **Associate Report With**, click the ellipses button and then use the **Select Investments** dialog box to identify the work items that will be included in the report data.

General Schedule

Run this report immediately

Report Template [Dropdown Menu]

Description

Associate Report With

... Investment: IT Hardware Upgrade

- On the **Schedule** tab, select **Run this report on a schedule** if you want the report to be run on a periodic basis. Once selected, you can define how frequently you want the report to be run, the format in which the report will be presented, and how many previous instances of the report you want to store.

General **Schedule** Recipients Template

Run this report on a schedule

Schedule

Frequency: Daily Weekly
 Monthly

Time of Day: 1:00 PM

Day of Week: Monday

Day of Month: 1

Output

Format: Acrobat (PDF) File

Store: 5 instances of the report.

Report Parameters

Start Date: Sch. date + 0 days End Date: Sch. date + 0 days

Status: Show all Priority: Show all

8. If you have chosen to run the report on a scheduled basis, you can use the **Recipients** tab to select the users, security groups, and security roles who will receive a notification when this report is run. After you have chosen the recipients, click **Add**.
9. If you have chosen to run the report on a scheduled basis, you can use the **Template** tab to define parameters for the email notification. You can define the title (as it will appear in the subject line). You can add the **Timestamp** and **Report Name** attributes into the title or the template (the message body). You can add a URL link into the message body that will allow any recipient to link directly to the report.

General Schedule Recipients **Template**

* Title: _____


Insert Attribute: Timestamp

Insert URL Link:

<<Report_Name>> ran as scheduled at <<Timestamp>>

10. When finished, click **OK**.

View

You can view the **Risks by Investment** report directly after adding it by selecting the **Run this report immediately** option in the **New Report** dialog box. (Reports can also be run from the **My Reports** tab in the **Tools** module or the **Reports** tabs in the **Projects** module.) Set the filter options and click  **Apply**.

Start Date:  10/19/2008 End Date:  11/16/2009 Status: Priority:

Filter options:

Filter	Description
End Date	The date on which the reporting period ends. Use the calendar picker to select this date.
Priority	The priority of the log item. Filter options: Blank, High, Low, Medium, and Show All.
Start Date	The date from which the reporting period begins. Use the calendar picker to select this date.
Status	Indicates which work items will be shown, based on the current status of the work item. Filter options: Assigned, Blank, Open, Resolved, and Show All.

Tasks by Investment

This report lists tasks by work item showing start date, finish date, work duration, and labor costs for both plan and actual dimension, comparing them based on cost and schedule.

The user configurable parameters for the report are:

- **Start Date** The date on which the reporting period begins.
- **End Date** The date on which the reporting period ends.
- **Compare To** Users can choose the primary set of data (start, finish, work, and cost) that will appear in the report.
- **Actuals** Users can choose to show or hide actuals.

Fields

Descriptions for the fields that are available in this report can be found in the following table.

Field	Description
Actual Finish	The date by which work on a task (or a task plan) actually finished.

Field	Description
Actual Labor Cost	The cost of labor for a task in a task plan.
Actual Start	The date on which work on a task (or a task plan) actually started.
Actual Work	The amount of work that has been completed, to-date, by all resources who have been assigned to a task (or a task plan).
Baseline Finish	The original, planned finish date for a task (or a task plan).
Baseline Labor Cost	The original, planned cost for a task (or a task plan).
Baseline Start	The original, planned start date for a task (or a task plan).
Baseline Work	The original, planned work for a task (or a task plan).
Cost Status	The status of a cost, or the status of the amount of money that is spent to produce something of value.
Cost Variance	The difference between a planned or baseline labor cost and the actual labor cost.
Finish (Plan)	The date on which a task is scheduled to finish.
Labor Cost (Plan)	The amount of money that is spent to produce something of value.
Schedule Status	The current status of a project.
Start (Plan)	The date on which a task is scheduled to start.
Task Name	The name of the task.
Work (Plan)	The total amount of work that has been scheduled for a task.

Screen Shot

Tasks by Investment

For 9/6/2009 - 11/29/2009

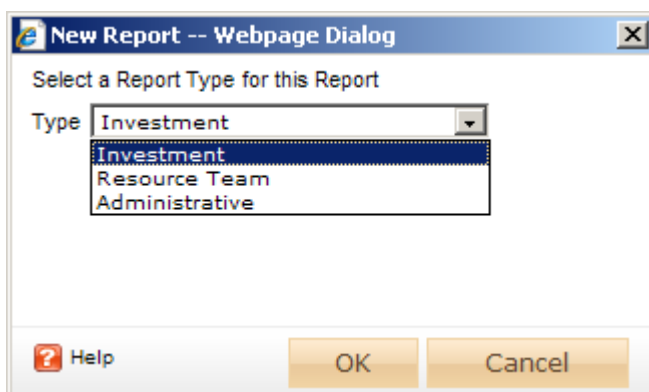
Task Name	Plan				Actual				Cost	
	Start	Finish	Work	Labor Cost	Start	Finish	Work	Labor Cost	Variance	Status
Website Monitoring Service										
1 Summary Task	8/3/2009	2/17/2010	2224	\$124,800	7/7/2008		0	\$0	(\$124,800)	Under Budget
6 Requirements	8/24/2009	11/6/2009	440	\$0			0	\$0	\$0	On Budget
7 Analyze Current Monitoring Capabilities	8/24/2009	9/25/2009	200	\$0			0	\$0	\$0	On Budget
8 Define Future Monitoring State	9/28/2009	11/6/2009	240	\$0			0	\$0	\$0	On Budget
9 Design	11/9/2009	12/4/2009	480	\$32,000			0	\$0	(\$32,000)	Under Budget
10 Design Monitoring Tool Integration	11/9/2009	11/27/2009	360	\$24,000			0	\$0	(\$24,000)	Under Budget
New Schedule Project										
1 Summary Task	10/28/2009	10/28/2009		\$0				\$0	\$0	On Budget
Financials Test Project										
1 Summary Task	10/29/2009	10/30/2009	24	\$2,400	10/29/2009		9	\$900	(\$1,500)	Under Budget
2 Task 1	10/29/2009	10/30/2009	8	\$800	10/29/2009		4	\$500	(\$300)	Under Budget

Adding a report that uses the Tasks by Investment report template

To add a report that uses the **Tasks by Investment** report template, open the **New Report** dialog box from the **My Reports** tab and then follow the steps below.

To add a report that uses the Tasks by Investment template

1. Open the **Tools** module.
2. Select the **My Reports** tab.
3. Click **New Report**, select **Investment**, and then click **OK**.



4. In the **New Report** dialog box, type a name for the report.
5. On the **General** tab, from the **Report Template** drop-down, select **Tasks by Investment**, enter a description (optional), and indicate whether you want to run the report immediately (after you are finished creating it).

General Schedule

Run this report immediately

Report Template [Dropdown]

Description

Associate Report With

... Investment: IT Hardware Upgrade

6. Under **Associate Report With**, click the ellipses button and then use the **Select Investments** dialog box to identify the work items that will be included in the report data.

General Schedule

Run this report immediately

Report Template [Dropdown]

Description

Associate Report With

... Investment: IT Hardware Upgrade

7. On the **Schedule** tab, select **Run this report on a schedule** if you want the report to be run on a periodic basis. Once selected, you can define how frequently you want the report to be run, the format in which the report will be presented, and how many previous instances of the report you want to store.

General **Schedule** Recipients Template

Run this report on a schedule

Schedule

Frequency: Daily Weekly
 Monthly

Time of Day: 1:00 PM

Day of Week: Monday

Day of Month: 1

Output

Format: Acrobat (PDF) File

Store: 5 instances of the report.

Report Parameters

Start Date: Sch. date + 0 days End Date: Sch. date + 0 days

Status: Show all Priority: Show all

8. If you have chosen to run the report on a scheduled basis, you can use the **Recipients** tab to select the users, security groups, and security roles who will receive a notification when this report is run. After you have chosen the recipients, click **Add**.
9. If you have chosen to run the report on a scheduled basis, you can use the **Template** tab to define parameters for the email notification. You can define the title (as it will appear in the subject line). You can add the **Timestamp** and **Report Name** attributes into the title or the template (the message body). You can add a URL link into the message body that will allow any recipient to link directly to the report.

General Schedule Recipients **Template**

* Title: _____


Insert Attribute: Timestamp


Insert URL Link:

<<Report_Name>> ran as scheduled at <<Timestamp>>

10. When finished, click **OK**.

View

You can view the **Tasks by Investment** report directly after adding it by selecting the **Run this report immediately** option in the **New Report** dialog box. (Reports can also be run from the **My Reports** tab in the **Tools** module or the **Reports** tabs in the **Projects** module.) Set the filter options and click  Apply.

Start Date:  9/6/2009 End Date:  10/25/2009 Compare To: Actuals:

Filter options:

Filter	Description
Actuals	Indicates whether to show actual data (start, finish, work, and labor cost) plus cost variance (as compared the original plan or baseline data) and cost status. Filter options: Hide and Show .
Compare To	The data from which the report is based and with which you can then make comparisons with actual and variance data. Filter options: Plan , Baseline , and any of ten project-specific baselines.
End Date	The date on which the reporting period ends. Use the calendar picker to select this date.
Start Date	The date from which the reporting period begins. Use the calendar picker to select this date.

User Licenses

This report provides a current count of used and available licenses; it also details the specific users that are assigned to each license type. There are no parameters for this report.

Fields

Descriptions for the fields that are available in this report can be found in the following table.

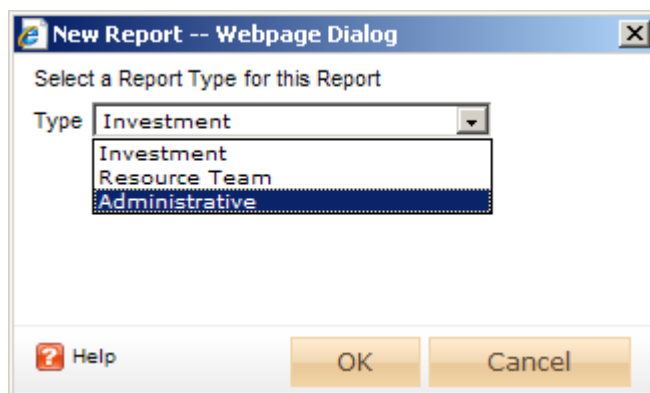
Field	Description
Active?	Indicates whether the resource is an Active resource.
License Type	The type of license.
Name	The name of the user to which the license is assigned.
Resource?	Indicates whether the user is a resource.
Username	The name of the user.

Adding a report that uses the License Counts and Licenses by User report template

To add a report that uses the **License Counts and Licenses by User** report template, open the **New Report** dialog box from the **My Reports** tab and then follow the steps below.

To add a report that uses the License Counts and Licenses by User template

1. Open the **Tools** module.
2. Select the **My Reports** tab.
3. Click **New Report**, select **Administrative**, and then click **OK**.



4. In the **New Report** dialog box, type a name for the report.
5. On the **General** tab, from the **Report Template** drop-down, select **License Counts and Licenses by User**, enter a description (optional), and indicate whether you want to run the report immediately (after you are finished creating it).

6. On the **Schedule** tab, select **Run this report on a schedule** if you want the report to be run on a periodic basis. Once selected, you can define how frequently you want the report to be run, the format in which the report will be presented, and how many previous instances of the report you want to store.

General **Schedule** Recipients Template

Run this report on a schedule

Schedule

Frequency: Daily Weekly
 Monthly

Time of Day: 1:00 PM

Day of Week: Monday

Day of Month: 1

Output

Format: Acrobat (PDF) File

Store: 5 instances of the report.

Report Parameters

Start Date: Sch. date + 0 days End Date: Sch. date + 0 days

Status: Show all Priority: Show all

7. If you have chosen to run the report on a scheduled basis, you can use the **Recipients** tab to select the users, security groups, and security roles who will receive a notification when this report is run. After you have chosen the recipients, click **Add**.
8. If you have chosen to run the report on a scheduled basis, you can use the **Template** tab to define parameters for the email notification. You can define the title (as it will appear in the subject line). You can add the **Timestamp** and **Report Name** attributes into the title or the template (the message body). You can add a URL link into the message body that will allow any recipient to link directly to the report.

General Schedule Recipients **Template**

* Title: _____

Insert Attribute: Timestamp

Insert URL Link:

<<Report_Name>> ran as scheduled at <<Timestamp>>

9. When finished, click **OK**.

View

You can view the **User Licenses** report directly after adding it by selecting the **Run this report immediately** option in the **New Report** dialog box. (Reports can also be run from the **My Reports** tab in the **Tools** module or the **Reports** tabs in the **Projects** module.) Administrative reports do not have filter options.

Weekly Timesheets

This report shows weekly posted time, as well as the time saved but not submitted for a specific work item. The report shows this information by work item and then by resource team and resource.

The user-configurable parameters in this report are:

- **Group by** Users can view the report sorted by item and then by resource team. They can also sort the report by resource team, resource and then by item.
- **Show** Users can choose to show unsubmitted time and posted time.
- **Weekends** Users can choose to show or hide weekends.
- **Week of** Users must define the timesheet period to run the report.

Fields

Descriptions for the fields that are available in this report can be found in the following table.

Field	Description
Investment	The name of the work item, log item, or discussion.
Rate	The standard rate for the resource, per unit of work. For example, \$100.00 per hour.
Team / Resource / Tasks	Depending on the report, the name of the team, resource, resource team, or task.
Total Hours	The number of hours worked.
Weekdays	The day of the week (Monday, Tuesday, Wednesday, Thursday, and Friday). If weekends are shown, then they will appear as part of the working week.

Screen Shot

Weekly Timesheets: By Resource Team by Investment

Week ending Sunday, October 18, 2009, Posted Time

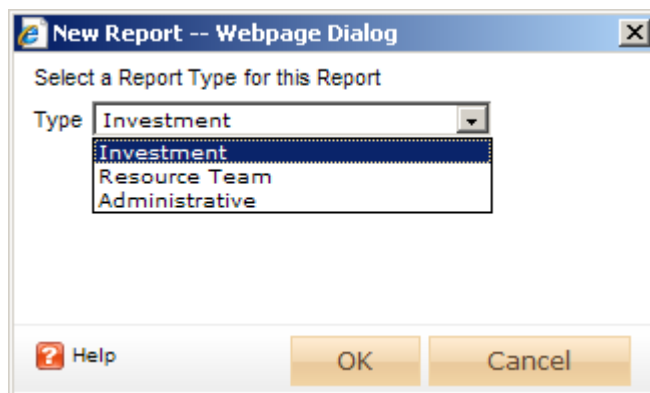
Team	Team / Resource / Tasks	Rate	Monday 10/12	Tuesday 10/13	Wednesday 10/14	Thursday 10/15	Friday 10/16	Total Hours
Vickie			10	7	5	5	5	32
	Key		10	7	5	5	5	32
	Competitive Monitoring Service		10	7	5	5	5	32
	New Task 1	\$100	8	5	5	5	5	28
	New Task 2	\$100	2	2	0	0	0	4

Adding a report that uses the Weekly Timesheets report template

To add a report that uses the **Weekly Timesheets** report template, open the **New Report** dialog box from the **My Reports** tab and then follow the steps below.

To add a report that uses the Weekly Timesheets template

1. Open the **Tools** module.
2. Select the **My Reports** tab.
3. Click **New Report**, select **Investment**, and then click **OK**.



4. In the **New Report** dialog box, type a name for the report.
5. On the **General** tab, from the **Report Template** drop-down, select **Weekly Timesheets**, enter a description (optional), and indicate whether you want to run the report immediately (after you are finished creating it).

General Schedule

Run this report immediately

Report Template [Dropdown]

Description

Associate Report With

... Investment: IT Hardware Upgrade

6. Under **Associate Report With**, click the ellipses button and then use the **Select Investments** dialog box to identify the work items that will be included in the report data.

General Schedule

Run this report immediately

Report Template [Dropdown]

Description

Associate Report With

... Investment: IT Hardware Upgrade

7. On the **Schedule** tab, select **Run this report on a schedule** if you want the report to be run on a periodic basis. Once selected, you can define how frequently you want the report to be run, the format in which the report will be presented, and how many previous instances of the report you want to store.

General **Schedule** Recipients Template

Run this report on a schedule

Schedule

Frequency: Daily Weekly
 Monthly

Time of Day: 1:00 PM

Day of Week: Monday

Day of Month: 1

Output

Format: Acrobat (PDF) File

Store: 5 instances of the report.

Report Parameters

Start Date: Sch. date + 0 days End Date: Sch. date + 0 days

Status: Show all Priority: Show all

8. If you have chosen to run the report on a scheduled basis, you can use the **Recipients** tab to select the users, security groups, and security roles who will receive a notification when this report is run. After you have chosen the recipients, click **Add**.
9. If you have chosen to run the report on a scheduled basis, you can use the **Template** tab to define parameters for the email notification. You can define the title (as it will appear in the subject line). You can add the **Timestamp** and **Report Name** attributes into the title or the template (the message body). You can add a URL link into the message body that will allow any recipient to link directly to the report.

General Schedule Recipients **Template**

* Title: _____


Insert Attribute: Timestamp


Insert URL Link:

<<Report_Name>> ran as scheduled at <<Timestamp>>

10. When finished, click **OK**.

View

You can view the **Weekly Timesheets** report directly after adding it by selecting the **Run this report immediately** option in the **New Report** dialog box. (Reports can also be run from the **My Reports** tab in the **Tools** module or the **Reports** tabs in the **Projects** module.) Set the filter options and click  Apply.

Week of:  10/18/2009 Show: Weekends: Group By:

Filter options:

Filter	Description
Group By	For any report that includes both investment and resource data, you can choose to filter the report by investment or by resource, and then by the other. For investment reports, users can view the report sorted by item and then by resource team. They can also sort the report by resource team, resource and then by item. For resource team reports, users can view the report sorted by resource team for the entire date range or by resources broken down into timesheet periods. Filter options: <ul style="list-style-type: none"> Investment reports: Investment / Resource Team or Resource Team / Investment Resource Team reports: Role / Resource Team, or Resource Team / Role
Show	Indicates whether the report will show posted time (time that has been entered into a timesheet by a resource and then submitted) or unsubmitted time (time that has been entered into a timesheet by a resource, but not submitted). Users can choose to show unsubmitted time and posted time. Filter options: Posted Time and Unsubmitted Time .
Week of	The week for which the report will be run. Users must define the timesheet period to run the report.
Weekends	Indicates whether weekend dates will be shown in the report. Users can choose to show or hide weekends. Filter options: Hide and Show .

Custom Reports

This section describes how to build, deploy, manage, and manage reports. It also provides descriptions of the data services stored procedures, which provide the data to reports.

Users of this section should be familiar with the following tools and concepts:

- Microsoft Visual Studio
- Microsoft SQL Server 2005 Reporting Services
- Relational database concepts (SQL)

- Business intelligence and reporting concepts

To better understand how reports work, you should be familiar with the following concepts. Reports are sometimes referred to as report templates.

- **Report Definition** An XML file that specifies what the report does and how it looks. It is a template for the user to populate with parameters. There is no data in a report definition file. This is the file that users see in the **Report** list in the **General** tab when creating or editing report.
- **Parameterized Report Definition** A report definition with user-defined parameters and an association to a work item or a resource team. There is no data in the parameterized report definition. This is the state of the reports listed in a user's **Reports** tab.
- **Report Instance (Rendered Report)** A parameterized report definition that is populated and viewed by a user. A report instance contains data based on user-defined parameters. Users can redefine some of the parameters and view the report with these new parameters. The newly refreshed report is still a report instance. This is the state of the report when a user views a report on the **Reports** list. When a user closes the report window, the data is not saved. A report instance is not a document. It is a presentation of data in the report definition file.
- **Report** A report instance that is printed or exported to an output format such as PDF, HTML, CSV, .tiff or Microsoft Excel. When a user prints or exports the report instance to one of the formats listed, the report instance becomes a report.
- **Scheduled Reports** Reports that a user can specify to be run on a schedule, exported to an output format, and stored in the **Documents Manager**.

The following software is required for reporting:

- Microsoft Visual Studio
- Microsoft SQL Server 2005 Reporting Services
- Software configuration prerequisites: The OLE DB Provider, configuring a data source for working internally, and valid permissions as well as in Microsoft SQL Server 2005 Reporting Services.

Downloading a report definition file template

You can use an existing report definition file (both custom and out-of-the-box) as a template for creating a new custom report definition file.

To download a report definition file template

1. From the application toolbar, click **Setup**, and then select **System Settings**.
2. Select the **Report Templates** tab.
3. Select a custom or out-of-the-box report definition and click **Download a Report Definition File**.
4. Save it to a location on your local computer.

Removing a custom report definition file

If you don't need a custom report definition file, you can delete it.

To remove a custom report definition file

1. From the application toolbar, click **Setup**, and then select **System Settings**.

2. Select the **Report Templates** tab.
3. Under **Custom**, select the report definition file you want to remove and click **Delete a Report Definition File**. Confirm.

Uploading a report definition file

After you have created a custom report definition file using the OLE DB Provider and Microsoft SQL Server 2005 Reporting Services, you can add it.

To upload a report definition file

1. From the application toolbar, click **Setup**, and then select **System Settings**.
2. Select the **Report Templates** tab.
3. Click **Upload a Report Definition file**.
4. In the **Upload Report Template** dialog box, click **Browse** to specify which report definition file you want to upload and select the template type from the **Type** drop-down.
5. Click **Upload**. When the upload process is finished, click **OK**.

Viewing out-of-the-box reports

Out-of-the-box reports can be viewed from the **Report Templates** view in the **System Settings** module and are grouped in the upper section of the view.

To view out-of-the-box reports

1. From the application toolbar, click **Setup**, and then select **System Settings**.
2. Select the **Report Templates** tab.
3. Out-of-the-box reports are listed under **System**.

Viewing custom reports

Custom report templates can be viewed from the **Report Templates** view in the **System Settings** module and are grouped in the lower section of the view.

To view your organization's custom reports

1. From the application toolbar, click **Setup**, and then select **System Settings**.
2. Select the **Report Templates** tab.
3. Custom reports are listed under **Custom**.

Reporting Services Architecture

In order to understand the reporting environment, it is important to understand the interaction between the Report Viewer (users of reports), the application and the Report Server. The visual below shows how reporting works. For the remainder of this document, we will refer to the server that has Reporting Services and reports data as the Report Server.

- The application communicates with Report Server to retrieve reports catalog (what reports are available) and report templates (what the report is designed to do). This communication takes place over a Web service. This interaction takes place every time a user is creating new report instances.

- Report Viewer interacts with report Server to view report instances. This is done over HTTP/HTTPS.
- The Report Writer interacts with the Report Server to deploy reports.
- An administrator interacts with the Report Server to manage content and access.
- Report Server communicates with data via a custom OLE DB to get the data for the reports.

Usually, the flow of events for reporting is as follows:

- The user logs on and navigates to the Reports view.
- The user clicks to create a report. The Web server queries the Reports server for available report templates.
- The user clicks to view a report instance. If applicable, a request is made for report parameters.
- SQL Reporting Services passes parameters, and then collects the data.
- SQL Reporting Services renders the report instance.
- The user can re-configure parameters and view report again. If a user schedules reports, the parameters are stored. The Scheduler service initiates rendering of the report and then stores the scheduled report instance in the Documents Manager.
- Report Writer posts additional reports. The Administrator manages content or access.

Building Report Definitions

To build a report definition, you must first establish a connection to data services and then use SQL Reporting services to define the report. Use this procedure to create a data source. Users must have Access Data Services permission granted in the Administration module.

In addition to standard SQL Reporting Services parameters, the View Report page uses certain special parameters to take advantage of features when running reports.

A report may be associated with either items or resource teams. Reports associated with items must have at least one string parameter, named *InvestmentId*, which is the internal unique ID of the item in the application.

Resource reports must have at least one string parameter, named *ResourceId*. These parameters are hidden from the user when the report is run, and they are supplied by the application.

Parameter Name Format	Value Type	Sample Parameter Name	Parameter Description
InvestmentId	String	InvestmentId	The item(s) with which the report instance is associated.

ResourceId	String	ResourceId	The resource team(s) with which the report instance is associated.
DateRangeBegin<ID>	DateTime	DateRangeBegin1	The start date of a date range. This is compared against the matching DateRangeEnd parameter to ensure it is a valid date range.
DateRangeEnd<ID>	DateTimeDateTime	DateRangeEnd1	The end date of a date range. The string that comes after DateRangeEnd must match the string that comes after DateRangeBegin.
PESCurrency	String	PESCurrency	Produces a list of supported currencies on the system.
PESCurrencyEffectiveDate		PESCurrencyEffectiveDate	The date of the exchange rate used to generate the report.
PESDimension<ID>	String	PESDimension5	Produces a list of the dimensions configured.
PESList<AttributeName>	String	PESListCity	Where <AttributeName> is the XML Name of a PES List Attribute, provides a list of the members of that list.

Once parameters have been added to the report definition, they can be integrated into the query text. The InvestmentId parameter can be added to the example above by

converting the query text to an expression that builds the query: **= "SPGetPESObject" & Parameters!InvestmentId.Value.**

Once the query has been converted to an expression, the Refresh Fields and Run buttons in the Data tab toolbar are not available. You can still get data by using the Preview tab.

Deploying Report Definitions

Report definitions should be located on a configured report server under a top-level folder called the reports root. By default, the reports root is a folder at the top level of the tree named PESReports, but this can be configured in the Settings view of the Administration module so that different database instances can have different reporting root directories.

Under the reports root, there are three other folders:

- **PESInvReports** Report definitions that can be associated with items.
- **PESResourceReports** Report definitions that can be associated with resource teams.
- **PESAdminReports** Miscellaneous report definitions.

Each of these directories contains a single shared data source named DataSource1, which is configured to use the OLE DB to access data. The following visual shows the PESReports folder as it appears in SQL Server Reporting Services.

Sharing a Data Source

Each report folder under PESReports has a single data source named DataSource1, which is shared by all the report definitions in the folder. This data source is installed by the installer, and it should not require changes, unless the host name of the application server changes. The following visual shows the properties for DataSource1.

The Connection String settings are:

- Provider. PacificEdgeSoftware.OleDbProvider.1
- Extended Properties. Blank.
- Location. <server>/<virtual dir> This should be the name of the application server/virtual Web folder of the application (the virtual Web folder is usually mariner).
- Mode. Read.
- Data Source. USETOKEN.

Viewing Legacy Dimension Data

The **Task Plan** view has baselines that are nearly identical to how baselines are used in Microsoft Project. Because of this change in functionality, Project Portfolio Management 2009 R1 was required to stop using dimensions to store baseline data.

Old dimension data has been preserved and report queries can still be run against them. You can download a sample report called Tasks By Investment (Legacy Data) that shows you how to compare your old dimension data to the new baseline data.

In order to use this report, you must add it to your list of custom reports found in the **Report Templates** tab in the **System Settings** module.

Download: [Tasks by Investment \(Legacy Data\)](#)

Database Changes from Mariner 2008

The schema for the task plan has changed. Any custom report that pulls information from the **Task Plan** view may need to be modified to incorporate these schema changes. All standard reports delivered by Serena will continue to work and do not need to be changed. If you have a custom report that is configured to pull data from attributes that have been removed, you will get an error message. For example:

```
Query execution failed for data set: [name of dataset]
There was a problem executing the stored procedure. Attribute name [name of attribute]
```

The following changes will need to be made to the report queries:

Old Field	New Field / Comments
tsd_Work.Plan	tsk_Work
tsk_Work.Actual	tsk_ActualWork
tsk_Work.[Dimension]	tsk_BaselineWork No longer tied to dimensions; now fixed to eleven baseline values. Previous dimensions, such as Target, Baseline, or Task Baseline are now Baseline1, Baseline2, Baseline3, and so on. Where [Dimension] is the name of the old dimension, tsk_BaselineWork, tskBaseline1Work, tskBaseline2Work, and so on, represent the names of the new baselines.
...	...

Macro Samples for the Tasks by Investment (Legacy Data) Report

Keep in mind that old dimensioned data is not synchronized with data that is found in the **Task Plan** view. As you add new baselines, existing reports that contain old dimensioned data and old queries for retrieving dimensioned data will not work. You will need to update your queries for the new table structures and reports in order to synchronize it with the new baseline data found in the **Task Plan** view.

Use the following SELECT statements to retrieve old dimensioned data:

- SELECT * FROM dbo.PES_ProjectTaskDimension_Obsolete
- SELECT * FROM dbo.PES_ProjectAssignmentDimension_Obsolete
- SELECT * FROM dbo.PES_WorkItemTaskDimension_Obsolete
- SELECT * FROM dbo.PES_WorkItemAssignmentDim_Obsolete

For example, to find all task baseline dimensions:

```

SELECT dim_UID FROM dbo.PES_Dimension WHERE dim_IsBaseline = 1
SELECT obj_ProjectUID, obj_Name, pt.obj_UID, tsk_Start, tsk_Finish,
pt_baseline.tsd_Start AS baseline_Start, pt_baseline.tsd_Finish AS baseline_Finish
FROM dbo.PES_ProjectTask pt

```

And then JOIN that query with any baseline data that you want to view:

```

JOIN dbo.PES_ProjectTaskDimension_Obsolete pt_baseline ON pt_baseline.obj_VersionIndex = 1
WHERE pt.prv_Published = 1
ORDER BY obj_ProjectUID

```

Fields

Descriptions for the fields that are available in this report can be found in the following table.

Field	Description
Cost Status	The status of a cost, or the status of the amount of money that is spent to produce something of value.
Cost Variance	Variance is the difference between two data points, such as the difference between the amount of planned work and the amount of actual work. Users can choose to show or hide the variance between the dimensions chosen. If the purpose of the report is planning more than operational tracking, some users may choose not to display the variance. Unless an investment is tracking actuals, there may not be any meaningful basis for variance analysis. Filter options: Hide , and Show .
Finish	The date on which a task is scheduled to finish.
Finish (Actual)	The date by which work on a task (or a task plan) actually finished.
Labor Cost	The amount of money that is spent to produce something of value.
Labor Cost (Actual)	The cost of labor for a task in a task plan.
Schedule Status	The current status of a project.
Start	The date on which a task is scheduled to start.
Start (Actual)	The date on which work on a task (or a task plan) actually started.
Task Name	The name of the task.

Field	Description
Work	The total amount of work that has been scheduled for a task.
Work (Actual)	The amount of work that has been completed, to-date, by all resources who have been assigned to a task (or a task plan).

Screen Shot

Tasks by Investment (Legacy Data)

For 1/1/2007 - 1/1/2009

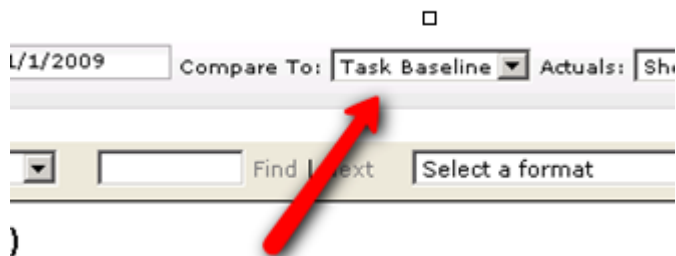
Task Name	Compared Dimension				Actual				Cost		Schedule	
	Start	Finish	Work	Labor Cost	Start	Finish	Work	Labor Cost	Variance	Status	Status	
IT Hardware Upgrade												
1	Summary Task		2/1/2008	7/18/2008	524	\$52,400	1/17/2008	242	\$24,200	(\$28,200)	Under Budget	Behind Schedule
3	Planning		2/1/2008	3/6/2008	164	\$16,400	2/4/2008	101	\$10,100	(\$6,300)	Under Budget	Behind Schedule
4	Scope definition		2/1/2008	2/29/2008	140	\$14,000	2/4/2008	82	\$8,200	(\$5,800)	Under Budget	Behind Schedule
5	Project Kick-off		3/3/2008	3/6/2008	24	\$2,400	2/4/2008	19	\$1,900	(\$500)	Under Budget	Behind Schedule
6	Executive Approval		3/6/2008	3/6/2008		\$0	2/4/2008	15	\$1,500	\$1,500	Over Budget	Behind Schedule
7	Execution		3/6/2008	7/18/2008	360	\$36,000	2/4/2008	126	\$12,600	(\$23,400)	Under Budget	Behind Schedule
8	Analyze Current System Performance		3/6/2008	5/7/2008	85	\$8,500	2/4/2008	32	\$3,200	(\$5,300)	Under Budget	Behind Schedule
9	Design New System Architecture		5/8/2008	5/28/2008	100	\$10,000	2/4/2008	27	\$2,700	(\$7,300)	Under Budget	Behind Schedule
10	Server Configuration and Deployment		5/29/2008	7/18/2008	175	\$17,500	2/4/2008	67	\$6,700	(\$10,800)	Under Budget	Behind Schedule
11	Order Servers		5/29/2008	6/30/2008	25	\$2,500	2/7/2008	16	\$1,600	(\$900)	Under Budget	Behind Schedule
											Under	Behind

Uploading the Tasks by Investment (Legacy Data) report definition file

Before you can use the Tasks by Investment (Legacy Data) report, you must first upload it into your system.

To upload a report definition file

1. Download the report: [Tasks by Investment \(Legacy Data\)](#)
2. From the application toolbar, click **Setup**, and then select **System Settings**.
3. Select the **Report Templates** tab.
4. Click **Upload a Report Definition file**.
5. In the **Upload Report Template** dialog box, find the Tasks by Investment (Legacy Data) report definition file and select it.
6. Click **Upload**. When the upload process is finished, click **OK**.
7. When you are using this custom report, use the **Compare To** drop-down to select the old dimension in which your old data is stored. This will then render a report that has actual data alongside legacy data from the selected dimension.



Scheduled Services

You can use the **Scheduled Services** tab to create and maintain scheduled jobs and plug-ins. Jobs that are in the queue are run sequentially, with the next job in the queue starting after the current one is finished. In general, most jobs should be scheduled to run at off-peak times.

For more information, see the following topics:

- [Jobs \[page 346\]](#)
- [Plug-ins \[page 347\]](#)

Jobs

The **Jobs** tab lets you schedule recurring tasks (jobs) that run a plug-in so that it performs a specific action, such as cleaning up abandoned print jobs, posting timesheet data, sending workflow notifications, recalculating range calculations on a nightly basis, using connectors to refresh and publish data, and so on. You can schedule jobs for any plug-in that has scheduling enabled.

Scheduling a job

You can create schedules for processing plug-ins on a daily, weekly, monthly, or one-time basis on the **Jobs** tab of the **Scheduled Services** tab. Plug-ins are DLL files that can be used to process data, such as sending connector job notifications, recalculating range calculations, or cleaning up abandoned print jobs.

To schedule jobs

1. From the application toolbar, click **Setup**, and then select **System Settings**.
2. Select the **Scheduled Services** tab.
3. Select the **Jobs** tab.
4. Select a job.
5. Under **Scheduled Job Properties**, define the schedule that this job should run. Jobs should be scheduled during time of the day where users are not logged onto the system. In most cases, running of a scheduled job will log off users or cause interruption to their use of the system.
6. Click **Save**.

Viewing a scheduled service's job history

You can view the history of a scheduled service, including the start and finish times, status of the job when it ran, and so on.

To view a scheduled service's job history

1. From the application toolbar, click **Setup**, and then select **System Settings**.
2. Select the **Scheduled Services** tab.
3. Select the **Jobs** tab.
4. Under **Status**, click **View Job History**.

Viewing the status of a scheduled job

You can check the status of a scheduled job in the **Scheduled Services** tab.

To view the status of a scheduled job

1. From the application toolbar, click **Setup**, and then select **System Settings**.
2. Select the **Scheduled Services** tab.
3. The status of the scheduled job is listed under **Status**, including its current status, the last time the job ran, whether it was successful the last time it ran, and so on.

Plug-ins

The **Plug-ins** tab lets you manage plug-ins that are included. Plug-ins are DLL files that can be used to process data, such as sending connector job notifications, recalculating range calculations, or cleaning up abandoned print jobs. Predefined plug-ins are included; additional plug-ins can be created by Serena Professional Services for your organization.

Available plug-ins

The following plug-ins are included:

- **Clean Up Abandoned Print Jobs** Use this plug-in to clean up abandoned print jobs and temporary files from the database and file system. This plug-in is run by the **Clean Up Abandoned Print Jobs** scheduled service.
- **Datasheet History** Use this plug-in to create and schedule datasheet snapshots in the **Reports** module.
- **Post All Data** Use this plug-in to combine the **Post Timesheet Data** and **Post Attribute Maps** plug-ins. This plug-in is run by the **Nightly Post Job** scheduled service. This plug-in should be run during off-peak hours.
- **Post Attribute Maps** Use this plug-in to consolidate timesheet data for task plans to the portfolio hierarchy using defined attribute maps. This plug-in can be run manually.
- **Post Timesheet Data** Use this plug-in to consolidate approved timesheet actuals back into task plans. Actual hours and costs will be recalculated. All timesheet data submitted since the last time this plug-in was run is updated. This plug-in can be run manually.
- **Recalculate Range Calculations** Use this plug-in to update all range calculations. Range calculations can change based on the system date; this plug-in forces all calculations to be updated to the current system date. This plug-in is run by the

Nightly Recalculation of Range Calculations scheduled service. This job should be run nightly and at off-peak hours.

- **Refresh Audit Tables for Agile Work Items** Use this plug-in to rebuild the audit tables for a work item (story, epic, and so on) if they get out of sync. This job should be run (manually) and only when Serena Support recommends it.
- **Refresh Audit Tables for Investments** Use this plug-in to rebuild the audit tables for items (projects, programs, and so on) if they get out of sync. This job should be run (manually) and only when Serena Support recommends it.
- **Reporting Master Job** Use this plug-in to determine what scheduled reports need to be run. This is the master job for scheduled reports and is set by default to be run every 15 minutes. This plug-in is run by the **Reports Master** scheduled service.
- **Rollup Investment Hierarchy** Use this plug-in to force a roll-up of data within the work item hierarchy. The hierarchy will not be accessible during this time. This job should be run (manually) and only when Serena Support recommends it.
- **Scheduled Notification Master Job** Use this plug-in to send a message to the notification processor to check if any scheduled notifications need to be run. This plug-in is set by default to be run every hour. This is the master job for scheduled notifications. This plug-in is run by the **Notification Master** scheduled service.
- **Send Job Notifications** Use this plug-in to generate and send nightly email notifications for the execution status of a specific, scheduled service. Plug-in notifications are based on an XML configuration file.
- **Send Workflow Notifications** Use this plug-in to generate and send reminder notifications for expired transitions in the Workflow tab in the **Projects** module. Workflow notifications are sent to the members of transition approval lists and to the individual who initiates a workflow transition. This plug-in is run by the **Nightly Workflow Notifications** scheduled service.
- **Synchronize Users** Use this plug-in to synchronize users and resources with information from selected authentication providers, such as Active Directory or Lightweight Directory Access (LDAP). This plug-in may require the assistance of Serena Professional Services in order to ensure proper configuration.
- **System Calendar Change** Use this plug-in to apply changes that have been made to the system calendar to all task plans. This plug-in should be run during off-peak hours. This plug-in is not used in Project Portfolio Management 2009 R1.

Adding a plug-in

If you want to be able to schedule jobs for the plug-in, be sure to select the **Can be Scheduled** check box.

To add a plug in

1. From the application toolbar, click **Setup**, and then select **System Settings**.
2. Select the **Scheduled Services** tab.
3. Select the **Plug-ins** tab.
4. Click **New**.
5. Name the new plug-in and provide a description.
6. Enter the plug-in DLL file name that is provided to you by Serena Professional Services in the **DLL Name** box.

7. Enter the plug-in class name that is provided to you by Serena Professional Services in the **Class Name** box.
8. Select the **Can be Scheduled** check box to allow jobs to be scheduled against this plug-in using the **Jobs** tab in the **Scheduled Services** view.
9. Click **Save**.

System Notifications

A notification is an automated way of being notified when specific actions occur within the application, such as when a resource submits their timesheet, when a new work item is added, updated, and so on. Some notifications--system notifications--are available to all users; some notifications--custom notifications--can be configured by each user from the **Define Notifications** tab in the **Tools** module.

You can use the **System Notifications** tab to manage the notifications that will be available to all of the users in your organization. System notifications are available for many events associated with the lifecycle of a work item, such as adding resource allocations or assigning risks. The full list of system notifications is available in the **System Notifications** tab.

Adding a system notification

You cannot add system notifications.

Editing a system notification

You can use the **Edit System Notifications** dialog box to modify a system notification. System notifications are preset. System notifications are available for many events associated with the lifecycle of a work item, such as resources added, risks assigned, or timesheets due. Your administrator can enable and disable system notifications to meet the needs of the users. The administrator can also edit a system notification to make it more useful for your enterprise. The administrator uses the **System Notifications** tab of the **System Settings** module to set up system notifications.

To edit a system notification

1. From the application toolbar, click **Setup**, and then select **System Settings**.
2. Select the **System Notifications** tab.
3. Select a notification and click **Edit Notification**.
4. In the **Edit System Notifications**, dialog box, make your changes.
5. Click **Save**.

Enabling default system notifications

Enabled system notifications that are also default notifications will be sent to all users in your organization regardless of their individual subscription preferences. If a default system notification is changed so that it is no longer a default system notification, all user subscriptions to that system notification will be removed.

To enable a default system notification

1. From the application toolbar, click **Setup**, and then select **System Settings**.
2. Select the **System Notifications** tab.

3. Select the check-boxes from both the **Enabled** and **Default** columns beside the notifications you want to enable.

Enabling system notifications

System notifications that are enabled will be available to users in your organization from the **My Notifications** tab in the **Tools** module.

To enable a system notification

1. From the application toolbar, click **Setup**, and then select **System Settings**.
2. Select the **System Notifications** tab.
3. Select the check-box from the **Enabled** column beside the notification that you want to enable.

Scheduling system notifications

You can configure the **Timesheet Due** and **Timesheet Overdue** system notifications to be sent to recipients at a scheduled time.

To schedule system notifications

1. From the application toolbar, click **Setup**, and then select **System Settings**.
2. Select the **System Notifications** tab.
3. Select a notification that has an On Schedule trigger, such as **Timesheet Due** or **Timesheet Overdue**, and then click the **Edit System Notifications** button.
4. In the **Edit System Notifications** dialog box, select the **Schedule** tab.
5. Under **Job Schedule**, choose the frequency, time of day, and day of the week or month.
6. Click **Save**.

Viewing system notifications

The list of system notifications is available from the **System Notifications** tab in the **System Settings** module.

To view system notifications

1. From the application toolbar, click **Setup**, and then select **System Settings**.
2. Select the **System Notifications** tab.

Email Settings

Users in your organization can view, subscribe to, and un-subscribe from any system notification that is enabled. Users can subscribe to and un-subscribe from their system notifications using the **My Notifications** tab in the **Tools** module. You can subscribe every user in your organization to an enabled system notification by making it a default notification.

Disabling email for a system notification

You may want to enable notifications for users, but not have those notifications be sent to a user's email account. In this case, when notifications are available, an icon will appear in the application toolbar.

To disable email for a system notification

1. From the application toolbar, click **Setup**, and then select **System Settings**.
2. Select the **System Notifications** tab.
3. In the row for the system notification you want to disable, un-check the **Enabled** column.

Managing who receives notifications

Once you've configured and enabled system notifications, you have to specify which users and groups of users should receive email notifications. This is done from the **Users** tab in the **Security** tab.

To manage which users receive email notifications

1. From the application toolbar, click **Setup**, and then select **System Settings**.
2. Select the **Security** tab.
3. Select the **Users** tab.
4. Below the list of users, click the **Manage Email Notifications** button to display the **Select Users to Receive Notifications** dialog box.
5. Select the users who should receive notifications and click the right arrow to add them. You can **CTRL**-click to select multiple users.
6. Click **OK**.

Security

You can use the **Security** tab to manage the users and groups of users who will be working, and to define the security roles that allow them to access the **Projects**, **Reports**, **Resources**, **Tools**, **System Settings**, and **Customization** modules.

For more information, see the following topics:

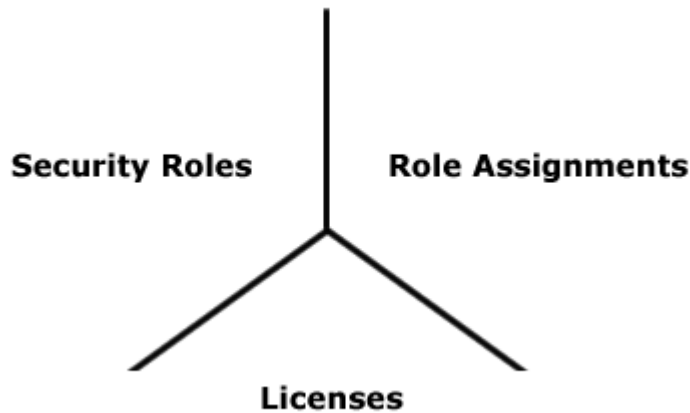
- [Application Security \[page 351\]](#)
- [Groups \[page 355\]](#)
- [Roles \[page 358\]](#)
- [Active Users \[page 360\]](#)
- [Password Policy \[page 360\]](#)

Application Security

Data is integrated from a wide variety of sources that may encompass sensitive project, budget, and resource information. To provide secure and controlled access across to your portfolio data, a multi-layered application security framework is used. This framework enables you to define user access both at a system and individual work item level. Designing a security policy that meets the needs of your organization requires careful planning and a thorough understanding of the security framework.

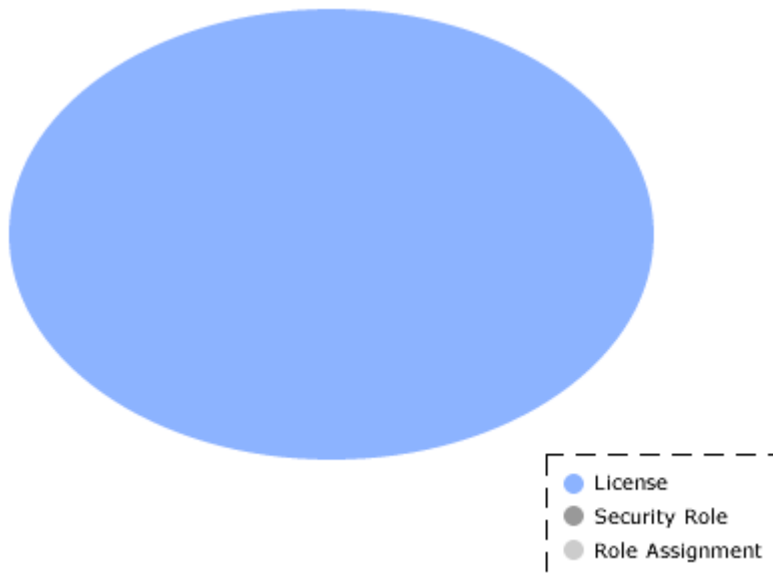
Overview

The structure of this framework is made up of three separate security elements: licenses, security roles, and work item role assignments. The combination of these security elements defines your overall security policy.



Licenses

Licenses are the foundation of the security model. There are two types of licenses: a base license that provides access to a limited set of functionality and a full license that provides access to the full application. A license is assigned individually to each user, providing the ability to log on and defining user access to modules and views. Essentially, a license defines the maximum possible access a user can be given to modules and views. Think of the license as a large container; it holds a user's greatest potential access to the application.

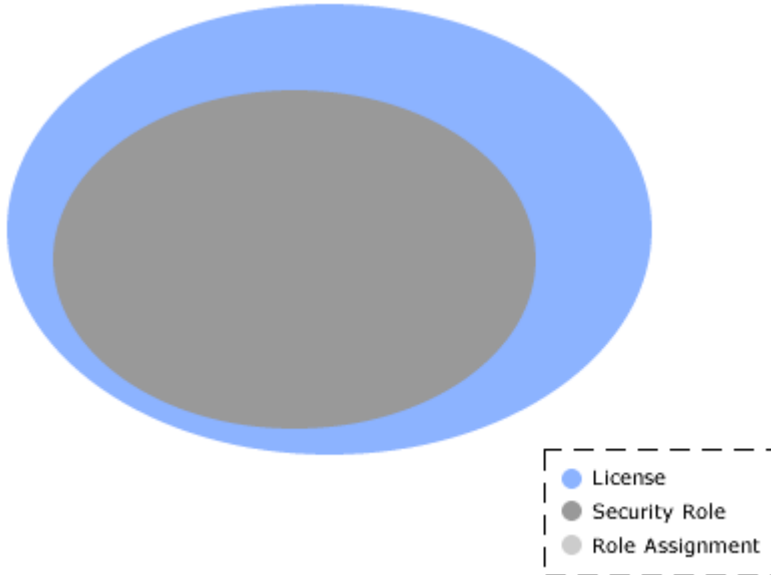


Security Roles

Security roles are basically a collection of individual permissions and define the level of access for users and groups and functions they can perform. The permissions structure enables you to specify the precise level of access for the security role, and to the individual views, dimensions, and user actions. Licensed users are put in groups, which are then assigned to a security role. When user access provided by a security role is

combined with the potential access granted by the license, the net result is the most restrictive level of access.

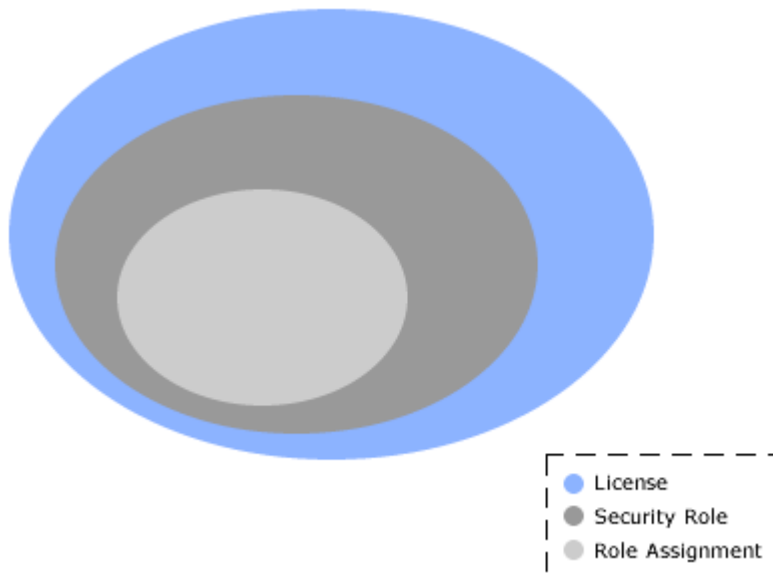
When security roles and licenses are combined, the result is restrictive. However, users and groups can belong to more than one security role. In this case, the user access from each security role is cumulative, but only to the extent provided by the license.



Role Assignments

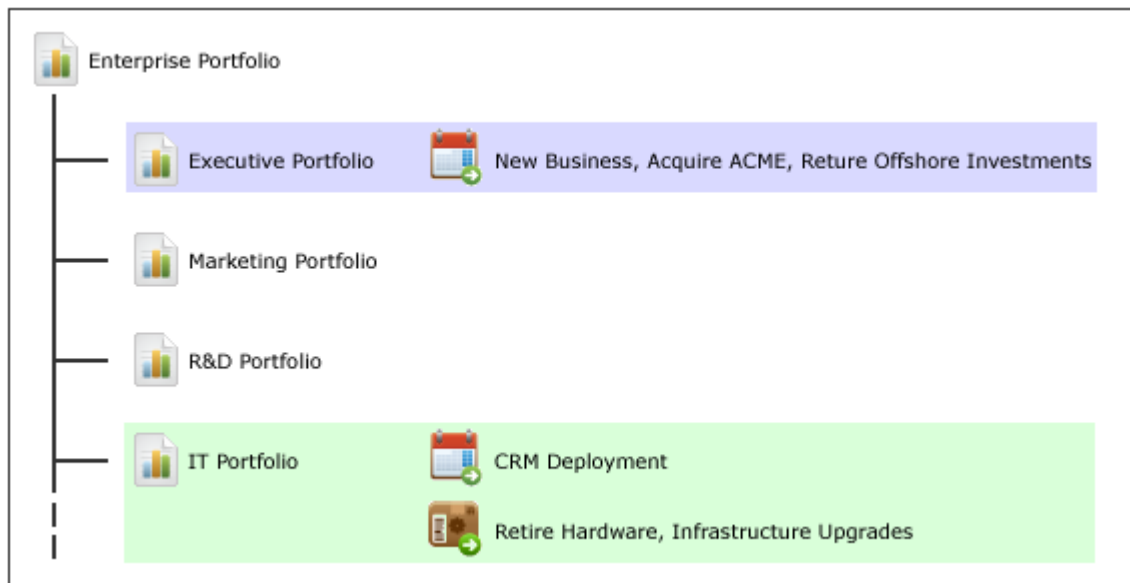
A role assignment is the last layer in the security framework. Role assignments define user and group access to a specific work item or work item portfolios. The security role assignment is actually part of the work item's properties. This is the final step in determining a the level of access for a user or group. A user can have a full license and have unrestricted access via their security role, and will not have access to a work item or portfolio without a appropriate role assignment.

Combining licenses, security roles, and role assignments effectively can provide the appropriate level of access and visibility into portfolio data. In fact, when combined with a well-designed portfolio structure, you can virtually isolate a work item and entire portfolios from unauthorized access.



Security Example

The following visual provides an example of this security-based portfolio isolation. Users with role assignments on the IT Portfolio, for instance, see only those items highlighted in green. When those users log on, the other items and portfolios will not even appear in the hierarchy. In the same way, users assigned to the Executive Portfolio will only see and have access to items in that specific portfolio.



Best Practices

There are many ways to approach application access and security role definitions. The security framework is designed to provide the flexibility to meet the specific application security needs of your organization. To help you achieve a well conceived security model, consider the following best practices:

-
- Document your requirements for user access and application security. Determine the level of granularity needed by your organization.
 - Outline the security roles.
 - Devise the licensing scheme that will match this setup.
 - Define and create each security role and assign corresponding permissions.
 - Ensure each security role has access to the appropriate dimensions.
 - Create groups, and assign groups to security roles.
 - Create users and then add them to appropriate groups.
 - Assign users the appropriate licenses that match their security roles.

If you assign a security role permission to edit the properties of a work item in the work item hierarchy, that permission will be inherited by all of that work item's children. It is possible to restrict permission to edit an work item's children, but it is not possible to restrict permission to view an work item's children.

Groups

The **Groups** tab is used to define the security groups, to specify the users and groups who belong to them, and to specify the security roles to which they are associated. Security groups are a collection of users and/or other security groups that have similar roles in your organization and similar needs for accessing work item data. Without using security groups, every user would need to be individually given permission to access the various modules and views. With groups, you can assign multiple users with similar roles and permission requirements to a single security group, and you can then assign a single security group permission to access a module or a view. Users can be assigned to more than one security group. If a user is assigned to more than one security group, that user has all the permissions associated with the all the groups to which they are assigned.

Adding a security group

Several default security groups are included. If these groups aren't the right ones for how your organization wants to work, you can add new ones.

To add a security group

1. From the application toolbar, click **Setup**, and then select **System Settings**.
2. Select the **Security** tab.
3. Select the **Groups** tab.
4. Click **New**.
5. Under **Group Properties**, enter a name and a description. Select the **Active** check box to activate the group.
6. Under **Users and Groups**, select a user or a security group from the left pane and move them to the right pane to add them to the security group.
7. Under **Global Administrative Roles**, choose the security roles to which the security group will belong.
8. Click **Save**.

Assigning a user to a security group

You can assign users and security groups to security groups. Security groups are given permission to access modules and views by assigning the security group to one or more security roles.

To assign a user to a security group

1. From the application toolbar, click **Setup**, and then select **System Settings**.
2. Select the **Security** tab.
3. Select the **Groups** tab.
4. Select the name of the security group to which you want to assign a user or group.
5. Under **Users and Groups**, select the name of the user or group you want to add move the user or group to the column on the right.
6. Click **Save**.

Copying a security group

You can add a security group by copying the properties of an existing security group. When you copy a security group, the users and/or security groups that are assigned to the security group from which the copy is made will also be copied.

To copy a security group

1. From the application toolbar, click **Setup**, and then select **System Settings**.
2. Select the **Security** tab.
3. Select the **Groups** tab.
4. Select the security group you want to copy and click **Copy**.
5. Under **Group Properties**, enter a name and a description. Select the **Active** check box to activate the group.
6. Under **Users and Groups**, select a user or a security group from the left pane and move them to the right pane to add them to the security group.
7. Under **Global Administrative Roles**, choose the security roles to which the security group will belong.
8. Click **Save**.

Deleting a security group

If your organization doesn't need a security group, you can delete it.

To delete a security group

1. From the application toolbar, click **Setup**, and then select **System Settings**.
2. Select the **Security** tab.
3. Select the **Groups** tab.
4. Select a group.
5. Click **Delete**. Confirm.

Editing a security group

Make your changes and then save them.

To edit a security group

1. From the application toolbar, click **Setup**, and then select **System Settings**.
2. Select the **Security** tab.
3. Click the **Groups** tab.
4. Select a group.
5. Make your changes.
6. Click **Save**.

Importing security groups

You can import users from an existing network directory service, such as Active Directory or Novell eDirectory. You must first set up the authentication provider, which determines which users and/or security groups will be imported. You can configure the authentication provider to be run periodically. When the authentication provider is re-run, only new or changed data will be imported. First name, last name, status, and email address are used to determine which users are new and/or have been changed. A user's username, password, domain, and authentication provider will remain unchanged.

To import security groups

1. From the application toolbar, click **Setup**, and then select **System Settings**.
2. In the **Import Users** dialog box, select the authentication provider from which you are importing.
3. The **Import Users** dialog box displays your authentication provider settings as read-only.
4. Type the following in the *Name* and **Password** boxes: If the authentication provider you selected uses the Application authentication type, type the database user name and password in the corresponding boxes. If the authentication provider you selected uses the Active Directory authentication type, type the domain user name (such as user name), a qualified domain name (such as domain/username), or a full distinguished name (such as cn=username,ou=pretend, dc=domain, dc=com) and password in the corresponding boxes. If the authentication provider you selected uses the Novell eDirectory authentication type, type a full distinguished name and password in the corresponding boxes.
5. Click **Import**. When users are imported, their user name and password are lowercase. When the import completes, click **OK**. If the import returns an error, check the authentication provider to ensure it is configured properly. Also ensure that the user context running the import has sufficient rights on the directory services server. If the user context does not have sufficient rights, the query will return null strings for those parts of the query the user cannot access. Once you have imported the users and groups, you can edit their information on the **Users** tab and **Groups** tab in the **Security**.

Viewing a security group

Security groups can be viewed from the **Groups** tab of the **Security** tab in the **Projects** module.

To view a security group

1. From the application toolbar, click **Setup**, and then select **System Settings**.
2. Select the **Security** tab.
3. Select the **Groups** tab.

Roles

The **Roles** tab is used to assign permission to areas within each of the modules: **Projects, Reports, Resources, Tools, System Settings, and Customization**. Permissions are granted on a role-by-role basis. Security roles define the permissions that are available for the users and security groups that are assigned to the security role. Users can be assigned to more than one security role. If a user is assigned to more than one security role, that user has all the permissions associated with the all the roles to which they are assigned.

Adding a security role

Several default security roles are included. If these security roles don't map to the way your organization manages security, you can add new ones.

To add a security role

1. From the application toolbar, click **Setup**, and then select **System Settings**.
2. Select the **Security** tab.
3. Click the **Roles** tab.
4. Click **New**.
5. Under **Security Role Properties**, enter a name and a description.
6. In the **System Settings, Customization, Resources, Tools, Reports, and Projects** tabs, select the permissions that will be allowed for the security role. If the Allowed column is selected for a permission, any user or security group will be granted permission to do the associated actions.
7. Click **Save**.

Assigning a user to a security role

Users can be assigned to security roles one at a time or as part of security groups.

To assign a user or a security group to a security role

1. From the application toolbar, click **Setup**, and then select **System Settings**.
2. Select the **Security** tab.
3. Select the **Roles** tab.
4. Select the name of the security role to which you want to assign a user or group.
5. Under **Users and Groups**, select the name of the user or group you want to add move the user or group to the column on the right.
6. Click **Save**.

Copying a security role

You can add a security role by copying the properties of an existing security role. When you copy a security role, the users and/or security roles that are assigned to the security role from which the copy is made will also be copied.

To copy a security role

1. From the application toolbar, click **Setup**, and then select **System Settings**.
2. Select the **Security** tab.
3. Select the **Roles** tab.
4. Select the security role you want to copy and click **Copy**.
5. Under **Security Role Properties**, enter a name and a description.
6. In the **Administration, Configuration, Resources, Workspace, Analyzer, and Projects** tabs, select the permissions that will be allowed for the security role. If the **Allowed** column is selected for a permission, any user or security group will be granted permission to do the associated actions.
7. Click **Save**.

Deleting a security role

If your organization doesn't need a security role, you can delete it.

To delete a security role

1. From the application toolbar, click **Setup**, and then select **System Settings**.
2. Select the **Security** tab.
3. Select the **Roles** tab.
4. Select a role.
5. Click **Delete**. Confirm.

Editing a security role

Make your changes and then save them. The Administrator (peadmin) security role cannot be modified.

To edit a security role

1. From the application toolbar, click **Setup**, and then select **System Settings**.
2. Select the **Security** tab.
3. Select the **Roles** tab.
4. Select a role.
5. Make your changes.
6. Click **Save**.

Viewing a security role

Security roles can be viewed from the **Roles** tab of the **Security** tab in the **System Settings** module.

To view a security role

1. From the application toolbar, click **Setup**, and then select **System Settings**.
2. Select the **Security** tab.
3. Select the **Roles** tab.

Active Users

The **Active Users** tab lists the current active users.

Viewing active users

The users who are currently working (active users) can be viewed from the **Active Users** tab of the **Security** tab in the **System Settings** module.

To view active users

1. From the application toolbar, click **Setup**, and then select **System Settings**.
2. Select the **Security** tab.
3. Click the **Active Users** tab.

Password Policy

The **Password Policy** tab provides the following options for password complexity:

- **Strong** The password must be between 8-16 characters and must contain at least one number (0-9), one lowercase letter (a-z), one uppercase letter (A-Z), and one non-alphanumeric character (such as #, \$, !, or %).
- **Medium** The password must be between 8-16 characters and must contain at least one number (0-9), one lowercase letter (a-z), and one uppercase letter (A-Z).
Default.
- **Weak** The password must be between 4-16 characters.

Password policy options are global settings and will be applied to any database that is used by your organization.

Customization

After you have created users, added licenses, defined security roles (and assigned users to them), you are ready to configure the application. The **Customization** module is used to manage a work item types, attributes, and views that your organization wants to use.

For more information, see the following topics:

- [ALM Integration \[page 361\]](#)
- [Attributes Setup \[page 362\]](#)
- [Environment Settings \[page 393\]](#)
- [Financials Setup \[page 397\]](#)
- [Types Setup \[page 399\]](#)
- [Labor Attribute Mapping \[page 407\]](#)
- [Microsoft Project Settings \[page 412\]](#)
- [Module Designer \[page 414\]](#)
- [Timesheet Settings \[page 430\]](#)
- [User Synchronization \[page 435\]](#)
- [View Designer \[page 439\]](#)
- [View Management \[page 458\]](#)
- [Workflow and Approvals \[page 462\]](#)

ALM Integration

You can use the **ALM Integration** tab to integrate with Serena Business Mashups and Serena Dimensions. ALM integration requires Java 1.6 or higher.

Integrating with Serena Business Mashups

Serena Business Mashups helps your organization to improve its business processes by pulling information from different sources within your organization, from Web Service, and from third-party applications through the Business Mashups interface and into an environment that lets you see what is really going on.

To integrate with Serena Business Mashups

1. From the application toolbar, click **Setup**, and then select **Customization**.
2. Select the **ALM Integration** tab.
3. On the **General** tab, check **Enable Business Mashup Integration**.
4. Enter the integration URL and description (optional). Click the ellipses button next to **Integration Config XML** to add, edit, or view the XML used to store configuration details. Provide a password; click **Encrypt** to encrypt that password.
5. On the **Investment Mapping** tab, create an external source for work item mapping. Define the source and choose the destination to which you want it to map. A mapped work item appears below.
6. When finished, click **Save**.

Integrating with Serena Dimensions

Serena Dimensions is an end-to-end cross-platform, highly scalable solution for distributed development. It integrates application development across global sites, stakeholders, and platforms and helps automate development steps by basing them on consistent processes and streamlined delivery of applications to help you drive your business better.

To integrate with Serena Dimensions

1. From the application toolbar, click **Setup**, and then select **Customization**.
2. Select the **ALM Integration** tab.
3. On the **General** tab, check **Enable Dimensions Integration**.
4. Enter the integration URL and description (optional). Click the ellipses button next to **Integration Config XML** to add, edit, or view the XML used to store configuration details. Provide a password; click **Encrypt** to encrypt that password.
5. On the **Investment Mapping** tab, create an external source for work item mapping. Define the source and choose the destination to which you want it to map. A work item appears below.
6. When finished, click **Save**.

Attributes Setup

You can use the **Attributes Setup** tab to create and manage work item type attributes.

For more information, see the following topics:

- [Attribute Dependencies \[page 362\]](#)
- [Attributes \[page 364\]](#)
- [Dimensions \[page 384\]](#)
- [Lists \[page 387\]](#)
- [Scorecard and Notesgrid \[page 388\]](#)
- [Split Attributes \[page 391\]](#)
- [Type System \[page 392\]](#)

Attribute Dependencies

The Attribute Dependencies tab allows you to link attributes to each other by defining a parent/child relationship. You can define parent/child relationships for any attribute type that can be associated with a list, such as *date*, *float*, *integer*, *money*, *percent*, or *text*.

After you have chosen the parent and child attributes, you need to define the dependency relationships. Select a list work item from the parent attribute and then associate a value from the child attribute by adding a list work item from the child attribute to the list work item of the parent attribute.

Adding an attribute dependency

Open the **New Attribute Dependency** dialog box and choose the parent and child attributes. Then specify the relationships between a list work item which belongs to the parent and child attributes.

To add an attribute dependency

1. From the application toolbar, click **Setup**, and then select **Customization**.
2. Select the **Attributes Setup** tab.
3. Select the **Attribute Dependencies** tab.
4. Click **New**.
5. In the **New Attribute Dependency** dialog box select a parent attribute (the attribute for which dependencies will be created) and a child attribute (the attribute from which the dependencies are based).
6. Select the parent/child pair that was just created.
7. Click **OK**.
8. Under **Selections**, select a priority for the dependency (*High, Medium, and Low*). For each priority, select the parent attributes that are associated with the child attribute and move them to the right column. As the parent / child relationships are created, they will be shown in the **Summary** section below.
9. Click **Save**.

Deleting an attribute dependency

If you are not using an attribute dependency, you can delete it.

To delete an attribute dependency

1. From the application toolbar, click **Setup**, and then select **Customization**.
2. Select the **Attributes Setup** tab.
3. Select the **Attribute Dependencies** tab.
4. Select a dependency pair.
5. Click **Delete**.

Editing an attribute dependency

Make your changes and then save them.

To edit an attribute dependency

1. From the application toolbar, click **Setup**, and then select **Customization**.
2. Select the **Attributes Setup** tab.
3. Select the **Attribute Dependencies** tab.
4. Select an attribute dependency.
5. Make your changes.
6. Click **Save**.

Viewing an attribute dependency

An attribute dependency can be viewed from the **Attribute Dependencies** tab in the **Attributes Setup** tab.

To view an attribute dependency

1. From the application toolbar, click **Setup**, and then select **Customization**.

2. Select the **Attributes Setup** tab.
3. Select the **Attribute Dependencies** tab.
4. Select a dependency pair. This populates the **Selections** and **Summary** boxes. The **Summary** box allows you to view a graphical representation of the parent/child relationship.
5. Use the **Parent List Items** drop-down to select the work item from which you want to view a child work item.

Attributes

Attributes are information about a work item that shows in a field or column of a view. Attributes should have unique names; if an attribute has the same name as another attribute, then it must have a unique attribute type and/or it must be dimensioned. Attributes can be assigned to work item types from the Investment Type tab in the **Types Setup** tab.

There are six primary types of attributes:

- **General** A general attribute can be used by any work item type. A general attribute is never timephased (or ranged) and it is never a milestone. General attribute types include: *date, flag, float, integer, large text, money, percent, resource, text, time,* and *URL link*.
- **Timephased** A timephased attribute can be used to track costs and/or benefits over a defined time period. There are four types of timephased attributes: labor costs, non-labor costs, other costs, and benefits. Timephased attributes can be split so that costs and/or benefits can be tracked in smaller, more detailed levels. When a timephased attribute is split, cost and benefit values are tracked at the split level, plus are rolled-up into the parent timephased attribute. Timephased attribute types include: *Timephased - CURRENCY, Timephased - FTE, Timephased - NonLabor,* and *Timephased - UNITS*.
- **Calculated Timephased** A *calculated timephased* attribute can be used to calculate currency, hours, skills, and other measurements that are already being tracked using a timephased attribute. There are four types of *calculated timephased* attributes: currency, FTE, hours, and units. Calculated timephased attributes may use MathML. The *calculated timephased* attribute type includes: *Timephased Calc - CURRENCY, Timephased Calc - FTE, Timephased Calc - HOURS,* and *Timephased Calc - UNITS*.
- **Ranged Calculation** A *ranged calculation* attribute can be used to derive the sum for timephased attributes and *calculated timephased* attributes. Ranged calculation attributes always use MathML.
- **Milestone** A milestone attribute can be used to define dates. A milestone attribute is always dimensioned and can be rolled-up. Status can be assigned to a milestone.
- **Constant** A *constant* attribute can be used in calculations, transitions, or whenever there is a need for a fixed value. A *constant* attribute is defined using the Edit Rates dialog box. A *constant* attribute must have a rate defined; use the Edit Rates dialog box to define a rate.

There are four roll-up types that can be applied to attributes (from the Attributes tab) and attribute dimensions (from the Dimensions tab):

- **Sum** The *sum* roll-up type adds all of an attribute's direct descendent values.

- **Average** The average roll-up type calculates the mean average of an attribute's direct descendent values.
- **Minimum** The *min* roll-up type selects the lowest value or earliest date from an attribute's direct descendent values.
- **Maximum** The *max* roll-up type selects the highest value or latest date from an attribute's direct descendent values.

Roll-up types can be used with the following attribute types: *date, float, integer, milestone, money, percent, ranged calculation, time, and calculated timephased* (all four of them).

Copying an attribute

You can create new attributes by copying existing ones.

To copy an attribute

1. From the application toolbar, click **Setup**, and then select **Customization**.
2. Select the **Attributes Setup** tab.
3. Select the **Attributes** tab.
4. Select the attribute you want to copy and click **Copy**.
5. Make your changes.
6. Click **Save**.

Deleting an attribute

You can remove any attribute that is not being used by an existing work item type, column, or box. Removing an attribute will remove any associated attribute list values.

To delete an attribute

1. From the application toolbar, click **Setup**, and then select **Customization**.
2. Select the **Attributes Setup** tab.
3. Select the **Attributes** tab.
4. Select an attribute.
5. Click **Delete**.

Editing an attribute

Make your changes and then save them. Once created, there are some properties of an attribute that cannot be modified, including its data type, roll-up type, or whether it is dimensioned.

To edit an attribute

1. From the application toolbar, click **Setup**, and then select **Customization**.
2. Select the **Attributes Setup** tab.
3. Select the **Attributes** tab.
4. Select an attribute.
5. Make your changes.

6. Click **Save**.

Viewing an attribute

An attribute can be viewed from the Attributes tab in the **Types Setup** view.

To view an attribute

1. From the application toolbar, click **Setup**, and then select **Customization**.
2. Select the **Attributes Setup** tab.
3. Select the **Attributes** tab.
4. Select an attribute and view its properties.

Calculated Timephased

A calculated timephased attribute (or field) is used to store information that is calculated and that can vary over time. There are several types of calculated timephased attributes: *Timephased Calc - CURRENCY*, *Timephased Calc - FTE*, *Timephased Calc - HOURS*, and *Timephased Calc - UNITS*. Some types of calculated timephased fields include *TotalCost* and *TotalCostCumulative*.

Adding a calculated timephased attribute

Add a new *calculated timephased* attribute. From the **Type** drop-down, select *Timephased Calc - CURRENCY*, *Timephased Calc - FTE*, *Timephased Calc - HOURS*, or *Timephased Calc - UNITS*. A *calculated timephased* attributes can be cumulative, reset, and dimensioned.

To add a calculated timephased attribute

1. From the application toolbar, click **Setup**, and then select **Customization**.
2. Select the **Attributes Setup** tab.
3. Select the **Attributes** tab.
4. Click **New**.
5. Name the new attribute. The system name will be generated automatically.
6. From the **Type** drop-down, select one of the following: *Timephased Calc - CURRENCY*, *Timephased Calc - FTE*, *Timephased Calc - HOURS*, or *Timephased Calc - UNITS*.
7. From the **Rollup Type** drop-down, select *none* (default, no roll-up) or *sum* (to add all of this attribute's direct descendent values). A *calculated timephased* attribute that uses the *sum* roll-up type should only be used with a dependency. An attribute with a rollup type other than *none* will be saved as a global attribute. (A global attribute is required for all work item types and optional for any work type.)
8. Under **Time Phase Attributes**, select **Cumulative** and then select *Calendar Quarter*, *Calendar Year*, *End of Time*, *Fiscal Quarter*, or *Fiscal Year* from the **Reset Interval** drop-down.
9. A *calculated timephased* attribute can be associated with one or more dimensions. Under **Dimensions**, select **Dimensioned** and then choose the dimensions to which the attribute is associated. If you want to use a MathML calculation with the *calculated timephased* attribute, select **Calculated** and then click **Calculation** to open the Calculation Editor dialog box. Add the MathML calculation and click **OK**.
10. Click **Save**.

Constant

A *constant* attribute (or field) is used to store a value that will remain constant.

Adding a constant attribute

Add a new *constant* attribute. From the **Type** drop-down, select *constant*. Choose a display value. A *constant* attribute can be dimensioned.

To add a constant attribute

1. From the application toolbar, click **Setup**, and then select **Customization**.
2. Select the **Attributes Setup** tab.
3. Select the **Attributes** tab.
4. Click **New**.
5. Name the attribute. The system name will be generated automatically.
6. From the **Type** drop-down, select *constant*.
7. From the **Display Value** drop-down, select *float*, *integer*, *money*, or *percent*.
8. A *calculated timephased* attribute can be associated with dimensions. Under **Dimensions**, select **Dimensioned** and then choose the dimensions to which the attribute is associated. If you want to use a MathML calculation with the *calculated timephased* attribute, select **Calculated** and then click **Calculation** to open the Calculation Editor dialog box. Add the MathML calculation and click **OK**.
9. Click **Save**.

Adding an attribute rate

Add an attribute rate for a *Timephased - FTE* or a *Timephased - UNITS* attribute. Click the **Rates** button to open the **Rate Editor** dialog box.

To add an attribute rate

1. From the application toolbar, click **Setup**, and then select **Customization**.
2. Select the **Attributes Setup** tab.
3. Select the **Attributes** tab.
4. In the list of attributes, select an attribute that has an attribute type of *constant*, *Timephased - FTE*, or *Timephased - UNITS*.
5. Under **Time Phase Attributes**, click **Rates**.
6. In the **Edit Rates** dialog box, select **Add**. In the **Rate** column, enter the rate and choose the date upon which the rate is to take effect.
7. Click **Save**.

Deleting an attribute rate

You can delete rates that have been defined for *Timephased - FTE* and *Timephased - UNITS* attributes. Click the **Rates** button to open the **Rate Editor** dialog box.

To delete an attribute rate

1. From the application toolbar, click **Setup**, and then select **Customization**.

2. Select the **Attributes Setup** tab.
3. Select the **Attributes** tab.
4. Select an attribute with a type of *constant*, *Timephased - FTE*, or *Timephased - UNITS*.
5. Click **Rates**.
6. In the **Rate Editor** dialog box, select a rate and click **Delete**.
7. Click **OK**.

Editing an attribute rate

You can modify rates that have been defined for *Timephased - FTE* and *Timephased - UNITS* attributes. Click the **Rates** button to open the **Rate Editor** dialog box.

To edit an attribute rate

1. From the application toolbar, click **Setup**, and then select **Customization**.
2. Select the **Attributes Setup** tab.
3. Select the **Attributes** tab.
4. Select an attribute with a type of *constant*, *Timephased - FTE*, or *Timephased - UNITS*.
5. Under **Time Phase Attributes**, click **Rates**.
6. Click **Save**.

Date

A *date* attribute (or field) is used to store dates, such as *Review Date*, *Task Actual Start*, *Task Actual Finish*, *Task Start*, and *Task Finish*.

Adding a date attribute

Add a new attribute. From the **Type** drop-down, select *date*.

To add a date attribute

1. From the application toolbar, click **Setup**, and then select **Customization**.
2. Select the **Attributes Setup** tab.
3. Select the **Attributes** tab.
4. Click **New**.
5. Name the new attribute. The system name will be generated automatically.
6. From the **Type** drop-down, select *date*.
7. From the **Rollup Type** drop-down, select *none* (default, no roll-up), *min* (selects the lowest value or earliest date from an attribute's direct descendent values), *max* (selects the highest value or latest date from an attribute's direct descendent values), *sum* (to add all of this attribute's direct descendent values). General attributes that use the *sum* roll-up type do not require a dependency. An attribute with a rollup type other than *none* will be saved as a global attribute.
8. Select **Global** to make the attribute a global attribute. A global attribute is required for all work item types and optional for any work type.

9. Select **Searchable** to allow users to search for the attribute in the **Projects** and **Reports** modules.
10. Under **List Attributes**, choose an attribute list to which the attribute will be associated.
11. Under **Calculation**, select **Calculated** and then click **Calculation** to open the **Calculation Editor** dialog box.
12. Calculated attributes can be associated with dimensions (except when using Serena Agile On Demand). Under **Dimensions**, select **Dimensioned** and then choose the dimensions to which the attribute is associated. If you want to use a MathML calculation with the *calculated timephased* attribute, select **Calculated** and then click **Calculation** to open the Calculation Editor dialog box. Add the MathML calculation and click **OK**.
13. Click **Save**.

Flag

A *flag* attribute (or field) is used to indicate yes/no data, such as whether a work item is billable (*Billable*), whether a document or a project is checked in (*Is Checked In*), whether a team member has assigned themselves to a task (*Self Assigned*), or whether a task has been made visible across projects (*Task Externally Visible*).

Adding a flag attribute

Add a new attribute. From the **Type** drop-down, select flag.

To add a flag attribute

1. From the application toolbar, click **Setup**, and then select **Customization**.
2. Select the **Attributes Setup** tab.
3. Select the **Attributes** tab.
4. Click **New**.
5. Name the new attribute. The system name will be generated automatically.
6. From the **Type** drop-down, select *flag*.
7. Select **Global** to make the attribute a global attribute. A global attribute is required for all work item types and optional for any work type.
8. Select **Searchable** to allow users to search for the attribute in the **Projects** and **Reports** modules.
9. Under **Calculation**, select **Calculated** and then click **Calculation** to open the Calculation Editor dialog box.
10. Calculated attributes can be associated with dimensions (except when using Serena Agile On Demand). Under **Dimensions**, select **Dimensioned** and then choose the dimensions to which the attribute is associated. If you want to use a MathML calculation with the *calculated timephased* attribute, select **Calculated** and then click **Calculation** to open the Calculation Editor dialog box. Add the MathML calculation and click **OK**.
11. Click **Save**.

Float

A *float* attribute (or field) is used to store a value that will vary across the projects in which the field is available, such as *Estimated Work*, *Remaining Work*, *Task Duration*, or *Task Remaining Duration*.

Adding a float attribute

Add a new attribute. From the **Type** drop-down, select *float*.

To add a float attribute

1. From the application toolbar, click **Setup**, and then select **Customization**.
2. Select the **Attributes Setup** tab.
3. Select the **Attributes** tab.
4. Click **New**.
5. Name the new attribute. The system name will be generated automatically.
6. From the **Type** drop-down, select *float*.
7. From the **Rollup Type** drop-down, select *none* (default, no roll-up), *min* (selects the lowest value or earliest date from an attribute's direct descendent values), *max* (selects the highest value or latest date from an attribute's direct descendent values), *sum* (to add all of this attribute's direct descendent values). General attributes that use the *sum* roll-up type do not require a dependency. An attribute with a rollup type other than *none* will be saved as a global attribute.
8. Select **Global** to make the attribute a global attribute. A global attribute is required for all work item types and optional for any work type.
9. Select **Searchable** to allow users to search for the attribute in the **Projects** and **Reports** modules.
10. Under **List Attributes**, choose an attribute list to which the attribute will be associated.
11. Under **Calculation**, select **Calculated** and then click **Calculation** to open the **Calculation Editor** dialog box.
12. Calculated attributes can be associated with dimensions (except when using Serena Agile On Demand). Under **Dimensions**, select **Dimensioned** and then choose the dimensions to which the attribute is associated. If you want to use a MathML calculation with the *calculated timephased* attribute, select **Calculated** and then click **Calculation** to open the **Calculation Editor** dialog box. Add the MathML calculation and click **OK**.
13. Click **Save**.

Integer

An *integer* attribute (or field) can be used to store a unique value in the application, such as *Parent ID*, *Resource User ID*, or *Team Owner*. Or it can be used to capture a required value from a list of values, such as *Priority*.

Adding an integer attribute

Add a new attribute. From the **Type** drop-down, select *integer*.

To add an *integer* attribute

1. From the application toolbar, click **Setup**, and then select **Customization**.
2. Select the **Attributes Setup** tab.
3. Select the **Attributes** tab.
4. Click **New**.
5. Name the new attribute. The system name will be generated automatically.
6. From the **Type** drop-down, select *integer*.
7. From the **Rollup Type** drop-down, select *none* (default, no roll-up), *min* (selects the lowest value or earliest date from an attribute's direct descendent values), *max* (selects the highest value or latest date from an attribute's direct descendent values), *sum* (to add all of this attribute's direct descendent values). General attributes that use the *sum* roll-up type do not require a dependency. An attribute with a rollup type other than *none* will be saved as a global attribute.
8. Select **Global** to make the attribute a global attribute. A global attribute is required for all work item types and optional for any work type.
9. Select **Searchable** to allow users to search for the attribute in the **Projects** and **Reports** modules.
10. Under **List Attributes**, choose an attribute list to which the attribute will be associated.
11. Under **Calculation**, select **Calculated** and then click **Calculation** to open the Calculation Editor dialog box.
12. Calculated attributes can be associated with dimensions (except when using Serena Agile On Demand). Under **Dimensions**, select **Dimensioned** and then choose the dimensions to which the attribute is associated. If you want to use a MathML calculation with the *calculated timephased* attribute, select **Calculated** and then click **Calculation** to open the Calculation Editor dialog box. Add the MathML calculation and click **OK**.
13. Click **Save**.

Large Text

A *large text* attribute (or field) is used to store very large strings of characters.

Adding a large text attribute

Add a new attribute. From the **Type** drop-down, select *large text*.

To add a large text attribute

1. From the application toolbar, click **Setup**, and then select **Customization**.
2. Select the **Attributes Setup** tab.
3. Select the **Attributes** tab.
4. Click **New**.
5. Name the new attribute. The system name will be generated automatically.
6. From the **Type** drop-down, select *large text*.

7. Select **Global** to make the attribute a global attribute. A global attribute is required for all work item types and optional for any work type.
8. Click **Save**.

Milestone

A *milestone* attribute (or field) is used to store a specific value.

Adding a milestone attribute

Add a new *milestone* attribute. From the **Type** drop-down, select *milestone*. When a *milestone* is a global attribute, it can be discovered as a search result.

To add a milestone attribute

1. From the application toolbar, click **Setup**, and then select **Customization**.
2. Select the **Attributes Setup** tab.
3. Select the **Attributes** tab.
4. Click **New**.
5. Name the new attribute. The system name will be generated automatically.
6. From the **Type** drop-down, select *milestone*.
7. From the **Rollup Type** drop-down, select *none* (default, no roll-up), *min* (selects the lowest value or earliest date from an attribute's direct descendent values), or *max* (selects the highest value or latest date from an attribute's direct descendent values). An attribute with a rollup type other than *none* will be saved as a global attribute.
8. Select **Global** to make the attribute a global attribute. A global attribute is required for all work item types and optional for any work type.
9. Select **Searchable** to allow users to search for the attribute in the **Projects** and **Reports** modules.
10. Milestone attributes are always part of an attribute list. Under **List Attributes**, choose an attribute list to which the milestone attribute will be associated. Milestone attributes are always dimensioned, but they cannot use MathML calculations.
11. Click **Save**.

Money

A *money* attribute (or field) is used to capture cost data, such as *Task Actual Cost*, *Task Actual Non-Labor Cost*, *Task Total Cost*, or *Project Costs Total*.

Adding a money attribute

Add a new attribute. From the **Type** drop-down, select *money*.

To add a money attribute

1. From the application toolbar, click **Setup**, and then select **Customization**.
2. Select the **Attributes Setup** tab.
3. Select the **Attributes** tab.
4. Click **New**.

5. Name the new attribute. The system name will be generated automatically.
6. From the **Type** drop-down, select *money*.
7. From the **Rollup Type** drop-down, select *none* (default, no roll-up), *min* (selects the lowest value or earliest date from an attribute's direct descendent values), *max* (selects the highest value or latest date from an attribute's direct descendent values), *sum* (to add all of this attribute's direct descendent values). General attributes that use the *sum* roll-up type do not require a dependency. An attribute with a rollup type other than *none* will be saved as a global attribute.
8. Select **Global** to make the attribute a global attribute. A global attribute is required for all work item types and optional for any work type.
9. Select **Searchable** to allow users to search for the attribute in the **Projects** and **Reports** modules.
10. Under **List Attributes**, choose an attribute list to which the attribute will be associated.
11. Under **Calculation**, select **Calculated** and then click **Calculation** to open the Calculation Editor dialog box.
12. Calculated attributes can be associated with dimensions (except when using Serena Agile On Demand). Under **Dimensions**, select **Dimensioned** and then choose the dimensions to which the attribute is associated. If you want to use a MathML calculation with the *calculated timephased* attribute, select **Calculated** and then click **Calculation** to open the Calculation Editor dialog box. Add the MathML calculation and click **OK**.
13. Click **Save**.

Percent

A *percent* attribute (or field) is used to store data that is best represented as a percentage, such as *Estimated Percent Complete*, *Percent Work Complete*, or *Task Percent Complete*.

Adding a percent attribute

Add a new *percent* attribute. From the **Type** drop-down, select *percent*.

To add a percent attribute

1. From the application toolbar, click **Setup**, and then select **Customization**.
2. Select the **Attributes Setup** tab.
3. Select the **Attributes** tab.
4. Click **New**.
5. Name the new attribute. The system name will be generated automatically.
6. From the **Type** drop-down, select *percent*.
7. From the **Rollup Type** drop-down, select *none* (default, no roll-up), *min* (selects the lowest value or earliest date from an attribute's direct descendent values), *max* (selects the highest value or latest date from an attribute's direct descendent values), *sum* (to add all of this attribute's direct descendent values). General attributes that use the *sum* roll-up type do not require a dependency. An attribute with a rollup type other than *none* will be saved as a global attribute.

8. Select **Global** to make the attribute a global attribute. A global attribute is required for all work item types and optional for any work type.
9. Select **Searchable** to allow users to search for the attribute in the **Projects** and **Reports** modules.
10. Under **List Attributes**, choose an attribute list to which the attribute will be associated.
11. Under **Calculation**, select **Calculated** and then click **Calculation** to open the Calculation Editor dialog box.
12. Calculated attributes can be associated with dimensions (except when using Serena Agile On Demand). Under **Dimensions**, select **Dimensioned** and then choose the dimensions to which the attribute is associated. If you want to use a MathML calculation with the *calculated timephased* attribute, select **Calculated** and then click **Calculation** to open the Calculation Editor dialog box. Add the MathML calculation and click **OK**.
13. Click **Save**.

Ranged Calculations

A *ranged calculation* attribute (or field) is used to store data that is calculated for a specified timeperiod.

Adding a ranged calculations attribute

Add a new *ranged calculation* attribute. From the **Type** drop-down, select *ranged calculation*. Select a roll-up type. Choose a display value. A *ranged calculation* attribute can be dimensioned.

To add a ranged calculation attribute

1. From the application toolbar, click **Setup**, and then select **Customization**.
2. Select the **Attributes Setup** tab.
3. Select the **Attributes** tab.
4. Click **New**.
5. Name the new attribute. The system name will be generated automatically.
6. From the **Type** drop-down, select *ranged calculation*.
7. From the **Rollup Type** drop-down, select *none* (default, no roll-up) or *sum* (to add all of this attribute's direct descendent values). Ranged calculation attributes that use the *sum* roll-up type should only be used with a dependency. An attribute with a rollup type other than *none* will be saved as a global attribute.
8. From the **Display Value** drop-down, select *float*, *integer*, *money*, or *percent*.
9. Select **Global** to make the attribute a global attribute. A global attribute is required for all work item types and optional for any work type.
10. Select **Searchable** to allow users in your organization to find this attribute using search.
11. A *calculated timephased* attribute can be associated with dimensions. Under **Dimensions**, select **Dimensioned** and then choose the dimensions to which the attribute is associated. If you want to use a MathML calculation with the *calculated*

timephased attribute, select **Calculated** and then click **Calculation** to open the Calculation Editor dialog box. Add the MathML calculation and click **OK**.

12. Click **Save**.

Resource

A *resource* attribute (or field) is used to identify a specific resource, such as *Development Owner*, *QA Owner*, and *Owner*. The resources that are available from a *resource* field include all of the resources who are currently available in the application.

Adding a resource attribute

Add a new attribute. From the **Type** drop-down, select resource.

To add a resource attribute

1. From the application toolbar, click **Setup**, and then select **Customization**.
2. Select the **Attributes Setup** tab.
3. Select the **Attributes** tab.
4. Click **New**.
5. Name the new attribute. The system name will be generated automatically.
6. From the **Type** drop-down, select *resource*.
7. Select **Global** to make the attribute a global attribute. A global attribute is required for all work item types and optional for any work type.
8. Select **Searchable** to allow users to search for the attribute in the **Projects** and **Reports** modules.
9. Click **Save**.

Text

A *text* attribute (or field) is used to store strings of text, such as *Resource Email*, *Name*, *Project Status*, *Mitigation Strategy*, *Impact*, or *Description*.

Adding a text attribute

Add a new attribute. From the **Type** drop-down, select text.

To add a text attribute

1. From the application toolbar, click **Setup**, and then select **Customization**.
2. Select the **Attributes Setup** tab.
3. Select the **Attributes** tab.
4. Click **New**.
5. Name the new attribute. The system name will be generated automatically.
6. From the **Type** drop-down, select text.
7. Select **Global** to make the attribute a global attribute. A global attribute is required for all work item types and optional for any work type.
8. Select **Searchable** to allow users to search for the attribute in the **Projects** and **Reports** modules.

9. Under **List Attributes**, choose an attribute list to which the attribute will be associated.
10. Under **Calculation**, select **Calculated** and then click **Calculation** to open the Calculation Editor dialog box.
11. Calculated attributes can be associated with dimensions (except when using Serena Agile On Demand). Under **Dimensions**, select **Dimensioned** and then choose the dimensions to which the attribute is associated. If you want to use a MathML calculation with the *calculated timephased* attribute, select **Calculated** and then click **Calculation** to open the Calculation Editor dialog box. Add the MathML calculation and click **OK**.
12. Click **Save**.

Time

A *time* attribute (or field) is used to store the time at which something started or finished, such as *Finish Time* or *Start Time*.

Adding a time attribute

Add a new attribute. From the **Type** drop-down, select time.

To add a time attribute

1. From the application toolbar, click **Setup**, and then select **Customization**.
2. Select the **Attributes Setup** tab.
3. Select the **Attributes** tab.
4. Click **New**.
5. Name the new attribute. The system name will be generated automatically.
6. From the **Type** drop-down, select *time*.
7. From the **Rollup Type** drop-down, select *none* (default, no roll-up), *min* (selects the lowest value or earliest date from an attribute's direct descendent values), *max* (selects the highest value or latest date from an attribute's direct descendent values), *sum* (to add all of this attribute's direct descendent values). General attributes that use the *sum* roll-up type do not require a dependency. An attribute with a rollup type other than *none* will be saved as a global attribute.
8. Select **Global** to make the attribute a global attribute. A global attribute is required for all work item types and optional for any work type.
9. Select **Searchable** to allow users to search for the attribute in the **Projects** and **Reports** modules.
10. Under **Calculation**, select **Calculated** and then click **Calculation** to open the Calculation Editor dialog box.
11. Calculated attributes can be associated with dimensions (except when using Serena Agile On Demand). Under **Dimensions**, select **Dimensioned** and then choose the dimensions to which the attribute is associated. If you want to use a MathML calculation with the *calculated timephased* attribute, select **Calculated** and then click **Calculation** to open the Calculation Editor dialog box. Add the MathML calculation and click **OK**.
12. Click **Save**.

Timephased

A timephased attribute (or field) is used to store information whose value can change over time. There are several types of timephased attributes: Timephased - Currency, Timephased - FTE, Timephased - Hours, Timephased - Nonlabor, and Timephased - Units. Some types of timephased fields include Labor Cost and Work Remaining TPA.

Adding a timephased attribute

Add a new timephased attribute. From the **Type** drop-down, select *Timephased - CURRENCY*, *Timephased - FTE*, *Timephased - NonLabor*, or *Timephased - UNITS*. If you select *Timephased - FTE* or *Timephased - UNITS*, you can assign rates to the attribute. If you select *Timephased - FTE*, you can use it with a labor attribute map.

To add a timephased attribute

1. From the application toolbar, click **Setup**, and then select **Customization**.
2. Select the **Attributes Setup** tab.
3. Select the **Attributes** tab.
4. Click **New**.
5. Under **Attribute Properties**, name the new work item type. The system name will be generated.
6. From the **Type** drop-down, select one of the following: *Timephased - CURRENCY*, *Timephased - FTE*, *Timephased - HOURS*, or *Timephased - UNITS*. Timephased attributes always have a roll-up type of *sum*. Timephased attributes are global by default. Timephased attributes are always dimensioned, but they cannot use MathML calculations.
7. Click **Save**.

Adding a Timephased - FTE attribute for labor attribute mapping

Labor attribute mapping is done using attributes that are based on the *Timephased - FTE* attribute type and have the **Mappable** option selected.

To add a Timephased - FTE attribute for labor attribute mapping

1. From the application toolbar, click **Setup**, and then select **Customization**.
2. Select the **Attributes Setup** tab.
3. Select the **Attributes** tab.
4. Click **New**.
5. Under **Attribute Properties**, name the new work item type. The system name will be generated.
6. From the **Type** drop-down, select *Timephased - FTE*. Timephased attributes always have a roll-up type of *sum*. Timephased attributes are global by default. Timephased attributes are always dimensioned, but they cannot use MathML calculations.
7. Click **Save**.

URL Link

A *URL link* attribute (or field) is used to store a URL value. A *URL link* can also be configured as a URL container.

Adding a URL link attribute

A URL container allows you to display information that resides elsewhere inside of your project workspace. A URL container can point to any URL addressable content, including reports on other internal systems, such as those generated by SAP or by Serena Business Mashups, or content on external systems or the Internet. You can use more than one URL container, sharing them across projects or dedicating them to specific projects and/or specific views within a project.

For each unique URL container that you want to add to a view, you must first create a global *URL link* attribute. Then, in the **View Designer** tab, you can add that URL container to any view on which you want it to be accessible. Set the `IsURLContainer` property to `True`. The URL shown in the URL container is specified by the user at run-time.

To add a URL link attribute

1. From the application toolbar, click **Setup**, and then select **Customization**.
2. Select the **Attributes Setup** tab.
3. Select the **Attributes** tab.
4. Click **New**.
5. Name the new attribute. The system name will be generated automatically.
6. From the **Type** drop-down, select *URL link*.
7. Select **Global** to make the attribute a global attribute. A global attribute is required for all work item types and optional for any work type.
8. Click **Save**.

Calculation Editor

Mathematical Markup Language (MathML) is an XML-based method of rendering mathematical expressions in Web pages. MathML consists of a number of XML tags which can be used to calculate equations. MathML is used for calculated timephase attributes and ranged calculated attributes. MathML calculations must be entered using the proper syntax and must call the XML names of properly formatted attributes.

Each MathML calculation must define the type of calculation that will be performed, the numbers or a variable to be included in the calculation, and a definition of any variable. The elements of a MathML calculation (including required container elements) are as follows:

```
<Calculation>
  <expression>
    <math xmlns:mathml="http://www.w3.org/1998/Math/MathML">
      <lambda>
        <bvar> <ci>a</ci>
        </bvar>
        <bvar> <ci>b</ci>
        </bvar>
        <apply> <plus/> <ci>a</ci> <ci>b</ci>
      </lambda>
    </math>
  </expression>
</Calculation>
```

```

    </apply>
  </lambda>
</math>
</expression>
<RHSVariable name="Total-Cost-Labor.Actual" identifier="a"/>
<RHSVariable name="Total-Cost-Support.Actual" identifier="b"/>
</Calculation>

```

For more information, see the following topics:

- [Basic Calculations \[page 379\]](#)
- [Range Calculations \[page 379\]](#)
- [MathML Examples \[page 381\]](#)

Basic Calculations

There are several standard calculations that can be performed using MathML:

- **Plus** This calculation lets you add values together.
- **Minus** This calculation lets you subtract one values from another.
- **Times** This calculation lets you multiply two values.
- **Divide** This calculation lets you divide one value by another.
- **Nested** Any combination of plus, minus, times, and divide.

Range Calculations

Range calculations can be used to derive the value of a timephased attribute over a defined period. A range calculation is used in a MathML calculation as the value for the name attribute in the RHSVariable element. A range calculation syntax has six components:

- **Range Calculation** A prefix for that range calculation which identifies the entry in the name attribute to be a range calculation.
- **Calculation** The calculation type to be used: SUM, AVG, MIN, MAX, NPV, LIST, or LISTCOUNT.
- **Attribute.Dimension** A timephased attribute, a calculated timephased attribute, or a group name. Using a group name will cause a macro-substitution of all the attributes in the group. The dimension to which the timephased attribute, calculated timephase attribute, or group name belongs must be specified.
- **Units** The unit of measurement: FTE, CURRENCY, HOURS, or UNITS.
- **Timescale** The period in which the range calculation will be used: CALENDAR_MONTH, CALENDAR_QUARTER, CALENDAR_YEAR, FISCAL_QUARTER, or FISCAL_YEAR.
- **Range 1, +n or ,-n.Dimension** The period with which the range calculation begins: TODAY, START, MONTH_START, QUARTER_START, YEAR_START, FISCAL_QUARTER_START, FISCAL_YEAR_START, or a milestone. You may use ,+n to create a range index which increments the starting range by n; you may use ,-n to create a range index which decrements the starting range by n. If the range is a

milestone, then the dimension must also be specified. Milestones and actual dates (such as the actual date of the start of the fiscal year) are inclusive.

- **Range 2, +n or ,-n.Dimension** The period with which the range calculation ends: TODAY, END, MONTH_END, QUARTER_END, YEAR_END, FISCAL_QUARTER_END, FISCAL_YEAR_END, or a milestone. You may use ,+n to create a range index which increments the ending range by n; you may use ,-n to create a range index which decrements the ending range by n. If the range is a milestone, then the dimension must also be specified. Milestones and actual dates (such as the actual date that February ends in a given year) are inclusive.

The syntax is the six components of the range calculation presented (in order), each component contained within a percent symbol (%):

```
%RangeCalculation%Calculation%Attribute.Dimension
%Units%Timescale%Range1%Range2%
```

For example, to find the sum of all timephased attributes in the Labor-Currency group that is part of the Plan dimension with a range from a milestone that is part of the Plan dimension through 12/1/2008, the range calculation would be:

```
%RangeCalculation%SUM%Labor-Currency.Plan%CURRENCY
%CALENDAR_MONTH%StartMS.Plan%12/1/2008%
```

To find the monthly average cost for all timephased attributes in the Server group that is part of the Plan dimension from today through the end of the fiscal year, the range calculation would be:

```
%RangeCalculation%AVG%Server.Plan%CURRENCY
%CALENDAR_MONTH%TODAY%FISCAL_YEAR_END%
```

To find the sum of all increased revenue in the Plan dimension for an entire calendar year and the Plan dimension is defined to begin on 1/1/2007 and end on 1/1/2008, the range calculation would be:

```
%RangeCalculation%SUM%IncreasedRevenue.Plan%CURRENCY
%CALENDAR_YEAR%Start.Plan%Finish.Plan%
```

To use a range index to find the sum of all increased revenue in the Plan dimension for three calendar years (back from the current calendar year) and the Plan dimension is defined to begin on 1/1/2007 and end on 1/1/2008, the range calculation would be:

```
%RangeCalculation%SUM%IncreasedRevenue.Plan%CURRENCY
%YEAR_START%Start.Plan,-2%Finish.Plan%
```

To use a range index to find the sum of all increased revenue in the Plan dimension for the two previous calendar years (back from the current calendar year) and the Plan dimension is defined to begin on 1/1/2007 and end on 1/1/2008, the range calculation would be:

```
%RangeCalculation%SUM%IncreasedRevenue.Plan%CURRENCY
%YEAR_START%Start.Plan,-2%Finish.Plan,-1%
```

MathML Examples

This section contains examples of using MathML to find calculated data, such as total to-date sum, net present value, return on item, internal rate of return, and item timeframe.

For more information, see the following topics:

- [Comparing Dates between Dimensions \[page 381\]](#)
- [Comparing Dates in a List Attribute \[page 381\]](#)
- [Finding a Total To-Date Sum \[page 382\]](#)
- [Finding an Item Timeframe \[page 383\]](#)
- [Finding Internal Rate of Return \[page 383\]](#)
- [Finding Net Present Value \[page 383\]](#)
- [Finding Return on Investment \[page 384\]](#)

Comparing Dates between Dimensions

You can use MathML to compare dates in dimensions. For example:

```
<?xml version="1.0" encoding="utf-16"?>
<Calculation>
  <Expression>
    <math xmlns:mathml="http://www.w3.org/1998/Math/MathML">
      <lambda>
        <bvar>
          <ci>x</ci>
          <ci>y</ci>
        </bvar>
        <apply>
          <minus></minus>
          <ci>x</ci>
          <ci>y</ci>
        </apply>
      </lambda>
    </math>
  </Expression>
  <RHSVariable name="StartMS.Actual" identifier="x"></RHSVariable>
  <RHSVariable name="StartMS.Plan" identifier="y"></RHSVariable>
</Calculation>
```

Comparing Dates in a List Attribute

You can compare dates in a list attribute. For example, comparing a status date, its various list items, and across dimensions. If you had a list attribute with list items of Status.Red, Status.Yellow, and Status.Green, and if you wanted to see their related dates as they exist in the Actual and Plan dimensions, you could use the MathML piecewise element to display the attribute values. For example:

```
<?xml version="1.0" encoding="utf-16"?>
<Calculation>
  <Expression>
```

```

<math xmlns:mathml="http://www.w3.org/1998/Math/MathML">
  <lambda>
    <bvar>
      <ci>x</ci>
      <ci>y</ci>
    </bvar>
    <piecewise>
      <piece>
        <ci>z1</ci>
        <apply>
          <gt;</gt>
          <apply>
            <minus></minus>
            <ci>x</ci>
            <ci>y</ci>
          </apply>
          <cn>30</cn>
        </apply>
      </piece>
      <piece>
        <ci>z2</ci>
        <apply>
          <gt;</gt>
          <apply>
            <minus></minus>
            <ci>x</ci>
            <ci>y</ci>
          </apply>
          <cn>0</cn>
        </apply>
      </piece>
      <otherwise>
        <ci>z3</ci>
      </otherwise>
    </piecewise>
  </lambda>
</math>
</Expression>
<RHSVariable name="StartMS.Actual" identifier="x"></RHSVariable>
<RHSVariable name="StartMS.Plan" identifier="y"></RHSVariable>
<RHSVariable name="%ListItem%Status.Red%" identifier="z1"></RHSVariable>
<RHSVariable name="%ListItem%Status.Yellow%" identifier="z2"></RHSVariable>
<RHSVariable name="%ListItem%Status.Green%" identifier="z3"></RHSVariable>
</Calculation>

```

Finding a Total To-Date Sum

You can use MathML to find a total, to-date sum of a timephased attribute by using the following syntax:

```

<Calculation>
  <expression>
    <math xmlns:mathml="http://www.w3.org/1998/Math/MathML">
      <lambda>

```

```

    <bvar>
      <ci>a</ci>
    </bvar>
  <apply>
    <plus />
    <ci>a</ci>
  </apply>
</lambda>
</math>
</expression>
<RHSVariable name="%RangeCalculation%SUM%Cost-Labor-Total%CURRENCY
  %CALENDAR_YEAR%Start%Today" identifier="a" />
</Calculation>

```

Finding an Item Timeframe

You can use MathML to find an item timeframe by using the following syntax:

```

<Calculation>
  <expression>
    <math xmlns:mathml="http://www.w3.org/1998/Math/MathML">
      <lambda>
        <bvar>
          <ci>a</ci>
        </bvar>
        <apply>
          <plus />
          <ci>a</ci>
        </apply>
      </lambda>
    </math>
  </expression>
  <RHSVariable name="%RangeCalculation%SUM%Cost-Exp-Total%CURRENCY
    %CALENDAR_YEAR%Start%End" identifier="a" />
</Calculation>

```

Finding Internal Rate of Return

You can use MathML to find internal rate of return by using the following syntax:

```

<Calculation>
  <expression className="PacificEdgeSoftware.Data.Calculations.Programmatic
    .InternalRateOfReturnWithGuess30,SerenaSoftware.Data" />
  <RHSVariable name="cMonthly-Discount-Rate" identifier="rate" />
  <RHSVariable name="%RangeCalculation%NPV%Cost-Total%CURRENCY%CALENDAR_MONTH
    %StartMS%END%" identifier="costs" />
  <RHSVariable name="%RangeCalculation%NPV%Benefits%CURRENCY%CALENDAR_MONTH
    %StartMS%END%" identifier="benefits" />
</Calculation>

```

Finding Net Present Value

You can use MathML to find net present value by using the following syntax:

```
<Calculation>
  <expression className="PacificEdgeSoftware.Data.Calculations
    .Programmatic.NetPresentValueFixedRate30,SerenaSoftware.Data" />
  <RHSVariable name="cMonthly-Discount-Rate" identifier="rate" />
  <RHSVariable name="%RangeCalculation%NPV%Cost-Total%CURRENCY
    %CALENDAR_MONTH%StartMS%END%" identifier="costs" />
  <RHSVariable name="%RangeCalculation%NPV%Benefits%CURRENCY
    %CALENDAR_MONTH%StartMS%END%" identifier="benefits" />
</Calculation>
```

Finding Return on Investment

You can use MathML to find return on investment by using the following syntax:

```
<Calculation>
  <expression className="PacificEdgeSoftware.Data.Calculations.Programmatic
    .ROI,SerenaSoftware.Data"/>
  <RHSVariable name="cMonthly-Discount-Rate" identifier="rate" />
  <RHSVariable name="%RangeCalculation%NPV%Benefits-Net%CURRENCY
    %CALENDAR_MONTH%StartMS%END%" identifier="netcost" />
  <RHSVariable name="%RangeCalculation%NPV%Cost-Total%CURRENCY
    %CALENDAR_MONTH%StartMS%END%" identifier="totalcosts" />
</Calculation>
```

Dimensions

Dimensions are data sets that are used to represent certain situations or goals. Dimensions enable users to group data which represents these situations or goals within a single time period, such as a project plan, a target, a budget, or actuals. There are two system dimensions: **Actual** and **Plan**. System dimensions can be renamed, but they must be present:

- **Actual** This dimension contains values that represent the actual amounts of dimensioned attributes. For example, posted timesheet time is included in the **Actual** dimension for assignments.
- **Plan** This dimension is used for more detailed project planning. Values in the plan dimension reflect a more detailed knowledge of the program and project execution requirements. The **Plan** dimension includes task plans for a task based work item, such as projects, as well as allocations for an activity-based work item.

Dimensions can be added to some (but not all) of the views that are available in the **Projects** and **Reports** modules. Two types of dimensions are included:

- **Roll-up** In a roll-up dimension, a parent work item displays data that is rolled-up from a child work item. Rolled-up data is read-only in the parent work item. When data in the child work item changes, data in the parent work item changes too. If a child work item becomes a parent work item, original data in the child data is replaced by rolled-up data from a child work item. Most dimensions are roll-up dimensions.
- **Static** In a static dimension, data is not rolled-up and there are no calculations. Data will be editable at any level of the parent/child hierarchy. Static dimensions are useful for top-down planning.

All security roles are given permission to view a dimension's work item data. You can prevent all users in your organization from being able to view a dimension's work item data by locking the dimension. Permission to edit a dimension's work item data is granted on a per-security role basis for each dimension. To give permission to edit a dimension's work item data, select the check box next to the security role. Permission to edit a dimension's work item data is given to all security groups for a dimension that comes pre-configured.

Note: This tab is not available when using Serena Agile On Demand.

Adding a dimension

Add a dimension and pick its type. If you want to prevent users (regardless of their security roles) from editing work item data in the dimension, then select **Locked**. If you want the dimension to be available as a baseline option in the **Tasks** tab, then select **Baseline**. If you want to allow users to edit work item data in a dimension, select the security roles which contain these users.

To add a dimension

1. From the application toolbar, click **Setup**, and then select **Customization**.
2. Select the **Attributes Setup** tab.
3. Select the **Dimensions** tab.
4. Click **New**.
5. Under **Dimension Properties**, enter a name. The system name will be generated.
6. If you want work item data in the dimension to be view-only, select **Locked**.
7. If you want the dimension to be available for baselines, select **Baseline**.
8. For each of the security roles in your organization, check the ones that will have edit permissions to this dimension when it is available in any work item to which they have access.
9. Click **Save**.

Allowing users to edit work item data in a dimension

For each dimension, you must specify the security groups (and the users who belong to them) that will be allowed to edit work item data in a dimension. Simply check the box next to the security role and save the dimension.

To allow users to edit work item data in a dimension

1. From the application toolbar, click **Setup**, and then select **Customization**.
2. Select the **Attributes Setup** tab.
3. Select the **Dimensions** tab.
4. Choose the dimensions from the list on the left, then select the roles that should be able to edit data in the dimension from the **Security Roles** box.
5. Click **Save**.

Deleting a dimension

Pick a dimension and delete it. This could cause a lot of data (related to that dimension) to be deleted as well, so be sure this is what you really want to do.

To delete a dimension

1. From the application toolbar, click **Setup**, and then select **Customization**.
2. Select the **Attributes Setup** tab.
3. Select the **Investment Request Pages** tab.
4. Select a dimension.
5. Click **Delete**.

Editing a dimension

Make your changes and then save them.

To edit a dimension

1. From the application toolbar, click **Setup**, and then select **Customization**.
2. Select the **Attributes Setup** tab.
3. Select the **Dimensions** tab.
4. Select a dimension.
5. Make your changes.
6. Click **Save**.

Preventing all users in an organization from editing work item data in a dimension

Locking a dimension will prevent all users in your organization from being able to view work item data in a dimension. All dimensions are unlocked by default. In order for users to edit work item data in a dimension, they must also be able to view work item data in a dimension.

To prevent users from editing work item data in a dimension

1. From the application toolbar, click **Setup**, and then select **Customization**.
2. Select the **Attributes Setup** tab.
3. Select the **Dimensions** tab.
4. Select a dimension.
5. Select **Locked** to prevent all users from being able to edit work item data in this dimension or de-select the security roles to prevent specific security roles from being able to edit work item data in this dimension.
6. Click **Save**.

Viewing a dimension

A dimension can be viewed from the Dimensions tab in the **Attributes Setup** tab.

To view a dimension

1. From the application toolbar, click **Setup**, and then select **Customization**.
2. Select the **Attributes Setup** tab.
3. Select the **Dimensions** tab.
4. Select a dimension.

Lists

Attributes can be configured to have drop-down lists. If an attribute has a drop-down list, you can define the values contained within it. A list work item can be named and can have icons associated with it.

Adding an attribute list

Add a new attribute list. Once added, it will be available to choose from the **List** drop-down in the **List Attributes** section of the **Attributes** tab.

To add an attribute list

1. From the application toolbar, click **Setup**, and then select **Customization**.
2. Select the **Attributes Setup** tab.
3. Select the **Attributes** tab.
4. In the list of attributes, select an attribute that has an attribute type of *constant*, *Timephased - FTE*, or *Timephased - UNITS*.
5. Under **Time Phase Attributes**, click **Rates**.
6. In the **Edit Rates** dialog box, select **Add**. In the Rate column, enter the rate and choose the date upon which the rate is to take effect.
7. Click **Save**.

Deleting an attribute list

You can remove any attribute list that is not being used by an existing attribute. An attribute list's values will be removed when the attribute list is removed.

To delete an attribute list

1. From the application toolbar, click **Setup**, and then select **Customization**.
2. Select the **Attributes Setup** tab.
3. Select the **Lists** tab.
4. Select an attribute list.
5. Click **Delete**.

Edit an attribute list

Make your changes and then save them. Once created, you cannot modify an attribute list's list type.

To edit an attribute list

1. From the application toolbar, click **Setup**, and then select **Customization**.
2. Select the **Attributes Setup** tab.
3. Select the **Lists** tab.
4. Make your changes.
5. Click **Save**.

Viewing an attribute list

An attribute list can be viewed from the Lists tab in the **Attributes Setup** tab.

To view an attribute list

1. From the application toolbar, click **Setup**, and then select **Customization**.
2. Select the **Attributes Setup** tab.
3. Select the **Lists** tab.
4. Under **Lists**, select an attribute list.

Scorecard and Notesgrid

Scorecard and notesgrid attributes can be assigned to the layout of the **Summary** tab (and custom **Summary** tabs) in the **View Designer** tab. Scorecard and notesgrid attributes are pre-configured with XML and XSL templates that can be modified to meet your organization's needs. When you add a scorecard or notesgrid attribute to a view, it will be displayed as a tab in a view that is available from the **Projects** module. Scorecard and notesgrid attributes can be global attributes.

For more information, see the following topics:

- [Notesgrid \[page 388\]](#)
- [Scorecard \[page 389\]](#)

Notesgrid

A notesgrid is a simple list of work items, issues, and so on, that can be configured to allow team members to track and manage them outside of your team's normal workflow. Anything that is tracked using a notesgrid is not available for tracking within a backlog, a task plan, a datasheet, or a custom report.

Adding a notesgrid attribute

Start with the pre-configured template. Modify the layout XML and layout XSL the way you want it. If you make the notesgrid attribute searchable, the search will look for only all values in the notesgrid.

To add a notesgrid attribute

1. From the application toolbar, click **Setup**, and then select **Customization**.
2. Select the **Attributes Setup** tab.
3. Select the **Scorecard/Notes Grid** tab.
4. Choose **Notes Grid** from the drop-down list.
5. Click **New**.
6. Under **Properties**, enter a name and a description. The system name will be generated. The default label is what the notesgrid will be named in summary views.
7. If you want the notesgrid attribute to be global, select **Global**. A global attribute is required for all work item types and optional for any work type.
8. For each of the configuration options (**Layout** and **Layout XSL**), edit the XML.
9. Click **Save**.

Deleting a notesgrid attribute

If your organization is not using a notesgrid attribute, you can remove it. Even when it is assigned to a **Summary** tab.

To delete a notesgrid attribute

1. From the application toolbar, click **Setup**, and then select **Customization**.
2. Select the **Attributes Setup** tab.
3. Select the **Scorecard/Notes Grid** tab.
4. Select **Notes Grid** from the list.
5. Select a notesgrid attribute.
6. Click **Delete**.

Editing a notesgrid attribute

Make your changes and then save them.

To edit a notesgrid attribute

1. From the application toolbar, click **Setup**, and then select **Customization**.
2. Select the **Attributes Setup** tab.
3. Select the **Scorecard/Notes Grid** tab.
4. From the drop-down list, select **Notes Grid**.
5. Select a notesgrid attribute.
6. Make your changes.
7. Click **Save**.

Viewing a notesgrid attribute

A notesgrid attribute can be viewed from the Scorecard/Notes Grid tab in the **Attributes Setup** tab.

To view a notesgrid attribute

1. From the application toolbar, click **Setup**, and then select **Customization**.
2. Select the **Attributes Setup** tab.
3. Select the **Scorecard/Notes Grid** tab.
4. Select **Notes Grid** from the drop-down.
5. Select a notesgrid attribute.

Scorecard

A scorecard is a way of comparing data so that a simple identifier can be used, such as a spotlight (red, yellow, green) to indicate status.

Adding a scorecard attribute

Start with the pre-configured template. Modify the default data XML, footnote XML, footnote XSL, layout XML, and layout XSL the way you want it. If you make the scorecard attribute searchable, the search will look only for the total score.

To add a scorecard attribute

1. From the application toolbar, click **Setup**, and then select **Customization**.
2. Select the **Attributes Setup** tab.
3. Select the **Scorecard/Notes Grid** tab.
4. Choose **Scorecard** from the drop-down list.
5. Click **New**.
6. Under **Properties**, enter a name and a description. The system name will be generated. The default label is what the scorecard will be named in summary views.
7. If you want the scorecard to be a global attribute, select **Global**. A global attribute is required for all work item types and optional for any work type.
8. If you want allow users to search for the scorecard, select **Searchable**.
9. For each of the configuration options (**Default Data**, **Footnote**, **Footnote XSL**, **Layout**, and **Layout XSL**), edit the XML.
10. Click **Save**.

Deleting a scorecard attribute

If your organization is not using a scorecard attribute, you can remove it. Even when it is assigned to a **Summary** tab.

To delete a scorecard attribute

1. From the application toolbar, click **Setup**, and then select **Customization**.
2. Select the **Attributes Setup** tab.
3. Select the **Scorecard/Notes Grid** tab.
4. Select **Scorecard** from the list.
5. Select a scorecard attribute.
6. Click **Delete**.

Editing a scorecard attribute

Make your changes and then save them.

To edit a scorecard attribute

1. From the application toolbar, click **Setup**, and then select **Customization**.
2. Select the **Attributes Setup** tab.
3. Select the **Scorecard/Notes Grid** tab.
4. Select **Scorecard** from the list.
5. Select a scorecard attribute.
6. Make your changes.
7. Click **Save**.

Viewing a scorecard attribute

Scorecard attributes can be viewed from the **Scorecard/Notes Grid** tab in the **Attributes Setup** tab.

To view a scorecard attribute

1. From the application toolbar, click **Setup**, and then select **Customization**.
2. Select the **Attributes Setup** tab.
3. Select the **Scorecard/Notes Grid** tab.
4. Select **Scorecard** from the drop-down.

Split Attributes

Split attributes are created from timephased attributes. Split attributes can be used to help your organization track the individual components of a timephased attribute and they roll-up their data to the parent timephased attribute. For example, your organization may want to track the number of sales leads generated for a specific time period. Using a split attribute can provide a way of tracking Internet, mail, and telephone leads individually, but also as part of a single timephased attribute. Split attributes cannot be created for *calculated timephased* attributes.

Note: This view is not available when using Serena Agile On Demand.

Adding a split attribute

Add a split attribute for a timephased attribute. If the timephased attribute already has data, this will cause that data to be replaced by the rolled-up data from any split attribute that is associated with the parent attribute.

To add a split attribute

1. From the application toolbar, click **Setup**, and then select **Customization**.
2. Select the **Attributes Setup** tab.
3. Select the **Split Attributes** tab.
4. Select an attribute.
5. Click **New**.
6. Name the split attribute. The system name will be generated after the split attribute is saved.
7. Click **Save**.

Deleting a split attribute

You can delete a split attribute, but you should be sure they are not being used and that they do not contain data before you delete them. For example, deleting a split attribute which contains data that is being used in the **Financials** tab will permanently delete that data and it may affect the layout of the **Financials** tab itself.

To delete a split attribute

1. From the application toolbar, click **Setup**, and then select **Customization**.
2. Select the **Attributes Setup** tab.
3. Select the **Split Attributes** tab.

4. Select an attribute.
5. Under **Splits**, select an attribute split.
6. Click **Delete**.

Editing a split attribute

Make your changes and then save them.

To edit a split attribute

1. From the application toolbar, click **Setup**, and then select **Customization**.
2. Select the **Attributes Setup** tab.
3. Select the **Split Attributes** tab.
4. Select a split attribute.
5. Make your changes.
6. Click **Save**.

Viewing a split attribute

Split attributes can be viewed from the Split Attributes tab in the **Attributes Setup** tab.

To view a split attribute

1. From the application toolbar, click **Setup**, and then select **Customization**.
2. Select the **Attributes Setup** tab.
3. Select the **Split Attributes** tab.
4. Select the timephased attribute containing the attribute split you want to remove in the **Attributes** list.
5. Select the split attribute whose details you want to view in the **Splits** list.

Type System

The type system is a collection of system configuration data that helps define the fundamental elements of your deployment, including work item types, attributes, dimensions, financials, workflow transitions, and so on. The type system represents out-of-the-box configuration elements plus custom configurations that your organization may have made. The type system is imported and exported from as an XML-based configuration template.

The type system is a template that stores configuration data. When your organization purchased this application, they may have also purchased a template containing configuration data. Importing a template populates a database with all of that template's configuration data. You can export the type system to create a back-up or to configure multiple databases with the same configuration.

Exporting a type system

Export the type system to use in a different database or to save a backup of the customized elements within your current configuration. If you are creating another database and you want to use configuration data from an existing database, you can export the type system and then import it into the new database. You can also use the type system to create a backup of your custom configuration settings. The following information is not included as part of a type system export: Microsoft Project settings,

labor attribute mapping details, timesheet settings, user synchronization settings, changes made from the **Module Designer**, the order in which views appear, a work item request page, or anything that is included out-of-the-box.

To export a type system

1. From the application toolbar, click **Setup**, and then select **Customization**.
2. Select the **Types Setup** tab.
3. In the application tool bar, click **Export Type System**.
4. Save the file.

Importing a type system

Import the type system to apply configuration settings from a different database to a new database, or to import a type system that you have saved as a backup for the type system your organization is currently using. When importing the type system, you can import custom forms created in the **View Designer** tab.

To import a type system

1. From the application toolbar, click **Setup**, and then select **Customization**.
2. Select the **Types Setup** tab.
3. In the application tool bar, click **Import Type System**.
4. In the **Type System Import** dialog box, browse to the location where the type system XML file is located and click **OK**.

Environment Settings

You can use the **Environment Settings** tab to manage system settings, such as documents management, workflow, and reporting server settings or to configure system notifications.

For more information, see the following topics:

- [System Settings \[page 393\]](#)
- [Notification Settings \[page 395\]](#)
- [Integration Settings \[page 397\]](#)

System Settings

This tab lets you configure documents manager server, workflow, and reporting server settings. A documents manager server is used to point to the Documents Manager. A reporting server is used to point to a server running Microsoft SQL Server 2005 Reporting Services. Workflow settings determine whether workflow transitions are done using the Workflow tab in the **Projects** module and the time period used for workflow transition audits.

Configuring documents management

Before users can save documents in the **Documents** tab of the **Projects** module, you must enable documents management.

To configure documents management

1. From the application toolbar, click **Setup**, and then select **Customization**.

2. Select the **Environment Settings** tab.
3. Select the **System Settings** tab.
4. Under **Documents Settings**, enter the name of the server running **Documents Manager** and the database into which documents will be saved.
5. Click **Save**.

Configuring reporting

Before users can use out-of-the-box and/or custom reports, you must configure a server that is running Microsoft SQL Server 2000 Reporting Services or Microsoft SQL Server 2005 Reporting Services.

To configure reporting

1. From the application toolbar, click **Setup**, and then select **Customization**.
2. Select the **Environment Settings** tab.
3. Select the **System Settings** tab.
4. Under **Reporting Settings**, enter the HTTP location of the server running Microsoft SQL Server 2005 Reporting Services (for example, `http://serverName/ReportServer`), the service path for the location in which the reporting service is installed (for example, `/ReportService.asmx`), and the root path to the folder which will contain the reports (for example, `/PESReports`).
5. Click **Save**. You may need to run IISRESET to pick up the connection.

Configuring workflow auditing

Before users can view workflow audits, you must configure workflow auditing.

To configure workflow auditing

1. From the application toolbar, click **Setup**, and then select **Customization**.
2. Select the **Environment Settings** tab.
3. Select the **System Settings** tab.
4. From the **Workflow Audit Bucket Size** drop-down, select an option: *Calendar Month*, *Calendar Quarter*, *Calendar Year*, *Fiscal Month*, *Fiscal Quarter*, *Fiscal Year*, or *Selected Timeframe*. This time period is used to determine the date range for a workflow transition audit.
5. Click **Save**.

Disabling workflow transitions

Workflow transitions are enabled by default and help your organization ensure that work item type changes are done using established criteria and an approval process before they can be finished. You can disable workflow transitions in the Workflow tab, which will allow users with permission to edit items in the **Projects** module to change a work item type directly.

To disable workflow transitions

1. From the application toolbar, click **Setup**, and then select **Customization**.
2. Select the **Environment Settings** tab.
3. Select the **System Settings** tab.

4. Under **Workflow Settings**, select **Allow Investment Type Changes Without Workflow**.
5. Click **Save**.

Viewing workflow and reporting settings

System settings for documents management, workflow settings, and reporting can be viewed from the **System Settings** tab in the **Environment Settings** tab.

To view documents, workflow, and reporting settings

1. From the application toolbar, click **Setup**, and then select **Customization**.
2. Select the **System Settings** tab.

Notification Settings

The Notification Settings tab lets you configure system notifications. Before system notifications can be generated, you must first enable a messaging queue on the MSMQ server that will host the notifications. This queue should be configured as a remote public queue (notifications cannot use remote private queues). You can configure the application so that users will only see their notifications in the application (and not their inbox) or so that users will see their notifications in the application (and in their inbox).

Notifications allow members of your organization to stay informed of changes made to items. Notifications can be displayed to users or they can be sent to users via email. There are four notification types:

- **Workflow** These notifications report the status of workflow transitions in the Workflow tab of the **Projects** module.
- **System** These notifications are pre-set. System notifications are available for many events associated with the lifecycle of a work item.
- **User** These notifications are defined by individual users in the **My Notifications** tab of the **Tools** module.
- **Report** Report notifications alert administrators when scheduled services have been completed.

There are two delivery methods for notifications:

- **Internal** Internal notifications are generated and sent by default. Internal notifications are displayed in the navigation toolbar as a notification alert. A notification alert indicates how many notifications a user has. Clicking the notification alert will open the Notifications view, where users can view and work with their notifications.
- **Email** Email notifications can be sent if that preference is configured. When email notifications are enabled, the application will send an email notification along with the internal notification. Email notifications can only be sent to users who have an email address configured. (Email addresses are configured from the **Security** tab in the **System Settings** module.) Team members can be allowed to disable their email notifications.

Allowing users to disable email notifications

You can allow users in your organization to disable email notifications. When this option is enabled, team members will be able to choose the **Receive Notifications as Emails** option when they manage their personal settings.

To allow users to disable their email notifications

1. From the application toolbar, click **Setup**, and then select **Customization**.
2. Select the **Environment Settings** tab.
3. Select the **Notification Settings** tab.
4. Select **Allow Users to Disable their Email Notifications**.
5. Click **Save**.

Configuring notifications

Before users can receive notifications, you must enable a notification queue that is hosted on messaging sever that supports MSMQ. The notification queue should be a remote public queue.

To configure notifications

1. From the application toolbar, click **Setup**, and then select **Customization**.
2. Select the **Environment Settings** tab.
3. Select the **Notification Settings** tab.
4. Enter the name of a server which is hosting email notification queue, the name of the queue, and the default locale.
5. Click **Save**.

Disabling email notifications

Application notifications (system notifications) cannot be disabled, but it is possible to enable and disable email notifications.

To disable email notifications

1. From the application toolbar, click **Setup**, and then select **Customization**.
2. Select the **Environment Settings** tab.
3. Select the **Notification Settings** tab.
4. De-select **Enable Email Notifications**.
5. Click **Save**.

Enabling email notifications

After a messaging server and a notification queue have been configured, you can enable email notifications. To do this, you will need to identify the SMTP server address, the port number, specify the default sender, and the default email address from which notifications will be sent.

To enable email notifications

1. From the application toolbar, click **Setup**, and then select **Customization**.
2. Select the **Environment Settings** tab.
3. Select the **Notification Settings** tab.
4. Select **Enable Email Notifications**. Only users who have an email address entered and the **Send Email Notifications** option selected from the **Users** tab of the **Security** tab can receive email notifications.

5. Enter the name from whom the email notification is sent.
6. Enter the email address from whom the email notification is sent.
7. Enter the address for the SMTP server through which an email notification is sent.
8. Enter the port through which an email notification is sent.
9. Click **Save**.

Enabling SMTP authentication

SMTP authentication can be used to validate the account used to send email notifications to users.

To enable SMTP authentication

1. From the application toolbar, click **Setup**, and then select **Customization**.
2. Select the **Environment Settings** tab.
3. Select the **Notification Settings** tab.
4. Select **Use SMTP Authentication**.
5. Enter a user name and password (twice, for verification).
6. Click **Save**.

Viewing notification settings

Notification settings can be viewed from the **Notification Settings** tab in the **Environment Settings** tab.

To view notification settings

1. From the application toolbar, click **Setup**, and then select **Customization**.
2. Select the **Environment Settings** tab.
3. Select the **Notification Settings** tab.

Integration Settings

This tab lets you configure settings used to specify the user name and password for the account that is used to authenticate with Serena Business Mashups. First, enable authentication. Then enter the user name and password (twice). And then click **Save**.

Financials Setup

You can use the **Financials Setup** tab to design and configure how the **Financials** tab will appear to users in your organization while they are working in the **Projects** module.

Adding a group

The **Financials** tab helps display and maintain timephased allocation of costs and benefits to items.

To add a group

1. From the application toolbar, click **Setup**, and then select **Customization**.
2. Select the **Financials Setup** tab.
3. Click the **Groups** tab.

4. Click **New**.
5. Name the new group. The system name will be generated automatically.
6. Under **Elements in Group**, select *Available Attributes* from the drop-down list to display a list of timephased attributes, attribute splits, and *constant* attributes; select *Available Groups* to display a list of available groups of timephased attributes, attribute splits, and *constant* attributes. Move the attributes or attribute groups you want to add to the group to the right column.
7. For some attributes or attribute groups, under **Display Properties**, you may be able to update its label and/or display unit.
8. Click **New**.

Designing the layout

Design a separate view layout for each work item type for the **Financials** tab. You can create customized tabs for each work item type, and define the timephased attributes, attribute splits, constant attributes, and groups of attributes contained within each tab.

To design the layout

1. From the application toolbar, click **Setup**, and then select **Customization**.
2. Select the **Financials** tab.
3. On the **Layout** tab, from the **Investment Type** drop-down, select a work item type.
4. Under **Tabs**, add, remove, and order tabs in the **Financials** tab.
5. Under **Viewable**, select the dimensions that will be available for this tab in the **Financials** tab.
6. Under **Elements in Group**, select *Available Attributes* from the drop-down list to display a list of timephased attributes, attribute splits, and *constant* attributes; select *Available Groups* to display a list of available groups of timephased attributes, attribute splits, and *constant* attributes. Move the attributes or attribute groups you want to add to the group to the right column.
7. For some attributes or attribute groups, under **Display Properties**, you may be able to update its label and/or display unit.
8. Click **Save**.

Editing the layout

You can modify the layout of the tabs in the **Financials** tab.

To edit the layout

1. From the application toolbar, click **Setup**, and then select **Customization**.
2. Select the **Financials** tab.
3. On the **Layout** tab, from the **Investment Type** drop-down, select a work item type.
4. Under **Tabs**, add, remove, and order tabs in the **Financials** tab.
5. Under **Viewable**, select the dimensions that will be available for this tab in the **Financials** tab.

6. Under **Elements in Group**, select *Available Attributes* from the drop-down list to display a list of timephased attributes, attribute splits, and *constant* attributes; select *Available Groups* to display a list of available groups of timephased attributes, attribute splits, and *constant* attributes. Move the attributes or attribute groups you want to add to the group to the right column.
7. For some attributes or attribute groups, under **Display Properties**, you may be able to update its label and/or display unit.
8. Click **Save**.

Types Setup

A work item is what users in your organization use to create, plan, manage, and analyze your projects. They can be assets, programs, projects, or portfolios. They can be the stages in a lifecycle, such as a request, an approval, or a rejection. They can be the phases in an Agile lifecycle, such as projects, releases, and sprints. They can have dependencies on other items.

You can use the **Types Setup** tab to manage the work item types your organization uses, their dependencies (if any), and how users in your organization can submit requests for new items.

For more information, see the following topics:

- [Work Item Types \[page 399\]](#)
- [Dependency Types \[page 403\]](#)
- [Work Item Request Pages \[page 406\]](#)

Work Item Types

Use the **Investment Type** tab to add, manage, and maintain all of the work item types that are used by your organization. Only active work item types can be used. Only work item types flagged as creatable will be available to users when they create new items; this option can help your organization establish an effective process around how items are created, and then transitioned into other work item types after they have been approved.

The Investment Type tab contains five tabs: **Properties**, **Attributes**, **Containment**, **Set Views**, and **Breakeven Attributes**.

The **Properties** tab lets you enter information that is unique to that investment type, such as its name, an associated icon, and color, and global information that is available to this work item type when it is used in your organization's portfolio, such as its work type, whether resources can self-allocate or self-assign themselves to this item, and so on. The **Properties** tab contains the following elements:

- **Name** The name of the work item type.
- **System Name** The XML name for the work item type; the system name is generated automatically.
- **Icon** The icon used to represent the work item type.
- **Color** The color used to represent the work item type when it appears in the Timeline view or in a resource's timesheet (when they have enabled timesheet colors).

- **Active** Indicates whether the work item type is an active work item type. Only active work item types can be selected from a list that contains work item types.
- **Creatable** Indicates whether the work item type can be chosen while creating new items in the **Projects** module or when working with a work item request page. Use this option in conjunction with workflow transitions to limit the types of items users can initially create (and from which it can be transitioned to other work item types).
- **None** Default. This option prevents resource allocations and resource assignments for this work item type. A work item type that is created from this work item type is often used as a container for other work item types.
- **Task-based** A task-based work item type is one where resources can be assigned or allocated to individual tasks or a work item and where time can be tracked against an assignment. An allocation can be inherited. A resource may be allowed to self-allocate or self-assign themselves to a task or to a work item. A task, once completed, can be locked by project managers for time tracking. Once saved, this option cannot be changed later.
- **Activity-based** An activity-based work item type is one where time can be tracked against an allocation. An allocation can be inherited. A resource may be allowed to self-allocate themselves to a task or to a work item. Once saved, this option cannot be changed later.
- **Inherit Allocations** Indicates whether a task-based or activity-based work item type can have an allocation made directly to it. When this option is selected, the work item type will inherit a resource allocation from the first parent item type in the hierarchy to which an allocation may be made. Time may still be entered, but that time will be applied to the inherited allocation.
- **Timesheet Disabled** Indicates whether timesheets are unavailable for this work item type. This option removes all timesheet links and all timesheet related actions, such as **Pull in Timesheet Actuals**. This option is available only for task-based and activity-based items.
- **Lock Completed Assignments** Indicates whether users will be able to submit time against an assignment after that assignment has been locked by a project manager. This is a global setting for any work item of this type; once enabled, this setting can be managed individually from the **Investments Properties** dialog box.
- **Self Allocate** Indicates whether a resource can allocate themselves to a work item type. This is a global setting for any work item of this work item type; once enabled, this setting can be managed individually from the **Investments Properties** dialog box.
- **Self Assign** Indicates whether a resource can assign themselves to a work item type. This is a global setting for any work item of this work item type; once enabled, this setting can be managed individually from the **Investments Properties** dialog box.

The **Attributes** tab displays all of the attributes that can be associated with the work item type. The full list of available attributes are in the left column and the attributes that are associated with the work item type are in the right column. To move an attribute between columns, select it and click the arrow that points to the other column. Hold down the **CTRL** key while selecting attributes to move more than one at a time.

The **Containment** tab displays all of the possible parent and child work item types. This determines the possible locations a work item can appear in the work item hierarchy; a work item can only be created under a valid parent work item and a work item can only

have valid children created underneath it. A portfolio can only be a child work item type of a portfolio.

The **Set Views** tab lets you select the views that will be associated with the work item type. Custom summary views that have been created in the View Designer will be available; the default summary view is **Summary**.

The **Breakeven Attributes** tab is used to associate timephased attributes with a work item type. Breakeven attributes are displayed in the Breakeven chart associated with this work item type. You can specify a positive and a negative breakeven attribute.

Activating a work item type

If a work item type is inactive, you can reactivate it so that it can be used when creating new items.

To activate a work item type

1. From the application toolbar, click **Setup**, and then select **Customization**.
2. Select the **Types Setup** tab.
3. Select the **Investment Types** tab.
4. Choose a work item type.
5. Select **Active**.
6. Click **Save**.

Adding a work item type

Add a new work item type. The task- and activity-based work type options allow resources to be allocated to the work item type, but once the work type option is set to task-based or activity-based, it cannot be changed.

To add a work item type

1. From the application toolbar, click **Setup**, and then select **Customization**.
2. Select the **Types Setup** tab.
3. Select the **Investment Types** tab.
4. Click **New**.
5. Name the work item type. Select an icon and/or a color to which the work item type will be associated.
6. Select **Active** to make this work item type available; only active work item type can be used to create new items.
7. Select **Creatable** to make this work item type available in the New Investment dialog box and in the **Investment Type** list on a work item request page. Use this option to limit the type of items users can create.
8. Under **Work Type**, select the work type option: *None*, *Task-based*, or *Activity-based*. Resources can only be allocated against task- or activity-based items. Once saved, the work type for a work item cannot be changed.
9. Select **Inherit Allocations** to have task and work item assignments be made based on other task-based work item types in the work item hierarchy. This option is only available for a task-based work type.

10. Select **Timesheet Disabled** to disable the timesheet for this work item type. This option is only available for a task-based work type.
11. Select **Lock Completed Assignments** to prevent team members from submitting time on assignments when the associated task has been marked as complete by a project manager. This option is only available for a task-based work type.
12. Select **Self Assign** to allow team members to assign themselves to tasks or a work item in items created from this work item type. This option is only available for a task-based work type.
13. Select **Self Allocate** to allow team members to allocate themselves to tasks or a work item in items created from this work item type. This option is available for any task- and activity-based work type.
14. On the **Attributes** tab, move the attributes you want to be associated with this work item type to the right column. Required attributes cannot be removed.
15. On the **Containment** tab, select the work item type's parent and child work item types.
16. On the **Set Views** tab, associate the views that will be available in the **Projects** module when team members are working on this work item.
17. On the **Breakeven Attributes** tab, select the positive and negative attributes that will be used to generate a Breakeven chart in the **Financials** view.
18. Click **Save**.

Deleting a work item type

A work item type can be deleted as long as it is not being used by an existing work item. If a work item type is being used (or may be used again) by a work item, you should inactivate it.

To delete a work item type

1. From the application toolbar, click **Setup**, and then select **Customization**.
2. Select the **Types Setup** tab.
3. Select the **Investment Types** tab.
4. Select a work item type and click **Delete**.

Editing a work item type

Find a work item type on the **Investment Type** tab of the **Types Setup** tab, make the changes that need to be made, and then click **Save**.

To edit a work item type

1. From the application toolbar, click **Setup**, and then select **Customization**.
2. Select the **Types Setup** tab.
3. Select the **Investment Types** tab.
4. Make your changes.
5. Click **Save**.

Inactivating a work item type

A work item type can be inactivated. This prevents them being available whenever lists of work item types are used and it helps preserve historical data associated with that work item type.

To inactivate a work item type

1. From the application toolbar, click **Setup**, and then select **Customization**.
2. Select the **Types Setup** tab.
3. Select the **Investment Types** tab.
4. Under **Investment Types**, select a work item type.
5. De-select **Active**.
6. Click **Save**.

Limiting availability for new investments

Use the **Creatable** check box when adding or modifying work item types. If the **Creatable** check box is enabled, then the work item type will be an option to users when they create new items.

To limit work item type availability for new items

1. From the application toolbar, click **Setup**, and then select **Customization**.
2. Select the **Types Setup** tab.
3. Select the **Investment Types** tab.
4. Create or select the work item type that you do not want to be available to users when creating new items.
5. De-select **Creatable**.
6. Click **Save**.

Viewing a work item type

Item types are shown on the **Investment Type** tab in the **Types Setup** tab.

To view a work item type

1. From the application toolbar, click **Setup**, and then select **Customization**.
2. Select the **Types Setup** tab.
3. Select the **Investment Types** tab.
4. Select the work item type in the list.

Dependency Types

Use the **Dependency Types** tab to add, manage, and maintain all of the dependency types that are used by your organization.

Note: This tab is not available when using Serena Agile On Demand.

The **Dependency Types** tab contains five tabs: **Properties**, **Attributes**, **Source**, and **Target**.

The **Properties** tab lets you enter information that is unique to that dependency type, such as its name, an associated icon, and a named summary view that is associated with this dependency. The **Properties** tab contains the following elements:

- **Name** The name of the dependency type.
- **Icon** The icon used to represent the dependency type.
- **Request View** A named summary view that will be available whenever this dependency type is created. The default summary view is **Summary**.
- **Source** Select one or more work item types that can be used as a source for this dependency type.
- **Target** Select one or more work item types that can be used as a target for this dependency type.

The **Attributes** tab displays all of the attributes that can be associated with the dependency type. The full list of available attributes are in the left column and the attributes that are associated with the dependency type are in the right column. To move an attribute between columns, select it and click the arrow that points to the other column. Hold down the **CTRL** key while selecting attributes to move more than one at a time. The Attributes tab contains the following elements:

- **Roll up to Source** Indicates whether roll-up data for source attributes should be displayed when viewing source information. Source attributes display as read-only.
- **Roll up to Target** Indicates whether roll-up data for target attributes should be displayed when viewing target information. Target attributes display as read-only.

The **Source** tab displays all of the attributes that are used as a source for roll-up data when viewing this dependency type. The full list of available attributes are in the left column and the attributes that are associated with the dependency type are in the right column. To move an attribute between columns, select it and click the arrow that points to the other column. Hold down the **CTRL** key while selecting attributes to move more than one at a time.

The **Target** tab displays all of the attributes that are used as a target for roll-up data when viewing this dependency type. The full list of available attributes are in the left column and the attributes that are associated with the dependency type are in the right column. To move an attribute between columns, select it and click the arrow that points to the other column. Hold down the **CTRL** key while selecting attributes to move more than one at a time.

Adding a dependency type

Dependency types created on the **Dependency Types** tab will be available for use.

To add a dependency type

1. From the application toolbar, click **Setup**, and then select **Customization**.
2. Select the **Types Setup** tab.
3. Select the **Dependency Types** tab.
4. Click **New**.
5. Name the dependency and choose an icon to represent this dependency type.
6. From the **Request View** drop-down, select the named summary view in which a new dependency of this type will appear. The default request view is **Summary**.

7. From the **Source** list, select one or more work item types that can be used as a source for this dependency type.
8. From the **Target** list, select one or more work item types that can be used as a target in this dependency type.
9. In the **Attributes** tab, move the attributes that you want to associate with this dependency type to the right column. Choose **Roll Up to Source** to roll-up data from the dependency type to the selected source work item types. Choose **Roll Up to Target** to roll-up data from the dependency type to the selected target work item types.
10. In the **Source** tab, move the attributes that you want to associate with this dependency type to the right column. Data associated with these attributes will be read-only when viewed.
11. In the **Target** tab, move the attributes that you want to associate with this dependency type to the right column. Data associated with these attributes will be read-only when viewed.
12. Click **Save**

Deleting a dependency type

A dependency type can be deleted as long as it is not being used by an existing work item type.

To delete a dependency type

1. From the application toolbar, click **Setup**, and then select **Customization**.
2. Select the **Types Setup** tab.
3. Select the **Dependency Types** tab.
4. Select the dependency type in the list.
5. Click **Delete**.

Editing a dependency type

To modify an dependency type, make the applicable changes, and then click **Save Dependency Type**.

To edit a dependency type

1. From the application toolbar, click **Setup**, and then select **Customization**.
2. Select the **Types Setup** tab.
3. Select the **Dependency Types** tab.
4. Make your changes.
5. Click **Save**.

Viewing a dependency type

Dependency types can be viewed from the **Dependency Types** tab in the **Types Setup** tab.

To view a dependency type

1. From the application toolbar, click **Setup**, and then select **Customization**.

2. Select the **Types Setup** tab.
3. Select the **Dependency Types** tab.
4. Select a dependency type.

Work Item Request Pages

Use the **IRP** tab to create a work item request page that allows people to submit a work item request page from outside the application. An work item request page is assigned a unique URL. A work item request page can be used to allow people from outside of your organization (or from outside of the application) to submit information without requiring that user to provide a user name or password in order to submit the work item request page. Before creating a work item request page, you must create a custom summary view that defines the layout of the work item request page.

The **IRP** tab contains the following elements:

- **Name** The name of the work item request page.
- **Item View** A named summary view that will be used with this work item request page. The summary view determines the layout of the work item request page. You can design custom layouts for a work item request page from the **View Designer** view.
- **Item Location** The work item to which this work item request page is associated. Any work item request that is created from this work item request page will be added as child work item to the selected work item location.
- **Email Address Required** Indicates whether a user of a work item request page is required to submit their email address along with a work item request page.
- **Page URL** A unique URL for the work item request page. This URL is generated automatically. This is the URL from which users can access the work item request page.
- **Available Item Request Pages** This box contains the list of any existing work item request page.

Adding a work item request page

A work item request page is based on a custom summary view; before a work item request page can be created, you must first design a custom summary page from which a work item request page can be based.

To add a work item request page

1. From the application toolbar, click **Setup**, and then select **Customization**.
2. Select the **Types Setup** tab.
3. Select the **Investment Request Pages** tab.
4. Click **New**.
5. Name the work item request page.
6. Select the custom summary view to which the work item request page is associated. The custom summary view determines the layout of the work item request page's Web page. The layout of a work item request page is defined on the View Layout tab in the **View Designer** tab.

7. Click the ellipse button next to Investment Location and choose the work item type that will be created when the work item request page is used to request new work item types.
8. Select **Email Address Required** to require individuals who submit a work item request to also provide an email address.
9. Click **Save**. The **Page URL** is generated. This URL is the page from which users of the work item request page will submit their requests for a new work item.

Deleting a work item request page

If you are no longer using a work item request page, you can delete it.

To delete a work item request page

1. From the application toolbar, click **Setup**, and then select **Customization**.
2. Select the **Types Setup** tab.
3. Select the **Investment Request Pages** tab.
4. Under **Available Investment Request Pages**, select a work item request page.
5. Click **Delete**.

Editing a work item request page

To modify the work item request page, make your changes, and click **Save Request Page** in the **Actions** box.

To edit a work item request page

1. From the application toolbar, click **Setup**, and then select **Customization**.
2. Select the **Types Setup** tab.
3. Select the **Investment Request Pages** tab.
4. Under **Available Investment Request Pages**, select a work item request page.
5. Make your changes.
6. Click **Save**.

Viewing a work item request page

Item types are shown on the **Investment Type** tab in the **Types Setup** tab.

To view a work item request page

1. From the application toolbar, click **Setup**, and then select **Customization**.
2. Select the **Types Setup** tab.
3. Select the **Investment Request Pages** tab.
4. Select the work item request page you want to view from the **Available Investment Request Pages** list.

Labor Attribute Mapping

You can use the **Labor Attribute Mapping** tab to consolidate labor that relates to operations (such as allocations, assignments, and timesheet actuals) into *Timephased - FTE* attributes. A labor attribute map can only be mapped to a single *Timephased - FTE*

attribute. Once labor attribute mapping is configured, the data can be used in any of the work item views or reports and the work item views can be configured to compare the plan versus the actual data.

Deleting a labor attribute map

If your organization is not using a labor attribute map, you should delete it.

To delete a labor attribute map

1. From the application toolbar, click **Setup**, and then select **Customization**.
2. Select the **Labor Attribute Mapping** tab.
3. Select the **Workflow** tab.
4. Select the name of the labor attribute map.
5. Click **Delete**.

Recalculating labor attribute mapping

This can be a resource-intensive operation and can take a considerable amount of time, especially in large work item hierarchies; scheduling labor attribute mapping for off-hours is recommended. When recalculating labor attribute mapping, the entire enterprise portfolio will be unavailable and users will be locked-out of the system until the process is complete. Once refreshed, additional recalculations are performed for all calculated attributes that include labor attribute mapping. In addition, any calculated attribute that is affected by updated data, up to the enterprise portfolio, is also recalculated.

(To recalculate labor attribute mapping for a single work item in the work item hierarchy, use the **Reconcile Now** option in the **Projects** module.)

To recalculate labor attribute mapping

1. From the application toolbar, click **Setup**, and then select **Customization**.
2. Select the **Labor Attribute Mapping** tab.
3. Click **Recalculate All**. Depending on the size of your organization's database and the number of calculations required for labor attribute mapping, this may take some time.

Scheduling labor attribute mapping recalculations

You can schedule the recalculation of labor attribute mapping. Create a schedule for the Post Attribute Maps plug-in from the **Jobs** tab in the **Scheduled Services** tab.

To schedule labor attribute mapping recalculations

1. From the application toolbar, click **Setup**, and then select **Customization**.
2. Select the **Scheduled Services** tab.
3. Select the **Jobs** tab.
4. Click **New** to schedule a new job.
5. In the **Scheduled Job Properties** section, enter a name and description for the job.
6. Select Post Attribute Maps from the **Job Type** list.
7. Set the frequency, date, and time options.

- Click **Save**.

Viewing a labor attribute map

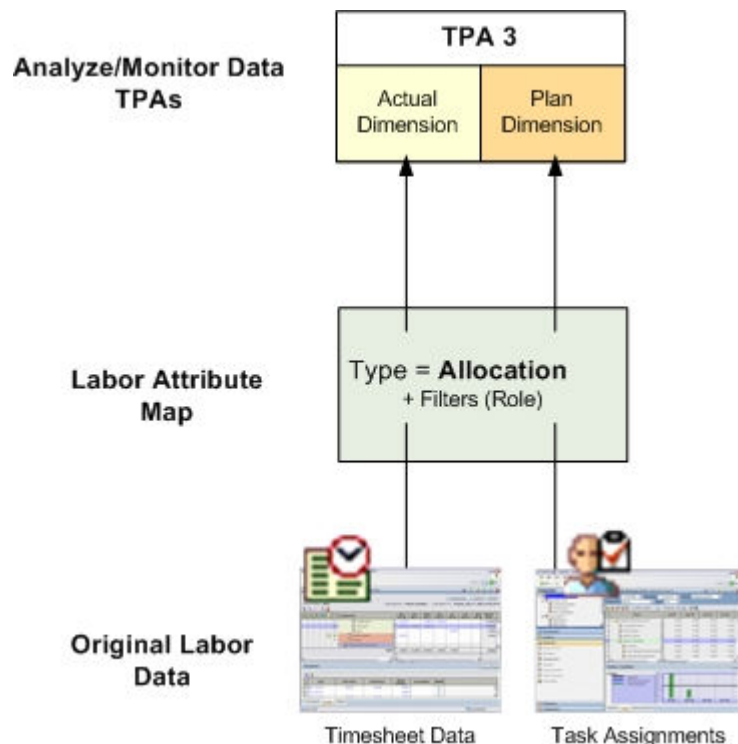
Labor attribute maps can be viewed from the **Labor Attribute Mapping** view.

To view a labor attribute map

- From the application toolbar, click **Setup**, and then select **Customization**.
- Select the **Labor Attribute Mapping** tab.
- Select a labor attribute map.

Activity-based Items

The labor attribute maps for an activity-based work item work differently than those for a task-based item; you can only use an allocation-based labor attribute map. Because there are no task assignments in activity-based items (only allocations), time logged against an activity-based work item is logged directly against the work item and not against an assignment. This means that while allocations roll up the same way as for task-based items, timesheet actuals, since there are no assignments, roll up (in the actual dimension) through the allocation map.



Adding an activity-based labor attribute map

Activity-based labor attribute maps roll-up allocations made against items to the **Plan** dimension and roll-up user timesheet that has been submitted against a work item. Before labor attribute mapping can be configured, be sure that a mappable *Timephased - FTE* attribute has been added.

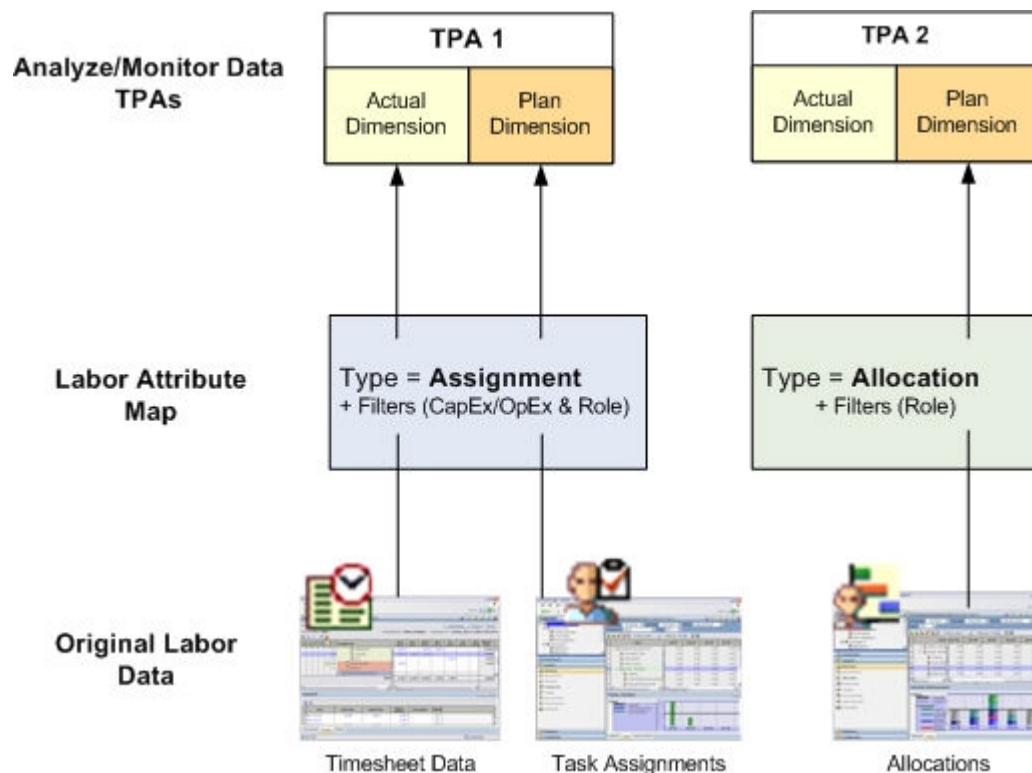
To add an activity-based labor attribute map

1. From the application toolbar, click **Setup**, and then select **Customization**.
2. Select the **Labor Attribute Mapping** tab.
3. Click **New Labor Attribute Map**.
4. Select **Allocations**.
5. Select the attribute from which the mapping is based from the **Attribute** drop-down. (This list is populated with *Timephased - FTE* attributes created from the **Attributes Setup** tab in the **Customization** module that are also marked as **Mappable**.)
6. You can filter the data by capital (**CapEX**) or operational (**OpEx**) expenses.
7. You can filter the data by a resource role.
8. Click **Save**.

Task-based Items

There are two types of labor attribute maps available for task-based items:

- **Assignment-based** The assignment-based labor attribute map rolls up (in the **Plan** dimension) task assignments made against items, and rolls up (in the **Actual** dimension) the user timesheet data that is submitted against a task or work item assignment. This data can be filtered by resource role, capital expenses, or operational expenses. Applying the **CapEX** filter rolls up assignments and timesheet actuals for all tasks that are marked as **CapEX**, thus capturing the labor component of capital expenses. The **OpEx** filter excludes the **CapEX**-marked tasks, with the assumption that all other labor data is operational in nature. Additionally, you can select a resource role or set of roles to filter; only the assignment and timesheet data for the selected roles is rolled up.
- **Allocation-based** The allocation-based labor attribute map rolls up (in the **Plan** dimension) allocations made to items. This plan data can be filtered only by resource role; when you select a resource role or set of roles to filter; only the allocations for the selected roles is rolled up.



Adding an allocation-based labor attribute map

Allocation-based labor attribute maps roll-up allocations made against items to the **Plan** dimension and roll-up user timesheet that has been submitted against a work item. Before labor attribute mapping can be configured, be sure that a mappable *Timephased - FTE* attribute has been added.

To add an allocation-based labor attribute map

1. From the application toolbar, click **Setup**, and then select **Customization**.
2. Select the **Labor Attribute Mapping** tab.
3. Click **New Labor Attribute Map**.
4. Select **Allocations**.
5. Select the attribute from which the mapping is based from the **Attribute** drop-down. (This list is populated with *Timephased - FTE* attributes created from the **Attributes Setup** tab in the **Customization** module that are also marked as **Mappable**.)
6. You can filter the data by capital (**CapEX**) or operational (**OpEx**) expenses.
7. You can filter the data by a resource role.
8. Click **Save**.

Adding an assignment-based labor attribute map

Assignment-based labor attribute maps roll-up task assignments made against items to the **Plan** dimension and roll-up user timesheet data that has been submitted against a task or work assignment. Before labor attribute mapping can be configured, be sure that a mappable *Timephased - FTE* attribute has been added.

To add an assignment-based labor attribute map

1. From the application toolbar, click **Setup**, and then select **Customization**.
2. Select the **Labor Attribute Mapping** tab.
3. Click **New Labor Attribute Map**.
4. Select **Assignments**.
5. Select the attribute from which the mapping is based from the **Attribute** drop-down. (This list is populated with *Timephased - FTE* attributes created from the **Attributes Setup** tab in the **Customization** module that are also marked as **Mappable**.)
6. You can filter the data by capital (**CapEX**) or operational (**OpEx**) expenses.
7. You can filter the data by a resource role.
8. Click **Save**.

Microsoft Project Settings

As the administrator, it is your responsibility to set up and maintain the Mariner Connector for Microsoft Project. When you log on to the application as an administrator, you can select the **Microsoft Project Settings** tab in the **Customization** module to access the administrative tools for the Mariner Connector for Microsoft Project product. You can use the **Microsoft Project Settings** tab to configure how users in your organization can use Microsoft Project with Mariner 2008.

Mapping attributes to Microsoft Project

The administrator determines the default Microsoft Project task attributes that must be published from a plan to a work item. Users can modify this list for individual items. You need to create the attributes in the **System Settings** module prior to attempting to map them to Microsoft Project attributes. Further, attributes added specifically for the purpose of mapping to Microsoft Project must be added to the work item types (such as project) for them to appear in the attribute mapping dialog.

To map attributes between Mariner 2008 and Microsoft Project

1. From the application toolbar, click **Setup**, and then select **Customization**.
2. Select the **Microsoft Project Settings** tab.
3. On the **Publish Attributes** tab, select the options for when a user of the Mariner Connector for Microsoft Project publishes information to Mariner 2008 from Microsoft Project. Select **Allow User To Override Attribute Selection** to let users choose their own attributes in Microsoft Project.
4. On the **Refresh Attributes** tab, select the options for when a user of the Mariner Connector for Microsoft Project refreshes Mariner 2008 information to Mariner 2008 from Microsoft Project. Select **Allow User To Override Attribute Selection** to let users choose their own attributes in Microsoft Project. Select **Allow User To Reorder Attributes** to let users set the attribute order while using Microsoft Project.
5. On the **Attribute Mappings** tab, select the mappings between Mariner 2008 attributes and Microsoft Project attributes for tasks, resources and assignments. These settings will apply to all items for all users, unless users are allowed to override attribute selections.

6. Click **Save**.

Setting publish attributes

As an administrator, you determine the Microsoft Project task attributes that must be published from a plan to a work item.

To publish attributes

1. From the application toolbar, click **Setup**, and then select **Customization**.
2. Select the **Microsoft Project Settings** tab.
3. Select the **Publish Attributes** tab.
4. On the **Task Attributes** tab, select the attributes you want to be available from the list of available attributes.
5. On the **Resource Attributes** tab, select the attributes you want to be available from the list of available attributes.
6. On the **Assignment Attributes** tab, select the attributes you want to be available from the list of available attributes.
7. For each tab, you can allow users of Microsoft Project to override attributes defined here (and to select their own attributes) by selecting **Allow User To Override Attribute Selection**.
8. Click **Save**.

Setting refresh attributes

When a plan is refreshed with information from the associated project, there may be a specific set of attributes. Information about a work item that shows in a box or column of a view that your organization always wants to be refreshed. For example, your organization may always want to refresh the **Actual Finish** attribute for tasks. Therefore, you can set this as a refresh attribute and the next time a work item owner refreshes their plan, the corresponding information from the associated work item appears in the **Actual Finish** attribute for the plan. You can allow users to make their own attribute selection and to reorder attributes, if you so choose.

To set attributes to refresh

1. From the application toolbar, click **Setup**, and then select **Customization**.
2. Select the **Microsoft Project Settings** tab.
3. Select the **Refresh Attributes** tab.
4. On the **Task Attributes** tab, select the attributes you want to be available from the list of available attributes.
5. On the **Resource Attributes** tab, select the attributes you want to be available from the list of available attributes. You can include resource calendars (**Include Calendars**) and resource rates (**Include Rates**).
6. On the **Assignment Attributes** tab, select the attributes you want to be available from the list of available attributes.
7. For each tab, you can allow users of Microsoft Project to override attributes defined here (and to select their own attributes) by selecting **Allow User To Override Attribute Selection**.

8. For each tab, you can allow users of Microsoft Project to reorder the attributes when refreshing data by selecting **Allow User To Reorder Attributes**.
9. Click **Save**.

Module Designer

A module (sometimes called a homepage) is a container for views. A module can be used to provide a daily starting point for members of your organization, including individual contributors, project and resource managers, portfolio analysts, and so on. You can use the **Module Designer** tab to create and modify homepage layouts and to help provide a centralized view into the information that users in your organization need.

You can include many elements on a homepage, such as datasheets, charts, logs, and work item assignments. You can also include pages that live in your organization's intranet and pages that live on the Internet. When users visit their homepage, the elements that are included on the homepage will be presented as view frames within the homepage view. The layout for each user role determines the type of information that is displayed when users of that role view their homepages.

When working in the **Module Designer** tab, you can create a custom homepage or you can modify existing ones. The **Module Designer** tab has two panes: the left pane contains the layout control options and the right pane is where the homepage view is created. There are three layout options: **Modules** (along with **Module-Tabs**) shows the list of module/homepages and the tabs that are available in each, **Widgets** lists the widgets that can be added to views, and **Properties** displays the properties for each widget.

For more information, see the following topics:

- [Agile Work Item Assignments \[page 415\]](#)
- [Chart \[page 415\]](#)
- [Datashet \[page 416\]](#)
- [Group Box \[page 417\]](#)
- [Horizontal Rule \[page 418\]](#)
- [Image \[page 419\]](#)
- [Label \[page 421\]](#)
- [Link Label \[page 422\]](#)
- [Logs \[page 424\]](#)
- [Projects \[page 424\]](#)
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- [Single Object Chart \[page 426\]](#)
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- [Work Item Assignments \[page 429\]](#)

Agile Work Item Assignments

The **Agile Work Item Assignments** widget is used to show the list of work item that are currently assigned to a user.

Properties

The **Agile Work Item Assignments** widget has the following properties:

Properties	Description
Allow Drag	The Allow Drag property is used to indicate whether users can move a widget around on a page while they are using it.
Height	The Height property is used to specify the height (in pixels) of an attribute, control, or widget.
ID	Read only. The ID property is used to show the unique ID of the design control.
Left	The Left property is used to set the number of pixels from the left side of a page that an attribute, control, or widget is positioned. Use this property to align the attributes, controls, and widgets on a page.
Top	The Top property is used to set the number of pixels from the top of a page that an attribute, control, or widget is positioned. Use this property to align the attributes, controls, and widgets on a page.
Type	Read only. The Type property is used to show the control type. For example, linklabel, button, hr, and so on.
Width	The Width property is used to specify the width (in pixels) of an attribute, control, or widget.
Z-Index	The Z-Index property is used to set the order by which attributes, controls, and widgets are layered on a page. For example, you can layer a form on top of an image.

Chart

Use the **Chart** control (sometimes referred to as a widget) to display a chart, such as a burndown chart.

Properties

The **Chart** widget has the following properties:

Properties	Description
Allow Drag	The Allow Drag property is used to indicate whether users can move a widget around on a page while they are using it.

Properties	Description
Default	The Default property is used to specify the default datasheet that will be available when a team member accesses the page on which this control has been placed.
Height	The Height property is used to specify the height (in pixels) of an attribute, control, or widget.
ID	Read only. The ID property is used to show the unique ID of the design control.
Left	The Left property is used to set the number of pixels from the left side of a page that an attribute, control, or widget is positioned. Use this property to align the attributes, controls, and widgets on a page.
Top	The Top property is used to set the number of pixels from the top of a page that an attribute, control, or widget is positioned. Use this property to align the attributes, controls, and widgets on a page.
Type	Read only. The Type property is used to show the control type. For example, linklabel, button, hr, and so on.
Width	The Width property is used to specify the width (in pixels) of an attribute, control, or widget.
Z-Index	The Z-Index property is used to set the order by which attributes, controls, and widgets are layered on a page. For example, you can layer a form on top of an image.

Datasheet

The **Datasheet** widget is used to show a datasheet.

Properties

The **Datasheet** widget has the following properties:

Properties	Description
Allow Drag	The Allow Drag property is used to indicate whether users can move a widget around on a page while they are using it.
Default	The Default property is used to specify the default datasheet that will be available when a team member accesses the page on which this control has been placed.
Height	The Height property is used to specify the height (in pixels) of an attribute, control, or widget.

Properties	Description
ID	Read only. The ID property is used to show the unique ID of the design control.
Left	The Left property is used to set the number of pixels from the left side of a page that an attribute, control, or widget is positioned. Use this property to align the attributes, controls, and widgets on a page.
Top	The Top property is used to set the number of pixels from the top of a page that an attribute, control, or widget is positioned. Use this property to align the attributes, controls, and widgets on a page.
Type	Read only. The Type property is used to show the control type. For example, linklabel, button, hr, and so on.
Width	The Width property is used to specify the width (in pixels) of an attribute, control, or widget.
Z-Index	The Z-Index property is used to set the order by which attributes, controls, and widgets are layered on a page. For example, you can layer a form on top of an image.

Group Box

Use the **Group Box** to group attributes together under a common heading. A **Group Box** is often used to help make it easier for users to work with data by locating common and/ or related data in a specific location.

Properties

The **Group Box** widget has the following properties:

Properties	Description
Background-Color	The Background-Color property is used to set the background color of an attribute, control, or widget.
Color	The Color property is used to set the font color of an attribute, control, or widget.
Font-Family	The Font-Family property is used to set the font, such as verdana, courier, or arial.
Font-Size	The Font-Size property is used to set the size of a font.
Font-Style	The Font-Style property is used to set the displayed style of the text: normal, italic, or oblique.
Font-Weight	The Font-Weight property is used to set the displayed weight of the text: normal, bold, or bolder.

Properties	Description
Height	The Height property is used to specify the height (in pixels) of an attribute, control, or widget.
ID	Read only. The ID property is used to show the unique ID of the design control.
Left	The Left property is used to set the number of pixels from the left side of a page that an attribute, control, or widget is positioned. Use this property to align the attributes, controls, and widgets on a page.
Legend	The Legend property is used to specify whether a legend should be displayed on a chart.
TabIndex	The TabIndex property is used to set the navigation order when using the TAB key. When the user tabs through the page, the field with a Tab Index of "1" will be first field, "2" second, and so on. For a read-only field, you should not add a Tab Index . This lets the user skip over this field when tabbing through the page.
Text-Decoration	The Text-Decoration property is used to specify whether text should be displayed normally, underlined, overlined, or with a strikethrough bar.
ToolTip	The ToolTip property is used to add customized tool tips for the control or attribute and over rides the default tool tip.
Top	The Top property is used to set the number of pixels from the top of a page that an attribute, control, or widget is positioned. Use this property to align the attributes, controls, and widgets on a page.
Type	Read only. The Type property is used to show the control type. For example, linklabel, button, hr, and so on.
Width	The Width property is used to specify the width (in pixels) of an attribute, control, or widget.
Z-Index	The Z-Index property is used to set the order by which attributes, controls, and widgets are layered on a page. For example, you can layer a form on top of an image.

Horizontal Rule

A **Horizontal Rule** is used to add a simple horizontal line to any page in the application. A **Horizontal Rule** can be used to help make it easier for users to work with data by providing visual separation between sections of data.

Properties

The **Horizontal Rule** widget has the following properties:

Properties	Description
Background-Color	The Background-Color property is used to set the background color of an attribute, control, or widget.
Color	The Color property is used to set the font color of an attribute, control, or widget.
Height	The Height property is used to specify the height (in pixels) of an attribute, control, or widget.
ID	Read only. The ID property is used to show the unique ID of the design control.
Left	The Left property is used to set the number of pixels from the left side of a page that an attribute, control, or widget is positioned. Use this property to align the attributes, controls, and widgets on a page.
TabIndex	The TabIndex property is used to set the navigation order when using the TAB key. When the user tabs through the page, the field with a Tab Index of "1" will be first field, "2" second, and so on. For a read-only field, you should not add a Tab Index . This lets the user skip over this field when tabbing through the page.
ToolTip	The ToolTip property is used to add customized tool tips for the control or attribute and over rides the default tool tip.
Top	The Top property is used to set the number of pixels from the top of a page that an attribute, control, or widget is positioned. Use this property to align the attributes, controls, and widgets on a page.
Type	Read only. The Type property is used to show the control type. For example, linklabel, button, hr, and so on.
Width	The Width property is used to specify the width (in pixels) of an attribute, control, or widget.
Z-Index	The Z-Index property is used to set the order by which attributes, controls, and widgets are layered on a page. For example, you can layer a form on top of an image.

Image

An **Image** is used to add a static image to a page. The image is set using the **Src** property as a URL to the location of the image on your organization's intranet or to a page on the Internet. You can add use the **Events** property to add JavaScript that is triggered when a user clicks on the image.

The image properties are set using the **Src** property as a URL to the location of the image on your organization's intranet or to a page on the Internet. You can add use the **Events** property to add JavaScript that is triggered when a user clicks on the image.

Properties

The **Image** widget has the following properties:

Properties	Description
Background-Color	The Background-Color property is used to set the background color of an attribute, control, or widget.
Color	The Color property is used to set the font color of an attribute, control, or widget.
Events	The Events property is used to add JavaScript to a page. For the Button and Image elements, click the button associated with the Events property to display the Code Editor dialog. In the Code Editor dialog, you can write code to be executed in association with the element (for example, code that executes when the user clicks a button).
Height	The Height property is used to specify the height (in pixels) of an attribute, control, or widget.
ID	Read only. The ID property is used to show the unique ID of the design control.
Left	The Left property is used to set the number of pixels from the left side of a page that an attribute, control, or widget is positioned. Use this property to align the attributes, controls, and widgets on a page.
Src	The Src property is used to specify the source URL for an image in an Image control.
TabIndex	The TabIndex property is used to set the navigation order when using the TAB key. When the user tabs through the page, the field with a Tab Index of "1" will be first field, "2" second, and so on. For a read-only field, you should not add a Tab Index . This lets the user skip over this field when tabbing through the page.
ToolTip	The ToolTip property is used to add customized tool tips for the control or attribute and over rides the default tool tip.
Top	The Top property is used to set the number of pixels from the top of a page that an attribute, control, or widget is positioned. Use this property to align the attributes, controls, and widgets on a page.
Type	Read only. The Type property is used to show the control type. For example, linklabel, button, hr, and so on.
Width	The Width property is used to specify the width (in pixels) of an attribute, control, or widget.

Properties	Description
Z-Index	The Z-Index property is used to set the order by which attributes, controls, and widgets are layered on a page. For example, you can layer a form on top of an image.

Label

A **Label** is used to add a text label to a page in the application.

Properties

The **Label** widget has the following properties:

Properties	Description
Background-Color	The Background-Color property is used to set the background color of an attribute, control, or widget.
Color	The Color property is used to set the font color of an attribute, control, or widget.
Font-Family	The Font-Family property is used to set the font, such as verdana, courier, or arial.
Font-Size	The Font-Size property is used to set the size of a font.
Font-Style	The Font-Style property is used to set the displayed style of the text: normal, italic, or oblique.
Font-Weight	The Font-Weight property is used to set the displayed weight of the text: normal, bold, or bolder.
Height	The Height property is used to specify the height (in pixels) of an attribute, control, or widget.
Hyperlink	The Hyperlink property is used to specify the URL for a Link Label widget.
ID	Read only. The ID property is used to show the unique ID of the design control.
Left	The Left property is used to set the number of pixels from the left side of a page that an attribute, control, or widget is positioned. Use this property to align the attributes, controls, and widgets on a page.

Properties	Description
TabIndex	The TabIndex property is used to set the navigation order when using the TAB key. When the user tabs through the page, the field with a Tab Index of "1" will be first field, "2" second, and so on. For a read-only field, you should not add a Tab Index . This lets the user skip over this field when tabbing through the page.
Text-Align	The Text-Align property is used to specify whether text should be right-aligned, left-aligned, centered, or justified.
Text-Decoration	The Text-Decoration property is used to specify whether text should be displayed normally, underlined, overlined, or with a strikethrough bar.
ToolTip	The ToolTip property is used to add customized tool tips for the control or attribute and over rides the default tool tip.
Top	The Top property is used to set the number of pixels from the top of a page that an attribute, control, or widget is positioned. Use this property to align the attributes, controls, and widgets on a page.
Type	Read only. The Type property is used to show the control type. For example, linklabel, button, hr, and so on.
Width	The Width property is used to specify the width (in pixels) of an attribute, control, or widget.

Link Label

A **Link Label** is used to add a hyperlink to a page in the application, from which users can link out to that information. For example, you can add a external link to a website, such as Google, an internal link to a page located within your organization's intranet, or to a page that is generated by another application.

Properties

The **Link Label** widget has the following properties:

Properties	Description
Background-Color	The Background-Color property is used to set the background color of an attribute, control, or widget.
Color	The Color property is used to set the font color of an attribute, control, or widget.
Font-Family	The Font-Family property is used to set the font, such as verdana, courier, or arial.
Font-Size	The Font-Size property is used to set the size of a font.

Properties	Description
Font-Style	The Font-Style property is used to set the displayed style of the text: normal, italic, or oblique.
Font-Weight	The Font-Weight property is used to set the displayed weight of the text: normal, bold, or bolder.
Height	The Height property is used to specify the height (in pixels) of an attribute, control, or widget.
Hyperlink	The Hyperlink property is used to specify the URL for a Link Label widget.
ID	Read only. The ID property is used to show the unique ID of the design control.
Left	The Left property is used to set the number of pixels from the left side of a page that an attribute, control, or widget is positioned. Use this property to align the attributes, controls, and widgets on a page.
TabIndex	The TabIndex property is used to set the navigation order when using the TAB key. When the user tabs through the page, the field with a Tab Index of "1" will be first field, "2" second, and so on. For a read-only field, you should not add a Tab Index . This lets the user skip over this field when tabbing through the page.
Text-Align	The Text-Align property is used to specify whether text should be right-aligned, left-aligned, centered, or justified.
Text-Decoration	The Text-Decoration property is used to specify whether text should be displayed normally, underlined, overlined, or with a strikethrough bar.
ToolTip	The ToolTip property is used to add customized tool tips for the control or attribute and over rides the default tool tip.
Top	The Top property is used to set the number of pixels from the top of a page that an attribute, control, or widget is positioned. Use this property to align the attributes, controls, and widgets on a page.
Type	Read only. The Type property is used to show the control type. For example, linklabel, button, hr, and so on.
Width	The Width property is used to specify the width (in pixels) of an attribute, control, or widget.
Z-Index	The Z-Index property is used to set the order by which attributes, controls, and widgets are layered on a page. For example, you can layer a form on top of an image.

Logs

The **Logs** widget is used to add a log type to a page in the application.

Properties

The **Logs** widget has the following properties:

Properties	Description
Allow Drag	The Allow Drag property is used to indicate whether users can move a widget around on a page while they are using it.
Configuration	The Configuration property is used to specify the attributes shown on a Card Wall widget.
Height	The Height property is used to specify the height (in pixels) of an attribute, control, or widget.
Left	The Left property is used to set the number of pixels from the left side of a page that an attribute, control, or widget is positioned. Use this property to align the attributes, controls, and widgets on a page.
ID	Read only. The ID property is used to show the unique ID of the design control.
Top	The Top property is used to set the number of pixels from the top of a page that an attribute, control, or widget is positioned. Use this property to align the attributes, controls, and widgets on a page.
Width	The Width property is used to specify the width (in pixels) of an attribute, control, or widget.
Z-Index	The Z-Index property is used to set the order by which attributes, controls, and widgets are layered on a page. For example, you can layer a form on top of an image.

Projects

The **Projects** widget is used to add a list of projects to a page in the application.

Properties

The **Projects** widget has the following properties:

Properties	Description
Allow Drag	The Allow Drag property is used to indicate whether users can move a widget around on a page while they are using it.
Height	The Height property is used to specify the height (in pixels) of an attribute, control, or widget.

Properties	Description
ID	Read only. The ID property is used to show the unique ID of the design control.
Left	The Left property is used to set the number of pixels from the left side of a page that an attribute, control, or widget is positioned. Use this property to align the attributes, controls, and widgets on a page.
Top	The Top property is used to set the number of pixels from the top of a page that an attribute, control, or widget is positioned. Use this property to align the attributes, controls, and widgets on a page.
Width	The Width property is used to specify the width (in pixels) of an attribute, control, or widget.
Z-Index	The Z-Index property is used to set the order by which attributes, controls, and widgets are layered on a page. For example, you can layer a form on top of an image.

Reports

The **Reports** widget is used to add a list of reports to a page in the application.

Properties

The **Reports** widget has the following properties:

Properties	Description
Allow Drag	The Allow Drag property is used to indicate whether users can move a widget around on a page while they are using it.
Height	The Height property is used to specify the height (in pixels) of an attribute, control, or widget.
ID	Read only. The ID property is used to show the unique ID of the design control.
Left	The Left property is used to set the number of pixels from the left side of a page that an attribute, control, or widget is positioned. Use this property to align the attributes, controls, and widgets on a page.
Top	The Top property is used to set the number of pixels from the top of a page that an attribute, control, or widget is positioned. Use this property to align the attributes, controls, and widgets on a page.
Width	The Width property is used to specify the width (in pixels) of an attribute, control, or widget.

Properties	Description
Z-Index	The Z-Index property is used to set the order by which attributes, controls, and widgets are layered on a page. For example, you can layer a form on top of an image.

Single Object Chart

A **Single Object Chart** is used to show values in a summary view as a chart. The **Single Object Chart** must be configured using the **BrandXML**, **ConfigureXML**, **Data Processor**, and **Data Processor Assembly** properties.

Properties

The **Single Object Chart** widget has the following properties:

Properties	Description
BrandXML	The BrandXML property is used to control the visual display and color scheme of a chart.
ConfigureXML	The ConfigureXML property is used to control the data displayed on the single object chart.
DataProcessor	The DataProcessor property is used to specify the code that generates a chart. Effectively, this determines the type of chart.
DataProcessorAssembly	The DataProcessorAssembly property is used to specify the location of a custom chart data processor.
Height	The Height property is used to specify the height (in pixels) of an attribute, control, or widget.
ID	Read only. The ID property is used to show the unique ID of the design control.
Left	The Left property is used to set the number of pixels from the left side of a page that an attribute, control, or widget is positioned. Use this property to align the attributes, controls, and widgets on a page.
Top	The Top property is used to set the number of pixels from the top of a page that an attribute, control, or widget is positioned. Use this property to align the attributes, controls, and widgets on a page.
Type	Read only. The Type property is used to show the control type. For example, linklabel, button, hr, and so on.

Properties	Description
Width	The Width property is used to specify the width (in pixels) of an attribute, control, or widget.
Z-Index	The Z-Index property is used to set the order by which attributes, controls, and widgets are layered on a page. For example, you can layer a form on top of an image.

Task Assignments

The **Task Assignments** widget is used to add a list of task assignments to a page in the application.

Properties

The **Task Assignments** widget has the following properties:

Properties	Description
Allow Drag	The Allow Drag property is used to indicate whether users can move a widget around on a page while they are using it.
Height	The Height property is used to specify the height (in pixels) of an attribute, control, or widget.
ID	Read only. The ID property is used to show the unique ID of the design control.
Left	The Left property is used to set the number of pixels from the left side of a page that an attribute, control, or widget is positioned. Use this property to align the attributes, controls, and widgets on a page.
Top	The Top property is used to set the number of pixels from the top of a page that an attribute, control, or widget is positioned. Use this property to align the attributes, controls, and widgets on a page.
Type	Read only. The Type property is used to show the control type. For example, linklabel, button, hr, and so on.
Width	The Width property is used to specify the width (in pixels) of an attribute, control, or widget.
Z-Index	The Z-Index property is used to set the order by which attributes, controls, and widgets are layered on a page. For example, you can layer a form on top of an image.

URL Container

A **URL Container** is used to display information that resides elsewhere inside of your project workspace. A **URL Container** can point to any URL-addressible content, including

reports on other internal systems, such as those generated by SAP or by Serena Business Mashups, or to content located on external systems, or to a location on the Internet.

Properties

The **URL Container** widget has the following properties:

Properties	Description
DefaultURL	The DefaultURL property is used to specify the URL that is shown in the URL Container .
Height	The Height property is used to specify the height (in pixels) of an attribute, control, or widget.
ID	Read only. The ID property is used to show the unique ID of the design control.
Left	The Left property is used to set the number of pixels from the left side of a page that an attribute, control, or widget is positioned. Use this property to align the attributes, controls, and widgets on a page.
ShowTitleBar	Indicates whether the Title of the URL Container will be shown. If the Title bar is not accessible, then users will not be able to select another URL from this URL Container .
Title	The Title property is used to specify a title that is visible to team members while using the widget or control.
Top	The Top property is used to set the number of pixels from the top of a page that an attribute, control, or widget is positioned. Use this property to align the attributes, controls, and widgets on a page.
Type	Read only. The Type property is used to show the control type. For example, linklabel, button, hr, and so on.
Width	The Width property is used to specify the width (in pixels) of an attribute, control, or widget.

URL Viewer

The **URL Viewer** widget is used to add a URL to a page in the application.

Properties

The **URL Viewer** widget has the following properties:

Properties	Description
Allow Drag	The Allow Drag property is used to indicate whether users can move a widget around on a page while they are using it.
AppendUsernameToQS	The AppendUsernameToQS property is used to indicate whether to append a username to the query string in a URL Viewer control.
DefaultURL	The DefaultURL property is used to specify the URL that is shown in the URL Container .
Height	The Height property is used to specify the height (in pixels) of an attribute, control, or widget.
ID	Read only. The ID property is used to show the unique ID of the design control.
Left	The Left property is used to set the number of pixels from the left side of a page that an attribute, control, or widget is positioned. Use this property to align the attributes, controls, and widgets on a page.
Top	The Top property is used to set the number of pixels from the top of a page that an attribute, control, or widget is positioned. Use this property to align the attributes, controls, and widgets on a page.
Type	Read only. The Type property is used to show the control type. For example, linklabel, button, hr, and so on.
Width	The Width property is used to specify the width (in pixels) of an attribute, control, or widget.
Z-Index	The Z-Index property is used to set the order by which attributes, controls, and widgets are layered on a page. For example, you can layer a form on top of an image.

Work Item Assignments

The **Work Item Assignments** widget is used to add a work item list (and any related assignments) to a page in the application.

Properties

The **Work Item Assignments** widget has the following properties:

Properties	Description
Allow Drag	The Allow Drag property is used to indicate whether users can move a widget around on a page while they are using it.
Height	The Height property is used to specify the height (in pixels) of an attribute, control, or widget.
ID	Read only. The ID property is used to show the unique ID of the design control.
Left	The Left property is used to set the number of pixels from the left side of a page that an attribute, control, or widget is positioned. Use this property to align the attributes, controls, and widgets on a page.
Top	The Top property is used to set the number of pixels from the top of a page that an attribute, control, or widget is positioned. Use this property to align the attributes, controls, and widgets on a page.
Type	Read only. The Type property is used to show the control type. For example, linklabel, button, hr, and so on.
Width	The Width property is used to specify the width (in pixels) of an attribute, control, or widget.
Z-Index	The Z-Index property is used to set the order by which attributes, controls, and widgets are layered on a page. For example, you can layer a form on top of an image.

Timesheet Settings

You can use the **Timesheet Settings** tab to configure how timesheets are opened and closed, who approves timesheets, whether timesheets can be saved, and how much detail timesheet entries should contain.

For more information, see the following topics:

- [Timesheet Periods \[page 430\]](#)
- [Approval Policy \[page 433\]](#)
- [Detail Configuration \[page 434\]](#)

Timesheet Periods

This tab is used to manage how timesheets are opened, closed, re-opened, and created.

Adding a scheduled timesheet period

Timesheet periods are measured in days, occur at a specified frequency, and new ones begin on a date based on when a previous one ends. Timesheet periods are created on a schedule you define, for example every week, on Monday, beginning 01/07/2008. You can also set the number of future timesheet periods that will be opened automatically.

To add a scheduled timesheet period

1. From the application toolbar, click **Setup**, and then select **Customization**.
2. Select the **Timesheet Settings** tab.
3. Select the **Periods** tab.
4. Click **Edit** to configure the future timesheet period.
5. From the **Auto Open** drop-down, select the number of time periods into the future that you want to open, the day of the week on which the new timesheet periods will begin, and the calendar date from which you want the new timesheet periods to take effect.
6. Click **Save**.

Closing a timesheet period

Timesheet periods can be open, closed, and re-opened. When a timesheet period is open, users can enter time in their timesheet for that period; when it is closed, users cannot enter time.

To close a timesheet period

1. From the application toolbar, click **Setup**, and then select **Customization**.
2. Select the **Timesheet Settings** tab.
3. Select the **Periods** tab.
4. Click the **Status** column in the timesheet row and select **Close**.
5. Click **Save**.

Closing a timesheet period automatically

Timesheets can be configured to close automatically. Choose the option to close timesheet periods when the Post Timesheet Data plug-in is run. Specify a grace period of up to seven days, during which users in your organization can still submit time, before the timesheet period is closed.

To close a timesheet period automatically

1. From the application toolbar, click **Setup**, and then select **Customization**.
2. Select the **Timesheet Settings** tab.
3. Select the **Periods** tab.
4. Select **Close past timesheet periods when posting job runs** and then select a grace period (1-7 days).
5. Click **Save**.

Deleting a scheduled timesheet period

You can delete a timesheet period schedule.

To delete a scheduled timesheet period

1. From the application toolbar, click **Setup**, and then select **Customization**.
2. Select the **Timesheet Settings** tab.
3. Select the **Periods** tab.
4. Click **Edit** to configure the future timesheet period.

5. Select the number of time periods into the future that you want remove and click **Delete**.
6. Click **Save**.

Editing a scheduled timesheet period

You can modify timesheet period schedules using the **Period Scheduling** dialog box in the middle of the **Timesheet Settings** tab. In the **Period Scheduling** dialog box, the timesheet periods are listed by their effective dates.

To edit a scheduled timesheet period

1. From the application toolbar, click **Setup**, and then select **Customization**.
2. Select the **Timesheet Settings** tab.
3. Select the **Periods** tab.
4. Click **Edit** to configure the future timesheet period.
5. Make your changes.
6. Click **Save**.

Editing a timesheet period's schedule

You can modify the settings with which a timesheet period is scheduled.

To edit a timesheet period schedule

1. From the application toolbar, click **Setup**, and then select **Customization**.
2. Select the **Timesheet Settings** tab.
3. Select the **Periods** tab.
4. Under **Period Scheduling**, select the period that you want to change, and then click **Edit**.
5. Modify the timesheet period length, when it begins, and the date upon which it is to take effect.
6. Click **Save**.

Opening a timesheet period

Timesheet periods can be open, closed, and re-opened. Resources can only submit time against an open timesheet.

To open a timesheet period

1. From the application toolbar, click **Setup**, and then select **Customization**.
2. Select the **Timesheet Settings** tab.
3. Select the **Periods** tab.
4. Click the **Status** column in the timesheet row and select **Open**.
5. Click **Save**.

Reopening a timesheet period

Timesheet periods can be open, closed, and re-opened. When a timesheet period is open, users can enter time in their timesheets for that period; when it is closed, users cannot enter time.

To reopen a timesheet period

1. From the application toolbar, click **Setup**, and then select **Customization**.
2. Select the **Timesheet Settings** tab.
3. Select the **Periods** tab.
4. Click the **Status** column in the timesheet row and select **Reopened**.
5. Click **Save**.

Reset a scheduled timesheet period

You can reset a scheduled timesheet period.

To reset a scheduled timesheet period

1. From the application toolbar, click **Setup**, and then select **Customization**.
2. Select the **Timesheet Settings** tab.
3. Select the **Periods** tab.
4. Under **Period Scheduling**, select the timesheet period you want to reset and click **Edit**.
5. Adjust the period length, the day of the week the timesheet period begins, and the date upon which the timesheet period will take effect, and then click **Reset**.
6. Click **Save**.

Viewing timesheet periods

Timesheet periods can be viewed from the Periods tab in the **Timesheet Settings** tab.

To view a timesheet period

1. From the application toolbar, click **Setup**, and then select **Customization**.
2. Select the **Timesheet Settings** tab.
3. Select the **Periods** tab.

Approval Policy

The **Approval Policy** tab is used to specify whether project and resources managers will be required to approve task-based assignments and whether project managers will be required to approve activity-based assignments. There are four approval options; approval options help your organization separate the time a resource spends on a task from the time it takes to actually complete a task. You can also allow users in your organization to save their timesheet.

Adding a status policy

When a policy is set, project managers will be required to approve status for task-based assignments. A status approval policy is independent of a time approval policy.

To add a status approval policy

1. From the application toolbar, click **Setup**, and then select **Customization**.
2. Select the **Timesheet Settings** tab.
3. Select the **Approval Policy** tab.
4. To require approvals, under **Status Approval**, select **Project Manager Approval Is Required**.
5. Click **Save**.

Adding an approval policy

When a policy is set, project and resource managers will be required to approve time for task-based assignments and resource managers will be required to approve time for activity-based assignments.

To add a time approval policy

1. From the application toolbar, click **Setup**, and then select **Customization**.
2. Select the **Timesheet Settings** tab.
3. Select the **Approval Policy** tab.
4. To require approvals, under **Time Approval**, select **Project Manager Approval Is Required**, **Project Manager Approval Is Required**, or **Project Manager Approval Is Required**.
5. Click **Save**.

Viewing approval policy settings

Timesheet approval policy settings can be viewed from the **Approval Policy** tab in the **Timesheet Settings** tab.

To view timesheet approval policy settings

1. Open the **Tools** module.
2. Select the **My Timesheet** tab.
3. Select a task or work item.
4. Select the **Status** tab.

Detail Configuration

This tab is used to increase the level of granularity for what can be entered into an activity-based work item type's timesheet. Some organizations have a need to track time at a more granular level. For example, help desk support personnel may spend eight hours responding to issues, but that time may be spread over supporting several applications across different business units.

Adding a timesheet column to an activity-based work item

You can increase the level of detail captured in timesheets for activity-based items. Changes to an activity-based item's timesheet will appear in the detail pane of a resource's timesheet.

To add a timesheet column to an activity-based work item

1. From the application toolbar, click **Setup**, and then select **Customization**.

2. Select the **Timesheet Settings** tab.
3. Select the **Detail Configuration** tab.
4. Select the work item type to which you want to add timesheet columns from the **Investment Type** drop-down.
5. Enable the **Detail Entry Enabled** option.
6. Move the available columns to the selected columns.
7. Click **Save**.

Allowing users to save their timesheets

The **Save** button on a resource's timesheet is hidden by default. If you want to allow users in your organization to save their timesheet before submitting their timesheet, you have to enable the **Save** button.

To allow users to save their timesheet

1. From the application toolbar, click **Setup**, and then select **Customization**.
2. Select the **Timesheet Settings** tab.
3. Select the **Approval Policy** tab.
4. Check **Allow users to save timesheet data before submitting**.
5. Click **Save**.

Enabling detailed timesheet entries

You can enable detailed timesheet entries.

To enable detailed timesheet entries

1. From the application toolbar, click **Setup**, and then select **Customization**.
2. Select the **Timesheet Settings** tab.
3. Select the **Detail Configuration** tab.
4. From the **Investment Type** drop-down, select a work item type.
5. Select **Detail Entry Enabled**.
6. Click **OK**.

User Synchronization

You can use the **User Synchronization** tab to manage the XML configuration file that contains the field mappings between attributes and a directory service, such as Active Directory or Novell eDirectory. When you create a provider, you have the option of managing some aspects of that provider in the **User Synchronization** tab.

The XML configuration file lives in the Scheduler Service directory, typically C:\Program Files\Serena\Mariner\SchedulerService. The XML configuration file must be called UserResourcesSyncConfig.xml.

If you are using an on-demand version of this application, you do not need to configure user synchronization. User synchronization is only necessary for on-premise customers.

Adding a user authentication provider

In order to use a provider in the **User Synchronization** tab, you must first add the provider to the view. Once added, select the **Use in Synchronization** option.

To add a user authentication provider

1. In the desktop **System Settings** module, under **Actions**, click **Manage Providers**.
2. In the **Manage Providers** dialog box, click **Add**.

Deleting a user authentication provider

Authentication providers can only be deleted if there are no users assigned to it.

To delete a user authentication provider

1. In the desktop **System Settings** module, under **Actions**, click **Manage Providers**.
2. In the **Manage Providers** dialog box, select a provider and click **Delete**.

Editing a user authentication provider

You can update the information related to a user authentication provider.

To edit a user authentication provider

1. In the desktop **System Settings** module, under **Actions**, click **Manage Providers**.
2. Select an existing provider.
3. Click **OK**.

User Authentication Providers

User authentication is the process of receiving and verifying user credentials and is a key component of identity management and network security. Authentication is implemented through authentication providers. User authentication providers are set up in the **Manage Providers** dialog box.

Four types of user authentication are supported:

- Active Directory
- NDS eDirectory
- Windows
- Application

User authentication is set up per user by selecting the user authentication provider from the **Authentication Provider** list for each user. Using an Lightweight Directory Access (LDAP)-based authentication provider enables you to validate user authentication using existing network directory services. The experience is seamless to users. If you select the Lightweight Directory Access (LDAP) or Microsoft Windows user authentication type, users cannot edit their user password. If you select Microsoft Windows authentication users will not be able to access the application unless they are logged on to the domain. Further, Microsoft Windows authentication will pass through a user's domain credentials when accessing the application. After logging in to the application once, users should not be presented with the log on page on subsequent visits.

To provide additional security, you can set up Lightweight Directory Access (LDAP)-based authentication providers to use a secure connection (SSL) between the application and the

directory services provider. This connection requires that the necessary certificates be installed on both the Web server and the directory services server.

Configuring Active Directory authentication

Each user account set up uses an authentication provider to facilitate user logon. By default, a predefined **Application** authentication provider is included. Multiple authentication types are supported, including those using the Lightweight Directory Access (LDAP) protocol. You can use the **Manage Providers** dialog box to add, modify or remove an authentication provider that uses Active Directory.

To configure Active Directory authentication

1. In the desktop **System Settings** module, under **Actions**, click **Manage Providers**.
2. In the **Manage Providers** dialog box, click **Add**.
3. In the **Authentication Provider Name** box, type a name.
4. In the **Authentication Type** list, select *Active Directory*.
5. In the **Server** box, type the fully qualified distinguished name (FQDN) of the Active Directory server, for example ad.serena.com.
6. In the **Domain Filter** box, type the Lightweight Directory Access (LDAP) query format for the provider, for example (objectclass=user).
7. Type values for the corresponding boxes (first name, last name, email, and user name). The default values should be correct in most cases for Active Directory.
8. In the **Distinguished Name** box, the field can accept a username (such as username) or a qualified domain name (such as domain\username) in addition to a full Lightweight Directory Access (LDAP) distinguished name.
9. Under **Connect As**, enter a user name and password. This is used to verify that the provider settings have been entered correctly. In Active Directory, the user name can be a simple user name, a qualified domain name, or a full distinguished name.
10. Click **Apply**. This will verify that Active Directory is accessible in the path specified, and that the query returns more than zero users. There is no user validation, as this would require using actual user passwords.
11. If you receive a "Server does not exist" error, modify the provider properties and try again. If no errors return, close the **Manage Providers** dialog.

Configuring application user authentication

Each user account set up uses an authentication provider to facilitate user logon. By default, a predefined **Application** authentication provider is included. Multiple authentication types, including those using the Lightweight Directory Access (LDAP) protocol, are supported.

To configure application user authentication

1. In the desktop **System Settings** module, under **Actions**, click **Manage Providers**.
2. In the **Manage Providers** dialog box, click **Add**.
3. In the **Authentication Provider Name** box, type a name.
4. In the **Authentication Type** list, select *Application*.

5. In the **Server** box, type the name of the server hosting the database and then in the **Database Name** box, type the database name.
6. Click **OK**.

Configuring Novell eDirectory authentication

Each user account set up uses an authentication provider to facilitate user logon. By default, a predefined **Application** authentication provider is included. Multiple authentication types are supported, including those using the Lightweight Directory Access (LDAP) protocol. You can use the **Manage Providers** dialog box to add, modify or remove an authentication provider that uses Novell eDirectory.

To configure Novell eDirectory authentication

1. In the desktop **System Settings** module, under **Actions**, click **Manage Providers**.
2. In the **Manage Providers** dialog box, click **Add**.
3. In the **Authentication Provider Name** box, type a name.
4. In the **Authentication Type** list, select *NDS eDirectory*.
5. In the **Server** box, type the fully qualified distinguished name (FQDN) of the Novell eDirectory server, for example fully.qualified.serena.com.
6. In the **Domain Filter** box, type the Lightweight Directory Access (LDAP) query format for the provider, for example (objectclass=user).
7. For the fields in the **Field Mapping** group box (first name, last name, email, and user name boxes), type the Lightweight Directory Access (LDAP) directory property that contains the data that best matches the field name. The default values should be correct in most cases for the Novell eDirectory Lightweight Directory Access (LDAP) provider.
8. Under **Connect As**, enter a user name and password. This is used to validate the provider settings. In Novell eDirectory, the user name must be a fully qualified distinguished name (FQDN) with sufficient rights to execute the Lightweight Directory Access (LDAP) filter on the directory services server.
9. Click **Apply**. This will verify that Novell eDirectory is present in the path specified, and that the Lightweight Directory Access (LDAP) query returns more than zero users. There is no user validation.
10. If you receive a "Server does not exist" error, modify the provider properties and try again. If no errors return, close the **Manage Providers** dialog.

Configuring Microsoft Windows authentication

Each user account set up uses an authentication provider to facilitate user logon. By default, a predefined **Application** authentication provider is included. Multiple authentication types are supported, including those using the Lightweight Directory Access (LDAP) protocol. You can use the **Manage Providers** dialog box to add, modify or remove an authentication provider that uses Microsoft Windows.

To configure Microsoft Windows authentication

1. In the desktop **System Settings** module, under **Actions**, click **Manage Providers**.
2. In the **Manage Providers** dialog box, click **Add**.
3. In the **Authentication Provider Name** box, type a name.

4. In the **Authentication Type** list, select *Windows*.
5. In the **Domain Filter** box, type the name of your Microsoft Windows domain.
6. For the fields in the **Field Mapping** group box (first name, last name, and email), type the Microsoft Windows directory property that contains the data that best matches the field name. The properties in the default Microsoft Windows directory do not contain explicit properties for first name, last name, or e-mail address, so the default of *FullName* for last name is a reasonable choice.
7. Click **OK**.

View Designer

You can use the **View Designer** tab to modify the layout of financials views and to create custom summary views for use in the **Projects** module. Custom summary views are also used to layout a work item request page.

The **View Designer** tab has five sections:

- **View Layout** This section is used to design the layout of a view. Choose a work item. Select a view. Use a form that is already there, add a new form, or copy a form and use it again.
- **Attributes** This section is used to add attributes to a view layout. Many attributes are named using its system name.
- **Controls** This section is used to add buttons, boxes, rules, images, labels, and so on to a view layout.
- **Properties** This section is used to manage the properties associated with attributes and controls. Properties are only visible for attributes and controls which have been added to the view layout.
- **Pane** The layout pane is a template for designing the view. Click and drag attributes and controls onto the layout pane, and then define the appropriate properties for each. The **View Layout** box defines the work item type that the **Summary** tab is associated with. It contains a list of all the **Summary** tabs, so that you can select the one that you want to work with. It also contains a list of available forms for the selected view and the buttons needed for working with forms. These forms are the tabs that appear in each **Summary** tab.

Adding a form

The forms that you create in the **View Designer** tab are the tabs that appear in the associated **Summary** tab. When you create a new form in the **View Designer** tab, the form is displayed in the **Forms** list in the **View Layout** box of the **View Designer** tab, where it is available to be used in **Summary** tabs. When creating forms, you can:

- Create a new form.
- Add blocks of JavaScript code to the form by using the **Script** button.
- Create a new form based on an existing form by using the **Copy** button.
- Rename a form.

To add a form

1. From the application toolbar, click **Setup**, and then select **Customization**.

2. Select the **View Designer** tab.
3. Under **View Layout**, click **New**.
4. Name the form and click **OK**.
5. Click and drag the appropriate attributes and controls to the layout pane and modify their properties as necessary.
6. Under **View Layout**, click **Save**.

Adding a view from within the View Designer

You can add custom summary views to your configuration.

To add a view from within the View Designer

1. From the application toolbar, click **Setup**, and then select **Customization**.
2. Select the **View Designer** tab.
3. Under **View Layout**, define the view: from the **Investment** list, select the work item type that the summary view will be associated with, from the **Views** list, select a view, and from the **Forms** list, select an existing form or click **New** to create a new form. If you select an existing form, you can click the **Script** button to display the Code Editor dialog box, which can be used to insert blocks of JavaScript code into the form.
4. Under **Attributes**, left-click and drag an attribute onto the layout pane, and position it as desired.
5. Under **Properties**, set or modify the properties for the attribute. Click the button, if available, to make different types of modifications, such as selecting a color or opening a text editor.
6. Under **Controls**, left-click and drag a control onto the layout pane.
7. Under **Properties**, set and modify the properties for the control. Set the properties in the **Properties** box for each element. If you put a work item dependency into the form, you must configure the dependency.
8. Click **Save**.

Copying a form

You can create new forms by copying existing ones.

To copy a form

1. From the application toolbar, click **Setup**, and then select **Customization**.
2. Select the **View Designer** tab.
3. Under **View Layout**, select the summary view that contains the form you want to copy.
4. In **Forms**, select the form and then click **Copy**.

Copying a view in the View Designer

You can add new views by copying the settings, properties, and layout of an existing view.

To copy a view

1. From the application toolbar, click **Setup**, and then select **Customization**.

2. Select the **View Designer** tab.
3. Under **View Layout**, select the work item type, its associated view, and the form you want to copy.
4. Click **Copy**.
5. In the Copy To dialog box, select the work item type and view that you want to copy, and then click **OK**.
6. Under **View Layout**, click **Save**.

Deleting a form

If you are not using a form, you can delete it.

To delete a form

1. From the application toolbar, click **Setup**, and then select **Customization**.
2. Select the **View Designer** tab.
3. Under **View Layout**, select the summary view that contains the form you want to delete.
4. In **Forms**, select the form and then click **Delete**.

Deleting a view from the View Designer

If you are not using a view, you can delete it. You cannot delete out-of-the-box, system views.

To delete a view

1. From the application toolbar, click **Setup**, and then select **Customization**.
2. Select the **View Management** tab.
3. Select the **Investment Views** tab.
4. Under **Investment Views**, select a view and click **Delete**. You cannot delete system views.

Renaming a form

You can rename any form in any view.

To rename a form

1. From the application toolbar, click **Setup**, and then select **Customization**.
2. Select the **View Designer** tab.
3. Under **View Layout**, select the work item and then the view which contains the form that you want to rename.
4. Select the form and click **Rename**.
5. Type the new name and click **OK**.

Attributes

An attribute is a single work item that is used to store, present, report on, or track information that is used by team members as they work on their tasks. Some common attributes include **Actual Work**, **Name**, and **Cost**.

The **Attributes** box lists the attributes available for use in the on the selected form. These attributes are populated from the attributes defined in the **System Settings** module. Every attribute shares a common set of properties, as listed below.

Properties	Description
DataKey	The DataKey property is used to specify an attribute by referring to its System Name value.
Height	The Height property is used to specify the height (in pixels) of an attribute, control, or widget.
Left	The Left property is used to set the number of pixels from the left side of a page that an attribute, control, or widget is positioned. Use this property to align the attributes, controls, and widgets on a page.
ID	Read only. The ID property is used to show the unique ID of the design control.
IsMultiLine	The IsMultiLine property is used to indicate whether text that is displayed in an attribute, control, or widget should wrap. Setting this property to <i>True</i> will cause the text to wrap at the end of lines. For small, single line text fields, set this property to <i>False</i> .
IsRichEditor	The IsRichEditor property is used to indicate whether text that is displayed in an attribute, control, or widget should be saved and rendered as rich text with HTML style formatting. Setting this property to <i>True</i> will cause the text to be saved as rich text. For plain text, set this property to <i>False</i> .
Max Value	The Max Value property is used to set a maximum number of characters that a user can enter in a field placed on a Summary tab.
Min Value	The Min Value property is used to set a minimum number of characters a user can enter in a field placed on a Summary tab.
Name	The Name property is used to specify the name of a control or widget.
PESNativeType	The PESNativeType property is used to specify the native database type that will be associated with an attribute.
Read Only	The Read Only property is used to indicate whether the information for an attribute is read-only. Values in a read-only field cannot be changed by a user.

Properties	Description
Required	The Required property is used to indicate whether an attribute is a required field that forces a user to input information into the field. If the Required property is set to <i>True</i> , the user must enter data. If you want to prevent users from entering data in a required field, set this property to <i>False</i> and the Property property to <i>True</i> .
Top	The Top property is used to set the number of pixels from the top of a page that an attribute, control, or widget is positioned. Use this property to align the attributes, controls, and widgets on a page.
Type	Read only. The Type property is used to show the control type. For example, linklabel, button, hr, and so on.
Width	The Width property is used to specify the width (in pixels) of an attribute, control, or widget.
Z-Index	The Z-Index property is used to set the order by which attributes, controls, and widgets are layered on a page. For example, you can layer a form on top of an image.

Controls

The **Controls** box lists the elements that can be in the view such as frames and graphical elements.

For more information, see the following topics:

- [Audit History \[page 443\]](#)
- [Button \[page 444\]](#)
- [Document Store \[page 446\]](#)
- [Group Box \[page 446\]](#)
- [Horizontal Rule \[page 448\]](#)
- [Iframe \[page 449\]](#)
- [Image \[page 450\]](#)
- [Item Dependency \[page 451\]](#)
- [Label \[page 454\]](#)
- [Link Label \[page 455\]](#)
- [Single Object Chart \[page 456\]](#)

Audit History

An **Audit History** is used to add the ability to view the history of changes made to specific investments and work types.

Properties

The **Audit History** control has the following properties:

Properties	Description
Height	The Height property is used to specify the height (in pixels) of an attribute, control, or widget.
Left	The Left property is used to set the number of pixels from the left side of a page that an attribute, control, or widget is positioned. Use this property to align the attributes, controls, and widgets on a page.
ID	Read only. The ID property is used to show the unique ID of the design control.
Top	The Top property is used to set the number of pixels from the top of a page that an attribute, control, or widget is positioned. Use this property to align the attributes, controls, and widgets on a page.
Type	Read only. The Type property is used to show the control type. For example, linklabel, button, hr, and so on.
Width	The Width property is used to specify the width (in pixels) of an attribute, control, or widget.
Z-Index	The Z-Index property is used to set the order by which attributes, controls, and widgets are layered on a page. For example, you can layer a form on top of an image.

Button

A **Button** is used to add a button to a page in the application. You can add use the **Events** property to add JavaScript that is triggered when a user clicks on the button.

Properties

The **Button** control has the following properties:

Properties	Description
Background-Color	The Background-Color property is used to set the background color of an attribute, control, or widget.
Color	The Color property is used to set the font color of an attribute, control, or widget.

Properties	Description
Events	The Events property is used to add JavaScript to a page. For the Button and Image elements, click the button associated with the Events property to display the Code Editor dialog. In the Code Editor dialog, you can write code to be executed in association with the element (for example, code that executes when the user clicks a button).
Font-Family	The Font-Family property is used to set the font, such as verdana, courier, or arial.
Font-Size	The Font-Size property is used to set the size of a font.
Font-Style	The Font-Style property is used to set the displayed style of the text: normal, italic, or oblique.
Font-Weight	The Font-Weight property is used to set the displayed weight of the text: normal, bold, or bolder.
Height	The Height property is used to specify the height (in pixels) of an attribute, control, or widget.
Left	The Left property is used to set the number of pixels from the left side of a page that an attribute, control, or widget is positioned. Use this property to align the attributes, controls, and widgets on a page.
ID	Read only. The ID property is used to show the unique ID of the design control.
TabIndex	The TabIndex property is used to set the navigation order when using the TAB key. When the user tabs through the page, the field with a Tab Index of "1" will be first field, "2" second, and so on. For a read-only field, you should not add a Tab Index . This lets the user skip over this field when tabbing through the page.
Text-Align	The Text-Align property is used to specify whether text should be right-aligned, left-aligned, centered, or justified.
Text-Decoration	The Text-Decoration property is used to specify whether text should be displayed normally, underlined, overlined, or with a strikethrough bar.
ToolTip	The ToolTip property is used to add customized tool tips for the control or attribute and over rides the default tool tip.
Top	The Top property is used to set the number of pixels from the top of a page that an attribute, control, or widget is positioned. Use this property to align the attributes, controls, and widgets on a page.

Properties	Description
Type	Read only. The Type property is used to show the control type. For example, linklabel, button, hr, and so on.
Width	The Width property is used to specify the width (in pixels) of an attribute, control, or widget.
Z-Index	The Z-Index property is used to set the order by which attributes, controls, and widgets are layered on a page. For example, you can layer a form on top of an image.

Document Store

A **Document Store** is used to provide a location in which documents can be stored for specific investments, work types, or log types.

Properties

The **Document Store** control has the following properties:

Properties	Description
Height	The Height property is used to specify the height (in pixels) of an attribute, control, or widget.
Left	The Left property is used to set the number of pixels from the left side of a page that an attribute, control, or widget is positioned. Use this property to align the attributes, controls, and widgets on a page.
ID	Read only. The ID property is used to show the unique ID of the design control.
Top	The Top property is used to set the number of pixels from the top of a page that an attribute, control, or widget is positioned. Use this property to align the attributes, controls, and widgets on a page.
Type	Read only. The Type property is used to show the control type. For example, linklabel, button, hr, and so on.
Width	The Width property is used to specify the width (in pixels) of an attribute, control, or widget.
Z-Index	The Z-Index property is used to set the order by which attributes, controls, and widgets are layered on a page. For example, you can layer a form on top of an image.

Group Box

Use the **Group Box** to group attributes together under a common heading. A **Group Box** is often used to help make it easier for users to work with data by locating common and/or related data in a specific location.

Properties

The **Group Box** control has the following properties:

Properties	Description
Background-Color	The Background-Color property is used to set the background color of an attribute, control, or widget.
Color	The Color property is used to set the font color of an attribute, control, or widget.
Font-Family	The Font-Family property is used to set the font, such as verdana, courier, or arial.
Font-Size	The Font-Size property is used to set the size of a font.
Font-Style	The Font-Style property is used to set the displayed style of the text: normal, italic, or oblique.
Font-Weight	The Font-Weight property is used to set the displayed weight of the text: normal, bold, or bolder.
Height	The Height property is used to specify the height (in pixels) of an attribute, control, or widget.
Left	The Left property is used to set the number of pixels from the left side of a page that an attribute, control, or widget is positioned. Use this property to align the attributes, controls, and widgets on a page.
Legend	The Legend property is used to specify whether a legend should be displayed on a chart.
ID	Read only. The ID property is used to show the unique ID of the design control.
TabIndex	The TabIndex property is used to set the navigation order when using the TAB key. When the user tabs through the page, the field with a Tab Index of "1" will be first field, "2" second, and so on. For a read-only field, you should not add a Tab Index . This lets the user skip over this field when tabbing through the page.
Text-Decoration	The Text-Decoration property is used to specify whether text should be displayed normally, underlined, overlined, or with a strikethrough bar.
ToolTip	The ToolTip property is used to add customized tool tips for the control or attribute and over rides the default tool tip.

Properties	Description
Top	The Top property is used to set the number of pixels from the top of a page that an attribute, control, or widget is positioned. Use this property to align the attributes, controls, and widgets on a page.
Type	Read only. The Type property is used to show the control type. For example, linklabel, button, hr, and so on.
Width	The Width property is used to specify the width (in pixels) of an attribute, control, or widget.
Z-Index	The Z-Index property is used to set the order by which attributes, controls, and widgets are layered on a page. For example, you can layer a form on top of an image.

Horizontal Rule

A **Horizontal Rule** is used to add a simple horizontal line to any page in the application. A **Horizontal Rule** can be used to help make it easier for users to work with data by providing visual separation between sections of data.

Properties

The **Horizontal Rule** control has the following properties:

Properties	Description
Background-Color	The Background-Color property is used to set the background color of an attribute, control, or widget.
Color	The Color property is used to set the font color of an attribute, control, or widget.
Height	The Height property is used to specify the height (in pixels) of an attribute, control, or widget.
Left	The Left property is used to set the number of pixels from the left side of a page that an attribute, control, or widget is positioned. Use this property to align the attributes, controls, and widgets on a page.
ID	Read only. The ID property is used to show the unique ID of the design control.
TabIndex	The TabIndex property is used to set the navigation order when using the TAB key. When the user tabs through the page, the field with a Tab Index of "1" will be first field, "2" second, and so on. For a read-only field, you should not add a Tab Index . This lets the user skip over this field when tabbing through the page.

Properties	Description
ToolTip	The ToolTip property is used to add customized tool tips for the control or attribute and over rides the default tool tip.
Top	The Top property is used to set the number of pixels from the top of a page that an attribute, control, or widget is positioned. Use this property to align the attributes, controls, and widgets on a page.
Type	Read only. The Type property is used to show the control type. For example, linklabel, button, hr, and so on.
Width	The Width property is used to specify the width (in pixels) of an attribute, control, or widget.
Z-Index	The Z-Index property is used to set the order by which attributes, controls, and widgets are layered on a page. For example, you can layer a form on top of an image.

Iframe

An **Iframe** is used as a way to display a page from outside the application, as long as that page can be referenced from a URL. For example, you can show a page from your organization's intranet, a link to a report generated by another application, or to a page on the Internet. The default URL used in the **Iframe** is set using the **Src** property.

Properties

The **Iframe** control has the following properties:

Properties	Description
FrameBorder	The FrameBorder property is used to specify the style of a frame border.
Height	The Height property is used to specify the height (in pixels) of an attribute, control, or widget.
Left	The Left property is used to set the number of pixels from the left side of a page that an attribute, control, or widget is positioned. Use this property to align the attributes, controls, and widgets on a page.
ID	Read only. The ID property is used to show the unique ID of the design control.
Src	The Src property is used to specify the source URL for an image in an Image control.

Properties	Description
TabIndex	The TabIndex property is used to set the navigation order when using the TAB key. When the user tabs through the page, the field with a Tab Index of "1" will be first field, "2" second, and so on. For a read-only field, you should not add a Tab Index . This lets the user skip over this field when tabbing through the page.
Top	The Top property is used to set the number of pixels from the top of a page that an attribute, control, or widget is positioned. Use this property to align the attributes, controls, and widgets on a page.
Type	Read only. The Type property is used to show the control type. For example, linklabel, button, hr, and so on.
Width	The Width property is used to specify the width (in pixels) of an attribute, control, or widget.
Z-Index	The Z-Index property is used to set the order by which attributes, controls, and widgets are layered on a page. For example, you can layer a form on top of an image.

Image

An **Image** is used to add a static image to a page. The image is set using the **Src** property as a URL to the location of the image on your organization's intranet or to a page on the Internet. You can add use the **Events** property to add JavaScript that is triggered when a user clicks on the image.

Properties

The **Image** control has the following properties:

Properties	Description
Background-Color	The Background-Color property is used to set the background color of an attribute, control, or widget.
Color	The Color property is used to set the font color of an attribute, control, or widget.
Events	The Events property is used to add JavaScript to a page. For the Button and Image elements, click the button associated with the Events property to display the Code Editor dialog. In the Code Editor dialog, you can write code to be executed in association with the element (for example, code that executes when the user clicks a button).
Height	The Height property is used to specify the height (in pixels) of an attribute, control, or widget.

Properties	Description
Left	The Left property is used to set the number of pixels from the left side of a page that an attribute, control, or widget is positioned. Use this property to align the attributes, controls, and widgets on a page.
ID	Read only. The ID property is used to show the unique ID of the design control.
Src	The Src property is used to specify the source URL for an image in an Image control.
TabIndex	The TabIndex property is used to set the navigation order when using the TAB key. When the user tabs through the page, the field with a Tab Index of "1" will be first field, "2" second, and so on. For a read-only field, you should not add a Tab Index . This lets the user skip over this field when tabbing through the page.
ToolTip	The ToolTip property is used to add customized tool tips for the control or attribute and over rides the default tool tip.
Top	The Top property is used to set the number of pixels from the top of a page that an attribute, control, or widget is positioned. Use this property to align the attributes, controls, and widgets on a page.
Type	Read only. The Type property is used to show the control type. For example, linklabel, button, hr, and so on.
Width	The Width property is used to specify the width (in pixels) of an attribute, control, or widget.
Z-Index	The Z-Index property is used to set the order by which attributes, controls, and widgets are layered on a page. For example, you can layer a form on top of an image.

Item Dependency

An **Item Dependency** is used to show a dependency for a work item. This control must be configured using the **Configuration** property.

Properties

The **Item Dependency** control has the following properties:

Properties	Description
Configuration	The Configuration property is used to specify the attributes shown on a Card Wall widget.

Properties	Description
Height	The Height property is used to specify the height (in pixels) of an attribute, control, or widget.
Left	The Left property is used to set the number of pixels from the left side of a page that an attribute, control, or widget is positioned. Use this property to align the attributes, controls, and widgets on a page.
ID	Read only. The ID property is used to show the unique ID of the design control.
Top	The Top property is used to set the number of pixels from the top of a page that an attribute, control, or widget is positioned. Use this property to align the attributes, controls, and widgets on a page.
Type	Read only. The Type property is used to show the control type. For example, linklabel, button, hr, and so on.
Width	The Width property is used to specify the width (in pixels) of an attribute, control, or widget.
Z-Index	The Z-Index property is used to set the order by which attributes, controls, and widgets are layered on a page. For example, you can layer a form on top of an image.

Adding a dependency control

The dependency control is added to a summary form for the each applicable work item type. For each dependency control, you need to create a custom summary form for the **Dependency Creation** dialog; essentially, this dialog is the user interface that is presented to users when they are adding a dependency to the grid.

To add a dependency control

1. From the application toolbar, click **Setup**, and then select **Customization**.
2. Select the **View Designer** tab.
3. Under **View Layout**, select the work item type, its associated view, and the form on which the dependency will appear.
4. Under **Controls**, click and drag the Investment Dependency control to the layout pane. Size and position the control as necessary.
5. Under **Properties**, click the button for the Configuration attribute to open the Investment Dependency Configuration dialog box.
6. In the **Side** drop-down, select *Source* or *Target*.
7. In the **Dependency Type** drop-down, select the dependency type that will appear in the view. This list shows only those dependencies whose source or target includes the work item type selected in the view layout.
8. Move the attributes that you want to display in the view under **Column Attributes**.

9. Click **Save**.
10. Under **View Layout**, click **Save**.

Adding a dependency creation form

A work item dependency control can be added to a summary form for any applicable work item type. For each dependency control, you need to create a custom summary form for the Dependency Creation dialog; essentially, this dialog is the user interface that is presented to users when they are adding a dependency to the grid.

To add a dependency creation form

1. From the application toolbar, click **Setup**, and then select **Customization**.
2. Select the **View Designer** tab.
3. Under **View Layout**, from the **Projects** list, select a work item dependency, and then from the **Views** list select **Summary**. Click **New**.
4. Name the form and click **OK**.
5. Click and drag the appropriate attributes and controls to the layout pane and modify their properties as necessary.
6. Under **View Layout**, click **Save**.

Adding a work item dependency

Configuring work item dependencies involves adding and configuring work item dependency controls and creating dependency-creation forms for each. The types of work item dependencies you can use is set in the **System Settings** module. When you put a work item dependency control on a form in the **View Designer** tab, you must configure the dependency by specifying the dependency type, which attributes are to be displayed, and whether the attributes come from the dependency, source side of the dependency, or target side of the dependency. Once the work item dependency control is configured, you need to create a summary form for users to create dependencies.

To add a work item dependency

1. From the application toolbar, click **Setup**, and then select **Customization**.
2. Select the **View Designer** tab.
3. Under **View Layout**, select the work item type, its associated view, and the form on which the dependency will appear.
4. Under **Controls**, click and drag the Investment Dependency control to the layout pane. Size and position the control as necessary.
5. Under **Properties**, click the button for the Configuration attribute to open the Investment Dependency Configuration dialog box.
6. In the **Side** drop-down, select *Source* or *Target*.
7. In the **Dependency Type** drop-down, select the dependency type that will appear in the view. This list shows only those dependencies whose source or target includes the work item type selected in the view layout.
8. Move the attributes that you want to display in the view under **Column Attributes**.
9. Click **Save**.
10. Under **View Layout**, click **Save**.

Label

A **Label** is used to add a text label to a page in the application.

Properties

The **Label** control has the following properties:

Properties	Description
Background-Color	The Background-Color property is used to set the background color of an attribute, control, or widget.
Color	The Color property is used to set the font color of an attribute, control, or widget.
Font-Family	The Font-Family property is used to set the font, such as verdana, courier, or arial.
Font-Size	The Font-Size property is used to set the size of a font.
Font-Style	The Font-Style property is used to set the displayed style of the text: normal, italic, or oblique.
Font-Weight	The Font-Weight property is used to set the displayed weight of the text: normal, bold, or bolder.
Height	The Height property is used to specify the height (in pixels) of an attribute, control, or widget.
Left	The Left property is used to set the number of pixels from the left side of a page that an attribute, control, or widget is positioned. Use this property to align the attributes, controls, and widgets on a page.
ID	Read only. The ID property is used to show the unique ID of the design control.
Text-Align	The Text-Align property is used to specify whether text should be right-aligned, left-aligned, centered, or justified.
Text-Decoration	The Text-Decoration property is used to specify whether text should be displayed normally, underlined, overlined, or with a strikethrough bar.
ToolTip	The ToolTip property is used to add customized tool tips for the control or attribute and over rides the default tool tip.
Top	The Top property is used to set the number of pixels from the top of a page that an attribute, control, or widget is positioned. Use this property to align the attributes, controls, and widgets on a page.

Properties	Description
Type	Read only. The Type property is used to show the control type. For example, linklabel, button, hr, and so on.
Width	The Width property is used to specify the width (in pixels) of an attribute, control, or widget.
Z-Index	The Z-Index property is used to set the order by which attributes, controls, and widgets are layered on a page. For example, you can layer a form on top of an image.

Link Label

A **Link Label** is used to add a hyperlink to a page in the application, from which users can link out to that information. For example, you can add a external link to a website, such as Google, an internal link to a page located within your organization's intranet, or to a page that is generated by another application.

Properties

The **Link Label** control has the following properties:

Properties	Description
Background-Color	The Background-Color property is used to set the background color of an attribute, control, or widget.
Color	The Color property is used to set the font color of an attribute, control, or widget.
Font-Family	The Font-Family property is used to set the font, such as verdana, courier, or arial.
Font-Size	The Font-Size property is used to set the size of a font.
Font-Style	The Font-Style property is used to set the displayed style of the text: normal, italic, or oblique.
Font-Weight	The Font-Weight property is used to set the displayed weight of the text: normal, bold, or bolder.
Height	The Height property is used to specify the height (in pixels) of an attribute, control, or widget.
Left	The Left property is used to set the number of pixels from the left side of a page that an attribute, control, or widget is positioned. Use this property to align the attributes, controls, and widgets on a page.

Properties	Description
ID	Read only. The ID property is used to show the unique ID of the design control.
TabIndex	The TabIndex property is used to set the navigation order when using the TAB key. When the user tabs through the page, the field with a Tab Index of "1" will be first field, "2" second, and so on. For a read-only field, you should not add a Tab Index . This lets the user skip over this field when tabbing through the page.
Text-Align	The Text-Align property is used to specify whether text should be right-aligned, left-aligned, centered, or justified.
Text-Decoration	The Text-Decoration property is used to specify whether text should be displayed normally, underlined, overlined, or with a strikethrough bar.
ToolTip	The ToolTip property is used to add customized tool tips for the control or attribute and over rides the default tool tip.
Top	The Top property is used to set the number of pixels from the top of a page that an attribute, control, or widget is positioned. Use this property to align the attributes, controls, and widgets on a page.
Type	Read only. The Type property is used to show the control type. For example, linklabel, button, hr, and so on.
Width	The Width property is used to specify the width (in pixels) of an attribute, control, or widget.
Z-Index	The Z-Index property is used to set the order by which attributes, controls, and widgets are layered on a page. For example, you can layer a form on top of an image.

Single Object Chart

A **Single Object Chart** is used to show values in a summary view as a chart. The **Single Object Chart** must be configured using the **BrandXML**, **ConfigureXML**, **Data Processor**, and **Data Processor Assembly** properties.

Properties

The **Single Object Chart** control has the following properties:

Properties	Description
BrandXML	The BrandXML property is used to control the visual display and color scheme of a chart.

Properties	Description
ConfigureXML	The ConfigureXML property is used to control the data displayed on the single object chart.
DataProcessor	The DataProcessor property is used to specify the code that generates a chart. Effectively, this determines the type of chart.
DataProcessorAssembly	The DataProcessorAssembly property is used to specify the location of a custom chart data processor.
Height	The Height property is used to specify the height (in pixels) of an attribute, control, or widget.
Left	The Left property is used to set the number of pixels from the left side of a page that an attribute, control, or widget is positioned. Use this property to align the attributes, controls, and widgets on a page.
ID	Read only. The ID property is used to show the unique ID of the design control.
Top	The Top property is used to set the number of pixels from the top of a page that an attribute, control, or widget is positioned. Use this property to align the attributes, controls, and widgets on a page.
Type	Read only. The Type property is used to show the control type. For example, linklabel, button, hr, and so on.
Width	The Width property is used to specify the width (in pixels) of an attribute, control, or widget.
Z-Index	The Z-Index property is used to set the order by which attributes, controls, and widgets are layered on a page. For example, you can layer a form on top of an image.

Adding a single-object chart

A single object chart is an XML-based chart type that can be added to summary views and homepages. Using a single object chart, you can quickly and visually represent several types of data for users.

The following visual shows a single object chart inserted into a summary view. The attributes used to render the chart are also placed on the view. The single object chart provides a quick visual reference for the user of this summary view.

The configurations for the single object chart are made in two XML-based properties in the **View Designer** tab:

- **BrandXML** This property controls the visual display and color scheme of the chart.

- **ConfigureXML** This property controls the data displayed on the single object chart.

Example files for both a pie chart and gauge chart type are provided. The files for the pie chart type are PESAlignmentPieSOChartBrand.xml and PESAlignmentPieSOChartConfigure.xml, respectively.

The pie chart type can easily be modified to render several other chart types, such as a bar chart and a radar chart, simply by changing the chart type in the XML.

The files for the gauge chart type are PESSOGaugeChartBrand.xml and PESSOGaugeChartConfigure.xml, respectively.

These files are located in your installation directory, by default at C:\Program Files\Serena\Mariner\Mariner\charts\config. You will need the appropriate files to paste into the Code Editor dialog box and then modify for your purposes.

To add a single object chart

1. From the application toolbar, click **Setup**, and then select **Customization**.
2. Select the **View Designer** tab.
3. Under **View Layout**, select a work item and a view to which you are adding a single object chart.
4. Under **Controls**, select the **Single Object Chart** control and drag it to the layout pane.
5. Under **Properties**, select **BrandXML** to open the **Code Editor** dialog box. Add the XML for the chart.
6. Click **Save**.
7. Under **Properties**, select **ConfigureXML** to open the **Code Editor** dialog box. Add the XML for the chart.
8. Click **Save**.
9. Click **Save**.

View Management

You can use the **View Management** tab to manage work item types, log views, and the order in which views appear in modules.

For more information, see the following topics:

- [Item Views \[page 458\]](#)
- [Log Views \[page 459\]](#)
- [View Order \[page 461\]](#)

Item Views

Use the **Investment Views** tab to add views to the **Projects** module. New work item views can be associated with existing work item types from the **Investment Types** tab in the **Types Setup** tab.

Adding a work item view

Add a new work item view. Once added, work item views will be available when you set views using the **Investment Types** tab in the **Types Setup** tab.

To add a work item view

1. From the application toolbar, click **Setup**, and then select **Customization**.
2. Select the **View Management** tab.
3. Select the **Investment Views** tab.
4. Click **New**.
5. Enter a name, a description, and choose an icon.
6. Click **Save**.

Adding a summary view

Use custom summary views to capture additional work item data in the **Projects** module.

To add a summary view

1. From the application toolbar, click **Setup**, and then select **Customization**.
2. Select the **View Management** tab.
3. Select the **Investment Views** tab.
4. Click **New**.
5. Enter a name, a description, and choose an icon.
6. Click **Save**.

Deleting a work item view

If you don't need a work item view, you can delete it.

To delete a work item view

1. From the application toolbar, click **Setup**, and then select **Customization**.
2. Select the **View Management** tab.
3. Select the **Investment Views** tab.
4. Under **Investment Views**, select a view and click **Delete**. You cannot delete a system view.

Log Views

A log type is a simple list of items that are tracked in association with your projects, for example a list of risks, issues, or impediments. Log types can be customized and new log types can be added.

Use the **Log Views** tab to capture additional summary work item data for selected items in the **Projects** module. Log views are fully configurable. They can be renamed, deleted, and modified. New log views can be created, to which you can then associate to work item views. In order for users to access a log view, a log view must be associated with one or more security roles. This can be done from the **Roles** tab in the **Security** tab. Use the **View Designer** tab to design the interface for the new log view.

For example, say you have a log view called **Complaints** that contains a log item describing a common customer problem. Several members of your team contribute discussion points about this log item until the decision is made to convert this log item from a **Complaint** to an **Issue**. After a meeting, the decision is made to create a **Work**

Item from the **Issue** to address the problem. The work item is assigned to a resource who then fixes the problem.

To work with a log view or a log item, a user must have the appropriate permissions. Each log view has corresponding permissions to view or edit, and actions such as creating items from a log item (such as discussions, issues, or risks) are also permissioned actions. With the appropriate permissions, users can interact with log views in several ways; they can:

- Create or modify a log item
- Contribute to a conversation about a log item
- Convert a log item to a different log type
- Assign a log item (not enabled for **Discussions**)
- Escalate a log item (not enabled for **Discussions**)
- Create a work item from a log item
- Create a work item from a log item
- Delete a log item

Adding a log type

Several out-of-the-box log types are included: discussions, risks, and issues. You can add custom log types.

To add a log type

1. From the application toolbar, click **Setup**, and then select **Customization**.
2. Select the **View Management** tab.
3. Select the **Log Views** tab.
4. Click **New**.
5. In the **New Log Type** dialog box, name the new log type. Select an icon with which to associate the new log type. You can allow items tracked in the new log view to be escalated, transitioned into work item types, be assigned to resources, and become a work item.
6. If you chose to allow the log view to be transitioned into a work item type, under **Allowed Conversions**, select the work item types into which this log type can be transitioned.
7. Under **Attribute Assignments**, select the attributes that you want to associate with the log view.
8. Click **Save**.

Adding a log view

Add a new log view. You can allow users in your organization to escalate, to create items based on, to create work items from, and to assign the items in a log view. If these options are enabled, task icons will be available in the log view toolbar. You can also allow items in the log view to be converted into log types.

To add a log view

1. From the application toolbar, click **Setup**, and then select **Customization**.
2. Select the **View Management** tab.

3. Select the **Log Views** tab.
4. Click **New**.
5. In the **New Log Type** dialog box, name the new log type. Select an icon with which to associate the new log type. You can allow items tracked in the new log view to be escalated, transitioned into work item types, be assigned to resources, and become a work item.
6. If you chose to allow the log view to be transitioned into a work item type, under **Allowed Conversions**, select the work item types into which this log type can be transitioned.
7. Under **Attribute Assignments**, select the attributes that you want to associate with the log view.
8. Click **Save**.

Deleting a log view

If your organization isn't using a log view, you can delete it. You cannot delete a log view that is currently being used by any work item.

To delete a log view

1. From the application toolbar, click **Setup**, and then select **Customization**.
2. Select the **View Management** tab.
3. Select the **Log Views** tab.
4. Select a log type and click **Delete**.

Editing a log view

You can change the properties of any existing log view.

To edit a log view

1. From the application toolbar, click **Setup**, and then select **Customization**.
2. Select the **View Management** tab.
3. Select the **Log Views** tab.
4. Select a log view.
5. In the lower pane, make your changes.
6. Click **Save**.

View Order

Use the **View Order** tab to configure order in which views are listed in the **Projects**, **Reports**, **Resources**, **Tools**, **System Settings**, and **Customization** modules. Changes to the view order will affect all users in the same way regardless of their user role.

Editing the order in which views appear

Views can be shown in any order, from left to right.

To edit the order in which views appear

1. From the application toolbar, click **Setup**, and then select **Customization**.

2. Select the **View Management** tab.
3. Select the **View Order** tab.
4. From the **Module Name** drop-down, select the module in which you want to re-order views.
5. Under **Available Views**, select a view and click **Up** or **Down** for each view you want to move.
6. Click **Save**.

Workflow and Approvals

A work item type transition is the process of converting a work item from one work item type to another. You can use the **Workflow and Approvals** tab to create and maintain work item type transitions, transition approval lists, and transition criteria that is used from the Workflow tab in the **Projects** module.

The **Workflow and Approvals** tab has two tabs: **Workflow** and **Approval Lists**. For more information, see the following topics:

- [Workflow \[page 462\]](#)
- [Approval Lists \[page 464\]](#)

Workflow

The **Workflow** tab is used to define all of the possible work item type transitions, set their transition properties, and their transition criteria. You can add, modify, and delete transitions. You can create the criteria and rules which determine whether a workflow transition can take place. You can set up audit logs that can be used to archive and retrieve workflow transition information.

Adding a transition

A workflow transition is when a work item meets the predefined conditions that allows it to be changed from one type to another. Add a new workflow transition. Give it a name. Describe it. You must select a source work item type and a destination work item type for every workflow transition. It can be helpful to give a workflow transition a name that is based on the source and destination work item types. If a workflow transition requires approval, then choose the user, role, or group of users from the **Approval List** drop-down.

To add a workflow transition

1. From the application toolbar, click **Setup**, and then select **Customization**.
2. Select the **Workflow and Approvals** tab.
3. Select the **Workflow** tab.
4. Click **New**.
5. Under **Properties**, name the workflow transition and provide a description. Select a source work item type and a destination work item type. Select a workflow transition template (if available). Select an approval list (if applicable).
6. Select **Active** to make the workflow transition an active workflow transition. Only active workflow transitions will be available in the Workflow view from the **Projects** module.

7. Select **Audit this transition** to create workflow transition audits for the workflow transition. Workflow audits are available from the **History** tab in the Workflow tab.
8. Select **Auto Finalize** if the workflow transition does not require approvals before it can be finished.
9. Under **Rule Detail**, define the criteria for the workflow transition and click **Add**. These are the conditions that must be met before the workflow transition can be started. As each rule is created, it will be shown under **Filter Rules**.
10. Click **Save**.

Auditing a transition

When the **Audit this transition** option is enabled, a transition audit log is created for the workflow transition. A transition audit log is visible from the **History** tab in the Workflow tab. Audit logs can be archived. Archived audit logs can be retrieved.

To audit a workflow transition

1. From the application toolbar, click **Setup**, and then select **Customization**.
2. Select the **Workflow and Approvals** tab.
3. Select the **Workflow** tab.
4. Choose a transition from the **Transitions** list.
5. Select **Audit this transition**.
6. Click **Save**.

Deleting a transition

You can remove a workflow transition if you no longer need it.

To delete a workflow transition

1. From the application toolbar, click **Setup**, and then select **Customization**.
2. Select the **Workflow and Approvals** tab.
3. Select the **Workflow** tab.
4. Under **Transitions**, select a workflow transition.
5. Click **Delete**.

Editing a transition

To edit the transition, select a workflow transition and make your changes.

To edit a workflow transition

1. From the application toolbar, click **Setup**, and then select **Customization**.
2. Select the **Workflow and Approvals** tab.
3. Select the **Workflow** tab.
4. Select a workflow transition.
5. Make your changes.
6. Click **Save**.

Viewing a transition

Workflow transitions can be viewed from the **Workflow** tab in the **Workflow and Approvals** tab.

To view a workflow transition

1. From the application toolbar, click **Setup**, and then select **Customization**.
2. Select the **Workflow and Approvals** tab.
3. Select the **Workflow** tab.

Approval Lists

The **Approval Lists** tab is used to create approval lists for workflow transitions and to add users, roles, and groups to approval lists. Approval lists can be ordered (where users on the list must approve workflow transitions in the same order as in the approval list) or unordered (where users on the list can approve workflow transitions simultaneously).

Adding an ordered workflow transition approval list

An unordered workflow transition list allows simultaneous approval by any member of the approval list. Open the **Select Users** dialog box to add users, groups, and roles to the approval list.

To add an ordered workflow transition approval list

1. From the application toolbar, click **Setup**, and then select **Customization**.
2. Select the **Workflow and Approvals** tab.
3. Select the **Approval Lists** tab.
4. Click **New**.
5. Name the approval list.
6. Select **Ordered** to require approval of the workflow transition to be made in the order defined in the approval list.
7. Click **Add User** to add a single team member to the approval list.
8. Click **Add Group** to add all members of a security group to the approval list. Only team members who have permission to the work item from which the workflow transition request is being made will be able to approve the workflow transition. Specify how many team members from the security group will be required to approve the workflow transition.
9. Click **Add Role** to add all members of a security role to the approval list. Only team members who have permission to the work item from which the workflow transition request is being made will be able to approve the workflow transition. Specify how many team members from the security role will be required to approve the workflow transition.
10. After you have added users, security groups, or security roles to the approval list, click **Move Up** or **Move Down** to put each user, security group, or security role in the correct order.
11. Click **Save**.

Adding an unordered workflow transition approval list

An ordered workflow transition list requires workflow transition approval to occur in the order listed. Open the **Select Users** dialog box to add users, groups, and roles to the approval list.

To add an unordered workflow transition approval

1. From the application toolbar, click **Setup**, and then select **Customization**.
2. Select the **Workflow and Approvals** tab.
3. Select the **Approval Lists** tab.
4. Click **New**.
5. Name the approval list.
6. Leave **Ordered** unselected.
7. Click **Add User** to add a single team member to the approval list.
8. Click **Add Group** to add all members of a security group to the approval list. Only team members who have permission to the work item from which the workflow transition request is being made will be able to approve the workflow transition. Specify how many team members from the security group will be required to approve the workflow transition.
9. Click **Add Role** to add all members of a security role to the approval list. Only team members who have permission to the work item from which the workflow transition request is being made will be able to approve the workflow transition. Specify how many team members from the security role will be required to approve the workflow transition.
10. Click **Save**.

Deleting an approval list

If your organization is not using a workflow transition list, you can delete it.

To delete a workflow transition approval

1. From the application toolbar, click **Setup**, and then select **Customization**.
2. Select the **Workflow and Approvals** tab.
3. Select the **Approval Lists** tab.
4. Select an approval list.
5. Click **Delete**. You cannot delete a workflow transition list that is being used by an active workflow transition.

Editing an approval list

To modify the approval list, make your changes and save them.

To edit a workflow transition approval list

1. From the application toolbar, click **Setup**, and then select **Customization**.
2. Select the **Workflow and Approvals** tab.
3. Select the **Approval Lists** tab.
4. Select an approval list.

5. Make your changes.
6. Click **Save**.

Viewing an approval list

Workflow transition approval lists can be viewed from the **Approval Lists** tab in the **Workflow and Approvals** tab.

To view a workflow transition approval

1. From the application toolbar, click **Setup**, and then select **Customization**.
2. Select the **Workflow and Approvals** tab.
3. Select the **Approval Lists** tab.
4. Select an approval list to view its properties.

Reference

This section contains reference information about the database, macros, MathML calculations, reporting services, and Web Service.

For more information, see the following topics:

- [Attributes \[page 467\]](#)
- [Data Dictionary \[page 476\]](#)
- [Data Service Macros \[page 504\]](#)
- [Fields \(Task Plan\) \[page 515\]](#)
- [Virtual Stored Procedures \[page 524\]](#)
- [Resource Management Web Service \[page 525\]](#)

Attributes

The following table provides a description for all of the fields that are available in Project Portfolio Management:

attribute	Description
Billable	Indicates whether the costs associated with a task (or a task plan) are billable costs.
Completed	Indicates whether all of the work related to a task or work item has been completed.
Concurrency Modified By	The user name of the person (or process) who made the most recent changes to the task, task plan, or work item.
Concurrency Timestamp Date	The date and time on which the most recent concurrent changes were made to the task, task plan, or work item.
Cost Status	The status of a cost, or the status of the amount of money that is spent to produce something of value.
Cost Type ID	The unique ID for a specific cost.
Created By	The name of the resource who initially created the task, task plan, work item, and so on.
Created Date	The date on which a task, task plan, work item, and so on, was created.
Day	The day of the week: Sunday, Monday, Tuesday, Wednesday, Thursday, Friday, or Saturday.

attribute	Description
Delivery Interval	The interval in which the work item is currently located.
Delivery Interval ID	The unique ID for the delivery interval.
Dependency Source ID	The unique ID for the work item that is causing a dependency for another work item (the dependency target).
Dependency Target ID	The unique ID for the work item that is affected by a dependency (the dependency source).
Description	The description of a work item in the application, such as a task, work item, summary, and so on.
Development Allocation	The number of hours (or story points) that have been allocated to a work item.
Development Owner	The name of the resource who has been assigned to do the actual work related to the work item.
Effective End Date	The date by which a task should be finished.
Effective Start Date	The date by which a task should be started.
End Date	The date on which all work for a work item will be finished.
Estimated Finish Date	The estimated date on which all work for a work item will be finished.
Estimated Percent Complete	The estimate of progress made against a task (or a task plan), expressed as a percentage (of 100%).
Estimated Remaining Work	The estimated amount of time required for all resources (who are assigned to the task) to complete the task.
Estimated Start Date	The estimated date on which all work for a work item will be started.
Estimated Work	The estimated amount of work (measured in hours or story points) required to complete all planned work for a work item.
Finish Time	The time at which a task is scheduled to finish, or the time at which a task actually ended.
Hours Worked	The number of hours worked.

attribute	Description
Impact	The impact on a release, sprint, task, task plan, or other interval.
Is Checked In	Indicates whether the task plan is checked in.
Is Published	Indicates whether the task plan is published.
Issue Resolution	The planned resolution for an issue.
Item ID	The unique ID for the work item.
Item Type	The the type of work item. If the work item is task-based, then the list will contain task-based work item types. If the work item is activity-based, then the list will contain activity-based work item types.
Labor Cost	The cost of labor for a task in a task plan.
Labor Status	The current status of labor for a task in a task plan.
LAM_Allocations	The labor attribute mapping allocations that have been made for a task or for a task plan.
LAM_Assignments	The labor attribute mapping assignment that have been made for a task or for a task plan.
LAM_Assignments_Calc	The labor attribute mapping assignment calculations that have been made for a task or for a task plan.
LAM_AssignmentsCapEx	The labor attribute mapping capital expenses that have been made for a task or for a task plan.
LAM_AssignmentsOpEx	The labor attribute mapping operating expenses that have been made for a task or for a task plan.
Last User Modified By	The user name of the person who made the most recent changes to the task, task plan, or work item.
Last User Modified Date	The date on which the most recent changes were made to the task, task plan, or work item.
Likelihood	The estimated chances of a particular event occurring.
Log Priority	The priority of the log item.
Log Status	The status of the log item.

attribute	Description
MarketingSplit	A marketing split is when two plans are compared against each other, one a control (used to act as a baseline) and one a sample (used to act as the comparison against a baseline).
Mitigation Strategy	The approach that a team or a team member will use to work through a series of issues, impediments, and so on, towards resolution.
Name	The name of a task (or a task plan).
NonLaborHardware	The non-labor hardware that is being used by a team member while completing a task.
Owner	The owner of the work item.
Owning Investment Name	The name of the investment or interval to which a work item belongs.
Owning Item	The work item which belongs to an investment or to an interval.
Owning Task	The work item which belongs to an investment or to an interval.
Parent ID	The unique ID for the parent task.
Percent Work Complete	The amount of work that has been completed for a task (or a task plan), expressed as a percentage (of 100%).
Planning Interval	The name of the interval that is used to indicate planning.
Planning Interval ID	The ID for the interval that is used to indicate planning.
Planning Owner	The name of the owner of the individual team member who is responsible for the interval that is used to indicate planning.
Planning Owner ID	The ID for the owner of the individual team member who is responsible for the interval that is used to indicate planning.
Priority	Indicates the importance of the task in relation to other tasks. 500 is the default value; 1000 is the highest priority and 0 is the lowest priority. The higher the number, the higher the priority.
Project Costs Total	The total cost for a project.

attribute	Description
Project Costs Total CapEx	The total capital expenses for a project.
Project Costs Total OpEx	The total operational expenses for a project.
Project Labor Hours	The number of planned labor hours that are required to complete a project.
Project Labor Hours Variance	The difference in costs between the planned labor hours and the actual labor hours that are required to complete a project.
Project Priority	Indicates the importance of the task in relation to other tasks. 500 is the default value; 1000 is the highest priority and 0 is the lowest priority. The higher the number, the higher the priority.
Project Status	Indicates the current status of the project.
QA Owner	The name of the tester who has been assigned to do validate the quality of the work related to the work item.
Rank	Indicates the rank of a work item, in relation to other work items in the same list. The lower the number, the higher the rank.
Remaining Work	The amount of time required for all resources (who are assigned to the task) to complete the task.
Request State	The request state for a work item.
Resource Address1	The address for the location in which a resource is located. Resource Address1, Resource Address2, Resource City, Resource State, and Resource Zip Code are used together to define a resource's complete address.
Resource Address2	The place for additional address information, if needed, for the location in which a resource is located. Resource Address1, Resource Address2, Resource City, Resource State, and Resource Zip Code are used together to define a resource's complete address.
Resource Allocation Comment	The comment (or comments) that are associated with a resource allocation.

attribute	Description
Resource Allocation Earliest Start	The earliest date on which a resource allocation can be made.
Resource Allocation Latest Finish	The latest date on which a resource allocation can be made.
Resource Allocation Skill Set	The skills that a resource is required to have in order for them to be allocated to this work item.
Resource Allocation Skill Set ID	The unique ID for the skills that a resource is required to have in order for them to be allocated to this work item.
Resource Allocation Status	The status of a resource allocation.
Resource Alternate Name	The alternate name for a resource, such as a nickname.
Resource City	The city in which a resource is located. Resource Address1, Resource Address2, Resource City, Resource State, and Resource Zip Code are used together to define a resource's complete address.
Resource Completed	Indicates whether a resource has completed their assignment.
Resource Email	The email address of a resource.
Resource First Name	The first name of a resource.
Resource IsInactive	Indicates whether a resource is an active resource. An active resource must have an application license.
Resource Last Name	The last name of a resource.
Resource Primary Skill Set	The name of the skill to which a resource is most often associated.
Resource Primary Skill Set ID	The unique ID of the skill to which a resource is most often associated.
Resource State	The state in which a resource is located. Resource Address1, Resource Address2, Resource City, Resource State, and Resource Zip Code are used together to define a resource's complete address.
Resource Type	The type of resource.

attribute	Description
Resource User ID	The unique ID for the resource.
Resource Username	The username of a resource.
Resource Zip Code	The zip code in which a resource is located. Resource Address1, Resource Address2, Resource City, Resource State, and Resource Zip Code are used together to define a resource's complete address.
Review Date	The date on which a review will occur, or the date on which a review occurred.
Risk	The name of the risk.
Self Assigned	Indicates whether a resource has assigned themselves to a work item.
Start Date	The date on which all work for a work item will be started.
Start Time	The time at which a task is scheduled to start, or the time at which a task actually began.
Status	The current status of a work item, task, or project.
Task Actual Cost	The actual cost to complete actual work for a task (or a task plan).
Task Actual Duration	The amount of that has been actually needed to complete actual work for a task (or a task plan).
Task Actual Finish	The date by which work on a task (or a task plan) actually finished.
Task Actual Non-Labor Cost	The actual non-labor cost to complete actual work for a task (or a task plan).
Task Actual Start	The date by which work on a task (or a task plan) actually started.
Task Actual Total Cost	The actual total cost to complete actual work for a task (or a task plan).
Task Actual Work	The amount of work that has been completed, to-date, by all resources who have been assigned to a task (or a task plan).
Task Baseline Cost	The original, planned cost for a task (or a task plan).

attribute	Description
Task Baseline Duration	The original, planned duration for a task (or a task plan).
Task Baseline Finish	The original, planned finish date for a task (or a task plan).
Task Baseline Start	The original, planned start date for a task (or a task plan).
Task Baseline Work	The original, planned work for a task (or a task plan).
Task Cap-Ex	The capital expenses that are associated with a task in a task plan.
Task Cost	The amount of money that is spent to produce something of value. In a task plan, a cost is the amount of money that is spent while finishing a task.
Task Duration	The total amount of time required to complete a task, based on a task's start and finish dates. A duration is always based on how a day is defined in the working calendar associated with the task plan. A day is defined (by default) as being 8 hours; therefore, a duration of 1 day in a task is 8 hours.
Task Externally Visible	Indicates whether a task is externally visible.
Task Finish	The date on which a task is scheduled to finish.
Task Mapped Milestone	Indicates whether a task is a mapped milestone task, for the purposes of labor attribute mapping.
Task Non-Labor Cost	The non-labor costs that are associated with a task.
Team Owner ID	The unique ID of the resource in your organization who is responsible for the team.
Task Percent Complete	The progress made against a task (or a task plan), expressed as a percentage (of 100%).
Task Plan Vision	The planned vision for a task plan.
Task Project ID	The unique ID for the project to which a task (or a task plan) is associated.
Task Project Start	The date on which a project is scheduled to start.
Task Remaining Cost	The cost required to finish the remaining amount of work for all resources assigned to the task.

attribute	Description
Task Remaining Duration	The amount of time required to finish the remaining amount of work for all resources assigned to the task.
Task Resource Names	The name of the resource (or resources) who are assigned to a task in a task plan.
Task Sibling Order	The order in which tasks will appear.
Task Start	The date on which a task is scheduled to start.
Task Total Cost	The total amount of money that is spent to produce something of value. In a task plan, a cost is the amount of money that is spent while finishing a task. A cost can be associated with a task, a resource, an assignment, or a task plan.
Task Work	The total amount of work that has been scheduled for a task.
Team Owner	The name of the individual resource in your organization who is responsible for all work performed by the the team.
Timephase Finish	The timephased date on which a task is scheduled to finish.
Timephase Start	The timephased date on which a task is scheduled to start.
Timephase Value	The amount of time which comprises the range of time between a task's timephased start and timephased finish dates.
TotalCost	The total amount of money that is spent to produce something of value. In a task plan, a cost is the amount of money that is spent while finishing a task. A cost can be associated with a task, a resource, an assignment, or a task plan.
TotalCostCumulative	The total cumulative amount of money that is spent to produce something of value.
Transition State	The transition state for a task or for a work item.
Unspecified Cost	The cost of any work item that are unknown or not otherwise directly accounted for (such as entered in a field which tracks actual cost).

attribute	Description
User Assigned To	The name of the resource to whom a task or work item has been assigned.
User Assigned To ID	The unique ID of the resource to whom a task or work item has been assigned.
User Story Work Remaining	The amount of work (measured as story points) which has not yet been completed.
Work Estimated	The amount of work that is estimated
Work Item Parent	The parent work item in the work hierarchy.
Work Remaining	The amount of work that still needs to be completed.
Work Remaining TPA	The amount of work that still needs to be completed, measured as a timephased amount of work.

Data Dictionary

All data and metadata is stored in a Microsoft SQL Server database. The database schema defines the structure of the database, including tables, data types, fields, and associated relationships. The schema is fixed upon release and does not change based upon your usage. The database schema may change from release to release, but these changes are usually additive in nature.

Each customer's configuration is unique and can vary widely. This is achieved within the context of the database by populating two different kinds of tables: Metadata and Instance data tables. Both table types will be used for constructing meaningful queries to retrieve data for custom reports, external data stores, Microsoft Excel, or any other system which needs to interact with data.

The database schema has been documented for the purposes of direct, read-only access to the database. We strongly recommend you do not perform any direct writes to the tables. The data in the metadata tables and instance data tables are subject to consistency checks and business logic processing by the application. Attempts to bypass the application will likely corrupt the database and result in a non-supportable situation for your company.

For more information, see the following topics:

- [Metadata Tables \[page 477\]](#)
- [Instance Data Tables \[page 477\]](#)
- [User and Security Tables \[page 477\]](#)
- [Data Access Component \(Data Services\) \[page 477\]](#)
- [Macros \[page 478\]](#)
- [Schema Changes Between Releases \[page 478\]](#)
- [Data Types \[page 478\]](#)

- [Metadata Table Summary \[page 479\]](#)
- [Instance Data Table Summary \[page 484\]](#)
- [User and Security Table Summary \[page 503\]](#)

Metadata Tables

Metadata tables contain information about your configuration, such as custom attributes, allowable item types, or the different ways a person can view monetary data. Some metadata tables are fixed with each release, and some change depending on the customer.

When you use the administration module to import data to or export data, you are in fact importing or exporting the metadata that is contained in these tables.

Instance Data Tables

Instance data tables contain the actual data that a customer inputs. Examples include a customer's financial information year to year, summary information about a portfolio, and a task plan for an individual project. In many cases, instance data is stored within a binary field of a particular table. This is part of the flexible architecture that allows the customer to interact with and affect large amounts of data in real time as well as have the ability to configure his system in any way imaginable without having to wait for a processing job to occur overnight or dynamically changing the schema of the database.

Retrieving instance data out the application requires the use of the data access component, also referred to as data services. In addition to accessing data, using the data access component allows for the application of business logic such as dynamically changing the layout of financial data, enforcement of user security, and prevents any unauthorized writing to the tables outside of the application.

User and Security Tables

The User and Security tables contain information about the users on your system. For the purposes of this document, only one such table is exposed.

Data Access Component (Data Services)

The Data Access Component is part of the a work item, which can be installed on any client machine that needs to access data. It works by passing SQL through to the application server, which then parses the SQL, processes the data, and returns it to the client, where it can then be displayed by any client that supports the OLE DB standard for retrieving data. Examples of these are: Microsoft Excel, Crystal Reports, and SQL Server Reporting Services.

Using the OLE DB to access data ensures data consistency, enforces user security, and prevents unauthorized writing to the database. Only users with the Manage Reports (View/Edit) permission can download the OLE DB Provider.

Downloading the OLE DB Provider

Only users with the Manage Reports (View/Edit) permission can download the OLE DB Provider.

To download the OLE DB Provider

1. In the toolbar, select Settings from the drop-down next to your user name.

2. In the **Settings** dialog box, click Install OLE DB Provider, and then save the OLE DB Provider to a local computer.

Macros

Because the custom attributes are stored in binary fields in the tables of the database, special commands are required to retrieve this data. These special commands are called data services macros. Macros work by wrapping T-SQL statements. The Data Services layer parses the macros, performs the appropriate processing to create a temporary table to which the requested binary data is extracted; data in this temporary table is passed off to SQL Server for normal T-SQL processing.

Macros sometimes take additional parameters to perform other business logic such as normalizing timephased (business case) data, filtering the temporary table for optimization, and selecting custom attributes for inclusion in the temporary table. Further, some macros serve as convenient methods for reporting. All macros are detailed as data services.

Schema Changes Between Releases

In general, the schema changes are additive between releases. This means that new features tend to require the addition of tables and fields while existing fields typically remain unchanged. This allows for increased compatibility between releases. However, this is a general guideline, not a guarantee. At any release (major or patch), we reserve the right to change the schema without any written or implied notice. Also be aware the Reports written by Professional Services are not guaranteed between releases.

Schema changes for the PPM 2009 R1 release are described below.

PES_ProjectTaskDimension

The PES_ProjectTaskDimension table is no longer used. The relevant fields have been moved into PES_ProjectTask and made into first class, non-dimensioned attributes. Mariner dimensions are no longer supported in the Task Plan. Instead of Mariner dimensions, ten fixed Baselines are available.

PES_ProjectTask

New columns have been added to the PES_ProjectTask table, representing planned and actual values for task dates, work, and cost. Ten sets of columns for fixed baseline values are provided.

The task plan no longer has the concept of Non-Labor costs. Although columns for these costs are present in the PES_ProjectTask table, they are not used by the task plan, and should not be referenced in any reports. These columns are tsk_TotalCost, tsk_ActualTotalCost, tsk_NonLaborCost, and tsk_ActualNonLaborCost.

PES_ProjectAssignmentDimension

The PES_ProjectAssignmentDimension table has been removed and relevant columns have been moved into PES_ProjectAssignment table. Note that baselines do not exist at the assignment level.

Data Types

Each table listed in the summary above is detailed below, including columns, data types, and descriptions. The data type refers type of value that each column can contain. The following data types are used in the table details below:

Data Type	Description
int	This data type stores an integer. Often used for object IDs. The int value stores 4 bytes of data.
smallint	This data type stores an integer. The smallint value stores 2 bytes of data.
nvarchar(n)	This data type stores strings of varying lengths; the parenthetical numeric value is the maximum length allowed in the column. In addition to text, the string can include digits and symbols; the field supports both single- and double-byte characters.
bit	This data type stores Boolean values. Typically a value of "1" is true, while a "0" is false.
uniqueidentifier	This data type stores a GUID value.
image	This data type stores data in binary blobs. This data cannot be viewed using traditional methods and must be extracted using data services macros.
ntext	This data type stores text strings and supports both single- and double-byte characters.
datetime	This data type stores a time and date stamp for the data, based on your locale settings. By default, this format is "m/dd/yyyy" or "h:m:s". Quotes (") are used to enclose dates and times.
smalldatetime	This data type stores a date stamp for the data, based on your locale settings, but does not include a time stamp. By default, this format is "m/dd/yyyy". Quotes (") are used to enclose dates and times.
float	This data type stores a varying numeric value.

Metadata Table Summary

Metadata is essentially the "data about the data." Metadata provides the structure for your organization's instance data. The following table summarizes the database tables containing metadata.

Table Name	Column Prefix
PES_Class	cls_
PES_Attribute	att_
PES_Dimension	dim_

PES_StorageUnit	stu_
PES_Timescale	tis_
PES_List	lst_
PES_ListItem	li_

For more information, see the following topics:

- [PES_Class](#) [page 480]
- [PES_Attribute](#) [page 481]
- [PES_Dimension](#) [page 482]
- [PES_StorageUnit](#) [page 482]
- [PES_Timescale](#) [page 482]
- [PES_List](#) [page 483]
- [PES_ListItem](#) [page 483]

PES_Class

The PES_Class table contains type information for various object types. Specifically, it contains the definitions for each item type. These definitions contain various properties which govern system behavior.

Column	Data Type	Description
cls_XMLName	nvarchar(60)	Each type has a unique name which can be used to identify it.
cls_UID	int	Every type has a unique identifier. Many other tables reference this field.
cls_Name	nvarchar(50)	The name of a particular type.
cls_IsActive	bit	Specifies an active object that will be available in various screens and operations. A value of "1" indicates that the object is active.
cls_IsCreatable	bit	Specifies whether a new instance of the type can be created by a user. A value of "1" indicates that the object is creatable.
cls_CanSelfAllocate	bit	Specifies whether this item type allows self-allocation. Security still applies on the instance of the item. A value of "1" indicates that users can self allocate to this item type, by default.

cls_CanSelfAssign	bit	Specifies whether this item type allows self-assignment. Security still applies on the instance of the item. A value of "1" indicates that users can self assign to this object, by default.
cls_InheritAllocations	bit	Specifies whether this item type inherits its allocations from a parent item or whether direct allocation is allowed. A value of "1" indicates that this item inherits allocations.

PES_Attribute

This table contains type information for the attributes defined in the system.

Column	Data Type	Description
att_UID	int	A unique identifier. Every record in the table has a unique ID. Many other tables reference this field.
att_XMLName	nvarchar(50)	Each attribute has a unique name which can be used to identify it. When using macros, you will reference custom attributes by this field.
att_Name	nvarchar(50)	The friendly name of a particular attribute. The View Designer view gets its default label name from this attribute.
att_IsDimensioned	bit	Specifies whether an attribute is dimensioned.
att_IsCalculated	bit	Specifies whether an attribute derives its value from a calculation.
lst_UID	int	Specifies whether the attribute is mapped to a list. When mapped to a list, this value will be the unique ID of a list from the PES_List table.
atype_UID	int	Specifies the data type of the attribute based on the PES_AttributeType table.

Tables in the database that refer to an attribute use the att_UID for the reference key. However, when specifying a custom attribute in a macro, use the att_XMLName, which is usually much more readable. When an attribute is dimensioned, you must reference the dimension when retrieving the value via a macro.

MACRO: PES_MACRO_INVESTMENT. For example:

```
SELECT att_UID, att_IsDimensioned, att_XMLName FROM PES_Attribute
```

PES_Dimension

This table contains type information for the dimensions defined in the system.

Column	Data Type	Description
dim_UID	int	A unique identifier. Every record in the table has a unique ID. Many other tables reference this field.
dim_XMLName	nvarchar(32)	The unique name of the dimension, such as Plan. When using macros, you will reference custom dimensioned attributes by this field.
dim_Name	nvarchar(50)	The friendly name of a particular dimension. It can be (and often is) the same as the dim_XMLName.
dim_Locked	bit	A locked dimension cannot accept new attribute values in screens or operations.

Tables in the database which refer to a dimension use the dim_UID for the reference key. However, when specifying a custom dimensioned attribute in a macro, you will use the dim_XMLName, which is usually much more readable. When an attribute is dimensioned, you must reference the dimension when retrieving the value via a macro. For example:

```
SELECT * FROM PES_MACRO_PROJECT_TASK(task, ,tsd_Start@Plan)
```

PES_StorageUnit

This table contains the information about all the valid timephased attribute storage units in the system. The storage unit specifies how timephased data is displayed. (Currency, Units, Hours, FTEs).

Column	Data Type	Description
stu_UID	int	A unique identifier. Every record in the table has a unique ID.
stu_Name	nvarchar(255)	Each storage unit has a name, such as "FTE". This name is used in the various macros to display an attribute in a given storage unit.

PES_Timescale

This table contains the information about all the valid timephased attribute timescales in the system. The timescale specifies how the product will display timephased data. (Years, Quarters, Months, Days, Fiscal Years, Fiscal Quarters, Fiscal Months).

Column	Data Type	Description
tis_UID	int	A unique identifier. Every record in the table has a unique ID.
tis_Name	nvarchar(50)	Each timescale unit has a name, such as "Fiscal Year". This name is used in the various macros to display an attribute in a given timescale.

The values in these two tables are primarily used when specifying the timescale in a macro to display a timephased attribute. For example:

```
SELECT * FROM PES_MACRO_TIMEPHASE_ATTRIBUTES_TIMESCALE (tmp, obj_UID = 281, Currency,
```

PES_List

This table contains the information about all the valid list types defined in the system. A list holds a number of valid items, which are stored in the PES_ListItem table.

Column	Data Type	Description
lst_UID	int	A unique identifier. Every record in the table has a unique ID. An attribute that derives its values from a list will point to this key.
lst_Name	nvarchar(50)	The name of the list that will appear in the Administration module.
atype_UID	int	Specifies the data type of the list based on the PES_AttributeType table.

PES_ListItem

This table contains the information about all the valid list items defined in the system.

Column	Data Type	Description
li_UID	int	A unique identifier. Every record in the table has a unique ID.
li_Name	nvarchar(50)	The display name of the list item.
lst_UID	int	The ID of the list in which this item appears. This is the list value stored in the PES_List table.
li_Precedence	int	The display order of items in a list. When you select from a list drop-down, the list items appear in the order specified.

li_IsOrphan	int	An orphan item is a list item that is no longer valid for selection in a list drop-down.
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PES_List and PES_ListItem contain information about lists and their respective items. When you remove a list item, it becomes orphaned. Attributes which referred to this value continue to keep it, but the list item is no longer selectable in drop downs throughout. For example:

```
SELECT * FROM PES_List lst JOIN PES_ListItem li ON li.lst_UID = lst.lst_UID WHERE li.
```

Instance Data Table Summary

Instance data is the data that is entered by your organization. This includes task plans, items, resources, timesheet data, and so on. The following table lists the database tables that store instance data.

Table Name	Column Prefix
PES_Object	obj_
PES_ObjectAssociation	oa_
PES_Dependency	obj_
PES_TimephaseAttributes	tpa_
PES_TimephaseAttributeDetails	tpd_
PES_ProjectTask	tsk_
PES_ProjectTaskDimension	tsd_
PES_ProjectAssignment	tsk_
PES_ProjectAssignmentDimension	tsd_
PES_WorkItemTask	tsk_
PES_WorkItemTaskDimension	tsd_
PES_WorkItemAssignment	tsk_
PES_WorkItemAssignmentDimension	tsd_
PES_ConfigurableLog	obj_
PES_TimesheetDetailsPending	tsl_
PES_TimesheetLineItem	tsl_

PES_Resource	res_
PES_ResourceAllocation	ral_
PES_ResourceAllocationContour	ralc_
PES_SkillSet	sks_

For more information, see the following topics:

- [PES_Object \[page 485\]](#)
- [PES_ObjectAssociation \[page 486\]](#)
- [PES_Dependency \[page 487\]](#)
- [PES_TimephaseAttributes \[page 488\]](#)
- [PES_TimephaseAttributeDetails \[page 488\]](#)
- [PES_ProjectTask \[page 489\]](#)
- [PES_ProjectTaskDimension \[page 492\]](#)
- [PES_ProjectAssignment \[page 492\]](#)
- [PES_ProjectAssignmentDimension \[page 494\]](#)
- [PES_WorkItemTask \[page 494\]](#)
- [PES_WorkItemTaskDimension \[page 495\]](#)
- [PES_WorkItemAssignment \[page 496\]](#)
- [PES_WorkItemAssignmentDimension \[page 497\]](#)
- [PES_ConfigurableLog \[page 498\]](#)
- [PES_TimesheetDetailsPending \[page 499\]](#)
- [PES_TimesheetLineItem \[page 500\]](#)
- [PES_Resource \[page 500\]](#)
- [PES_ResourceAllocation \[page 502\]](#)
- [PES_ResourceAllocationContour \[page 502\]](#)
- [PES_SkillSet \[page 503\]](#)

PES_Object

This table contains item and resource team information. The resource teams are identified by having a cls_UID of 6. If the database was migrated from Portfolio Edge, the cls_UID may be a value other than 6, and defined in the PES_Class table.

Column	Data Type	Description
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obj_UID	int	A unique identifier. Every record in the table has a unique ID. It will be used often in JOIN statements to retrieve related information.
obj_ParentUID	int	The ID of an object's immediate parent.
obj_HasChildren	bit	Indicates whether the item or resource team has any children.
cls_UID	smallint	Identifies the item type of a particular row entry. The item type appears in the PES_Class table.
obj_Name	nvarchar(100)	The name of a particular item.
obj_BinData	image	Contains all the custom attribute data for an item. This data is stored in binary and requires a macro to extract it.
obj_Description	ntext	The description of a particular item.
obj_LastChange	datetime	Last time the object was changed by a user or the system (includes system).
obj_LastChangeBy	int	The ID of the user who last changed the object (includes system).
obj_LastUserChangeDate	datetime	The last time the object was changed by a user (excludes system).
obj_LastUserChangeBy	int	The ID of the user who last changed the object (excludes system).

Name and Description (obj_Name and obj_Description) can be retrieved without using a macro as they are both predefined fields in the system.

MACRO: PES_MACRO_INVESTMENT. For example:

```
SELECT * FROM PES_MACRO_INVESTMENT(inv, obj_UID = 100, Project_Status)
```

PES_ObjectAssociation

This table manages the hierarchical relationship among items and resource teams.

Column	Data Type	Description
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oa_AncessorUID	int	The ID of the ancestor object.
oa_DescendantUID	int	The ID of the descendant object.
oa_Level	smallint	The number of levels down in the item hierarchy the descendant is from the ancestor.

For example:

```
SELECT oa_DescendantUID FROM PES_ObjectAssociation WHERE oa_AncessorUID IN (1)
```

This table is often used in a MACRO's inner filter clause to bring back all items at a certain level and lower. For example:

```
SELECT * FROM PES_MACRO_INVESTMENT(inv, obj_UID IN (SELECT oa_DescendantUID FROM PES_C
```

PES_Dependency

This table contains information related to item dependencies.

Column	Data Type	Description
obj_UID	int	A unique identifier. Every record in the table has a unique ID.
obj_SourceUID	int	The ID of the dependency's source item.
cls_UID	smallint	Identifies the dependency type of a particular row entry. The type appears in the PES_Class table.
obj_TargetUID	int	The ID of the dependency's target item.
obj_LastChange	datetime	The last time the object was changed by a user or the system (includes system).
obj_BinData	image	Contains all the custom attribute data for a dependency. Use a macro to extract it.
obj_Description	ntext	The description of a particular item.
obj_LastChangeBy	int	The ID of the user who last changed the object (includes system).
obj_LastUserChangeDate	datetime	The last time the object was changed by a user (excludes system).
obj_LastUserChangeBy	int	The ID of the user who last changed the object (excludes system).

MACRO: PES_MACRO_DEPENDENCY. For example:

```
SELECT source.obj_Name as Source, target.obj_Name as Target, dep.obj_Name as Dependence
FROM PES_MACRO_DEPENDENCY (dep, ,Name)
JOIN PES_Object source ON dep.obj_SourceUID = source.obj_UID
JOIN PES_Object target ON dep.obj_TargetUID = target.obj_UID
```

PES_TimephaseAttributes

This table contains data for the timephased attributes.

Column	Data Type	Description
obj_UID	int	A unique identifier. Every record in the table has a unique ID.
dim_UID	tinyint	The ID of the dimension that this row's data belongs to. Can join to PES_Dimension table.
att_UID	int	The ID of the attribute that this row's data belongs to. Can join to PES_Attribute table.
tpa_BinData	image	Contains all the timephased attribute data for a given attribute / dimension combination. This data is stored in binary and requires a macro to extract it.

MACRO: PES_MACRO_TIMEPHASE_ATTRIBUTES_TIMESCALE. For example:

```
SELECT * FROM PES_MACRO_TIMEPHASE_ATTRIBUTES_TIMESCALE (tmp, obj_UID = 281, Currency,
```

PES_TimephaseAttributeDetails

This table stores detail attributes associated with each timephased attribute entry. These details are custom attributes that attached to a timephased attribute.

Column	Data Type	Description
obj_UID	int	A unique identifier. Every record in the table has a unique ID.
obj_InvestmentUID	int	The ID of the item that this attribute detail record belongs to. Can be used to JOIN back to related item.
obj_Description	int	The description of a particular attribute. This is a default detail attribute on each BCV entry. You do not need a macro to get at this.

obj_BinData	image	Contains all the timephased detail attribute data for a given attribute. This data is stored in binary and requires a macro to retrieve it.
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MACRO: PES_MACRO_TIMEPHASE_ATTRIBUTE_DETAIL. For example:

```
SELECT self.Value, detail.obj_Name, detail.obj_Description
FROM PES_MACRO_TIMEPHASE_ATTRIBUTES_SELF_CONTRIBUTION (self, obj_UID = 281 and att_UID = 281)
LEFT OUTER JOIN PES_TimephaseAttributeDetails detail ON self.obj_BucketUID = detail.obj_BucketUID
WHERE self.obj_InvestmentUID = 281
```

or

```
SELECT self.Value, detail.Description, detail.obj_Description
FROM PES_MACRO_TIMEPHASE_ATTRIBUTES_SELF_CONTRIBUTION (self, obj_UID = 281 and att_UID = 281)
LEFT OUTER JOIN PES_MACRO_TIMEPHASE_ATTRIBUTE_DETAIL(detail, obj_InvestmentUID = 281, att_UID = 281)
```

PES_ProjectTask

This table contains information about the tasks that are part of an item's task plan.

Column	Data Type	Description
obj_UID	int	A unique identifier. Every record in the table has a unique ID.
obj_Name	nvarchar(100)	The display name of a particular task.
obj_ParentUID	int	The ID of a task's immediate parent.
obj_HasChildren	bit	Indicates whether the task has any children. A value of "1" indicated that it does.
obj_ProjectUID	int	The ID of the item to which the task belongs.
prv_Published	bit	Specifies the current state of the task plan wherein the task appears. A value of "1" indicates the task belongs to a checked in plan. A value of "0" means it belongs to a checked out plan.
obj_BinData	image	Contains all the custom attribute data for a task. This data is stored in binary and requires a macro to extract it.

obj_Description	ntext	The description of a particular task.
obj_LastChange	datetime	The last time the object was changed by a user or the system.
obj_LastChangeBy	int	The ID of the user who last changed the object (includes system).
obj_LastUserChangeDate	datetime	The last time the object was changed by a user (excludes system).
obj_LastUserChangeBy	int	The ID of the user who last changed the object (excludes system).
tsk_Completed	bit	Indicates whether or not a resource has marked the item as completed. A value of "1" indicates the item has been marked as completed.
tsk_PMCompleted	bit	Indicates whether or not a project manager has marked the item as completed. A value of "1" indicates the item has been marked as completed.
tsk_CapEx	bit	Indicates that the task is marked as a Capital expense. A value of "1" indicates that the item is a capital expense; a value of "0" means that it is not.
tsk_RemainingWork	float	Calculates the value of remaining work (Plan Work minus Actual Work).
tsk_PercentWorkComplete	float	Calculates the value of percent work complete (Actual Work v. Plan).
tsk_Start	datetime	The planned start date of a task.
tsk_ActualStart	datetime	The actual start date of a task.
tsk_Finish	datetime	The planned end date of a task.
tsk_ActualFinish	datetime	The actual end date of a task.

tsk_Work	float	The planned amount of work associated with a task.
tsk_ActualWork	float	The actual amount of work associated with a task.
tsk_Duration	float	The duration of a task.
tsk_Cost	float	The planned cost of a task.
tsk_ActualCost	float	The actual cost of a task.
tsk_RemainingCost	float	The planned remaining cost associated with a task.
tsk_BaselinenStart	datetime	The planned start date in baseline n.
tsk_BaselinenActualStart	datetime	The actual start date in baseline n.
tsk_BaselinenFinish	datetime	The planned end date in baseline n.
tsk_BaselinenActualFinish	datetime	The actual end date in baseline n.
tsk_BaselinenWork	float	The planned amount of work associated with a task in baseline n.
tsk_BaselinenActualWork	float	The actual amount of work associated with a task in baseline n.
tsk_BaselinenDuration	float	The duration of a task in baseline n.
tsk_BaselinenCost	float	The planned cost of a task in baseline n.
tsk_BaselinenActualCost	float	The actual cost of a task in baseline n.
tsk_BaselinenRemainingCost	float	The planned remaining cost associated with a task in baseline n.

With tasks, you can select directly off the tables when looking for the system attributes specified above. If you have custom attributes, you will need to use the macro. The parent_UID for the root task is -6. This can be used to select the summary task.

This is useful for reporting on a rolled up value such as total planned work, total actual work, duration, whether the entire task plan has been marked PM completed, and so on.

MACRO: PES_MACRO_PROJECT_TASK. For example:

```
SELECT * FROM PES_MACRO_PROJECT_TASK(task, obj_ProjectUID = 281, Description, tsk_Comp
```

PES_ProjectTaskDimension

The PES_ProjectTaskDimension table is no longer used. The relevant fields have been moved into PES_ProjectTask and made into first class, non-dimensioned attributes.

PES_ProjectAssignment

This table contains information about the assignments that are associated with an item. Note that baselines do not exist at the assignment level.

Column	Data Type	Description
obj_UID	int	A unique identifier. Every record in the table has a unique ID.
obj_Name	nvarchar(100)	The name of a particular assignment.
obj_ProjectUID	int	The ID of the item to which this assignment belongs.
obj_TaskUID	int	The ID of the task to which an assignment belongs.
obj_AllocationUID	int	The ID of the allocation that an assignment is part of. This can be used in a join to find out the allocation and resource.
prv_Published	bit	A value of "1" means this particular assignment belongs to a checked in plan. A value of "0" means it belongs to a checked out plan.
obj_BinData	image	Contains all the custom attribute data for a task assignment. This data is stored in binary and requires a macro to extract it.
obj_Description	ntext	The description of a particular assignment.
obj_LastChange	datetime	The last time the object was changed by a user or the system.

obj_LastChangeBy	int	The ID of the user who last changed the object (includes system).
obj_LastUserChangeDate	datetime	The last time the object was changed by a user (excludes system).
obj_LastUserChangeBy	int	The ID of the user who last changed the object (excludes system). May be the same value as obj_LastChangeBy.
tsk_Completed	bit	Indicates whether or not a resource has marked the item as completed. A value of "1" indicates the item has been marked as completed.
tsd_Cost	float	The cost for a particular assignment.
tsd_Duration	float	The duration of an assignment.
tsd_Finish	datetime	The finish date of an assignment.
tsk_PercentWorkComplete	float	Calculates the value of percent work complete (Actual Work v. Plan).
tsk_PMCompleted	bit	Indicates whether or not a project manager has marked the item as completed. A value of "1" indicates the item has been marked as completed.
tsk_RemainingWork	float	Calculates the value of remaining work (Plan Work minus Actual Work).
tsd_Start	datetime	The start date of an assignment.
tsd_Work	float	The amount of work for an assignment.

With assignments, you can select directly off the tables when looking for the system attributes specified above. If you have custom attributes, you will need to use the macro.

MACRO: PES_MACRO_PROJECT_ASSIGNMENT. For example:

```
SELECT * FROM PES_MACRO_PROJECT_ASSIGNMENT(assn, obj_ProjectUID = 281, Description, ts
```

PES_ProjectAssignmentDimension

The PES_ProjectAssignmentDimension table has been removed and relevant columns have been moved into PES_ProjectAssignmentTable.

PES_WorkItemTask

This table contains information about the work items that are associated with an item.

Column	Data Type	Description
obj_UID	int	A unique identifier. Every record in the table has a unique ID.
obj_Name	nvarchar(100)	The name of a particular assignment.
obj_ProjectUID	int	The item to which this assignment belongs.
obj_BinData	image	Contains all the custom attribute data for a task assignment. This data is stored in binary and requires a macro to extract it.
obj_Description	ntext	The description of a particular assignment.
obj_LastChange	datetime	Last time the object was changed by a user or the system.
obj_LastChangeBy	int	ID of the user that the object was last changed by (includes system).
obj_LastUserChangeDate	datetime	Last time the object was changed by a user (excludes system).
obj_LastUserChangeBy	int	ID of the user that the object was last changed by (excludes system).
tsk_Completed	bit	Indicates whether or not a resource has marked the item as completed. A value of "1" indicates the item has been marked as completed.
tsk_PMCompleted	bit	Indicates whether or not a project manager has marked the item as completed. A value of "1" indicates the item has been marked as completed.

tsk_CapEx	bit	Indicates that the task is marked as a Capital expense. A value of "1" indicates that the item is a capital expense.
tsk_RemainingWork	float	Calculates the value of remaining work (Plan Work minus Actual Work).
tsk_PercentWorkComplete	float	Calculates the value of percent work complete (Actual Work v. Plan).

With work items, you can select directly off the tables when looking for the system attributes specified above. If you have custom attributes, you will need to use the macro.

MACRO: PES_MACRO_WORK_ITEM_TASK. For example:

```
SELECT * FROM PES_MACRO_WORK_ITEM_TASK(work, obj_ProjectUID = 281, Description, tsk_C
```

PES_WorkItemTaskDimension

This table contains data for dimensioned attributes of a work item.

Column	Data Type	Description
obj_UID	int	A unique identifier that specifies the ID of the task. This value appears in the PES_WorkItemTask table.
dim_UID	int	Specifies the ID of the dimension. This value appears in the PES_Dimension table.
tsd_Duration	float	The duration of a work item.
tsd_Start	datetime	The start date of a work item.
tsd_Finish	datetime	The finish date of a work item.
tsd_Work	float	The amount of work for a work item.
tsd_Cost	float	The cost for a particular work item.

With work items, you can select directly off the tables when looking for the system attributes specified above. If you have custom attributes, you will need to use the macro. If you are selecting both dimensioned and non-dimensioned attributes, you may find it easier to use a macro rather than joining the tables together.

MACRO: PES_MACRO_WORK_ITEM_TASK. Use an "@" symbol to specify the dimension from which you want to display work item task data. For example:

```
SELECT * FROM PES_MACRO_WORK_ITEM_TASK(work, obj_ProjectUID = 281, Description, tsk_C
```

PES_WorkItemAssignment

This table contains information about the work item assignments that are associated with an item.

Column	Data Type	Description
obj_UID	int	A unique identifier. Every record in the table has a unique ID.
obj_Name	nvarchar(100)	The name of a particular assignment.
obj_ProjectUID	int	The item to which this assignment belongs.
obj_TaskUID	int	The ID of the work item to which an assignment belongs.
obj_AllocationUID	int	The ID of the allocation that an assignment is part of. This can be used in a join to find out the allocation and resource.
obj_BinData	image	Contains all the custom attribute data for a work item. This data is stored in binary and requires a macro to extract it.
obj_Description	ntext	The description of a particular assignment.
obj_LastChange	datetime	The last time the object was changed by a user or the system.
obj_LastChangeBy	int	The ID of the user who last changed the object (includes system).
obj_LastUserChangeDate	datetime	Last time the object was changed by a user (excludes system).
obj_LastUserChangeBy	int	The ID of the user who last changed the object (excludes system).
tsk_Completed	bit	Indicates whether or not a resource has marked the item as completed. A value of "1" indicates the item has been marked as completed.

tsk_PMCompleted	bit	Indicates whether or not a project manager has marked the item as completed. A value of "1" indicates the item has been marked as completed.
tsk_RemainingWork	float	Calculates the value of remaining work (Plan Work minus Actual Work).
tsk_PercentWorkComplete	float	Calculates the value of percent work complete (Actual Work v. Plan).

With work item assignments, you can select directly off the tables when looking for the system attributes specified above. If you have custom attributes, you will need to use the macro.

MACRO: PES_MACRO_WORK_ITEM_ASSIGNMENT. For example:

```
SELECT * FROM PES_MACRO_WORK_ITEM_ASSIGNMENT(work, obj_ProjectUID = 281, Description,
```

PES_WorkItemAssignmentDimension

This table contains data for dimensioned attributes of a work item.

Column	Data Type	Description
obj_UID	int	A unique identifier. Every record in the table has a unique ID.
dim_UID	int	The ID of a dimension. This value appears in the PES_Dimension table.
tsd_Duration	float	The duration of a particular work item.
tsd_Start	datetime	The start date of a work item.
tsd_Finish	datetime	The finish date of a work item.
tsd_Work	float	The amount of work for a particular item.
tsd_Cost	float	The cost for a particular item.

With work item assignments, you can select directly off the tables when looking for the system attributes specified above. If you have custom attributes, you will need to use the macro. If you are selecting both dimensioned and non-dimensioned attributes, you may find it easier to use a macro rather than joining the tables together.

MACRO: PES_MACRO_WORK_ITEM_ASSIGNMENT. Use an "@" symbol to specify the dimension from which you want to display assignment data. For example:

```
SELECT * FROM PES_MACRO_WORK_ITEM_ASSIGNMENT(work,
obj_ProjectUID = 281, Description, tsk_Completed, tsk_PMCompleted,
tsk_RemainingWork, tsk_PercentWorkComplete, tsd_Duration@Plan,
tsd_Start@Plan, tsd_Finish@Plan, tsd_Work@Plan, tsd_Cost@Plan,
tsd_Duration@Actual, tsd_Start@Actual, tsd_Finish@Actual,
tsd_Work@Actual, tsd_Cost@Actual)
```

PES_ConfigurableLog

This table contains data for the various configurable log items.

Column	Data Type	Description
obj_UID	int	A unique identifier. Every record in the table has a unique ID. It will be used often in JOIN statements to retrieve related information.
obj_OwningInvestment	int	The ID of the item to which the log belongs.
cls_UID	smallint	Identifies the log type of a particular row entry. The log types appears in the PES_Class table.
obj_Name	nvarchar(100)	The name of a particular log item.
obj_LastChange	datetime	The last time the object was changed by a user or the system (includes system).
obj_BinData	image	Contains all the custom attribute data for an item. This data is stored in binary and requires a macro to extract it.
obj_Description	ntext	The description of a particular item.
obj_LastChangeBy	int	The ID of the user who last changed the object (includes system).
obj_LastUserChangeDate	datetime	The last time the object was changed by a user (excludes system).
obj_LastUserChangeBy	int	The ID of the user who last changed the object (excludes system).
usr_AssignedTo	int	The ID of the user that this particular log item has been assigned to.

obj_LogStatus	int	The ID of the list item value that indicating the current status of a log item.
obj_LogPriority	int	The ID of the list item value indicating the current priority of a log item.

All attributes above can be accessed without a macro as they are predefined fields in the system. However, custom attributes must be accessed via the macro. In addition, list items will be automatically resolved without the need for a further table lookup when using the macro.

There are different log types just as there are different item types. To group your returns by specific log types, you can order by log type using the cls_UID.

MACRO: PES_MACRO_CONFIGURABLE_LOG. For example:

```
SELECT * FROM PES_MACRO_CONFIGURABLE_LOG(log, obj_OwningInvestment = 281
AND cls_UID = 10, Description, obj_LogPriority, obj_LogStatus)
ORDER BY cls_UID
```

PES_TimesheetDetailsPending

This table contains data for every timesheet entry in the system.

Column	Data Type	Description
tsl_UID	int	A unique identifier. Every record in the table has a unique ID. This value associates a timesheet entry with the PES_Timesheet LineItem.
tsl_Date	smalldatetime	This is the date of an entry.
tsl_Hours	float	This is the number of hours for an entry.

A record exists for every timesheet entry in the system. If you do not use timesheet details, you can access this table directly. If you need access to detail items, you will need to use a macro.

MACRO: PES_MACRO_TIMESHEET_DETAIL_PENDING. For example:

```
SELECT * FROM PES_TimesheetDetailsPending
WHERE (tsl_Date > '1/01/2006')
AND (tsl_Date < '12/31/2006')
```

The macro uses slightly different field names. The tdl_Duration corresponds to the tsl_Hours and the tdl_Day corresponds to the tsl_Date in the above table. For example (using the macro):

```
SELECT * FROM PES_MACRO_TIMESHEET_DETAIL_PENDING(tdpm, tdl_Day >= '1/01/2006'
AND tdl_Day <= '12/31/2006', tdl_Duration,tdl_Day,Description
```

PES_TimesheetLineItem

This table contains some internal structures for maintaining timesheets. In addition, it contains the key for getting from the timesheet entry to the task, work item, or activity allocation.

Column	Data Type	Description
tsl_UID	int	A unique identifier. Every record in the table has a unique ID.
obj_AssignmentGUID	uniqueidentifier	This identifier ties a line item to an obj_VersionIndependentUID in either the PES_ProjectAssignment, PES_WorkItemAssignment or PES_ResourceAllocation tables.

This table can be used as an intermediary table to get from the timesheet entry to the appropriate assignment. The assignment can be to a task, work item, or activity. The GUID is found in each of the corresponding tables. For example:

```
SELECT assn.obj_Name AS Task, tdp.tsl_Date, tdp.tsl_Hours
FROM PES_TimesheetDetailsPending tdp JOIN PES_TimesheetLineItem tli ON tdp.tsl_UID=
assn.obj_VersionIndependentUID WHERE (tdp.tsl_Date > '2006-01-01' AND tdp.tsl_Date < '2006-12-31' AND assn.prv_Published = 1)
tli.tsl_UID LEFT OUTER JOIN PES_ProjectAssignment assn ON tli.obj_AssignmentGUID=
```

PES_Resource

This table contains data for all the resources in the system.

Column	Data Type	Description
obj_UID	int	A unique identifier. Every record in the table has a unique ID.
obj_ParentUID	int	This is the ID of the owning resource team (found in PES_Object table).
obj_Name	nvarchar(100)	This is the full name of the resource.
cls_UID	int	The ID of the class (resource) type. This is found in the PES_Class table.
usr_UID	int	The ID of the corresponding user. Every named resource has a user record in the system (excluding generic resources). This value appears in the PES_User table.

obj_BinData	image	Contains all the custom attribute data for a resource. Use a macro to extract it.
obj_Description	ntext	The description of a resource.
res_AlternateName	nvarchar(255)	An alternate name for a resource.
res_Address1	nvarchar(255)	The first line of the resource's address.
res_Address2	nvarchar(255)	The second line of the resource's address.
res_City	nvarchar(255)	The resource's city.
res_State	nvarchar(255)	The resource's state.
res_ZipCode	nvarchar(255)	The resource's zip code.
res_PrimarySkillSet	int	The ID of the default Resource Role that this resource has. When allocated to an item, this is the default Role for the subsequent allocation.
res_EffectiveStart	datetime	The date which the resource became active. At any time before this date the resource's capacity will be 0.
res_EffectiveEnd	datetime	The date which the resource became inactive. At any time after this date the resource's capacity will be 0.
obj_LastChange	datetime	The last time the resource was changed by a user or the system.
obj_LastChangeBy	int	The ID of the user who last changed the resource (includes system).
obj_LastUserChangeDate	datetime	The last time a user changed the resource (excludes system).
obj_LastUserChangeBy	int	The ID of the user who last changed the resource (excludes system).

Resources are either first class resource or generic resources. In general, first class resources have a `cls_UID` of 2, where generic resources have a `cls_UID` of 8. However, this is not always guaranteed if you came from a Portfolio Edge migration. Make sure to check your `PES_Class` table before making that assumption for retrieving data. Every resource belongs to a resource team, which are defined in the `PES_Object` table.

With resources, you can select directly off the tables when looking for the system attributes specified above. If you have custom attributes, you will need to use the macro.

MACRO: PES_MACRO_RESOURCE. For example:

```
SELECT peso.obj_Name as ResourceTeam, resource.obj_Name as Resource FROM PES_Object
peso INNER JOIN PES_Resource resource ON peso.obj_UID = resource.obj_ParentUID ORDER
BY peso.obj_Name, resource.obj_Name
```

PES_ResourceAllocation

This table contains data for all the resource allocations in the system. Each resource allocation maps a resource to an item. An allocated resource can then be assigned to tasks or work items. In addition, resource allocations have other properties associated with them such as resource roles and contours.

Column	Data Type	Description
obj_UID	int	A unique identifier. Every record in the table has a unique ID.
obj_ResourceUID	int	The ID of the resource. This value appears in PES_Resource table.
obj_ProjectUID	nvarchar(100)	The ID of the item to which the resource is allocated.
sks_SkillSetUID	int	The ID of Resource Role that corresponds to this resource or allocation. This value appears in the PES_SkillSet table.
obj_BinData	image	Contains all the custom attribute data for an allocation. This data is stored in binary and requires a macro to extract it.

MACRO: PES_MACRO_RESOURCE_ALLOCATION. For example:

```
SELECT * FROM PES_MACRO_RESOURCE_ALLOCATION(alloc, ,Name)
```

or

```
SELECT inv.obj_Name as Investment, res.obj_Name as Resource FROM PES_ResourceAllocation
JOIN PES_Resource res on alloc.obj_ResourceUID = res.obj_UID
JOIN PES_Object inv on alloc.obj_ProjectUID = inv.obj_UID
```

PES_ResourceAllocationContour

This table contains data for all the resource allocation contours in the system. A contour describes the dates that a resource is allocated to an item or activity, and at what percentage.

Column	Data Type	Description
ralc_UID	int	A unique identifier. Every record in the table has a unique ID.
obj_UID	int	The ID of the resource allocation.
ralc_Value	float	The allocation percentage for a time period.
ralc_Start	datetime	The start of the time period of the contour.
ralc_Finish	datetime	The end of the time period of the contour.
ralc_Comment	nvarchar(1000)	The comment that is attached to the contour.

There can be multiple contours per allocation. For example:

```
SELECT resource.obj_Name, ralc_Start, ralc_Finish, ralc_Value
FROM PES_ResourceAllocationContour contour
INNER JOIN PES_ResourceAllocation alloc on alloc.obj_UID = contour.obj_UID
INNER JOIN PES_Resource resource ON resource.obj_UID = alloc.obj_ResourceUID WHERE al
```

PES_SkillSet

This table contains data for all the resource roles in the system.

Column	Data Type	Description
sks_UID	int	A unique identifier. Every record in the table has a unique ID.
sks_Name	nvarchar(50)	The display name of the role, such as Developer.
sks_Description	nvarchar(250)	The description of the role.

Every resource has a primary role on an item to which they are allocated. For example:

```
SELECT resource.obj_Name as Resource, role.sks_Name as Role,
       inv.obj_Name as Investment
FROM PES_ResourceAllocation alloc
JOIN PES_SkillSet role on role.sks_UID = alloc.sks_SkillSetUID
JOIN PES_Resource resource on resource.obj_UID =
       alloc.obj_ResourceUID
JOIN PES_Object inv on inv.obj_UID = alloc.obj_ProjectUID
```

User and Security Table Summary

The user and security tables contain data for each user in the system. This section deals with only the PES_User table. There is only one User and Security table exposed in the schema.

Table Name	Column Prefix
PES_User	usr_

For more information, see the following topics:

- [PES_User \[page 504\]](#)

PES_User

This table contains data for all the users in the system. Users are people that are allowed access into the system. Access levels are determined by security roles and permissions.

Column	Data Type	Description
usr_UID	int	A unique identifier. Every record in the table has a unique ID.
usr_UserName	nvarchar(100)	The login name of the user. This name must be unique in the system.
usr_IsInactive	bit	Specifies whether a user is not active in the system and not allowed to login. An inactive user has a value of "1." An active user has a value of "0".
usr_FirstName	nvarchar(300)	The first name of the user.
usr_LastName	nvarchar(300)	The last name of the user.
usr_Domain	nvarchar(100)	The domain to which the user belongs (if applicable).
usr_EmailName	nvarchar(300)	The email address of the user.
usr_SendEmailNotifications	bit	Indicates whether or not the user can receive email notifications.
usr_DistinguishedName	nvarchar(1024)	If using LDAP, this is the distinguished name of the user.

For example:

```
SELECT usr_UserName, usr_isInactive FROM PES_User
```

Data Service Macros

Data service macros are provided as an alternative to using virtual stored procedures. Data services macros provide a greater degree of flexibility when accessing data, allowing

more control over the data set you are working with. These macros require expertise in Microsoft SQL Server and enable you to access and manipulate data using SQL SELECT statements. Data is stored in binary format in the database, and is generally inaccessible when accessed directly. The SELECT statement can use several data services macros that enable you to extract select binary data and render it in a temporary table in SQL.

To execute SQL statements through data services, a user must be granted the Direct Data Access permission in the Administration module. This permission can be assigned through a security role, or can be assigned to a particular user or set of users. It is recommended that this access be granted using a group that belongs to a security role.

For more information, see the following topics:

- [Data Services Macro Syntax \[page 505\]](#)
- [Multi-Currency Query Parameters \[page 506\]](#)
- [Object Macros \[page 506\]](#)

Data Services Macro Syntax

Data services macros pass specifically defined parameters using SQL Select statements. The syntax for these operations must be precise.

All macros have the same first 2 parameters. The first parameter is the temporary table's alias name. The requested data is placed into this temporary table when extracted from the database. The name for the temporary table must be unique. This is important when you need to prefix a column name with the table name. For example:

```
SELECT * FROM NAME_OF_MACRO
```

The second parameter is a WHERE clause. Using a WHERE clause enables you to narrow the scope of the data extraction, thus reducing the amount of binary data that is parsed. This is the most critical factor in the overall performance of data services macros. For example:

```
SELECT * FROM PES_MACRO_INVESTMENT(tmp, cls_UID = 1, Budget)
```

is calling for the budget attribute of portfolio. PES_MACRO_INVESTMENT is the name of the data services macro, tmp is the name of the temporary table in SQL, and cls_UID = 1 is a WHERE clause that reduces the amount of work data services must perform by parsing only the portfolio binaries. This parameter can be left blank to return back all the rows from the table.

Macros can also be embedded into another macro's WHERE clause. The following example is a macro that returns back all the project tasks whose owning item is active. For example:

```
SELECT * FROM PES_MACRO_PROJECT_TASK(task, obj_ProjectUID IN
```

or:

```
(SELECT obj_UID FROM PES_MACRO_INVESTMENT(inv, , Active) WHERE inv.Active = 1), Comple
```

Once the macro is processed and the temporary table is created and filled with data, data services replace the macro with the table name along with the alias that was used in the

first parameters. Once all macros are processed, the original SQL statement, with the macro replaced with temporary table names, is passed on to SQL Server to process. This gives the ability to use SQL to process further into the desired results.

Multi-Currency Query Parameters

If your organization has enabled support for multi-currencies, accessing currency information data using data services macros requires two additional query parameters. These query parameters must be prefixed to any query intended to return multi-currency data. The parameters are:

- # currency
- # currency_effective_date

For example, if you run the a SQL SELECT statement calling PES_MACRO_INVESTMENT and want to return currency values in Yen, the query would be prefixed as follows:

```
# currency = JPY
# currency_effective_date = 1/1/2004
SELECT * FROM PES_MACRO_INVESTMENT(tmp, cls_UID = 1, Budget)
```

Specifying a currency value as part of running a virtual stored procedure should not cause an error if there is no currency information available. If multi-currency support is not enabled, you do not need to prefix your query with the parameters above.

Object Macros

The macros described in this section extract attribute data from the binary data used to store custom attributes. These macros operate using the same parameters, but return data from different tables.

Each of the macros in the table below use these parameters:

- Temporary table name
- WHERE clause applied to the table containing the binary blob
- List of system attribute key names to add as columns in the temporary table

Anytime a system attribute key name is used as a column in the temporary table certain rules have to be applied. The first rule is that the `.` used as the dimension delimiter is replaced by the `@` symbol. The second rule is that `-'` are replaced with `_'`.

Anytime the # StripHTML attribute is used at the beginning of the macro, rich text formatting of the query results will be enabled (# StripHTML=false) or disabled (# StripHTML=true). Rich text formatting is enabled by default.

This is done so that the system attribute name will be a compatible database column name.

Macro Database	Table Where Data is Extracted
PES_MACRO_CONFIGURABLE_LOG	PES_ConfigurableLog
PES_MACRO_DEPENDENCY	PES_Dependency

PES_MACRO_INVESTMENT	PES_Object
PES_MACRO_PROJECT_ASSIGNMENT	PES_ProjectAssignment
PES_MACRO_PROJECT_NONLABOR	PES_ProjNonLaborAsgn
PES_MACRO_PROJECT_TASK	PES_ProjectTask
PES_MACRO_RESOURCE	PES_Resource
PES_MACRO_RESOURCE_ALLOCATION	PES_ResourceAllocation
PES_MACRO_TIMEPHASE_ATTRIBUTE_DETAIL	PES_TimephaseAttributeDetails
PES_MACRO_TIMESHEET_DETAIL_APPROVED	PES_TimesheetDetailsApproved
PES_MACRO_TIMESHEET_DETAIL_PENDING	PES_TimesheetDetailsPending
PES_MACRO_WORK_ITEM_ASSIGNMENT	PES_WorkItemAssignment
PES_MACRO_WORK_ITEM_TASK	PES_WorkItemTask

The following example shows a select statement that returns the Budget and plan start milestones for all projects in the system.

```
SELECT * FROM PES_MACRO_INVESTMENT(tmp, cls_UID = 6, Budget, StartMS@Plan)
```

Each of the macros in the table above can be called using a similarly structured SQL SELECT statement. The macros in the following sections are more complicated and are treated separately.

The following example shows using the StripHTML attribute to disable rich text formatting in a report's output:.

```
# StripHTML=true
SELECT * FROM PES_MACRO_INVESTMENT(tmp, cls_UID = 6, Budget, StartMS@Plan)
```

For more information, see the following topics:

- [PES_MACRO_ACTIVITY_ASSIGNMENT_TIMESCALE \[page 508\]](#)
- [PES_MACRO_CURRENT_RESOURCE \[page 508\]](#)
- [PES_MACRO_CURRENT_USER \[page 509\]](#)
- [PES_MACRO_DATES \[page 509\]](#)
- [PES_MACRO_EXPAND_MULTIPLE_OBJECT_ID \[page 509\]](#)
- [PES_MACRO_REMAINING_RESOURCE_ALLOCATION_FROM_ASSIGNMENT \[page 509\]](#)
- [PES_MACRO_REMAINING_RESOURCE_CAPACITY_FROM_ALLOCATION \[page 510\]](#)
- [PES_MACRO_REMAINING_RESOURCE_CAPACITY_FROM_ASSIGNMENT \[page 510\]](#)

- [PES_MACRO_RESOURCE_ALLOCATION_TIMESCALE](#) [page 511]
- [PES_MACRO_RESOURCE_CAPACITY_TIMESCALE](#) [page 512]
- [PES_MACRO_TASK_ASSIGNMENT_TIMESCALE](#) [page 512]
- [PES_MACRO_TIMEPHASE_ATTRIBUTES_SELF_CONTRIBUTION](#) [page 513]
- [PES_MACRO_TIMEPHASE_ATTRIBUTES_TIMESCALE](#) [page 513]
- [PES_MACRO_VSPROC](#) [page 514]
- [PES_MACRO_WORKITEM_ASSIGNMENT_TIMESCALE](#) [page 514]

PES_MACRO_ACTIVITY_ASSIGNMENT_TIMESCALE

`PES_MACRO_ACTIVITY_ASSIGNMENT_TIMESCALE` helps you view work item assignment data, similar to how resource assignments for tasks are viewed in the Assignment and Team Roster views.

The parameters for this macro are:

- Temporary table name
- WHERE clause applied against the `PES_ResourceAllocation` table so only the task assignment data associated with resource allocations are normalized.
- **Dimension** The possible values are 'Actual' and 'Plan'.
- **Storage unit** The possible values are 'FTE', 'Currency', and 'Hours'.
- **Time scale** The possible values are 'Calendar Year', 'Calendar Quarter', 'Calendar Month', 'Calendar Week', 'Calendar Day', 'Fiscal Year' and 'Fiscal Quarter'.
- **Start date** The entire bucket containing the start date will be included. For example, if 1/16/2011 is specified and Calendar Month is requested then the entire month of January is returned.
- **Finish date** As with Start Date, the entire bucket containing this date will be included.
- **Use date format** The possible values are true and false. If true then the column names for the buckets will be yXXXX_mXX_dXX. If false then the column names for the buckets will be PX.

The following example shows how to find the cost of all resource allocations made from a single resource team during the month of April, 2008:

```
SELECT * FROM PES_MACRO_ACTIVITY_ASSIGNMENT_TIMESCALE(ra, obj_ResourceUID
IN (SELECT resource.obj_UID FROM PES_Object peso JOIN PES_Resource resource
ON peso.obj_UID = resource.obj_ParentUID and resource.obj_ParentUID
in (SELECT oa_DescendantUID FROM PES_ObjectAssociation WHERE oa_AncessorUID = 3)), Pl
```

PES_MACRO_CURRENT_RESOURCE

`PES_MACRO_CURRENT_RESOURCE` returns the id of the current session resource if there is one, null if no resource for current user:

```
SELECT obj_UID FROM PES_Resource WHERE obj_UID = PES_FUNCTION_CURRENT_RESOURCE()
```

PES_MACRO_CURRENT_USER

PES_MACRO_CURRENT_USER returns the id of the current session user.

```
SELECT obj_UID FROM PES_Object WHERE obj_CreatedBy = PES_FUNCTION_CURRENT_USER()
```

PES_MACRO_DATES

PES_MACRO_DATES returns a set of dates as columns in the results set for the specified time scale and date range. This is useful when getting dates for column headers of reports.

The parameters for this macro are:

- Temporary table name
- Time scale; the possible values are 'Calendar Year', 'Calendar Quarter', 'Calendar Month', 'Calendar Week', 'Calendar Day', 'Fiscal Year' and 'Fiscal Quarter'
- Start date; the entire bucket containing the start date will be included. For example, if 1/16/2006 is specified and Calendar Month is requested then the entire month of January is returned
- Finish date; similar to Start Date the entire bucket containing this date will be included

The following example shows this macro querying for dates between January and April by calendar month:

```
SELECT * FROM PES_MACRO_DATES(tmp, Calendar Month, 1/1/2006, 4/30/2006)
```

PES_MACRO_EXPAND_MULTIPLE_OBJECT_ID

PES_MACRO_EXPAND_MULTIPLE_OBJECT_ID returns a comma-separated list of object IDs for a given list of items or resource team IDs; the returned list can also include child objects, if specified. The format '2;45;69:true' returns a comma separated list of IDs, including children IDs.

```
SELECT obj_UID FROM PES_Object WHERE obj_UID  
IN PES_FUNCTION_INVESTMENT_IDS_FORMATTER(2;3;4:true)
```

PES_MACRO_REMAINING_RESOURCE_ALLOCATION_FROM_ASSIGNMENT

PES_MACRO_TIMEPHASE_ATTRIBUTES_TIMESCALE shows remaining resource assignments (based on total allocations) per resource for the requested timescale and storage unit. The output value of this macro is calculated as [allocation - assignment].

The parameters for this macro are:

- Temporary table name
- Dimension; the possible values are 'Actual', 'Plan', and 'Timephased'.
- Storage unit; the possible values are 'FTE', 'Currency', 'Hours', 'Units'. (Note: only attributes that are coercible to this storage unit are returned.)
- Time scale; the possible values are 'Calendar Year', 'Calendar Quarter', 'Calendar Month', 'Calendar Week', 'Calendar Day', 'Fiscal Year' and 'Fiscal Quarter'

- Start date; the entire bucket containing the start date will be included. For example, if 1/16/2006 is specified and Calendar Month is requested then the entire month of January is returned
- Finish date; similar to Start Date the entire bucket containing this date will be included
- Use date format; the possible values are true and false. If true then the column names for the buckets will be yXXXX_mXX_dXX. If false then the column names for the buckets will be PX

The following example shows a call to get remaining resource allocations for assigned resources (in hours) for the Actual dimension between May 17, 2008 and May 17, 2009

```
SELECT * FROM PES_MACRO_REMAINING_RESOURCE_ALLOCATION_FROM_ASSIGNMENT(tmp, ,Actual,
Hours, Calendar Month, 2008-03-17, 2009-03-17, 1)
```

PES_MACRO_REMAINING_RESOURCE_CAPACITY_FROM_ALLOCATION

PES_MACRO_REMAINING_RESOURCE_CAPACITY_FROM_ALLOCATION shows remaining allocation capacity per resource for the requested timescale and storage unit. The output value of this macro is calculated as [capacity - allocation].

The parameters for this macro are:

- Temporary table name
- Storage unit; the possible values are 'FTE', 'Currency', 'Hours', 'Units'. (Note: only attributes that are coercible to this storage unit are returned.)
- Time scale; the possible values are 'Calendar Year', 'Calendar Quarter', 'Calendar Month', 'Calendar Week', 'Calendar Day', 'Fiscal Year' and 'Fiscal Quarter'
- Start date; the entire bucket containing the start date will be included. For example, if 1/16/2006 is specified and Calendar Month is requested then the entire month of January is returned
- Finish date; similar to Start Date the entire bucket containing this date will be included
- Use date format; the possible values are true and false. If true then the column names for the buckets will be yXXXX_mXX_dXX. If false then the column names for the buckets will be PX

The following example shows a call to get remaining resource capacity for allocations (in hours) for the Actual dimension between May 17, 2008 and May 17, 2009

```
SELECT * FROM PES_MACRO_REMAINING_RESOURCE_CAPACITY_FROM_ALLOCATION(tmp, , Hours,
Calendar Month, 2008-03-17, 2009-03-17, 1)
```

PES_MACRO_REMAINING_RESOURCE_CAPACITY_FROM_ASSIGNMENT

PES_MACRO_REMAINING_RESOURCE_CAPACITY_FROM_ASSIGNMENT the remaining assignment capacity per resource for the requested timescale and storage unit. The output value of this macro is calculated as [capacity - assignment].

The parameters for this macro are:

- Temporary table name

- Dimension; the possible values are 'Actual', 'Plan', and 'Timephased'.
- Storage unit; the possible values are 'FTE', 'Currency', 'Hours', 'Units'. (Note: only attributes that are coercible to this storage unit are returned.)
- Time scale; the possible values are 'Calendar Year', 'Calendar Quarter', 'Calendar Month', 'Calendar Week', 'Calendar Day', 'Fiscal Year' and 'Fiscal Quarter'
- Start date; the entire bucket containing the start date will be included. For example, if 1/16/2006 is specified and Calendar Month is requested then the entire month of January is returned
- Finish date; similar to Start Date the entire bucket containing this date will be included
- Use date format; the possible values are true and false. If true then the column names for the buckets will be yXXXX_mXX_dXX. If false then the column names for the buckets will be PX

The following example shows a call to get remaining resource capacity (in hours) for the Actual dimension between May 17, 2008 and May 17, 2009.

```
SELECT * FROM PES_MACRO_REMAINING_RESOURCE_CAPACITY_FROM_ASSIGNMENT(tmp, ,Actual, Hours,
Calendar Month, 2008-03-17, 2009-03-17, 1)
```

PES_MACRO_RESOURCE_ALLOCATION_TIMESCALE

PES_MACRO_RESOURCE_ALLOCATION_TIMESCALE helps you view resource allocation data, similar to how resource allocation is viewed in the Allocation and Team Roster views.

The parameters for this macro are:

- Temporary table name
- WHERE clause applied against the PES_ResourceAllocation table so only those allocations are normalized.
- **Storage unit** The possible values are 'FTE', 'Currency', 'Hours'. (Note: only attributes that are coercible to this storage unit are returned.)
- **Time scale** The possible values are 'Calendar Year', 'Calendar Quarter', 'Calendar Month', 'Calendar Week', 'Calendar Day', 'Fiscal Year' and 'Fiscal Quarter'.
- **Finish date** Similar to Start Date the entire bucket containing this date will be included.
- **Use date format** The possible values are true and false. If true then the column names for the buckets will be yXXXX_mXX_dXX. If false then the column names for the buckets will be PX.

The following example shows how to find the cost of all resource allocations made from a single resource team during the month of April, 2008:

```
SELECT * FROM PES_MACRO_RESOURCE_ALLOCATION_TIMESCALE(ra, obj_ResourceUID
IN (SELECT resource.obj_UID FROM PES_Object peso JOIN PES_Resource resource
ON peso.obj_UID = resource.obj_ParentUID and resource.obj_ParentUID
in (SELECT oa_DescendantUID FROM PES_ObjectAssociation WHERE oa_AncessorUID = 3)),
Currency, Calendar Year, 4/1/2008,4/30/2008, true)
```

PES_MACRO_RESOURCE_CAPACITY_TIMESCALE

PES_MACRO_RESOURCE_CAPACITY_TIMESCALE shows resource capacity for the requested timescale and storage unit.

The parameters for this macro are:

- Temporary table name
- Storage unit; the possible values are 'FTE', 'Currency', 'Hours', 'Units'. (Note: only attributes that are coercible to this storage unit are returned.)
- Time scale; the possible values are 'Calendar Year', 'Calendar Quarter', 'Calendar Month', 'Calendar Week', 'Calendar Day', 'Fiscal Year' and 'Fiscal Quarter'
- Start date; the entire bucket containing the start date will be included. For example, if 1/16/2006 is specified and Calendar Month is requested then the entire month of January is returned
- Finish date; similar to Start Date the entire bucket containing this date will be included
- Use date format; the possible values are true and false. If true then the column names for the buckets will be yXXXX_mXX_dXX. If false then the column names for the buckets will be PX

The following example shows a call to get resource capacity (in hours) for the Actual dimension between May 17, 2008 and May 17, 2009.

```
SELECT * FROM PES_MACRO_RESOURCE_CAPACITY_TIMESCALE(tmp, , Hours,
Calendar Month, 2008-03-17, 2009-03-17, 1)
```

PES_MACRO_TASK_ASSIGNMENT_TIMESCALE

PES_MACRO_TASK_ASSIGNMENT_TIMESCALE helps you view task assignment data, similar to how resource assignments for tasks are viewed in the Assignment and Team Roster views.

The parameters for this macro are:

- Temporary table name
- WHERE clause applied against the PES_ResourceAllocation table so only the task assignment data associated with resource allocations are normalized.
- **Dimension** The possible values include 'Actual', 'Plan', and 'Baseline'. Ten other possible values are 'Baselinen' (where *n* is an integer between 1 and 10, inclusive).
- **Storage unit** The possible values are 'FTE', 'Currency', and 'Hours'.
- **Time scale** The possible values are 'Calendar Year', 'Calendar Quarter', 'Calendar Month', 'Calendar Week', 'Calendar Day', 'Fiscal Year' and 'Fiscal Quarter'.
- **Start date** The entire bucket containing the start date will be included. For example, if 1/16/2011 is specified and Calendar Month is requested then the entire month of January is returned.
- **Finish date** As with Start Date, the entire bucket containing this date will be included.

- **Use date format** The possible values are true and false. If true then the column names for the buckets will be yXXXX_mXX_dXX. If false then the column names for the buckets will be PX.

The following example shows how to find the cost of all resource allocations made from a single resource team during the month of April, 2008:

```
SELECT * FROM PES_MACRO_TASK_ASSIGNMENT_TIMESCALE (ra, obj_ResourceUID
IN (SELECT resource.obj_UID FROM PES_Object peso JOIN PES_Resource resource
ON peso.obj_UID = resource.obj_ParentUID and resource.obj_ParentUID
in (SELECT oa_DescendantUID FROM PES_ObjectAssociation WHERE oa_AncessorUID = 3)), Pla
```

PES_MACRO_TIMEPHASE_ATTRIBUTES_SELF_CONTRIBUTION

PES_MACRO_TIMEPHASE_ATTRIBUTES_SELF_CONTRIBUTION is used to get all the self-contributing buckets for the time phase attributes in the system converted into the requested storage unit (i.e. currency, hours, FTE or units). This macro is different from PES_MACRO_TIMEPHASE_ATTRIBUTE_DETAIL in that it returns all the self-contributing buckets (PES_MACRO_TIMEPHASE_ATTRIBUTE_DETAIL only returns self-contributing buckets that have been promoted to the detail object).

The parameters for this macro are:

- Temporary table name
- WHERE clause applied against the PES_TimephaseAttributes table such that only the binary data is extracted for timephased attributes
- Storage unit; the possible values are 'FTE', 'Currency', 'Hours', 'Units'

This example shows how to join with PES_MACRO_TIMEPHASE_ATTRIBUTE_DETAIL to show detail data along with all the self contribution values.

```
SELECT self.Start, self.Finish, self.Value, detail.Description
FROM PES_MACRO_TIMEPHASE_ATTRIBUTES_SELF_CONTRIBUTION (self, obj_UID = 49, Currency)
LEFT OUTER JOIN
PES_MACRO_TIMEPHASE_ATTRIBUTE_DETAIL (detail, obj_InvestmentUID = 49,
Description) ON self.obj_BucketUID = detail.obj_UID
```

PES_MACRO_TIMEPHASE_ATTRIBUTES_TIMESCALE

PES_MACRO_TIMEPHASE_ATTRIBUTES_TIMESCALE converts the timephased attributes into the requested timescale and storage unit.

The parameters for this macro are:

- Temporary table name
- WHERE clause applied against the PES_TimephaseAttributes table so only those timephased attributes' blobs are expanded
- Storage unit; the possible values are 'FTE', 'Currency', 'Hours', 'Units'. (Note: only attributes that are coercible to this storage unit are returned.)
- Time scale; the possible values are 'Calendar Year', 'Calendar Quarter', 'Calendar Month', 'Calendar Week', 'Calendar Day', 'Fiscal Year' and 'Fiscal Quarter'

- Start date; the entire bucket containing the start date will be included. For example, if 1/16/2006 is specified and Calendar Month is requested then the entire month of January is returned
- Finish date; similar to Start Date the entire bucket containing this date will be included
- Use date format; the possible values are true and false. If true then the column names for the buckets will be yXXXX_mXX_dXX. If false then the column names for the buckets will be PX

The following example shows a call to get all the attributes that can be shown in Currency in Calendar Month for the year 2005 for item id 49.

```
SELECT * FROM PES_MACRO_TIMEPHASE_ATTRIBUTES_TIMESCALE(tmp, obj_UID = 49, Currency, Calendar Month, 1/1/2005, 12/31/2005, true)
```

PES_MACRO_VSPROC

PES_MACRO_VSPROC wraps the output of a virtual stored procedure into a macro, which allows the results to be manipulated by traditional SQL operations.

The parameters for this macro are:

- Temporary table name
- VSPROC Query surrounded by parenthesis, such as (SPGetPESObject1)
- List of columns from the vsproc to be return back by the macro. If the column name from the vsproc is not a valid name for column in database then the as operator must be used to give a different name. For example if a column for the vsproc is "Column With Space" you query might look like this "SELECT CWS FROM PES_MACRO_VSPROC(tmp, (SPGetPESObject 1), Column With Space as CWS).

PES_MACRO_WORKITEM_ASSIGNMENT_TIMESCALE

PES_MACRO_WORKITEM_ASSIGNMENT_TIMESCALE helps you view work item assignment data, similar to how resource assignments for tasks are viewed in the Assignment and Team Roster views.

The parameters for this macro are:

- Temporary table name
- WHERE clause applied against the PES_ResourceAllocation table so only the task assignment data associated with resource allocations are normalized.
- **Dimension** The possible values are 'Actual' and 'Plan'.
- **Storage unit** The possible values are 'FTE', 'Currency', and 'Hours'.
- **Time scale** The possible values are 'Calendar Year', 'Calendar Quarter', 'Calendar Month', 'Calendar Week', 'Calendar Day', 'Fiscal Year' and 'Fiscal Quarter'.
- **Start date** The entire bucket containing the start date will be included. For example, if 1/16/2011 is specified and Calendar Month is requested then the entire month of January is returned.
- **Finish date** As with Start Date, the entire bucket containing this date will be included.

- **Use date format** The possible values are true and false. If true then the column names for the buckets will be yXXXX_mXX_dXX. If false then the column names for the buckets will be PX.

The following example shows how to find the cost of all resource allocations made from a single resource team during the month of April, 2008:

```
SELECT * FROM PES_MACRO_WORKITEM_ASSIGNMENT_TIMESCALE(ra, obj_ResourceUID
IN (SELECT resource.obj_UID FROM PES_Object peso JOIN PES_Resource resource
ON peso.obj_UID = resource.obj_ParentUID and resource.obj_ParentUID
in (SELECT oa_DescendantUID FROM PES_ObjectAssociation WHERE oa_AncessorUID = 3)), Pla
```

Fields (Task Plan)

The following table provides a description for all of the fields that are available in a task plan:

Task Plan Fields	Description
Actual Cost	The actual cost to complete actual work for a task (or a task plan).
Actual Duration	The amount of time (typically measured in working days) that has been actually needed to complete actual work for a task (or a task plan).
Actual Finish	The date by which work on a task (or a task plan) actually finished.
Actual Start	The date by which work on a task (or a task plan) actually started.
Actual Work	The amount of work that has been completed, to-date, by all resources who have been assigned to a task (or a task plan).
ACWP	Actual cost of work performed. The actual cost of all completed work, including resource costs, actual work, fixed costs, and so on, up to the current date.
Assignment Units	The amount of units for which a resource is assigned to a task. Assignment units are a percentage, where 100% is used as the maximum value.
BAC	Budget at completion. The total planned cost to complete every scheduled task. This is sometimes called baseline cost.
Baseline Cost	The original, planned cost for a task (or a task plan).
Baseline Duration	The original, planned duration for a task (or a task plan).

Task Plan Fields	Description
Baseline Finish	The original, planned finish date for a task (or a task plan).
Baseline Start	The original, planned start date for a task (or a task plan).
Baseline Work	The original, planned work for a task (or a task plan).
BCWP	Budgeted cost of work performed. The cumulative costs of planned work that has been actually completed, and then compared to the original estimates for that work. This is sometimes called earned value (EV).
BCWS	Budgeted cost of work scheduled. The planned cost of total amount of work that has been scheduled. This is sometimes called planned value (PV).
CapEx	A capital expense is a cost of doing business that is typically associated with expenditures for fixed asset work item that are understood to have a benefit to the organization that exceeds one year> For example, such as buildings and equipment are considered to be capital expenses, whereas rent, office supplies, or utility expenses (such as electricity or Internet access) are not considered to be capital expenses. If an expense is not a capital expense, it is considered to be an operational expense.
Complete	Indicates whether the task is complete.
Completed Through	The date and time at which all reported actuals against a task have been reported.
Constraint Date	The date (start or finish) upon which the constraint is based. Required for Finish No Earlier Than, Finish No Later Than, Must Finish On, Must Start On, Start No Earlier Than, or Start No Later Than . This is not used with the As Late As Possible or As Soon As Possible constraints.
Constraint Type	The constraint that has been set for a task. A constraint can be one of the following: As Late As Possible, As Soon As Possible, Finish No Earlier Than, Finish No Later Than, Must Finish On, Must Start On, Start No Earlier Than, or Start No Later Than .

Task Plan Fields	Description
Cost	The amount of money that is spent to produce something of value. In a task plan, a cost is the amount of money that is spent while finishing a task. For example, a resource's hourly billing rate or the cost of renting a tractor (a material resource) for a day. A cost can be associated with a task, a resource, an assignment, or a task plan.
CPI	Cost performance index. The difference in value between the budgeted cost of work performed and the actual cost of work performed. The calculation for cost performance index is as follows: $CPI = BCWP / ACWP$. When the cost performance index is greater than 1, it is an indicator that the task plan is over budget.
Created	The date and time at which a task was added to a task plan.
Critical	Indicates whether a task is on the critical path. The critical path is based on the longest possible sequence of tasks, factoring in their start dates, finish dates, dependencies, and constraints, and then comparing the calculated finish date of the last task in the sequence to the planned finish date for the task plan. A task on the critical path must be finished on time in order for the task plan to be finished on time.
CSI	Cost schedule index. The difference in value between the cost performance index and schedule performance index. The calculation for cost schedule index is as follows: $CSI = CPI \times SPI$. Cost schedule index should be as close to 1 as possible. When the cost schedule index is not one, it is an indicator that the task plan is behind schedule and over budget. The farther away from 1, the farther behind and/or over budget the task plan is.
CV	Cost variance. The difference between planned costs of work performed and the actual costs of work performed. The calculation for cost variance is as follows: $CV = BCWP - ACWP$. When the cost variance is less than 1, it is an indicator that the task plan is over budget.
CV Percent	Cost variance percentage. The percentage over or under budget, based on cost variance and the planned cost of work in the task plan. The calculation for cost variance percentage is as follows: $CV\% = CV / BCWP$. When the cost variance percentage is greater than 1, it is an indicator that the task plan is under budget.
Deadline	A deadline is a date in the task plan schedule by which a task needs to be completed. A deadline appears in a Gantt chart view as a diamond.

Task Plan Fields	Description
Display Task As Milestone	Indicates whether the task is displayed as a milestone task. A milestone is a task that has a duration of zero days.
Duration	A duration is the total amount of time required to complete a task, based on a task's start and finish dates. A duration is always based on how a day is defined in the working calendar associated with the task plan. A day is defined (by default) as being 8 hours; therefore, a duration of 1 day in a task is 8 hours.
EAC	Estimate at completion. The expected cost to complete all remaining work. The calculation for estimate at completion is as follows: $EAC = ACWP + (BAC - BCWP)$. BAC - BCWP represents the planned costs of all uncompleted tasks. This is sometimes referred to as the estimate to complete (ETC).
Early Finish	The date by which a task can finish without having to be constrained or to be dependent on a predecessor or successor task.
Early Start	The date by which a task can start without having to be constrained or to be dependent on a predecessor or successor task.
Earned Value Method	Earned value method. This field is manually entered (and its value is not calculated). Use earned value method when there are tasks in a task plan that require physical percent complete.
Effort Driven	Indicates whether the total amount of work required to complete the task is directly affected by the number of resources that have been assigned to it.
Elapsed Duration	Indicates from where in the task plan that budgeted cost of work performed (BCWP) values are derived.
Estimated	Indicates whether the task's duration is an estimated duration. When a duration is an estimated duration, a question mark (?) will appear alongside it in the task plan.

Task Plan Fields	Description
Expense Type	<p>The way that costs are measured for a task (or a task plan). There are three types of costs:</p> <ul style="list-style-type: none"> ▪ Fixed cost A fixed cost is one that does not change regardless of a task's duration or how much actual work is completed. ▪ Per-use cost A per-use cost is one that is applied each time a resource is used. When a work resource is associated with a per-use cost, that cost is applied each time that resource is assigned work in a task plan. When a material resource is associated with a per-use cost, that cost is applied once. ▪ Rate cost A rate cost is one that is applied based on a duration (typically, per-hour). A rate cost is most often associated with a work resource and it is used to represent the units worked (typically hours) against a task in a task plan. There are two types of rates: regular and overtime.
Finish	The date on which a task is scheduled to finish.
Finish Offset	The difference between the baseline finish date for a task and the current, actual, scheduled finish date.
Finish Slack	The amount of time in a task plan where a task can be delayed without causing a predecessor task (or the task plan itself) to be delayed.
Fixed Cost	A cost that is not associated with a resource.
Fixed Cost Accrued	Indicates how a fixed cost is applied to a task. A fixed cost can be applied when the task is started, when the task ends, or as the task progresses.
Free Slack	The amount of time in a task plan where a task can be delayed without causing a successor task (or the task plan itself) to be delayed.
ID	The unique ID for a task.
Ignore Resource Calendar	Indicates whether the task, when scheduled, ignores calendars that are associated with one or more resources who are assigned to this task (or task plan).

Task Plan Fields	Description
Indicators	The indicators that are associated with this task. A graphical indicator shows special conditions that may exist for tasks in that spreadsheet, such as whether the task is 100% complete (✔), has a note (📄), has a constraint (📅), missed its deadline (⊗), uses its own calendar (📅) and not the task plan calendar, cannot be completed as scheduled (📅), has a parent task to which resources are assigned (👤), is a subproject (📁), or is a subproject that cannot be opened (🚫).
Is WBS Parent	Indicates that this task is a parent task in the work breakdown structure.
Just Modified	Indicates that the task (or task plan) has been modified since it was last saved.
Late Finish	The date by which a task must finish before it causes another task (or the task plan itself) to be delayed.
Late Start	The date by which a task must start before it causes another task (or the task plan itself) to be delayed.
Leveling Delay	The amount of time that a task can be delayed, based on its early start date.
Name	The name of a task (or a task plan).
Notes	The notes that have been entered about a task (or a task plan).
Parent ID	The unique ID for the parent task.
Percent Complete	The progress made against a task (or a task plan), expressed as a percentage (of 100%).
Percent Work Complete	The amount of work that has been completed for a task (or a task plan), expressed as a percentage (of 100%).
Physical Percent Complete	The percentage of work completed, measured independently of a task's duration. Use physical percent complete to manually override budgeted cost of work performed values when the process of completing a task can be measured independently of the task's duration. Sometimes used as an alternative to budgeted cost of work scheduled (BCWS).
Predecessors	The unique ID for a predecessor task in the task plan.

Task Plan Fields	Description
Priority	Indicates the importance of the task in relation to other tasks. 500 is the default value; 1000 is the highest priority and 0 is the lowest priority. The higher the number, the higher the priority.
Project ID	The ID for the task plan.
Remaining Cost	The cost required to finish the remaining amount of work for all resources assigned to the task.
Remaining Duration	The amount of time required to finish the remaining amount of work for all resources assigned to the task.
Remaining Work	The amount of time required for all resources (who are assigned to the task) to complete the task.
Resource Group	The name of a group to which a resource belongs. This is typically the same group names used by your organization's directory service.
Resource Initials	The initials of a resource, or an abbreviation of that resources full resource name.
Resource Names	The name of the resource (or resources) who are assigned to a task in a task plan.
Resource Phonetics	This field is not used in the Task Plan view.
Resume	The amount of time remaining for a scheduled task, based on the percent of work that has already been completed.
SPI	Schedule performance index. The difference in value between current progress and the expected progress. The calculation for schedule performance index is as follows: $SPI = BCWP / BCWS$. When the schedule performance index is less than 1, it is an indicator that the task plan is behind schedule.
Start	The date on which a task is scheduled to start.
Start Offset	The difference between the baseline start date for a task and the current, actual, scheduled start date.
Start Slack	The amount of time in a task plan where a predecessor task can be delayed without causing a successor task (or the task plan itself) to be delayed.
Stop	The date on which actual work for a task will finish.

Task Plan Fields	Description
Successors	The unique ID for one or more successor tasks in the task plan.
SV	Schedule variance. The difference in costs between current progress and expected progress. The calculation for schedule variance is as follows: $SV = BCWP - BCWS$. When the schedule variance is less than 0, it is an indicator that the task plan is behind schedule.
SV Percent	Schedule variance percent. A percentage that shows how well the schedule is doing in relation to the cost of scheduled work. The calculation for schedule variance percent is as follows: $SV\% = (SV / BCWS) * 100$. When the schedule variance percentage is greater than 1, it is an indicator that the task plan is behind schedule.
Task Calendar	The calendar that is associated with the task (or, more commonly, the entire task plan). The calendar associated with the task plan is the default calendar for all tasks and resources associated with that task plan.
TCPI	To-complete performance index. A ratio of remaining work. The difference between the planned costs of all completed tasks to the to the planned costs of all remaining, uncompleted tasks. The calculation for to-complete performance index is as follows: $TCPI = [BAC - BCWP] / [BAC - ACWP]$. When the to-complete performance index is greater than 1, it is an indicator that close attention should be paid to all of the work that remains so that the task plan can stay within budget.
Timesheet Closed	Indicates whether the timesheet is closed.
Timesheet Complete	Indicates whether the timesheet is complete.
Total Slack	The amount of time in a task plan where a task can be delayed without causing another task (or the task plan itself) to be delayed.
Total Slack End	The total amount of time in a task plan where a predecessor task can be delayed without causing a successor task (or the task plan itself) to be delayed.
Total Slack Start	The total amount of time in a task plan where a task can be delayed without causing a successor task (or the task plan itself) to be delayed.

Task Plan Fields	Description
Type	<p>The task type; used to determine how work, assignment units, and durations are calculated for this task in the task plan:</p> <ul style="list-style-type: none"> ▪ Fixed duration The values for the task's start and finish dates are fixed values. ▪ Fixed work The values for the work to be completed are fixed values. ▪ Fixed units The values for the resources assigned to the task are fixed values.
Unique ID	The unique ID for a task in a task plan.
Unique ID Predecessors	The work breakdown structure for a task in a task plan. This is used to identify a predecessor task within the work breakdown structure. For example, 1.B.c or 5.A.f.
Unique ID Successors	The work breakdown structure for a task in a task plan. This is used to identify a successor task within the work breakdown structure. For example, 1.A.a or 2.B.c.
VAC	Variance at completion. The difference between the the total planned cost to complete every scheduled task and the expected cost to complete all remaining work. The calculation for variance at completion is as follows: BAC - EAC. When the variance at completion is negative, it is an indicator that your task plan is over budget.
WBS	Work breakdown structure. The hierarchy of tasks in a task plan. A work breakdown structure is often represented as a series of delimited numbers, letters, and/or characters, separated by period, plus, slash, and/or minus symbols. For example, 1.A.a could be the way that your organization chooses to define the sequence. When a task is the 2nd summary task in the task plan (itself with a series of summary tasks), the 3rd task for the 2nd sub-summary task would have a work breakdown structure of 2.B.c.
WBS Parent	Work breakdown structure, parent. A parent task in the work breakdown structure is also known as a summary task.
WBS Predecessors	Work breakdown structure, predecessor. A predecessor task is a task that determines when another task (a successor) can be scheduled. Any predecessor task in the work breakdown structure will also have a unique ID.

Task Plan Fields	Description
WBS Successors	Work breakdown structure, successor. A successor task is a task that has its schedule determined by another task (a predecessor). Any successor task in the work breakdown structure will also have a unique ID.
Work	The total amount of work that has been scheduled for a task.

In addition to the specific fields found in the table, the following generic fields are available:

- Baseline Cost 1-10
- Baseline Duration 1-10
- Baseline Finish 1-10
- Baseline Start 1-10
- Baseline Work 1-10
- Cost 1-10
- Date 1-10
- Duration 1-10
- Finish 1-10
- Flag 1-20
- Number 1-20
- Start 1-10
- Text 1-30

Virtual Stored Procedures

Data services allow reporting tools to take advantage of data and security models. Because reporting tools traditionally report on relational data, an extension is included that allows data to be accessed as a client of an OLE DB Provider. The data is accessed through virtual stored procedures, which show up in your reporting tool as stored procedures. This solution requires that the OLE DB Provider be installed on any client machine that is used for reporting.

When calling these stored procedures, you must supply your user name and password along with the name of your database connection stored in the web.config file on the application server.

For more information, see the following topics:

- [Error Logging \[page 524\]](#)
- [SPGetScoreCard and SPGetNotesGrid \[page 525\]](#)

Error Logging

In general, the two most common reporting problems are:

- Invalid parameters passed to the stored procedure (for example, an attribute ID or object ID that does not correspond to an attribute or object in the database).
- The requesting user does not have the appropriate permissions.

These types of errors are all returned to the OLE DB client with the same error message. For more detailed information about the problem, consult the log file log.txt. This file is written to the machine on which the OLE DB Provider is installed. The default path is: C:\Program Files\Serena\Mariner\Reporting

SPGetScoreCard and SPGetNotesGrid

SPGetScoreCard and **SPGetNotesGrid** are extensions of the summary view. Since the scorecard and notes grid contain specially formatted data that can't be easily broken down into name/attribute pairs for viewing in the summary view, they have been given their own stored procedures, which return reports that are closer to the format seen on the corresponding tabs in the application. A user must have permissions to see the view on which these tabs reside on.

Parameters	Data Type	Required	Description
ObjectId	System.Int32	Yes	The ID of the item that supplies the data.
AttributeId	System.Int32	Yes	The ID of the attribute of interest.

Resource Management Web Service

This section details the methods and parameters for the Resource Management Web Service. The Resource Management Web Service is available at the URL

http://<appserver>/Mariner/WebServices/ResourceManagement.asmx, where <appserver> is the application server. The WSDL for this set of methods can be retrieved at the URL **http://<appserver>/Mariner/WebServices/ResourceManagement.asmx?wsdl**.

The Resource Management Web Service enables you to create, modify, and delete resource allocations programmatically. An allocation contour of a single resource can be created against a single investment, whether an allocation already exists or not. If the allocation already exists, the contour is added to the allocation; if not, a new allocation is created. Any part of an existing allocation contour can also be modified. An existing contour can be modified by calling this web service; the values passed as parameters will override the values of an existing contour. Finally, contours can be deleted for allocations, resources and/or projects.

Several of the methods use a parameter called **attribute[]**. This is an array of key/value pairs where the key is the XML name of the attribute, and the value is the string representation of the value. The value string will need to be formatted in such a way that it can be converted into the correct type to match the attribute type.

Date types should be in ISO 8061 format and will be assumed to be in UTC.

List attributes can be set by supplying the list item name for the value.

URL Link attributes are a composite made up of three parts: **URL**, **DisplayName**, and **UseDisplayName**. If an attribute key is specified by using its XML name, then the URL and DisplayName portions will be set to the value supplied. You may get/set any part of a

URL Link by appending ",part=<part>" to the XML name of the attribute key. For example:

- My-Link
- My-Link,part=URL
- My-Link,part=DisplayName
- My-Link,part=UseDisplayName

Connect

This method is required to create an authenticated Web services session. It must be called before any other method. This method returns a token which is supplied to all of the other methods. The parameters for the **Connect** method are:

Parameter	Datatype	Description
username	string	The user name of the user who is logging in.
password	string	The password associated with the username .
dbtitle	string	The connection name of the database to connect to.
machineip	string	The IP address of the machine making the request. For example, "127.0.0.1".

CreateNewContours

This method creates a new contour for a specified investment. The parameters for the **CreateNewContours** method are:

Parameter	Datatype	Description
token	string	The token returned by the Connect method.
investmentId	int	The id of the investment for which to create the contour.
resourceUserName	string	The resource for which the contour defines allocation.
startDate	dateTime	The start date of the contour to be created.
endDate	dateTime	The end date of the contour to be created.
FTE	double	A value between 0 and 1 defining the fractional allocation of a resource towards an investment.
comment	string	A descriptive comment about the contour.

DeleteAllocationForResource

This method deletes a resource allocation applied to an investment. The parameters for the **DeleteAllocationForResource** method are:

Parameter	Datatype	Description
token	string	The token returned by the Connect method.
resourceUserName	string	The resource to be removed from an allocation.

DeleteAllocationsForInvestment

This method deletes resource allocation applied to an investment. The parameters for the **DeleteAllocationsForInvestment** method are:

Parameter	Datatype	Description
token	string	The token returned by the Connect method.
investmentId	int	The investment for which the allocation will be deleted.

DeleteAllocations

This method deletes a set of allocations specified in an array of type **allocIdList**. The parameters for the **DeleteAllocations** method are:

Parameter	Datatype	Description
token	string	The token returned by the Connect method.
allocIdList	array of int	A list of allocation IDs, representing the allocations to delete. Each ID is an integer value, not a string.

DeleteContoursForAllocation

This method deletes contours associated with an allocation. The parameters for the **DeleteContoursForAllocation** method are:

Parameter	Datatype	Description
token	string	The token returned by the Connect method.
contourIds	int	The allocation contours which will be deleted.

GetAllocationContoursForTeamResource

This method gets an allocation associated with a specified team resource. It returns an array of type **Allocation**, which contains the following fields:

Field	Datatype	Description
Resource	Resource	The resource associated with the contour.
Contours	ArrayOfTimephasedData	An array representing the contour.
Rates	ArrayOfRate	An array representing the rates associated with a resource.

The parameters for the **GetAllocationContoursForTeamResource** method are:

Parameter	Datatype	Description
token	string	The token returned by the Connect method.
teamResourceId	int	The ID of the resource for which to get an allocation.

GetAllocationsForInvestment

This method gets the allocations associated with a specified investment. It returns an array of type **AllocationWithContours**, which contains the following fields:

Field	Datatype	Description
Resource	Resource	The resource associated with the contour.
Contours	ArrayOfTimephasedData	An array representing the contour.
Rates	ArrayOfRate	An array representing the rates associated with a resource.

The parameters for the **GetAllocationsForInvestment** method are:

Parameter	Datatype	Description
token	string	The token returned by the Connect method.
investmentId	int	The Id of the investment for which to get allocations.

GetContoursForAllocation

This method gets the contours associated with a specified allocation. It returns an array of type **TimephasedContour**, which contains the following fields:

Field	Datatype	Description
Start	dateTime	The start time of the contour.

Field	Datatype	Description
Finish	dateTime	The end time of the contour.
Units	double	The allocation percentage for a time period.
Comments	string	An array representing the rates associated with a resource.
ContourId	int	The Id of the contour.

This method The parameters for the **GetContoursForAllocation** method are:

Parameter	Datatype	Description
token	string	The token returned by the Connect method.
allocationId	int	The Id of the allocation for which to get contours.

ModifyAllocationContour

This method modifies the allocation for a contour. The parameters for the **ModifyAllocationContour** method are:

Parameter	Datatype	Description
token	string	The token returned by the Connect method.
contourId	int	The Id of the contour associated with the allocation.
investmentId	int	The Id of the investment associated with the allocation contour.
resourceUserName	string	The name of the resource associated with the allocation contour.
startDate	dateTime	The start time of the contour period.
endDate	dateTime	The end time of the contour period.
FTE	double	The percentage of time for which the resource is applied in the contour.
comment	string	A descriptive comment associated with the allocation contour.