Oracle
Primavera Unifier
Managers User Guide

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Oracle Primavera Unifier Managers User Guide

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Contents

Working with Unifier Managers

This guide explains how to work with the following Unifier managers:

Within our documentation, some content might be specific for cloud deployments while other content is relevant for on-premises deployments. Any content that applies to only one of these deployments is labeled accordingly.

> **Note**: The instructions and information presented in the Unifier documentation is based on an out-of-the-box setup and before being customized by the user.

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In This Section

Asset Manager

The Asset Manager module is part of the company workspace. It is used to manage assets and depreciation. You can track assets and depreciation on their associated asset sheets.

The Asset Manager allows you to:

- Create, organize, and manage company assets
- Define an unlimited number of asset classes, and design an asset attribute form per asset class
- Create assets manually, using templates, or importing
- Apply multiple asset depreciation methods: straight line, double decline, sum of years digits, manual
- Track the asset's total cost of ownership: roll up maintenance-related costs from projects or company level business processes to specific company account codes

The Asset Manager uses the three most common depreciation methods:

- Straight line
- Double decline, or sum of year digits
- Manual depreciation

Irrespective of method, asset depreciation is calculated for the entire life of the asset over whatever period you specify. For example, if an asset is depreciating over two years and you specify a monthly depreciation increment, then the asset's value will be recalculated each month for two years from the date of acquisition.

Asset Classes: Assets are grouped in classes (for example, buildings, equipment, etc.). The detail forms that are used to enter asset information can be designed in uDesigner, per class. For example, you can design and use different forms for entering information about your company's building assets and equipment assets. Each asset exists as a unique record.

Asset Codes: Asset codes are generated automatically when assets are created. The asset code will be built using different data elements defined on the asset form as segments. At runtime, the asset code is built automatically based on the data element values selected. A tree structure is automatically built to access these assets based on the asset codes. Assets with the same segment values will be grouped together to form a hierarchy.

Asset Sheets: You can track assets and depreciation on asset sheets. There is one asset sheet per class, listing details about each asset in that class, plus an asset summary sheet, which helps you track all of your assets in one place. User permissions are granted per asset class or sheet. If you cannot view any part of the Asset Manager to which you require access, contact your company administrator.

For information about language (internationalization) and CSV files refer to *Unifier General User Guide*.

In This Section

Creating and Managing Assets

You can create and manage your company assets in the Asset Manager in the company workspace portion of the Navigator.

Each asset that you add to the system exists as a unique record. You can create new assets manually by copying from a template within the same asset class, copying another asset in the same class, or by importing assets. The form that is used to enter the details about each asset is designed in Designerr for each class. The form design can vary greatly from class to class.

Access the Asset Manager

To access the asset manager

1) In User Mode, go to the **Company Workspace** tab and click **Asset Manager** in the left Navigator. The Asset Manager displays asset sheets and asset classes.
2) To access asset sheets, click the **Asset Sheets** node.
3) To access assets, select an asset class. The log opens for the asset class.

   The center navigation pane displays the segments of the asset codes hierarchically by their segments, as selected in the properties window for each asset. These nodes are created as asset codes are created. The right pane lists all assets created under the selected class.

Asset Manager navigation and asset codes

Assets are organized by the segments of the asset codes. Asset codes are based on segments. These segments are created when the asset is created, based on the values entered on the asset form. For example, for an asset class Buildings, the asset codes for individual assets may be built by location segments: country-state-city. You can then view all buildings in the asset class or drill down to all buildings per segment (per country, state or province, and city).

Click the asset class name in the asset navigator to view all assets created under the class, or click each segment to view assets matching the segment.

Create a new asset

You can create new assets manually by copying from a template within the same asset class, copying another asset in the same class, or by importing assets.

The form that is used to enter the details about each asset is designed in uDesigner for each class. The form design can vary greatly from class to class.

Each asset that you add to the system exists as a unique record.

You can manually create new assets or create assets by copying from another asset or from a template. If the asset record or template also has a depreciate schedule set up, it will also be copied to the new asset.

To create a new asset manually

1) In User Mode, go to the Company Workspace tab and click **Asset Manager** in the left Navigator. Select an asset class. The Asset Class navigator opens.
2) Select the node under which you want to create the new asset.
3) Click **New**. The Create New Asset form opens.
4) Complete the form. This form is similar to a non-workflow business process form and has two sections:
   - **General:** In the upper portion of the form, enter all the details about the asset.
   - **Depreciation Schedule:** Setting up a depreciation schedule is optional. Before you can set up a depreciation schedule, you must first save the form.
5) After completing the form, click **Save** to save changes to the upper form, or **Finish Editing** to save and close the form.

To create an asset by copying from a template

1) In the Asset Class navigator, click the **Copy** button and choose **Template**. A list window opens displaying all templates for the asset class.
2) Select a template and click **Open**. The Create New Asset form opens. The form may be populated with general and depreciation information from the template.
3) Make changes as needed and click **Save** or **Finish Editing** to save the new asset. After saving, the Depreciation Setup button becomes available.

To copy an asset

1) Select an asset from the log and click **Copy > Asset**. The form opens, with the information from the original asset.
2) Make changes as needed and click **Save** or **Finish Editing** to save the new asset. After saving, the Depreciation Setup button becomes available.

Working with Asset Sheets

Asset sheets are created automatically when asset classes are imported and activated. Asset sheets are listed in the Asset Sheet log window in the User Mode Asset Manager. There is one sheet per asset class, plus an asset summary sheet that summarizes all asset sheets. Assets are added to asset sheets as rows automatically, listed by the segmented asset code. In the asset summary sheet, the rows are the asset classes.

The asset summary sheet displays information of all asset sheets. It displays total values from individual asset class sheets. The asset summary sheet is created automatically once the first asset class is imported. Asset classes imported into Unifier are automatically added as rows.

Columns can be added to asset sheets. Some examples of columns include:

- Business processes (company-level BPs with the line items with asset code subtype are available; only the amount field is available.)
- Project cost columns; most columns from project cost sheets are available (only the amount field is available). This is available when projects are created under asset categories.
- Manual entry or formula columns.

Access asset sheets

Asset sheets are listed in the Asset Sheet log window in the Asset Manager. There is one sheet per class, plus a summary sheet which lists all sheets in all classes.

> **Note**: You must have permissions to access any listed sheet. If you need access to a sheet not listed in the log, contact your company administrator.

To access asset sheets

In User Mode, go to the **Company Workspace** tab and click **Asset Manager > Asset Sheets** in the left Navigator. The Asset Sheets log opens. The log lists any existing asset sheets: one asset sheet per class, which is automatically created when an asset class is activated, plus an asset summary sheet that summarizes asset class information.

To open an asset sheet

Select the sheet in the log and click **Open**.

View asset and column details

To view column details

Open the asset sheet and click a column heading. A view-only window opens displaying the column details.

To view asset details

Open the asset sheet and click a listed asset. Assets appear on the sheet as hyperlinks. A view-only window opens displaying the asset details.

View asset sheet properties

The Properties window for the asset sheet maintains the name and display options, and can be used to map a column to a company account code.

To open the asset sheet Properties window

In the Asset Sheets log, select the sheet and click the **Properties** button. In the Options tab, asset sheet columns can be mapped to company account codes. The total value of the column will roll up to the company accounts sheet.

Enter or edit asset sheet data

For manual data-entry columns, you can enter data directly into the sheet.

To enter asset sheet data

1) Open the asset sheet.
2) Click inside a manual entry column cell to enter data.
3) Click the **Save** button to save changes.

Create and view a snapshot

You can save a snapshot of an asset sheet or the asset summary sheet.

To save a snapshot

1) Open the asset sheet or asset summary sheet.
2) Choose **File > Create Snapshot**. The Create Snapshot window opens.
3) Enter a title and click **OK**.

To view a saved snapshot

1) Open the asset sheet or asset summary sheet.
2) Choose **View > Snapshot Log**. The snapshot log opens.
3) Select the snapshot from the list and click **Open**. A read-only view of the asset sheet or asset summary sheet opens, displaying the sheet data at the time of the snapshot.

Import asset sheet column data

You can enter column data into manual-entry columns by importing a CSV sheet. Columns are limited to those of numeric data elements on the asset form.

First, export the CSV structure, enter the data into the CSV file, and then re-import the CSV file.

To export a manual-entry column

1) Open the asset sheet.
2) Click **Export > Column Data**.
3) Save the CSV file to your local drive.

To enter column data

1) Open the CSV file.
2) Enter column data for each listed asset. Be careful not to change the CSV file structure.
3) Save the CSV file.

To import column data

1) Open the asset sheet.
2) Click **Import > Column Data**.
3) Browse to the CSV file containing the column data and click **OK**.

Copy data from one column to another

You can copy data from one manual entry column to another.

To copy data from one column to another

1) Click the **Edit** menu and choose **Copy > Column Data**. The Copy Column Data window opens.
2) Complete the window as described in the following table.

In this field	Do this
Copy from column	Select the manual entry column to copy the data from (numeric or date).
Percentage	Enter the percent of the value to copy. Enter 100% to copy the entire value.
Copy to column	Select the manual-entry column to copy the data to (numeric or date, based on the Copy from column selection.

Search for assets on an asset sheet

To search for assets:

1) Open the asset sheet.
2) Click **View > Find**. The Find window opens.
3) Choose a column from the asset sheet and enter a value to search.
4) Select the direction to search (up or down from the selection on the sheet).
5) Click **Find Next** to search for the entered value. You can click again to continue searching.
6) Click **Cancel** to cancel the search.

Export asset sheet or summary sheet data

You can export data from asset sheets or the asset summary sheet in CSV format.

To export an asset summary sheet

1) Open the asset summary sheet.
2) Click the **Export** button and choose **Summary Sheet**.
3) Save the CSV file to your local drive. The data is for reference only and cannot be re-imported.

To export summary data on an asset sheet

1) Open an asset sheet.
2) Click the **Export** button and choose **Summary Sheet**.
3) Save the CSV file to your local drive. The data is for reference only and cannot be re-imported.

Note: In Cash Flow, Cost Sheet, and Earned Value, you can replace the Summary Sheet with the Activity Sheet as a source.

Understanding Reverse Auto-population

Certain data elements support reverse auto-population. These are specified in uDesigner. Reverse auto-population means that some values can be updated when other values are modified in a business process that has reached a specified status. Auto-population can occur on BPs that are in the same shell or across shells.

Depending on the setup in uDesigner, auto-population can occur in these instances:

- Changes to data elements in a BP upper form can result in changes to the upper form of another BP.
- Changes to the detail form in a BP can result in changes to the upper form and detail form of another BP.
- Changes to the upper form or detail form of a BP can result in changes in the Asset, Resource, or Planning Manager forms.

In the Asset Manager, reverse auto-population might occur if a move-order BP references an asset record. Updates on the move order can be reverse auto-populated on the asset.

Editing Multiple Assets from Asset Log (Bulk Edit)

If you have a large number of assets that need similar edits, you can use bulk edit to update all of the assets at once. You can update a maximum of 200 records using bulk asset edit. The bulk asset edit must be defined in uDesigner, and you must have the Allow Bulk Edit permission set on the asset class.

Note: Bulk edits overwrite data without stopping for you to verify the overwrite of each record. Be sure that you have entered the data you want to edit correctly.

To update assets using bulk edit

1) Navigate to the asset log.
2) Select one asset or several assets, or perform a find to search for a group of assets to work with. You can select the assets from the asset log or the Find log.
3) Choose **Edit > Bulk Edit**. The Bulk Edit window opens. The fields displayed in this window depend on what was specified for detail form integration in uDesigner for the asset class.

   The Bulk Edit form includes all editable fields for the detail form for the asset class.
4) Modify the bulk edit form as needed.
5) Select the **Update** checkbox for the fields you want to update. The checkbox is automatically selected when you type into or modify a field. You can deselect it if you do not want to modify the field at this time.
6) Click **Update**. This launches the bulk update of the selected assets.

7) The Bulk Actions Status window displays after you click Update. This window allows you to monitor the progress of the bulk asset update. Click **OK** after all records have processed. Click **Cancel** if you want to cancel the bulk update in progress.

Printing an Asset Manager Form

You can print a copy of an Asset form. You can choose PDF, HTML or Custom print formats and select one of the following options:

- Save a copy of the form as a PDF file and print the file
- Print an HTML view
- Print from a Word file if a custom print layout has been created for the form

The Custom Print formats include the BI Publisher custom print templates designed in the **Custom Templates** node. If custom print layouts have been created for the Asset Manager, the form will print according to the layout that you select. See the following ***Printing Options - Custom Format*** for details.

To preview and print an Asset Manager form:

1) Open the Asset Manager record that you want to print.
2) From the **File** menu, choose **Print Preview**, then choose one of the following:
   - **HTML** to view the form in the browser which can then be printed.
   - **PDF** to open the form in Adobe Reader, which can be saved or emailed as a PDF file, or printed process, you are asked to save the changes to the form.
   - **Custom** to select the BI Publisher, Microsoft Word, and PDF custom print templates from the same place as the current custom prints. See the following ***Printing Options - Custom Format*** for details.

   The Print Options window opens. This window displays the record information that can be printed.
3) Select the check boxes for the information that you want to print.
4) To select all the checkboxes, click the **Select All** checkbox. To deselect all, uncheck the **Select All** checkbox. If you deselect all checkboxes, only the header and footer will print.
5) Click **OK**. The preview form opens in an HTML or PDF (Adobe Acrobat or Reader) window, from which you can print.

   If you chose PDF, you can save a copy by clicking the **Save a Copy** button, or print. To print from HTML format, click on the **Print** icon in the upper right corner.

Printing Options for an Asset Manager Form

Following is a summary of the print options for an Asset Form.

Print option	What it prints
Detail Form	This prints the information entered on the form. Depreciation details in the line items are not printed.
General Comments	The general comment text and create details are printed.

Record Attachments	File attachments to the record are listed alphabetically by file name, and also include the file title, issue date, revision number, and file size.
Record Attachments > Comments	Prints comments associated with file attachments to the record. "Record Attachments" must also be selected to select this option.

To print an Asset Manager form with a custom print layout:

1) Open the Asset Manager form that you want to print. Be sure it is in a view mode.
2) From the File menu, choose **Print Preview**, then choose **Custom** to select the BI Publisher, Microsoft Word, or PDF custom print templates from the same place as the current custom prints (Custom Format Print selection window).
3) Select a layout and click **OK**. The File Download window opens.
4) Choose to **Open** or **Save** the file, which is a Microsoft Word DOC file.
5) Open the file in Microsoft Word and print. This feature can be used with Microsoft Word 2003 and 2007.

Printing Options - Custom Format

The Custom Format Print window has two sections:

- Select a custom print template
- Select a template and format to print

Both sections facilitate custom print template and format selections.

Select a custom print template

Lists all the custom print templates, including the custom print templates created in the **Custom Templates** node and the custom print templates. For example, the list may include BI Publisher custom print templates, Word, and PDF custom print templates.

If there are multiple custom print templates, all the published templates are listed in this section.

The "Select a template and format to print" is populated by the selection made in the "Select a custom print template" section.

Select a template and format to print

- If you select a BI Publisher custom print, then you can select the desired template and format from the drop-down lists.
- Template drop-down displays all the available templates for the selected format.
- Format drop-down displays the available formats for the selected template.
- If the custom print template was created using PDF or Word, then the "Select a template and format to print" is disabled.

Default template and format

- If a BI Publisher print template is selected, then the default values in the drop-down lists are set based on the default in the custom print template.

- When a BI Publisher print template is selected in the "Select a custom print template" section, the template and format are populated based on the default value selected at the time of designing the print template.

Configurable Managers (Configurable Modules)

Configurable managers have flexible coding structures that allow you to analyze your data. Configurable managers are created and named in uDesigner depending on the intended task. They can be created at the shell, project, or company level. Configurable managers provide additional functionality and do not replace existing managers. A configurable manager behaves like any other module in the Unifier.

There are two types of configurable managers:

- Code-based (code based)
- Code and Records-based

You can have up to 25 configurable managers (CM1, CM2, ..., CMx. The letter "x" represents a number ranging from 1 to 25 managers). For **Generic Cost Manager (CM0 or CM zero)**, see ***Generic Cost Manager*** (on page 355).

The **Configurable Modules** node will display managers in the following structure:

Configurable Modules

- <name> Manager [Code-based configurable manager]
- <name> Manager [Code and Records-based configurable manager]
  - Sheets
  - Class

> **Note**: The following sections may use the sub-nodes **Parts Manager**, **Material Inventory Manager**, **Condition Assessment Manager**, and so forth as examples of Code-based or Code and Records-based configurable managers.

For information about language (internationalization) and CSV files refer to *Unifier General User Guide*.

In This Section

Code and Records-based Configurable Managers

A Code and Records-based configurable manager allows you to define codes and capture data using records. This type of manager allows multiple classes of sheets and records to be created (each with its own coding structure).

For a Code and Records-based manager, you must first create the manager sheet. Thereafter, Unifier automatically adds information to the sheet as it is gathered from records that were created from business processes tied to the sheet.

For example, a **Parts Manager** could be created to do the following:

- Categorize parts by type (or class) by creating records for classes
- Track inventory at various locations
- Maintain basic cost information
- Track parts transactions (bought, sold, received, or shipped)
- Monitor costs generated by transactions

Code-based Configurable Managers

A code-based configurable manager also allows you to define codes, but it works with sheets to analyze information generated manually or from BPs. All the data is consolidated in one sheet. For a code-based manager, you must manually enter the rows on the sheet. Thereafter, Unifier automatically adds data to the rows as you manually enter it, or as it is gathered from records that were created from business processes tied to the sheet.

For example, a **Condition Assessment Manager** could be created to do the following:

- Define a building systems code structure at the company level, project level, or shell level
- Design multiple BPs to track and calculate:
  - Maintenance requirements
  - Inspections
  - Work orders
  - Repairs
  - Cost of maintenance
  - Deficiency costs
  - Renewal costs
- Various indexes, such as a facility condition index, to monitor the condition and usability of facilities

Access a Configurable Manager (Configurable Modules)

The configurable manager modules are designed in uDesigner and configured by your company administrator.

Note: User permissions are granted per class or sheet. If you cannot view any part of the configurable manager to which you require access, contact your company administrator.

To access a configurable manager at the project level or shell level

1) Go to your project or shell (**User** mode).
2) Click **Configurable Modules** node to expand.

The managers reside under the **Configurable Modules** > **[configurable manager name]** in the left Navigator.

- If you are using a Code and Records-based configurable manager, there are sheets and classes (for example, Sheets and Material Inventory Manager).
  - To access a sheet, click the **Sheets** node, and select a sheet from the log.
  - To access a class, select a class. The log for the class opens.
- If you are using a code-based configurable manager, there is just one sheet, which is listed under the log (for example Parts Manager).

To access a configurable manager at the company level (User mode)

1) Go to your company (**Company Workspace** > **User** mode).
2) Click **Configurable Managers** to expand.
3) Click a manager, class, or sheet sub-node to open.

To access a configurable manager at the company level (Admin mode)

1) Go to your company (**Company Workspace** > **Admin** mode).
2) Click **Templates** to expand.
3) Click **Shells** or **Configurable Modules** node to expand.

Reverse auto-population and Code and Records-based Managers

Certain Data Elements (DEs) support reverse auto-population (RAP). These are specified in uDesigner. RAP means that some values can be automatically updated when other values are modified in a Business Process (BP) form or record attribute form.

You can use RAP to **update** the fields on records, as well as, Attribute forms and Line items. This option can streamline the use of forms by keeping the information on them up-to-date with the latest Unifier data from components inside or outside the BP.

Depending on the set up in uDesigner, RAP can occur in these instances:

- Changes to the DEs in a BP Detail form under the Company level can result in changes to the record attribute form of a generic manager at the Company level
- Changes to the DEs in a BP Detail form under the Standard Project level can result in changes to the record Attribute form of a generic manager at the Standard Project level
- Changes to the DEs in a BP Detail form under the Shell level can result in changes to the record attribute form of a generic manager at the Shell level

Creating Sheets and Records for a Code and Records-based Manager (Standard View)

You can use the **Create** option to create a new Code and Records-based sheet by way of the following methods:

- **Manually**

  Read the process for manually creating a sheet, below.
- **From Template**

  This option enables you to create a configurable manager from a template. The **From Template** option is available only if one or more configurable manager templates are defined at **Company Workspace** (admin mode).
- **From Shell**

  When you click this option, Unifier opens a window which lists all the shells that the administrator has created. You can copy a configurable manager sheet from a shell that is listed.

To create a Code and Records-based sheet manually:

1) Click **Create** and click **Manual** to open the create sheet window.
2) In the overlay, enter the values. You can also edit existing values in the **Properties** tab, for example, change the **Picker** field value from **All Records** to records with their statuses set as "Active," "InActive," or both in the **Records with statuses** field.

   The **Default Filter View** drop-down field does not have any values when you create a new sheet. This field has a value for an existing sheet and can be changed.
3) When finished, from the top, click **Save**.
4) Click **Save** on the create sheet window.

You can use the **Create** option to create a new Code and Records-based class.

Important Information about Creating a Record in a Code and Records-based Sheet Manually

As a general rule, Unifier disables the fields used in the formula definition of CMx coding structures. As a result, once you create a record in a Code and Records-based sheet manually, you cannot modify the CMx coding structures that compile (roll up) the data. In some special cases, such as when a data picker is used to modify the fields used in the formula definition of CMx coding structures, you can modify the CMx coding structures. Also, once you create a record in a Code and Records-based sheet manually, and the record contains a formula field that is being auto-populated from another field (source field), you must ensure that you do not modify the value of the source field; otherwise, if you change the value of the source field, then the fields used in the formula definition of CMx coding structures will be modified. See the following examples:

Example 1 (No rollup issue)

Material SKU is a data picker

Material Category is auto-populated from Material SKU

Material Code (CMx code) that rolls up to the Sheet = Material Category<umatCategoryPD> + Material SKU #<umatSKUMtrDP>

Material Category is auto-populated with Material SKU and Material SKU is part of the formula that makes up the Material Code.

So, Material Category and Material SKU are disabled.

Example 2 (Rollup issue)

Material SKU is a data picker

Material Name is auto-populated from Material SKU

A1 = Manual entry

Material Code (CMx code) that rolls up to the Sheet = Material Name + A1

Material Name and A1 are used in Material Code formula. So, Material Name and A1 are disabled.

However, Material SKU is not disabled as it is not used directly used in Material Code formula. So, if you change the value of Material SKU data picker (which is not disabled), then it will change the value of Material Name through auto-population. Material Name which is part of Material Code will now be modified. As a result the roll up of data seen in the CMx Sheet will be incorrect.

Creating Sheets for a Code-based Manager (Standard View)

You can use the **Create** option to create a code-based configurable manager sheet;

- **Manually**

  Read the process for manually creating a sheet, below.
- **From Template**

  This option enables you to create a configurable manager from a template. The **From Template** option is available only if one or more configurable manager templates are defined at **Company Workspace** (admin mode). If no templates are defined, then this menu option will not be available. If you do not have create permission, this option is disabled. In this scenario, you can access rows or create more rows irrespective of the way that a sheet is created, manually or by template.

  You cannot modify the segment sources. Creating a sheet by way of a template enables you to access the sheet rows.
- **From Shell**

  When you click this option, Unifier opens a window which lists all the sheets that can be copied from other shells that the administrator has created.

To create a code-based configurable manager sheet manually:

1) Click **Create** and click **Manual** to open the create sheet window.
2) In the **Properties** tab, enter the values. You can also edit existing values in the **Properties** tab, for example, change the **Picker** field value from **All Records** to records with their statuses set as "Active," "InActive," or both in the **Records with statuses** field.

   The **Default Filter View** drop-down field does not have any values when you create a new sheet. This field has a value for an existing sheet and can be changed.
3) Click the **Segments** tab and add segments.

You can add multiple segments by clicking the plus icon (+). When you click the plus icon (+), Unifier inserts a new row on the grid. Once you add a row, you must click the cell under the **Segment Source** label and select a source, which has been designed in uDesigner. You can use drag-and-drop to move the segments. To delete a segment click on the segment row and click the delete option (trash can icon). The **Segments** tab has a grid that is similar to the grid and fields of the Line Items in BPs.

4) When finished, from the top, click **Save**.

Click **Save** on the create sheet window.

Working with Configurable Manager Sheets (Classic View)

The following topics describe how to use configurable manager sheets.

Create a new sheet from an existing template

You can create a sheet by copying an existing template from the same class.

To copy an existing template

1) Select a class template from the log.
2) To copy a template, do one of the following depending on which level the template is:
   - At the company level, click **Copy > Template**.
   - At the project level, click **Copy > Project**.
   - At the shell level, click Copy > <shell name>.

   The Properties window opens with the information from the original template.
3) Make changes as needed in the Properties window, and click **OK** to create the new sheet.

Add columns to a sheet

If you have created permission, you can add columns, but not rows, to a Configurable Manager sheet template. The columns can capture data from business processes or manually entered data.

To add a column to a sheet

1) Open the sheet.
2) Click **Columns**. The Columns log opens.
3) Click **New**. The Column Properties window opens. Complete the window as described in the table below.

In this field:	Do this:
Name	The Name field is populated with the data source value selected.

Datasource	Select a data source. The data sources available are data elements that are defined in the detail form for a class in uDesigner. Also listed are data elements based on **SYS Numeric Logical Datasource**, **SYS Date Logical Datasource**, **SYS Project Cost Datasource**, **SYS BP Currency Amount**, **SYS BP Decimal Amount**, and **SYS BP Integer Amount** data definitions. **Note**: You can add data picker fields as columns, but you cannot invoke the data picker from the sheet.
Width (pixels)	Enter the width the column should be. Maximum is 2000 pixels. (You can also manually resize the columns on the sheet.)
Alignment	Specify whether the data in the column should be left- or right-aligned, or centered.
Entry Method	Choose a data entry method for the column. The options vary depending on the data source selected: ▸ **Manual entry**: You can enter data directly into the cell, or data is rolled up from another source, such as the form. ▸ **Formula**: Formula types are numeric, date difference, and date add. See ***Add a formula column*** (on page 41) for details on working with formulas. ▸ **Define**: Use this method to specify data that should roll up from line items. Click the Define button and in the Formula Creation window, select the business processes and fields whose values should roll up to the manager sheet. You can select single fields to roll up, or you can add several fields together for a combined roll up amount.
Data Format	Specify how the column data appears for numeric columns. The options are: ▸ **Show as Percentage:** Data entered in a column is displayed as a percentage. For example, if you enter 0.25, it displays as 25%. **Note**: When entering the percentage values in your sheet, if you are working in Classic View, then enter the value by using decimal number format. For example, for ten percent, enter: 0.1, and if you are working in Standard View, then enter the value by using percent format. For example, for ten percent, enter: 10%. The value that Unifier uses to validate the value of the Percentage column, when applicable, will be: 0-100.

	▸ **Decimal Places:** Select the number of decimal places to display (0 to 8). ▸ **Use 1000 Separator (,):** If you select this option, the entered data is formatted with a separator for numbers with more than three digits. For example, 1,000 rather than 1000. ▸ **Negative Number Format:** Specify if negative values are displayed with a negative sign or in parentheses.
Display Mode	Select **Hide** to make the column invisible to users. Select **Show** to display it. You can show/hide any column on the sheet, including the code name column.
Summary Rows	Specify what the summary rows display. ▸ **Blank:** Summary row remains blank. ▸ **Sum of All Rows:** Summary row displays the sum total of all row values for this column. ▸ **Use Formula Definition:** Formula entered in the Formula field applies to the summary row.
Total	Specifies what displays in the bottom summary row for each column: **Blank:** Summary row remains blank. **Sum of All Rows:** Summary row displays the sum total of all row values for this column. **Use Formula Definition:** Formula entered in the Formula field applies to the summary row.
Column Position After	Determines the position of the column on the sheet.

To copy a column

1) In the Column log, select a column and click **Copy**.
2) The Column Properties window opens. Make changes as necessary for the new column. You must change at least the data source.

View column properties

The Properties window for a column maintains the column name, data source, entry method, and other properties for that column.

To open the column properties window

In the sheet, click on a column link. The View Column window opens, showing the data source from which the column values are gathered and the data entry method, including any formula used to calculate the values.

Add a formula column

You can add a formula column to the sheet for data sources that are based on either the data definitions SYS Numeric Logical Datasource or SYS Date Logical Datasource.

You can define formulas for the following types:

- **Numeric:** This option is available if the data source is SYS Numeric Logical.
- **Data Difference:** This option is available if the data source is SYS Numeric Logical. It is used for formulas that calculate the difference between two dates.
- **Date Add:** This option is available if the data source is SYS Date Logical. It can be used to add values to a date to calculate a new date.

To create a numeric formula

1) In the column Properties window, choose **Formula** and select **Numeric**.
2) Click **Create**. The Create Formula window for numeric formulas opens.
3) Select either **Item** or **Sheet** from the data type drop-down list. Item lists data elements that are defined on the form. Sheet lists columns that are already defined on sheet.
4) Build a formula by doing the following:
   - To include a data source in the formula, select the data source from the list and click **Select**.
   - Click a mathematical modifier (plus, minus, and so on) and numbers on the keypad.
5) When the formula is complete, click **OK**.

To create a date difference formula

1) In the column Properties window, choose **Formula** and choose **Data Difference**. Click **Create**. The Date Difference window opens.
2) For Earlier Date and Later Date, click **Select**. Select a data element. The list includes date type data elements from the form or existing date type columns on the sheet.
3) Choose one of the following:
   - **Calculations based on Calendar Days:** The calculation is based on calendar days and does not take company non-working days into account.
   - **Calculations based on Work Days:** The calculation is based on the company calendar working and non-working days.
   - **Show Partial Day**
4) Click **OK**.

To create a date add formula

1) In the column Properties window, choose **Formula** and choose **Data Add**. Click **Create**. The Date Add window opens.
2) For the **Date** field, click **Select** and choose a data element from the list.
3) For the **Add** field, click **Select** and choose a data element from the list.
4) Choose one of the following:

- **Calculations based on Calendar Days:** The calculation is based on calendar days and does not take company non-working days into account.
- **Calculations based on Work Days:** The calculation is based on the company calendar working and non-working days.

5) Click **OK**.

Open a sheet

Manager sheets are listed on the Sheet log of the configurable manager.

> **Note**: You must have permissions to access a sheet. If you need access to a sheet not listed in the log, contact your company administrator.

To open a sheet for a code-based manager

1) Open the project or shell in which the manager resides and click Configurable Modules in the left Navigator. The Navigator expands to display the configurable managers that have been created for this project or shell.
2) Select the configurable manager you want to work in. Unifier displays the sheets log.
3) On the sheets log, double-click the name of the sheet. Unifier opens the sheet.

To open a sheet for a Code and Records-based manager

1) Open the project or shell in which the manager resides and click Configurable Modules in the left Navigator. The Navigator expands to display the configurable managers that have been created for this project or shell.
2) In the Navigator, click the name of the manager you want to work in. The Navigator expands to display a Sheets node.
3) In the Navigator, click the **Sheets** node. Unifier displays the sheets log, listing a sheet for every class created for the manager.
4) On the sheets log, double-click the name of the sheet. Unifier opens the sheet.

View record details

To view the details of a listed record, click the record. A view-only window opens displaying the record details.

View sheet properties

The Properties window for the sheet maintains the name and display options. It can be used to map a column to a company account code.

To open the sheet Properties window

In the Sheets log, select the sheet and click the **Properties** button.

- The General tab is described in the following table.
- In the Options tab, sheet columns can be mapped to company account codes.

Expand or collapse the sheet rows

For convenience in viewing sheet data, you can expand and collapse the rows to expose and close sub-items on the sheet.

Drill down to more data

From the sheet, you can use the blue hyperlinks to drill down to additional detail about the item.

View or edit code details

Each row item on the sheet is identified by a code, which is in the first column on the sheet. The code is hyperlinked. If you want to see more details about a row item, click **Link**.

Code-based manager and record-based manager

Unifier displays a read-only copy of the Detail form, or the Attribute form, for that item. You cannot edit the displayed form because the manager retrieves the information from the records that have been created, automatically.

The sheet for a code-based manager is designed to be dynamically editable, so you can edit the fields that are not read-only (grayed out). For a code-based manager, Unifier displays the Code Details window which shows the fields from the manager Attribute form. Note that the "Code" field is not editable.

If the field appears as a column on the sheet, any changes that you make to the field (in the Code Details window) will appear on the sheet. Reciprocally, any changes you make on the sheet will also appear on the Code Details window, for the item.

View rollup data

For Code and Records-based managers, BP line item data, such as costs and quantities, can be configured to roll up to the manager sheet from across shells. Cells that contain rolled-up data will show a hyperlinked value. Every transaction will include an ID that includes the shell or project number where the BP Record was created. You can click on this hyperlink to open a cell details window and view all the business process transactions that contributed to the rollup. Double-click on a transaction to open the original BP Record in view mode.

Sort the sheet content

If the manager sheet is in flat mode (that is, it lists the codes in a flat structure, rather than hierarchically), you can sort the content on the sheet by column. By default, Unifier shows column data in ascending order.

To sort column data

Click the column heading. Unifier will re-display the data in that column in descending order. To return the column data to ascending order, click the heading again.

Filter the sheet content

Some managers, particularly those configured to function across shells, can accumulate a substantial amount of data. To make viewing this data easier, you can create filters to restrict the content of the sheet.

To create a filter

1) Open the sheet.
2) From the View menu, choose **Filters...**. The Setup Filters window opens.
3) Click the **Add** button. The Add Filter window opens.
4) In the **Filter Name** field, enter a name for this filter.
5) Click the **Add** button. The Query Condition window opens.
6) In the **Data Element** field, enter the name of the field you want to appear on the manager sheet.

   The values in the field must meet a condition (such as "equals" or is "greater than") to be included on the sheet.

   Depending on the data element you enter, the Query Condition window will display variable fields.

   Select the**Show result matching ANY condition** checkbox if you want the field to meet any one of the conditions in the filter, rather than meeting all filter specifications.

   Select the **Display Summary Rows** checkbox if you want to see the summary rows recalculated based on the filtered view of the sheet.
7) Click **OK**, or click **Apply Filter** to filter the sheet content.

To apply a filter to a sheet

1) Open the sheet.
2) From the View menu, choose **Filters...**. The Setup Filters window opens, showing a list of the filters that have been created for the sheet.
3) Select the filter you want to use and click **Apply Filter**.

   Unifier displays a filtered view of the manager sheet. While in a filtered view, you can use all sheet functions except Export and Import.

   If you want to re-display all the rows on the sheet, you can clear the filter by choosing **ClearFilters** from the **View** menu.

To edit a filter

1) Open the sheet.
2) From the View menu, choose **Filters...**. The Setup Filters window opens, showing a list of the filters that have been created for the sheet.
3) Select the filter you want to edit and click **Edit**.

Enter sheet data

For manual data-entry columns, you can enter data directly into the sheet.

To enter data on a sheet

1) Open the sheet.
2) Click inside a manual-entry cell and enter the data.
3) Click **Save**.

Edit sheet data

You can perform some editing on the sheet itself. Columns are designated with an entry method when they are added to the sheet. If the column specified "manual entry," you can enter data directly into that column on the sheet. If you change a field value on the sheet, Unifier will also change the field on the item's attribute or detail form.

> **Note**: The name of the row item is always editable. The code, however, is never editable.

To enter data on a sheet

1) Double-click inside a manual-entry cell. Unifier will highlight the cell data and open a text box.
2) Enter the data in the text box and click **Save**.

Create and view a snapshot

You can take a snapshot of a sheet to keep as a record and view later.

To create a snapshot

1) Open the sheet.
2) Select **File > Create Snapshot**. The Create Snapshot window opens.
3) Enter a title and click **OK**.

To view a saved snapshot

1) Open the sheet.
2) Select **View > Snapshot Log**. The Snapshot log opens.
3) Select a snapshot from the list and click **Open**. A read-only view of the sheet opens, displaying the sheet data at the time of the snapshot.

Copy data to another column

You can copy data from one manual-entry column to another.

To copy data from one column to another

1) Select **Edit > Copy > Column Data**. The Copy Column Data window opens.
2) Select the manual-entry column to copy, the percentage value, and the column to which to copy.
3) Click **Copy**.

Search for records on a sheet

To search for records:

1) Open the sheet.
2) Click **Find**. The Find window opens.
3) Select the search criteria:
   - **Column:** Choose a column from the sheet.
   - **Value:** Enter a value to search.
   - **Search:** Select the direction to search from the selection on the sheet.
4) Click **Find Next** to search for the entered value. You can click again to continue searching.
5) Click **Cancel** to cancel the search.

Export sheet data

You can export data from columns that have been manually entered to a CSV file. The data is for reference only and cannot be re-imported.

To export columns from a sheet

1) Open the sheet.
2) Click the **Export** button and choose Codes (for code-based managers only) or Column Details.
3) Select the columns to export and click **OK**.
4) Save the CSV file to your local drive.

Import sheet column data

You can enter data into manual-entry columns by importing a CSV sheet. The column must be configured on the record detail form to accept numeric data elements.

To import column data

1) In the CSV file, enter data for each listed record. Be careful not to change the CSV file structure.
2) Save the CSV file.
3) Open the sheet to which you want to import the data.
4) Click the **Import** button and choose Codes (for code-based managers only) or Column Details.
5) Browse to the CSV file containing the column data and click **OK**.

> **Note**: You cannot delete summary rows from the sheet using a CSV import. You also cannot delete existing rows using CSV import if their codes have been added to business processes.

Working with Configurable Manager Sheets (Standard View)

The configurable managers are nested under the **Configurable Modules** as shown below:

Configurable Modules

- <name> Manager [Code-based configurable manager]
- <name> Manager [Code and Records-based configurable manager]
  - Sheets
  - Class

The following explains applicable actions for each sub-node.

Add Columns or Rows to a Sheet

The following explains how to add columns or rows to a sheet, where applicable.

Configurable Modules: <name> Manager [Code-based configurable manager]

> **Note**: You must have the "Create" permission in order to proceed with adding columns or rows.

To add columns to a code-based configurable manager sheet:

1) Go to your shell or project in **User** mode.
2) From the left Navigator, click **Configurable Modules** node to expand.
3) Click your code-based configurable manager (**<name> Manager [Code-based configurable manager]**). The log displays a list of sheets and the corresponding properties (on the right-hand side).
4) Double click on the sheet to open the sheet log window that displays the columns.
5) From the toolbar options, click **Add Column**  (the icon with three vertical bars) to open the **Add Column** window.
6) Enter values in the fields that are displayed.
7) After you are finished, select one of the following options:
   a. **Cancel**: To cancel the changes and close the window.
   b. **Save**: To save your work for creating a new column.
   c. **Save & Add New**: To save your work and begin creating a new column.

To add rows to a code-based configurable manager sheet:

1) Go to your shell or project in **User** mode.
2) From the left Navigator, click **Configurable Modules** node to expand.
3) Click your code-based configurable manager (**<name> Manager [Code-based configurable manager]**). The log displays a list of sheets and the corresponding properties (on the right-hand side).
4) Double click on the sheet to open the sheet log window that displays the columns.

5) From the toolbar options, click **Add Row** (the icon with three horizontal lines) ═ to open the **Add Row** window.
6) Enter values in the fields that are displayed.
7) After you are finished, select one of the following options:
   a. **Cancel**: To cancel the changes and close the window.
   b. **Save**: To save your work for creating a new row.
   c. **Save & Add New**: To save your work and begin creating a new row.

Configurable Modules: Generic Cost Manager

For **Generic Cost Manager (CM0 or CM zero)**, see ***Generic Cost Manager*** (on page 355).

Configurable Modules: <name> Manager [Code and Records-based configurable manager]-Sheets

> **Note**: You must have the "Create" permission in order to proceed with adding columns. You cannot add rows. The columns can capture data from business processes or manually entered data.

To add columns to a Code and Records-based configurable manager sheet:

1) Go to your shell or project in **User** mode.
2) From the left Navigator, click **Configurable Modules** node to expand.
3) Click your Code and Records-based configurable manager (**<name> Manager [Code and Records-based configurable manager]**) to expand.
4) Click the **Sheets** sub-node (**<name> Manager [Code and Records-based configurable manager]-Sheets**) to open the log. The log displays a list of sheets.
5) Double click on the sheet to open the sheet log window that displays the columns.
6) From the toolbar options, click **Add Column** (the icon with three vertical lines) to open the **Add Column** window.
7) Enter values in the fields that are displayed.
8) After you are finished, select one of the following options:
   a. **Cancel**: To cancel the changes and close the window.
   b. **Save**: To save your work for creating a new column.
   c. **Save & Add New**: To save your work and begin creating a new column.

Configurable Modules: <name> Manager [Code and Records-based configurable manager]-Class

You can create new **<name> Manager [Code and Records-based configurable manager]-Class**, only.

Fields

The following details some of the fields:

In this field:	Do this:
Name	The Name field is populated with the data source value selected.
Datasource	Select a data source. The data sources available are data elements that are defined in the detail form for a class in uDesigner. Also listed are data elements based on **SYS Numeric Logical Datasource**, **SYS Date Logical Datasource**, **SYS Project Cost Datasource**, **SYS BP Currency Amount**, **SYS BP Decimal Amount**, and **SYS BP Integer Amount** data definitions. **Note**: You can add data picker fields as columns, but you cannot invoke the data picker from the sheet.
Type	
Data Format	Specify how the column data appears for numeric columns. The options are: ▸ **Show as Percentage:** Data entered in a column is displayed as a percentage. For example, if you enter 0.25, it displays as 25%. **Note**: When entering the percentage values in your sheet, if you are working in Classic View, then enter the value by using decimal number format. For example, for ten percent, enter: 0.1, and if you are working in Standard View, then enter the value by using percent format. For example, for ten percent, enter: 10%. The value that Unifier uses to validate the value of the Percentage column, when applicable, will be: 0-100. ▸ **Decimal Places:** Select the number of decimal places to display (0 to 8). ▸ **Use 1000 Separator (,):** If you select this option, the entered data is formatted with a separator for numbers with more than three digits. For example, 1,000 rather than 1000. ▸ **Negative Number Format:** Specify if negative values are displayed with a negative sign or in parentheses.
Display Mode	Select **Hide** to make the column invisible to users. Select **Show** to display it. You can show/hide any column on the sheet, including the code name column.
Summary Rows	Specify what the summary rows display. ▸ **Blank:** Summary row remains blank. ▸ **Sum of All Rows:** Summary row displays the sum total of all row values for this column. ▸ **Use Formula Definition:** Formula entered in the Formula field applies to the summary row.
Total	Specifies what displays in the bottom summary row for each

	column: **Blank:** Summary row remains blank. **Sum of All Rows:** Summary row displays the sum total of all row values for this column. **Use Formula Definition:** Formula entered in the Formula field applies to the summary row.
Column Position After	Determines the position of the column on the sheet.

You cannot copy a column.

View Column Properties

The following explains how to open the column properties for each configurable manager.

Configurable Modules: <name> Manager [Code-based configurable manager]

To view the column properties:

1) Go to your shell or project in **User** mode.
2) From the left Navigator, click **Configurable Modules** node to expand.
3) Click your code-based configurable manager (**<name> Manager [Code-based configurable manager]**). The log displays a list of sheets and the corresponding properties (on the right-hand side).
4) Double click on the sheet to open the sheet log window that displays the columns.
5) In a column click on a cell that has a link. The screen will divide in half and the lower portion of the screen displays the following tabs which provide details about the cell:
   - **General**
   - **Audit Log**
   - **Transactions**
   - **Cell Details**

Click and drag the three dots on the boarder of the two screens to resize the windows, or click once to open and close the right pane.

Configurable Modules: Generic Cost Manager

For **Generic Cost Manager (CM0 or CM zero)**, see ***Generic Cost Manager*** (on page 355).

Configurable Modules: <name> Manager [Code and Records-based configurable manager]-Sheets

To view the column properties:

1) Go to your **<name> Code and Records-based configurable manager]-Sheets**. The log displays a list of sheets.
2) In a column click on a cell that has a link. A new window opens and the screen will divide in half. The properties pane (right-hand side of the window) contains the following tabs which provide details on each cell:
   - **Comments**

- **Linked Records**
- **Linked Mail**
- **Audit Log**

Click **Maximize** icon to expand the properties pane. To minimize click the icon again.

Configurable Modules: <name> Manager [Code and Records-based configurable manager]-Class

To view the column properties:

1) Go to your **<name> Manager [Code-based configurable manager]-Class**. The log displays a list of sheets and the corresponding properties (on the right-hand side).
2) Double click on the sheet to open the sheet log window that displays the columns.
3) In a column click on a cell that has a link. The screen will divide in half and the lower portion of the screen displays the following tabs which provide details about the cell:
   - **General**
   - **Audit Log**
   - **Transactions**
   - **Cell Details**

Click and drag the three dots on the boarder of the two screens to resize the windows, or click once to open and close the right pane.

Open a Sheet

Manager sheets are listed on the sheet log of the configurable manager.

> **Note**: You must have permissions to access a sheet. If you need access to a sheet not listed in the log, contact your company administrator.

Configurable Modules: <name> Manager [Code-based configurable manager]

To open a sheet:

1) Go to your shell or project in **User** mode.
2) From the left Navigator, click **Configurable Modules** node to expand.
3) Click your code-based configurable manager (**<name> Manager [Code-based configurable manager]**). The log displays a list of sheets and the corresponding properties (on the right-hand side).
4) Double click on the sheet to open the sheet log window that displays the columns.

Configurable Modules: Generic Cost Manager

For **Generic Cost Manager (CM0 or CM zero)**, see ***Generic Cost Manager*** (on page 355).

Configurable Modules: <name> Manager [Code and Records-based configurable manager]-Sheets

To open a sheet:

1) Go to your shell or project in **User** mode.
2) From the left Navigator, click **Configurable Modules** node to expand.
3) Click your Code and Records-based configurable manager (**<name> Manager [Code and Records-basedCode and Records-based configurable manager]**) to expand.
4) Click the **Sheets** sub-node (**<name> Manager [Code and Records-based configurable manager]-Sheets**) to open the log. The log displays a list of sheets.
5) Double click on the sheet to open the sheet log window that displays the columns.

Configurable Modules: <name> Manager [Code and Records-based configurable manager]-Class

To open a sheet:

1) Go to your shell or project in **User** mode.
2) From the left Navigator, click **Configurable Modules** node to expand.
3) Click your Code and Records-based configurable manager (**<name> Manager [Code and Records-based configurable manager]**) to expand.
4) Click the class sub-node (**<name> Manager [Code and Records-based configurable manager]-Class**) to open the log. The log displays a list of sheets.
5) Double click on the sheet to open the sheet log window that displays the columns.

View Record Details

To view the details of a listed record, click the record. A view-only window opens displaying the record details.

> **Note**: You must have permissions to access a sheet. If you need access to a sheet not listed in the log, contact your company administrator.

Configurable Modules: <name> Manager [Code-based configurable manager]

To view record details:

1) Go to your shell or project in **User** mode.
2) From the left Navigator, click **Configurable Modules** node to expand.
3) Click your code-based configurable manager (**<name> Manager [Code-based configurable manager]**). The log displays a list of sheets and the corresponding properties (on the right-hand side), **Properties** tab.

Configurable Modules: Generic Cost Manager

For **Generic Cost Manager (CM0 or CM zero)**, see ***Generic Cost Manager*** (on page 355).

Configurable Modules: <name> Manager [Code and Records-based configurable manager]-Sheets

To view record details:

1) Go to your shell or project in **User** mode.
2) From the left Navigator, click **Configurable Modules** node to expand.

3) Click your Code and Records-based configurable manager (**<name> Manager [Code and Records-based configurable manager]**) to expand.
4) Click the **Sheets** sub-node (**<name> Manager [Code and Records-based configurable manager]-Sheets**) to open the log.
5) Click on a record to see the corresponding properties (on the right-hand side), **Properties** tab.

Configurable Modules: <name> Manager [Code and Records-based configurable manager]-Class

To view record details:

1) Go to your shell or project in **User** mode.
2) From the left Navigator, click **Configurable Modules** node to expand.
3) Click your Code and Records-based configurable manager (**<name> Manager [Code and Records-based configurable manager]**) to expand.
4) Click the class sub-node (**<name> Manager [Code and Records-based configurable manager]-Class**) to open the log.
5) Click on a record to see the corresponding properties (on the right-hand side), **Record Details** tab.

View Sheet Properties

The following explains how to view the properties of a sheet.

> **Note**: You must have permissions to access a sheet. If you need access to a sheet not listed in the log, contact your company administrator.

Configurable Modules: <name> Manager [Code-based configurable manager]

To view the properties of a sheet:

1) Go to your shell or project in **User** mode.
2) From the left Navigator, click **Configurable Modules** node to expand.
3) Click your code-based configurable manager (**<name> Manager [Code-based configurable manager]**). The log displays a list of sheets and the corresponding properties (on the right-hand side), **Properties** tab.
4) Double click on the sheet to open the sheet log window that displays the columns.
5) Click the **Menu Options** drop-down icon ≡ and select **Properties**.

Configurable Modules: Generic Cost Manager

For **Generic Cost Manager (CM0 or CM zero)**, see ***Generic Cost Manager*** (on page 355).

Configurable Modules: <name> Manager [Code and Records-based configurable manager]-Sheets

To view the properties of a sheet:

1) Go to your shell or project in **User** mode.

2) From the left Navigator, click **Configurable Modules** node to expand.
3) Click your Code and Records-based configurable manager (**<name> Manager [Code and Records-based configurable manager]**) to expand.
4) Click the **Sheets** sub-node (**<name> Manager [Code and Records-based configurable manager]-Sheets**) to open the log.
5) Click on a record to see the corresponding properties (on the right-hand side), **Properties** tab.
6) Double click on the sheet to open the sheet log window that displays the columns.
7) Click the **Menu Options** drop-down icon ≡ and select **Properties**.

Configurable Modules: <name> Manager [Code and Records-based configurable manager]-Class

To view the properties of a sheet:

1) Go to your shell or project in **User** mode.
2) From the left Navigator, click **Configurable Modules** node to expand.
3) Click your Code and Records-based configurable manager (**<name> Manager [Code and Records-based configurable manager]**) to expand.
4) Click the class sub-node (**<name> Manager [Code and Records-based configurable manager]-Class**) to open the log.
5) Click on a record to see the corresponding properties (on the right-hand side), **Record Details** tab.

Filter Sheet Content

Some managers, particularly those configured to function across shells, can accumulate a substantial amount of data. To make viewing this data easier, you can create views that filter (restrict) the content of the sheet.

You can use the **View** option to access created views, create new views, or update the existing views. The views that have been created, including **Default**, are listed in the upper segment of the drop-down list. The lower segment of the list includes the **Create New View** and **Manage Views** options.

To create a view

1) Click **Create New View**.
2) Use the **Save** option to name your new view.
3) Use the following tabs for adding columns and filtering, grouping, and sorting information:
   - **Columns** tab
   - **Filters** tab
   - **Group By** tab
   - **Sort By** tab
4) Use the **Columns** tab to select the columns that you want displayed in the view.

The **Available Columns** box displays all the columns that you might want to include. The **Selected Columns** box displays all the columns that you select. You can move columns in and out of the **Selected Columns** box.

Use the following fields to set the position of the new view:

- **Left Lock after Column:** Displays a list of all columns, except the last column from the selected columns list. By default, **None** is selected, which means that you have chosen no column to be locked, from the left side of the sheet.
- **Right Lock after Column:** The default value is **None**, which means that you can select not to right-lock the column in the view. Other values in this field are based on the value that you have selected in the **Left Lock after Column**.

5) Use the **Filters** tab to control what information is displayed in the selected view.

   You can add multiple filters to a view, and you can use the same data element multiple times. When adding multiple filters, you can use operators to specify that the view must match all listed filters or that it can match one or more of the listed filters.

   a. Click the **Add Filter** button.
   b. Choose a **Data Element**: This drop-down lists all data elements that are on the attribute form. Any data elements in a hidden block are not available.
   c. Choose a **Condition**: This drop-down displays a list of conditions. This list is based on the type of data element selected.
   d. Choose a **Value**: Depending on the type of data element, choose a value that the query condition must meet.
      - **Data Element:** Lists the data elements on the attribute form.
      - **Constant Value:** You can enter a full or partial entry of the value to filter by. This is similar to entering search criteria.

6) To add additional filters, click **Add Filter** again, and repeat the preceding steps.

   You can use the same data element multiple times.

7) If you are using multiple filters, click the applicable operator that should apply:
   - **And:** If you want to specify that the view must match all listed filters, select **And**.
   - **Or:** If you want to specify that the view should match any of the listed filters, select **Or**.

8) Use the **Group By** and **Sort By** tabs to identify which columns should be used for group and sorting and in what order.
9) When you are done, click **Save**.

To manage a view

To update a view, select the applicable view from the **View** list, click **Edit View** (the pencil icon), and then make and save the applicable changes.

To modify or remove a filter

1) From within the applicable view, click **Edit View** (the pencil icon), and select the **Filters** tab.
2) Make the applicable changes, such as changing the selected **Data Element** or **Condition**, updating the **Value**, or removing one or more of the filters from a set.
3) To save your changes, click **Save** or **Save As**.

Create and View a Snapshot

You can take a snapshot of a sheet to keep as a record and view later.

> **Note**: You must have permissions to access a sheet. If you need access to a sheet not listed in the log, contact your company administrator.

Configurable Modules: <name> Manager [Code-based configurable manager]

You cannot create a snapshot.

Configurable Modules: Generic Cost Manager

For **Generic Cost Manager (CM0 or CM zero)**, see ***Generic Cost Manager*** (on page 355).

Configurable Modules: <name> Manager [Code and Records-based configurable manager]-Sheets

To create and view a snapshot:

1) Go to your shell or project in **User** mode.
2) From the left Navigator, click **Configurable Modules** node to expand.
3) Click your Code and Records-based configurable manager (**<name> Manager [Code and Records-based configurable manager]**) to expand.
4) Click the **Sheets** sub-node (**<name> Manager [Code and Records-based configurable manager]-Sheets**) to open the log. The log displays a list of sheets.
5) Double click on the sheet to open the sheet log window that displays the columns.
6) Click the **Menu Options** drop-down icon ☰ and select **Snapshots**.
7) Select one of these options:
   a. **Create**

      When you select **Create**, the **Save As Snapshot New** window opens which enables you to create a snapshot by entering the snapshot title and clicking **OK**.
   b. **Open**

      To open and view an existing snapshot, if available.

Configurable Modules: <name> Manager [Code and Records-based configurable manager]-Class

You cannot create a snapshot.

Export Sheet Data

You can export data from columns that have been manually entered to a CSV file. The data is for reference only and cannot be re-imported.

Note: You must have permissions to access a sheet. If you need access to a sheet not listed in the log, contact your company administrator.

Configurable Modules: <name> Manager [Code-based configurable manager]

To export sheet data:

1) Go to your shell or project in **User** mode.
2) From the left Navigator, click **Configurable Modules** node to expand.
3) Click your code-based configurable manager (**<name> Manager [Code-based configurable manager]**). The log displays a list of sheets and the corresponding properties (on the right-hand side), **Properties** tab.
4) Double click on the sheet to open the sheet log window that displays the columns.
5) Click the **Menu Options** drop-down icon ☰ and select **Export**.
6) Select one of the following options:
   a. **Codes**
      To export a Microsoft Excel Comma Separated Values File.
   b. **Column Data**
      To export column details.

Configurable Modules: Generic Cost Manager

For **Generic Cost Manager (CM0 or CM zero)**, see ***Generic Cost Manager*** (on page 355).

Configurable Modules: <name> Manager [Code and Records-based configurable manager]-Sheets

To export sheet data:

1) Go to your shell or project in **User** mode.
2) From the left Navigator, click **Configurable Modules** node to expand.
3) Click your Code and Records-based configurable manager (**<name> Manager [Code and Records-based configurable manager]**) to expand.
4) Click the **Sheets** sub-node (**<name> Manager [Code and Records-based configurable manager]-Sheets**) to open the log. The log displays a list of sheets.
5) Double click on the sheet to open the sheet log window that displays the columns.
6) Click the **Menu Options** drop-down icon ☰ and select **Export**.
7) Select one of the following options:
   a. **<sheet name> Summary Sheet**
      To export a Microsoft Excel Comma Separated Values File.
   b. **Column Data**
      To export column details.

Configurable Modules: <name> Manager [Code and Records-based configurable manager]-Class

To export sheet data:

1) Go to your shell or project in **User** mode.
2) From the left Navigator, click **Configurable Modules** node to expand.
3) Click your Code and Records-based configurable manager (**<name> Manager [Code and Records-based configurable manager]**) to expand.
4) Click the class sub-node (**<name> Manager [Code and Records-based configurable manager]-Class**) to open the log. The log displays a list of sheets.
5) Double click on the sheet to open the sheet log window that displays the columns.
6) Click the **Actions** drop-down icon and select **Export CSV Template**.
7) Follow the prompts to complete the export.

Import Sheet Column Data

To import column data

1) In the CSV file, enter data for each listed record. Be careful not to change the CSV file structure.
2) Save the CSV file.
3) Open the sheet to which you want to import the data.
4) Select **Menu Options.**
5) Click the **Import** button and choose Codes (for code-based managers only) or Column Details.
6) Browse to the CSV file containing the column data and click **Import**.

> **Note**: You cannot delete summary rows from the sheet using a CSV import. You also cannot delete existing rows using CSV import if their codes have been added to business processes.

You can enter data into manual-entry columns by importing a CSV sheet. The column must be configured on the record detail form to accept numeric data elements.

> **Note**: You must have permissions to access a sheet. If you need access to a sheet not listed in the log, contact your company administrator.

Configurable Modules: <name> Manager [Code-based configurable manager]

To import sheet data:

1) Go to your shell or project in **User** mode.
2) From the left Navigator, click **Configurable Modules** node to expand.
3) Click your code-based configurable manager (**<name> Manager [Code-based configurable manager]**). The log displays a list of sheets and the corresponding properties (on the right-hand side), **Properties** tab.

4) Double click on the sheet to open the sheet log window that displays the columns.
5) Click the **Menu Options** drop-down icon ☰ and select **Import**.
6) Select one of the following options:
   a. **Codes**
      To import by opening a local folder and selecting a file.
   b. **Column Data**
      To import column details.

Configurable Modules: Generic Cost Manager

For **Generic Cost Manager (CM0 or CM zero)**, see ***Generic Cost Manager*** (on page 355).

Configurable Modules: <name> Manager [Code and Records-based configurable manager]-Sheets

To import sheet data:

1) Go to your shell or project in **User** mode.
2) From the left Navigator, click **Configurable Modules** node to expand.
3) Click your Code and Records-based configurable manager (**<name> Manager [Code and Records-based configurable manager]**) to expand.
4) Click the **Sheets** sub-node (**<name> Manager [Code and Records-based configurable manager]-Sheets**) to open the log. The log displays a list of sheets.
5) Double click on the sheet to open the sheet log window that displays the columns.
6) Click the **Menu Options** drop-down icon ☰ and select **Import**.
7) Click **Column Data** to import column details.

Configurable Modules: <name> Manager [Code and Records-based configurable manager]-Class

To import sheet data:

1) Go to your shell or project in **User** mode.
2) From the left Navigator, click **Configurable Modules** node to expand.
3) Click your Code and Records-based configurable manager (**<name> Manager [Code and Records-based configurable manager]**) to expand.
4) Click the class sub-node (**<name> Manager [Code and Records-based configurable manager]-Class**) to open the log. The log displays a list of sheets.
5) Double click on the sheet to open the sheet log window that displays the columns.
6) Click the **Actions** drop-down icon and select **Import** to open the **Upload CSV** window and select a file.

Working with Configurable Manager Logs (Standard View)

The following topics describe how to use configurable manager sheets in Standard view. In particular, this section explains how to access, review, and create both code-based and Code and Records-based configurable managers.

Code-Based Managers Log (Standard View)

The code-based configurable manager log is divided into two panes, left and right. The following explains the left pane elements of the log in details.

Left pane elements:

- Toolbar: **Create**

  This option is available if a sheet has not been created. Once you create a configurable manager sheet, then there are will be no toolbar options.
- Column: **Title**, **Description**, and **Last updated**

Right pane elements:

This right pane is blank for an empty log. When you create a sheet, the right pane displays the Properties tab that captures the details of the sheet.

- **Properties** tab
  - **Title**
  - **Description**
  - **Display Mode**
  - **Default Filter View**
  - **Picker**
  - **Segments**
- Expand toggle key

  To expand the tab window.

Creating a Code-Based Configurable Manager (Standard View)

You can use the **Create** option to create a code-based configurable manager sheet;

- **Manually**

  Read the process for manually creating a sheet, below.
- **From Template**

  This option enables you to create a configurable manager from a template. The **From Template** option is available only if one or more configurable manager templates are defined at **Company Workspace** (admin mode). If no templates are defined, then this menu option will not be available. If you do not have create permission, this option is disabled. In this scenario, you can access rows or create more rows irrespective of the way that a sheet is created, manually or by template.

  you cannot modify the segment sources. Creating as sheet by way of a template enables you to access the sheet rows.
- **From Shell**

  When you click this option, Unifier opens a window which lists all the sheets that can be copied from other shells that the administrator has created.

To create a code-based configurable manager sheet manually:

1) Click **Create** and click **Manual** to open the create sheet window.

2) In the **Properties** tab, enter the values. You can also edit existing values in the **Properties** tab, for example, change the **Picker** field value from **All Records** to records with their statuses set as "Active," "InActive," or both in the **Records with statuses** field.

   The **Default Filter View** drop-down field does not have any values when you create a new sheet. This field has a value for an existing sheet and can be changed.

3) Click the **Segments** tab and add segments.

   You can add multiple segments by clicking the plus icon (+). When you click the plus icon (+), Unifier inserts a new row on the grid. Once you add a row, you must click the cell under the **Segment Source** label and select a source, which has been designed in uDesigner. You can use drag-and-drop to move the segments. To delete a segment click on the segment row and click the delete option (trash can icon). The **Segments** tab has a grid that is similar to the grid and fields of the Line Items in BPs.

4) When finished, from the top, click **Save**.

5) Click **Save** on the create sheet window.

Code and Records-based Managers Log (Standard View)

Sheets

The sheets log is divided into two panes, left and right. The following explains the left pane elements of the log in details.

Left pane elements:

- Toolbar: **Create**, **Find on Page,** and **Print**

  Empty log has one option on the toolbar: **Create**.

  A non-empty log, in which sheets for all classes within the manager have not been created, has three options on the toolbar: **Create**, **Find on Page**, and **Print**.

  A log in which sheets for all classes have been created shows the options: **Find on Page**, **Print**.

- Columns: **Title**, **Description**, **Class**, and **Last updated**

Right pane elements:

This pane is blank for an empty log. When one or more sheets have been created, this pane shows a tab that captures the properties of a selected sheet.

- **Properties** tab
  - **Title**
  - **Description**
  - **Class**
  - **Display Mode**
  - To determine how the entries in a sheet are going to be displayed.
  - **Default Filter View**
  - **Picker**
- Expand toggle key

  To expand the tab window.

Class

The class log is divided into two panes, left and right. The following explains the left pane elements of the log in details.

Left pane elements:

- Toolbar: **Create**, **Actions**, **View**, **Edit View**, **Refresh**, **Print**, **Search**, **Find on Page,** and **Help**
- Column: **Attachments** and class-related titles

Right pane elements:

- **Record Details** tab which displays all the details related to the highlighted class.
- Expand toggle key

  To expand the tab window.
- Tooltip

  If an attribute form is present, then you can hover over the question mark (?) symbol to see more information in the form of a tooltip.

You can:

- The Actions option to perform:
  - Import
  - To import CSV file in order to create records in bulk.
  - Export CSV Template
  - Same as: Export Template > CSV. To export a CSV template.
  - Bulk Edit.
  - You must have permission to perform a bulk edit (similar to the same option in the non-Workflow BP record log).
- Print the log based on the current view. This would output a report similar to a UDR. You can use the print functionality to print the CM Class log. When you click Print, Unifier displays a Print Preview in HTML format.
- The layout of the printed information is based on the view. This means that the column order, columns displayed, applied filtering conditions, etc. will all be printed. You can print all pages.

  Note: If you select a record and the record summary is displayed, this information will not be included as part of the log print.
- Select the order of the columns in the log and define which columns must be visible.
- Sort on one or many columns within the log.
- Search the parameters displayed on the search window have all been configured in uDesigner. Search user interface and logic is similar to the search function in the non-Workflow BP record log).
- Group based on one column, or up to 3 columns, and define how the groups are sorted and how rows are sorted within the groups.
- Apply filters to individual columns.

- Lock columns so that they are fixed on the left-hand side and the remaining columns scroll on the right-hand side.
- The Help option to view the CM Class specific help, which has been set up by the Administrator. The tool tip for this icon are:
  - <Class Name> help
  - User Productivity Kit
- Use the *gear menu* (⚙) for each record to:
  - Open

    To open a record.
  - Copy

    To copy a record.
  - Print-HTML
  - Print-PDF
  - Print-Custom

The system default for viewing Code and Records-based records is **All Records**. You others option are:

- **Records Created by Me**
- **Create New View**

  You can create new views by clicking the **Create New View...** option. Similar to the Tasks log view creation, the New View window has the following tabs:
  - Columns
  - Filters
  - Group By
  - Sort By
- **Manage Views**

  Use Manage Views to manage the user-defined views and the default views (OOTB).

  Note: Certain restrictions are placed for the view options provided in the OOTB.

> **Note**: Unifier uses the Classic view of the log (of the CM class) for the view definition.

The views, based on the designs, provide the following information:

Columns: The column layout, based on the uDesigner layout.

Sort By: Based on the Sort Order, in the uDesigner Sort Order.

Find: All search parameters in the **Find** are in the Filter page of the view.

Navigation: Standard view does not display the navigation structure elements that are defined in uDesigner.

CM Class Record

You view the CM Class record summary from the logs.

Visibility of the panel

The Panel is displayed when you select a record.

The details in the panel is available only when a single record is selected.

When multiple records are selected, the panel displays the following content:

Details of multiple records cannot be viewed.

Content displayed in the Panel

The detail form of the CM Class attribute.

The Panel consists of one tab: **Record Details**.

Use maximize option to view the record details in the full screen mode. When the full screen mode is active, the screen occupies the right-hand section. Click minimize to return to the previous screen.

The record details contain the layout, block description, etc. This option is available in View only mode.

The picker type fields are displayed with just the values. There will be no hyperlinks. Click maximize to view this in an expanded form.

Group By row highlighted

When Group By row is highlighted, then the right-hand section does not display any details.

When you click the CM Class log, a log similar to the log of a non-Workflow BP record appears. You can double-click a record to open it. The following explains the log options.

Columns

As set of pre-designed columns and labels. You can adjust the columns in the log as follows:

- Visibility

  Right-click on the column header and select to hide the column.
- Reposition

  Drag and drop.
- Resize

  Unifier keeps your adjustments without saving.
- Locking

  Use the view option.

> **Note**: When you adjust the columns in the log, you modify the view settings. Unifier does not save your view automatically, except where it is noted. You can save the view using the "Save as" option. The application saves the column width adjustments that are made on top of the default settings (in uDesigner); however, you can change the width of a column.

The column marked with the "x" icon captures the errors if you attempt to save the grid with incorrect entries. This function is similar to the errors column in the BP Detail Form grid entry.

Row Number: This is a read-only column. This column does not have a header. As you insert new rows, delete rows, or reorders rows, the row numbers throughout the grid gets updated accordingly.

Segment Source: This is an editable, type-ahead and drop-down field. The drop-down values are the same as in the Classic view.

Delete Row: This column does not have a header. This column displays a delete icon for each row. Clicking at the icon deletes the selected row.

Drag Row: This column does not have a header. This column displays the reorder icon. You can select multiple rows and drag them to another position.

Creating a New Code and Records-based Configurable Manager Sheet (Standard View)

You can use the **Create** option to create a new Code and Records-based sheet by way of the following methods:

- **Manually**

  Read the process for manually creating a sheet, below.
- **From Template**

  This option enables you to create a configurable manager from a template. The **From Template** option is available only if one or more configurable manager templates are defined at **Company Workspace** (admin mode).
- **From Shell**

  When you click this option, Unifier opens a window which lists all the shells that the administrator has created. You can copy a configurable manager sheet from a shell that is listed.

To create a Code and Records-based sheet manually:

1) Click **Create** and click **Manual** to open the create sheet window.
2) In the overlay, enter the values. You can also edit existing values in the **Properties** tab, for example, change the **Picker** field value from **All Records** to records with their statuses set as "Active," "InActive," or both in the **Records with statuses** field.

   The **Default Filter View** drop-down field does not have any values when you create a new sheet. This field has a value for an existing sheet and can be changed.
3) When finished, from the top, click **Save**.
4) Click **Save** on the create sheet window.

You can use the **Create** option to create a new Code and Records-based class.

Bulk Editing Configurable Manager Records

If you have a large number of records that need the same edits, you can use **Bulk Edit** to update all the records at once. You can update up to 200 records at a time. Bulk editing must be defined in uDesigner, and you must have the **Allow Bulk Edit** permission set for the manager.

> **Note**: You cannot bulk edit codes or names.

To update records using bulk edit

1) Navigate to the Configurable Manager log.
2) Select one or more records or use **Find** to search for a group of records with specific criteria. You can select the records from the class log or the Find log.
3) Select **Edit > Bulk Edit**. The Bulk Edit window opens. The fields displayed depend on what is specified in uDesigner for detail form integration for the class.

> **Note**: Bulk edits overwrite data without asking you to verify each change. Be sure that you have entered the data you want to edit correctly.

4) The Bulk Edit form includes all editable fields for the detail form. Modify the Bulk Edit form as needed.
5) Select the **Update** checkbox for the fields that you want to update. The checkbox is automatically selected when you type in a field. You can deselect it if you do not want to modify the field.
6) To start the bulk update of the selected records, click **Update**. The Bulk Actions Status window displays the progress of the update.
7) Click **OK** after all records have processed. Click **Cancel** if you want to cancel the bulk update in progress.

Printing a Configurable Manager Form

You can print a copy of the record form for Code-based manager and record-based manager. You can choose PDF, HTML or Custom print formats and select one of the following options:

- Save a copy of the form as a PDF file and print the file
- Print an HTML view
- Print from a Word file if a custom print layout has been created for the form

The Custom Print formats include the BI Publisher custom print templates designed in the **Custom Templates** node. If custom print layouts have been created for the Configurable Manager, the form will print according to the layout that you select. See the following Custom Format Print Options for details. See the following ***Printing Options - Custom Format*** for details.

To preview and print a Configurable Managers form:

1) Open a Configurable Managers record that you want to print.
2) From the **File** menu, choose **Print Preview**, then choose one of the following:
   - **HTML** to view the form in the browser which can then be printed.
   - **PDF** to open the form in Adobe Reader, which can be saved or emailed as a PDF file, or printed process, you are asked to save the changes to the form.
   - **Custom** to select the BI Publisher, Microsoft Word, and PDF custom print templates from the same place as the current custom prints. See the following ***Printing Options - Custom Format*** for details.

The Print Options window opens. This window displays the record information that can be printed.

3) Select the checkboxes for the information that you want to print.
4) To select all the checkboxes, click the **Select All** checkbox. To deselect all, uncheck the **SelectAll** checkbox. If you deselect all checkboxes, only the header and footer will print.
5) Click **OK**. The preview form opens in an HTML or PDF (Adobe Acrobat or Reader) window, from which you can print.

   If you chose PDF, you can save a copy by clicking the **Save a Copy** button, or print. To print from HTML format, click on the **Print** icon in the upper right corner.

Print Options for Configurable Manager Form

The following summarizes print options.

Print option	What it prints
Detail Form	This prints the information entered on the form.
General Comments	The general comment text and create details are printed.
Record Attachments	File attachments to the record are listed alphabetically by file name, and also include the file title, issue date, revision number, and file size. **Note**: For BI Publisher template the sorting is done in the template; as a result, the alphabetical list of file names may not always apply.
Record Attachments > Comments	Prints comments associated with file attachments to the record. "Record Attachments" must also be selected to select this option.
Record Attachments > Comments > Attachments	List of file attachments attached to the comment are listed and contain the file title, issue date, revision number, and file size.

To print a Configurable Managers form with a custom print layout:

1) Open the form that you want to print. Be sure it is in a view mode.
2) From the File menu, choose **Print Preview**, then choose **Custom** to select the BI Publisher, Microsoft Word, or PDF custom print templates from the same place as the current custom prints (Custom Format Print selection window).
3) Select a layout and click **Ok**. The File Download window opens.

Notes:

- In case of the BI Publisher templates, you can select an output format and based on that selected output format the output file is generated. The output file appears in a new window.
- In case of the PDF format, the output is a .pdf file and is displayed in a new window and save.
- In case of the RTF format, the output is a .rtf file and you can open the .rtf file with Microsoft Word and save.
- In case of the Excel format, the output is a .xls file and you can open the .xls file with Microsoft Excel and save.

Custom Format Print Options for Configurable Manager

The Custom Format Print Window for non-Workflow Configurable Manager forms has two sections:

- Select a custom print template
- Select a template and format to print

Both sections facilitate custom print template and format selections.

Select a custom print template

Lists all the custom print templates existing for the non-Workflow Configurable Manager forms, including the custom print templates created in the **Custom Templates** node and the custom print templates created in the configuration of the non-Workflow Configurable Manager forms. For example, the list may include BI Publisher custom print templates, Word, and PDF custom print templates.

If there are multiple custom print templates for the same non-Workflow Configurable Manager forms, all the published templates are listed in this section.

The "Select a template and format to print" is populated by the selection made in the "Select a custom print template" section.

Select a template and format to print

- If you select a BI Publisher custom print, then you can select the desired template and format from the drop-down lists.
- Template drop-down displays all the available templates for the selected format.
- Format drop-down displays the available formats for the selected template.
- If the custom print template was created using PDF or Word, then the "Select a template and format to print" is disabled.

Default template and format (non-Workflow)

- If a BI Publisher print template is selected, then the default values in the drop-down lists are set based on the default in the custom print template.
- When a BI Publisher print template is selected in the "Select a custom print template" section, the template and format are populated based on the default value selected at the time of designing the print template.

Custom Format Print Window for Workflow Configurable Manager forms

If there is only one custom print template, and it happens to be a BI Publisher template, then the print template is selected in the “Select a custom print template” section, and the template and format are populated based on the default value selected at the time of designing the print template.

The Custom Format Print window has three sections for Workflow Configurable Manager forms.

- Select a custom print template
- Select a template and format to print
- Select options for Workflow Progress

By default, when the Custom Format Print window is launched, all three sections are enabled and the first template is selected. The options seen in the subsequent sections are based on the selection made in the "Select a custom print template" section.

You are able to select options for workflow progress in the 'Select options for Workflow Progress" section of the Custom Format Print window for PDF and Word templates, which are created at the time of configuring the Workflow Configurable Manager forms.

If the selected custom print template is of a BI Publisher type, then the “Select options for Workflow Progress” section is disabled. This is because the custom print template designers can always use the system provided Workflow views to include workflow-related information in the template.

Default template and format (Workflow)

- When a BI Publisher print template is selected in the "Select a custom print template" section, the "Select a template and format to print" section is populated based on the default value selected at the time of designing the print template.
- If there is only one custom print template, and it is a BI Publisher template, then the print template is selected in the “Select a custom print template” section, and the template and format is populated based on the default value selected at the time of designing the print template.

Cost Manager

The **Cost Manager** module or node enables you to work with the following features which are presented as sub-modules or sub-nodes:

- **Cash Flow**
- **Cost Sheet**
- **Schedule of Values (SOV)**
- **Funding Sheet**
- **Commitment Funding Sheet**

The following topics provide details for each feature.

This section also explains other features that are related to the **Cost Manager**.

In This Section

Cash Flow

The term "cash flow" refers to:

- The movement of money in or out of a project (or business) during a specific time period.
- The movement of money in or out of a company in regard to a specific existing project, or shell, during a specific time period.
- The distribution of cost over time.

In the context of *capital projects*, cash flow is the estimating of future spends to be incurred on a project, based on current Actuals (or "spends).

The term cash flow is synonymous with cash flow forecasting, Actuals (or "spends") forecasting, and time-phasing of budget, which all refer to the availability of proper funding in each future period (month, quarter, or year).

Cash flow management includes the following steps:

1) Establishing a baseline spending plan: **Baseline**
2) Tracking actual costs: **Actuals**
3) Calculating future expenditures based on project schedules: **Forecast**

> **Note:** Cash flow forecasting is used to ensure that cash is available when payments are due.

The **Cash Flow** module lets you create the following curves and compare them on one cash flow worksheet:

- **Baseline**
- **Forecast**
- **Actual (or Spends)**
- **Portfolio Budget**
- **Derived**
- **Custom curves**

You can create data source, distribution profiles, and cash flow curve templates to simplify the creation of cash flow in multiple projects and shells.

If you do not select a distribution profile, then the system uses the default distribution profile, when you refresh the curve. If you remove the default distribution profile during a CSV curve setup for import, then the system uses the default distribution profile that was selected in the curve properties.

Administrators can set up Base Commit business processes to automatically create cash flow curves for the commitment record at a particular workflow step, or for non-workflow business processes, when the record is complete.

The following defines the *three most common*, *and important*, standard cash flow types:

- **Baseline**
- **Actuals (**or **Spends)**
- **Forecast**

Baseline

The **Baseline** is defined as:

- The time-phased distribution of the project budget over the project duration.
- The project budget distributed over the duration of the project, indicating how the budget might be spent.

A project can have multiple **Baselines** (original, revised, etc.).

Actuals (Spends)

The **Actuals** (Spends) is defined as:

- The spends that have actually been incurred (approved invoices, or in some cases, accruals).

Note: Spends is defined as periodic outlay of money, tracked per CBS.

- The project spending which includes actual invoices received for each period.

The **Actuals** (Spends) can be compared to baseline budget to maintain budgetary control.

Forecast

The **Forecast** is defined as:

- The time-phased distribution of the project forecast, from the latest **Actuals** (Spends).
- The expected spends for the future.

The start point of a **Forecast** curve is the end of the latest **Actuals** (Spends), and the end point is the total forecast.

You can use cash flow forecasting to ensure that cash is available when payments are due.

Forecast is updated as new actuals are incurred.

You can create cash flow at multiple levels in a project to:

- Track cash flow for the entire project or shell: **Project/Shell**
- Track the costs associated with summary CBS code: **Summary CBS**
- Track cash flow at the CBS code level, across all or specific CBS code: **CBS**
- Track cash flow data for an entire commit record, including Base Commit, Change Commit, and related invoice: **Commitment**

  Base Commit and Change Commit are Commitments BPs which are sub-types of Cost-type BP.

Cash Flow Curves

In general, cash flow curves are graphical presentations of the expenditures or spends. Cash flow curves enable you to:

- Pull data from cost sheets, business process records, or schedule sheets
- Record cash flow history by way of using snapshots
- Generate cash flow curve reports

The cash flow management steps (**Baseline**, **Actuals** or Spends, and **Forecast**) can be displayed as C*ash flow curves* in the system.

The following lists the cash flow curves types:

1) **Detail Curves**: Cost per period.
2) **Rollup Curves**: Each period includes sum of all previous periods.
3) **Summary Curves**: Each project or shell cash flow has a system defined project or shell summary curve.

Cash Flow Curves and Data Sources, Types, Distribution Profiles, Detail curve templates, and Roll up curve templates Options

A cash flow curve requires a data source which your administrator can create in the **Standards & Libraries** node.

Data Sources

Used to identify cash flow curves and Roll up data to the program and company worksheets. Multiple data sources can be defined per curve type, depending upon business needs. Example: “Original baseline and Current baseline” data sources can be defined for type “Baseline”. For roll ups, curves are summarized across data sources.

Curve Types

Used with pre-defined categories of cash flow curves for:

- **Baseline**
- **Forecast**
- **Actual (or Spends)**
- **Portfolio Budget**
- **Derived**
- **Custom**

Each curve type has its own logic to address different business requirements.

Distribution Profiles

Used to distribute data automatically in the cash flow worksheet.

Detail curve templates

Cash flow curves can be created either manually or from a template.

Cash flow templates are created in Company Workspace from project templates and are used to create new cash flow worksheet.

Roll up curve templates

Used to create curves in programs that roll up cash flow data from projects or shells.

Cash Flow Curves Types

The following explains each of the cash flow curves types in detail.

Detail Curves

The Detail Curves are referred to a family of curves that can be defined at the project or shell level, or at the program or company level.

Each curve, within the family, is based on a data source (one curve per unique data source).

A cash flow curve of type *Detail Curves* is a curve that is used to monitor the movement of cash at different detail levels in a project or shell.

The cash flow (Detail Curves) levels in a project or shell are:

- **Project/Shell**

- **Commitment**
- **CBS**
- **Summary CBS**

As mentioned earlier, you can specify the following cash flow types for each detail level in a project.

> **Note**: The first three cash flow types in the list below are the *three most common*, *and important*, standard cash flow types.

Baseline

Depicts the project budget that is spread over the duration of the project. Users can define multiple baselines for a project.

Actuals (Spends)

Depicts the expenditures (spends) that have actually incurred.

Forecast

Depicts the projection of the future costs, based on current expenditures (Actuals or Spends).

Portfolio Budget

Depicts the Baseline curve, or Forecast curve, used for portfolio optimization scenarios in the Portfolio Manager.

Derived

Depicts the Baseline curve, or Forecast curve, used for portfolio optimization scenarios in the Portfolio Manager.

The **Derived** curve is used to convert the sources currencies to a currency used by the **Portfolio Budget** curve.

Custom

Depicts cost data other than **Baseline**, **Actuals**, etc.

The **Custom** curves can include any other cost data that you want to view graphically.

Roll up Cashflow Curve (Rollup Curves)

A **Roll up Cashflow** curve includes a group of curves with **Active** status summarized by data source across all projects or shells in a program or across all projects or shells in a company.

A **Roll up Cashflow** curve facilitates the aggregation of cash flow data source (from projects or shells and **CBS**) to the program and company cash flow worksheets.

> **Note**: A **Roll up Cashflow** curve can only be created at program or company levels.

You can compare curves side-by-side, in the cash flow worksheet, to view cash flow distribution over time.

Summary Curves or Summary Cash Flow Curves

A summary cash flow curve is designed to present a consolidated view of cash flows, and each project or shell cash flow has a system-defined project or shell summary curve. A summary cash flow curve:

- Uses the detail cash flow curves to compare the movement of curves against the previous snapshots, and in the process show differences among curves with respect to time and schedule.
- Displays Variance and Forecast analyses, similar to the detail cash flow curves.

Cash Flow Worksheets

You can use cash flow worksheets to define and manage:

- Project or Shell level cash flow detail curves (listed under **Detail Curves** in project or shell **Cash Flow** log) and
- Company level Roll up Cashflow curves (listed in the company **Cash Flow** log).

The following descriptions applies to both the project or shell and Company levels cash flow worksheets.

> **Note**: The cash flow worksheet (Standard View) shows a blank page on Safari browser.

The cash flow worksheet is generated automatically after you define the properties for a new cash flow curve.

The system collects data from various managers and displays it in the cash flow curves. As a result, the curve options (for example, data sources and distribution selections) determine the appearance of a curve in a Flow worksheet.

The cash flow worksheet displays a graph and each curve listed has its own data set. You can click the curve name to open the window for the curve in order to view the contents. Depending on the curve set up, you can manage the curve data in that window.

Each part of the cash flow worksheet can be individually maximized. Additional options enable you to filter the information on the cash flow worksheet to display selected curves and to print the worksheet or both.

Transaction Currency in Cash Flow Curves

Introduction to Transaction Currency

During company creation, the administrator sets a base currency that becomes the default project currency for each project or shell.

When you create a project or shell, you can change the default project currency to any currency listed in the company level exchange rate table.

> **Note**: After creating your project or shell, you add additional currencies to your project or shell as needed.

Depending on the Commitment BP design, during record creation you can select a transaction currency from the list of available currencies in your project or shell. The system stores costs in the project currency and uses the active company level exchange rate table for currency conversion.

Transaction Currency in Cash Flow Curves

In the **Project/Shell**, **Summary CBS**, and **CBS** cash flow curves, the system displays cash flow costs in the project currency.

By default, the system displays Commitment curve cost data in the record transaction currency which is stored in project currency, using the active currency exchange rate table.

As a result:

- If the transaction currency is different from the project currency, you can change the currency view between transaction and project currencies, but you can only edit data in the transaction currency.

  The summary curve displays 0 (zero), if:

  a. The transaction currency is different from the project currency, and
  b. No exchange rate has been defined.
- If there is a more recent value in the exchange rate table, refreshing the curve will refresh the cost data.
- If the transaction currency is different from the project currency, then the system conducts the exchange rate conversion before rendering the **Summary Curves** cash flows.
- If the base currency is the only currency used in the company, then the system does not conduct the exchange rate conversion, and the **Summary Curves** cash flows show the **Summary Curves** cash flows in project currency which is the same as the base currency.

Switching Between Transaction and Project Currency in Cash Flow Curves

To switch between transaction currency and project currency in a cash flow worksheet:

1. Go to your project or shell (**User** mode).
2. From the left Navigator, click the **Cost Manager** node to expand.
3. Click the **Cash Flow** sub-node to open the **Cash Flow** log window, or the **Cash Flow** log.
4. Select a curve from the log and double-click the curve to open the cash flow worksheet window. By default the worksheet opens in the transaction currency if different from project currency.
5. Use the drop-down currency menu located at the top-center of the worksheet to change currency views. If the transaction currency and the project currency are the same, you will not see the drop-down field. The numbers and curve refresh to display the new currency values.
6. In the cash flow window curves list, located on the bottom portion of the window, select a curve and open the curve details window.

7. If you selected the project currency view before opening the curve details window, and the curve is in transaction currency, the data will be read only.
8. In the details window use the currency menu to switch to the transaction currency. Depending upon the curve set up, you can manually enter data or change the automatically distribution profile.
9. When finished, click **Save**. The cash flow window will refresh with changes.

Project or Shell Level Cash Flow

Project or shell level cash flow curves are curves that are defined at the project or shell level.

> **Note**: If you are working in a project or shell, the **Cash Flow** log displays cash flow **Detail Curves**. If you are working in a program or company (**User** mode), the log displays the company level Roll up Cashflow curves.

Project or Shell Level Cash Flow Log

The **Cash Flow** log is the starting place for cash flow operations.

To access the **Cash Flow** log:

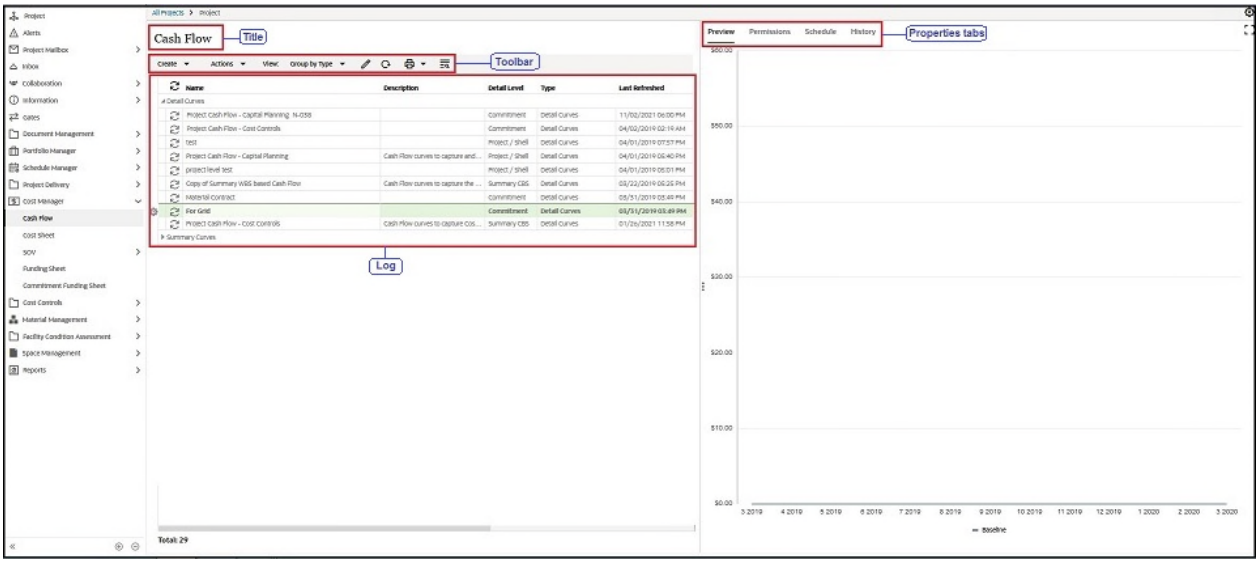
1) Go to your project or shell (**User** mode).
2) From the left Navigator, click the **Cost Manager** node to expand.
3) Click the **Cash Flow** sub-node to open the **Cash Flow** log window, or the **Cash Flow** log.

> **Note**: If you are working in a project or shell, the **Cash Flow** log displays cash flow **Detail Curves**. If you are working in a Company (**User** mode), the log displays the company-level Roll up Cashflow curves.

The project or shell **Cash Flow** log is divided into the following sections, as shown in the following typical screen capture:

- Title
- Toolbar
- Log

- Properties tabs. The Properties tabs include Preview, Permissions, Schedule, and History.



When you click and select a record (curve) on the **Cash Flow** log:

a) The log window splits in half to display the properties of the selected curve, on the right.

b) The *gear menu* (⚙) becomes active.

The following provides more details about the properties of the selected curve, and the *gear menu* (⚙) options.

Properties of the selected curve

When you click and select a record (curve) on the **Cash Flow** log, the log window splits in half, and the right-hand pane displays the following tabs which collectively *show the properties of the selected curve*, if available:

Preview

A preview of the Actuals, Baseline, or Forecast cash flow curve.

Permissions

Groups, users, and permissions that have been assigned to the cash flow are displayed on this tab. You can grant cash flow curves viewing and usage permissions to other users, within this tab.

Schedule

Information about the refresh condition, scheduled runs, schedule frequency, and range of recurrence.

History

A history log of all data updates, or refresh requests (manual and scheduled). The history log contains the requestor's name, the start and end dates and times, and the status for each detail curve.

Gear menu (⚙) of a selected curve

When you click and select a record (curve) on the **Cash Flow** log, the *gear menu* becomes active.

For *Detail Curves*, the *gear menu* enables you to conduct the following on the selected curve:

Open

To open a curve.

Copy

To copy a curve.

When you click **Copy**, the **New Cash Flow Worksheet** window opens with the options and values within this window pre-populated by way of information in the **Properties** of the source curve. The **Name** field in this window will be prefixed with "Copy of." You can make changes as needed and click **Save & Close** to complete creating the new cash flow curve and add it to the log.

Delete

To delete existing cash flow curves. When you select one or more curves (cash flow detail curves or summary cash flow curves) and click **Delete**, if you select, **Yes** in the resulting window, then the selected cash flow detail curves will be deleted.

Refresh Now

Refresh Data has three states: Refresh Now, In Progress, and Refresh Complete.

Rollup Status

A single menu option with two sub-options:

- **Active**
- **Inactive**

To manage cash flow curves roll up status. It controls whether the cash flow data from the current project or shell is rolled up to the program or company cash flow curves, or not.

This option applies to the Detail Curves, only, and it will be blank for the Summary Curves.

Permissions

To set, or modify, user permissions applicable to the curve.

Properties

To open the **Cash Flow Properties** window.

> **Note**: When you highlight more than one detail curve (a number of detail curves) on the log, the *gear menu* enables you to **View Summary**. This options enables you to open the **Summary** window and see a summary curve for all selected curves. You can use the **Snapshot** menu (top right-hand corner of the window) to **Create Snapshot** or **Save Summary Curve**.

For *Summary Curves*, the *gear menu* (⚙) enables you to conduct the following on the selected curve:

Open

To open a summary curve.

Copy

To copy a summary curve.

Project or Shell Level Cash Flow Log Toolbar Options

The **Cash Flow** log has the following toolbar options:

Create

This drop-down field has the following options:

- **Manual**

  Enabling you to create a new cash flow worksheet manually.
- **From Template**

  Enabling you to open the **Cashflow Templates** window, select a cash flow template, and create a new cash flow worksheet from the selected template.
- **Summary Curve**

  Enabling you to create a summary curve.

Actions

This drop-down field has the following options:

- **Refresh Now**

  Click one or several curves on the log and click **Refresh Now** to update the curve details. The refresh process may take some time. Refresh data has three states: Refresh Now, In Progress, and Refresh Complete including date and time. A check-mark will be visible for curves that have been refreshed.
- **Rollup Status**

  Click one or more curves on the log and click **Rollup Status** to mark them as **Active** or **Inactive**, for roll up purposes.
- **Permissions**

  Click one or several curves on the log and click **Permissions** to open the **Permissions** window and add or modify permissions.
- **Delete**

  Click one or several curves on the log and click **Delete** to create a summary curve.
- **Manage Distribution Profiles**

  This action is not related to cash flow list.

  The **Manage Distribution Profiles** option enables you to examine various distributions of cost, or any value, over a period of time, in a project or shell. The **Manage Distribution Profiles** option lets you open the **Edit Distribution Profiles** window and create new, copy, or delete distribution profiles, for your project or shell.

View

This drop-down field has the following options:

- **All Curves**

  This option lets you display all the available curves on the log.
- **Group by Type**

  This option lets you display all the available curves under the following groups:

- **Detail Curves**
- **Summary Curves**

- **<custom view>**

  Any custom view.

- **Create New View**

  This option lets you open the **New View** window and create a new view for the **Cash Flow** log window.

- **Manage Views**

  To open the **Manage Views** window and move the order of the current views, make a particular view visible or invisible, or delete a view.

Edit View

This option lets you open the **Edit View** window and set up the log view by determining available columns, applying filters, grouping and sorting on the following tabs:

- **Columns**
- **Filters**
- **Group By**
- **Sort By**

When finished, click **Apply** and then click **Save As** to save your view.

Refresh

This option lets you update the data in all the curves that appear on the **Cash Flow** log. The refresh has three states: Refresh Now, In Progress, and Refresh Complete which includes the date and time. See ***Refreshing Data in Cash Flow Log*** (on page 84) for more details.

Print

This option lets you print the list of curves displayed (**Print**), export the list of curves displayed to an external files (**Export to CSV** or **Export to Excel**).

Find on Page

This option lets you open a row on top of the rows within the log and enter values in each column to start a search for a specific curve in the log.

Managing Distribution Profiles

Distribution Profiles

When working with templates (versus detail curves) in a project or shell, the distribution profiles can be:

- Created in Administration Mode (in Standards & Libraries).
- Used when selecting auto distribution for curves.

At runtime, you can create additional distribution profiles within the project's cash flow module. When working with curves, you can apply the profiles created in Administration Mode, or in the project or shell.

> **Note:** If you are creating a new project or shell from a project or shell template, and you are copying the **Cash Flow** module, then the project

or shell template properties and permissions will be copied into the new project or shell.

Creating and Managing Distribution Profiles

Administrators can create a library of distribution profiles in the Company Workspace (**Admin** mode), **Standards & Libraries**. In addition to these profiles, you may also want to create additional distribution profiles in a project or shell. At runtime, when you select a distribution profile, you will see the list of profiles created both in **User** mode and in **Admin** mode.

To add a distribution profile in a project or shell:

1) Go to your project or shell (**User** mode).
2) From the left Navigator, click the **Cost Manager** node to expand.
3) Click the **Cash Flow** sub-node to open the **Cash Flow** log window (the **Cash Flow** log).
4) From the toolbar, click the **Actions** drop-down list and choose **Manage Distribution Profiles**. The **Edit Distribution Profiles** window opens.
5) Edit and manage distribution profiles in this window in the same way as the default distribution profiles created in **Admin** mode. See the *Unifier Administration Help* for details.

Creating a New View and Managing an Existing View in the Cash Flow Log

To create a new view in the **Cash Flow** log:

1. Go to your project or shell (**User** mode).
2. From the left Navigator, click the **Cost Manager** node to expand.
3. Click the **Cash Flow** sub-node to open the **Cash Flow** log window (the **Cash Flow** log).
4. From the **View** drop-down menu, select **Create New View**. The **New View** window opens.
5. In the **View Name** field box, enter a name for the new view.
6. Set the other view parameters in the following tabs:

   Columns

   Filters

   Group By

   Sort By
7. To save your changes, click **Save**. To discard your changes, or to close the window, click **Cancel**.

To manage a view in the **Cash Flow** log View:

1. Go to your project or shell (**User** mode).
2. From the left Navigator, click the **Cost Manager** node to expand.
3. Click the **Cash Flow** sub-node to open the **Cash Flow** log window (the **Cash Flow** log).

4. From the **View** drop-down menu, select **Manage Views** to open the **Manage Views** window.

> **Note**: The **Cash Flow** log views will be shared across templates and shells.

Provided that you have pertinent permissions, in the **Manage Views** window you can:

- Move the order of the views in the **View** menu on the toolbar.
- Make a particular view visible to the user.
- Delete a particular view.

The current view is marked with a green check-mark in the **Manage Views** window. To save your changes, click **Save**. To discard your changes, or to close the window, click **Cancel**.

Refreshing Data in Cash Flow Log

What does refresh do?

When you click **Refresh**, the system checks:

- To see if there are any new spends records that are not part of the curve. Depending on Period Close settings, the spends record is added to the correct period, and therefore, changes in values will appear for Spends curves and for Forecast curves that consider spends records.
- To see if a distribution profile definition has changed, either in Admin mode, or in the project/shell. Any changes will be applied to the curve.
- To see if dates are based on master schedule sheet, checks to see if values have changed in the schedule sheet.
- For a curve in the auto mode, refresh distributes unassigned values automatically.
- For errors, such as not selecting a valid business process record or cost column, or missing data such as a blank schedule sheet date column. The error alert will display in red font on the worksheet (below the curve section). Click the error to view the reason.

Refresh also checks for changes to CBS structure.

What happens to unassigned fields, when you refresh?

If there is a value in the Unassigned field, hover over or click the field. The reason for the value is displayed. For example:

- Excess or deficit because of Spends (invoice) records
- Incoming Change Orders

- For Forecast curves with option to start at the end of Actuals (Spends amount), the amount is put in the Unassigned field if the To Date of the forecast curve is less than effective date of a Spends value.

Read the following topics for information about scheduling auto refresh.

You can update (refresh) cash flow curves data:

- Manually
- Automatically

How do you refresh cash flow curves manually?

The following shows the various ways that you can update (refresh) data that appears on the cash flow curves, manually.

To refresh the contents of the **Cash Flow** log:

1. Go to your project or shell (**User** mode).
2. From the left Navigator, click the **Cost Manager** node to expand.
3. Click the **Cash Flow** sub-node to open the **Cash Flow** log window (the **Cash Flow** log).
4. From the toolbar, click the **Refresh** icon to refresh the contents of the **Cash Flow** log.

To refresh the contents of the cash flow curves in the **Cash Flow** log:

1. Go to your project or shell (**User** mode).
2. From the left Navigator, click the **Cost Manager** node to expand.
3. Click the **Cash Flow** sub-node to open the **Cash Flow** log window (the **Cash Flow** log).
4. Click to select one or more cash flow curves from the log.
5. Click the *gear menu* and select **Refresh Now**.

To refresh the contents of the cash flow worksheet:

1. Go to your project or shell (**User** mode).
2. From the left Navigator, click the **Cost Manager** node to expand.
3. Click the **Cash Flow** sub-node to open the **Cash Flow** log window (the **Cash Flow** log).
4. Select a curve from the log and double-click the curve to open the cash flow worksheet window.
5. From the toolbar, click the **Refresh** icon to refresh the contents of the cash flow worksheet window.

How do you refresh cash flow curves automatically?

The following shows how you can set up a schedule to automatically update (refresh) data that appears on the cash flow curves.

To set up a schedule to automatically update (refresh) data that appears on the cash flow curves, you must set the cash flow curve auto-refresh schedule. To do so:

1. Go to your project or shell (**User** mode).
2. From the left Navigator, click the **Cost Manager** node to expand.
3. Click the **Cash Flow** sub-node to open the **Cash Flow** log window (the **Cash Flow** log).

4. Click to select one or more cash flow curves from the log.
5. On the properties pane (right-hand side), click the **Schedule** tab.
6. Proceed to complete the fields to schedule the refresh runs, frequency, and range of recurrence.

   Selecting the **Enable Refresh** option will automatically update (refresh) data that appears on the selected cash flow curves.

Working with Project or Shell Level Snapshots and Audit Log

A snapshot displays the graph, curves, and curve data on the worksheet. Snapshots are not editable. You can take a snapshot and view it in project, transaction currencies, and reports. You can manually save a snapshot of a cash flow curve at any time.

When you open a detail curve (a cash flow worksheet) from project or shell **Cash Flow** log, you can click the **Snapshot** menu icon (the three horizontal line icon) and access the following options:

Option	Description
Create Snapshot	Use this option to create, or to take a snapshot of a cash flow curve, at any time. See "To take a snapshot at any time," below.
Snapshot Log	Use this option to view, open, or delete the snapshots that have been created or taken of a cash flow curve. The Title, Creator, and Created on data is also provided on this window.
Audit Log	Use this option to access a record of the following details about the cash flow curve: ▸ **Date** ▸ **Event** ▸ **Action** ▸ **Field** ▸ **Old Value** ▸ **New Value** ▸ **User Name** ▸ **Proxy User** ▸ **Attachment** You can use the **Audit Log** window toolbar options to refresh the list, print the list, and find items in the list of log items.

Option	Description
Properties	Use this option to open the **Cash Flow Properties** window. The function of the **Properties** option in the **Snapshots** menu icon (the three horizontal line icon) is identical to the function of the **Properties** option of the *gear menu* (⚙) next to a cash flow curve in the **Cash Flow** log. In the **Cash Flow Properties** window, click the **More Options** link to open the **More Options** window and set the following parameters for your snapshot in the **Period Close Settings** tab: ▸ **Enable auto snapshot** ▸ **Cut off Spends** ▸ **Apply spends to** The **More Options** window also allows you to add the cash flow curve to selected summary curves, in the **Summary** tab: ▸ **Available**: This block shows a list of available summaries. ▸ **Selected**: This block will contain your selected summary. Finally, in the **More Options** window, you can set the number of decimals or opt to use currency decimal precision, in the **Decimal Options** tab.

To take a snapshot at any time:

1. Open your cash flow curve.
2. Click the **Snapshots** menu icon (the three horizontal line icon) and select **Create Snapshot**. The **Create Snapshot** window opens. The window also displays the time-stamp of snapshot for reference.
3. Enter a title for your snapshot, in the **Title** field, and click **OK**.

To schedule an automatic snapshot:

1. Open your cash flow worksheet or curve.
2. Click the **Snapshots** menu icon (the three horizontal line icon) and select **Properties**.
3. In the **Cash Flow Properties** window, click the **More Options** link to open the **More Options** window and set the following parameters for your snapshot in the **Period Close Settings** tab:
    - **Enable auto snapshot**

- **Cut off Spends**
- **Apply spends to**

> **Note**: After taking an auto-snapshot, the system immediately refreshes the cash flow curve. Spends will resume after the auto-snapshot.

To view a created snapshot:

1. Open the cash flow curve.
2. Click the **Snapshots** menu icon (the three horizontal line icon) and select **Snapshot Log**. The **Snapshot Log** window opens.
3. Choose a snapshot to view and double-click on the snapshot to open the cash flow curve or worksheet snapshot.
4. Maximize the window to be able to identify the following elements:
   - Top block
   - Containing cost-related at-glance numeric data as well as detailed information, when you click the **Show More** option.
   - Bottom block
   - Containing curves corresponding to the cost periods and variances.
   - Screen split (icon with three vertical dots)
   - Click on the icon and drag to expand the window. You can use the **Expand** and **Dock** icons (top right-hand corner) to adjust this screen. This screen lets you access detailed information for actuals, baseline, forecast, and most other interactive elements, but the snapshot data is not editable.

To search for a snapshot:

1. Open the cash flow worksheet. Click the **Snapshots** menu (hamburger) icon and choose **Snapshot Log**. The **Snapshot Log** window opens.
2. In the **Snapshot Log** window, click **Find on Page** to open the find box for each column (**Title**, **Creator**, and **Created On**).
3. Proceed to enter a value in one or all of the boxes to search and find your desired snapshot.
4. To restore the entire list, click the **Find on Page**.

To delete a snapshot:

1. Open the cash flow worksheet. Click the **Snapshots** menu (hamburger) icon and choose **Snapshot Log**. The **Snapshot Log** window opens.
2. In the **Snapshot Log** window, click to select a snapshot, click the **Delete** icon, and follow the prompts.

To print a snapshot:

1. Open the cash flow worksheet. Click the **Snapshots** menu (hamburger) icon and choose **Snapshot Log**. The **Snapshot Log** window opens.
2. In the **Snapshot Log** window, click to select the **Print** icon and select one of the following options:

- **Print**
- To open a window that allows you to select a method to print the selected curves.
- **Export to CSV**
- To open a dialog box that allows you to save a Microsoft Excel Comma Separated Values (CSV) File version of the selected curves, so you can export the file to a desired destination.
- **Export to Excel**
- To open a dialog box that allows you to save a Microsoft Excel Worksheet version of the selected curves, so you can export the file to a desired destination.

Project or Shell Level Cash Flow Log Columns

The **Cash Flow** log has the following columns options:

Refresh Data (displayed by an icon)

To update each curve data and view the refresh status. The refresh actions apply to *Detail Curves* and not to *Summary Curves*.

Name

Name of the curve.

Description

Description for the curve.

Detail Level

This option applies to *Detail Curves* only and will be blank for *Summary Curves*.

Type

Type of the curve.

Last Refreshed

Date when the curve received the most up-to-date information.

Summary Status

Summary Curve status. As the label suggests, the **Summary Status** column applies to *Summary Curves* and not to *Detail Curves*. This column should be blank for *Detail Curves*.

Time Scale

The time taken by the process. This option applies to *Detail Curves* only and will be blank for *Summary Curves*.

Rollup Status

This option controls whether the cash flow data from the current project or shell is rolled up to the Company cash flow curves, or not. This option applies to *Detail Curves* only and will be blank for *Summary Curves*. You can change the roll up status of one or more curves. To activate or deactivate the roll up status click **Active** or **Inactive**.

Last Saved

The date the cash flow curve properties were last updated and saved. This option applies to *Detail Curves* only and will be blank for *Summary Curves*.

Auto Refresh

A detail cash flow curve can be set up to refresh automatically as per a schedule. This column shows the auto-refresh frequency, if the curve has been set up for the same, else, it shows as blank. This option applies to *Detail Curves* only and will be blank for *Summary Curves*.

Project or Shell Level Cash Flow Worksheet

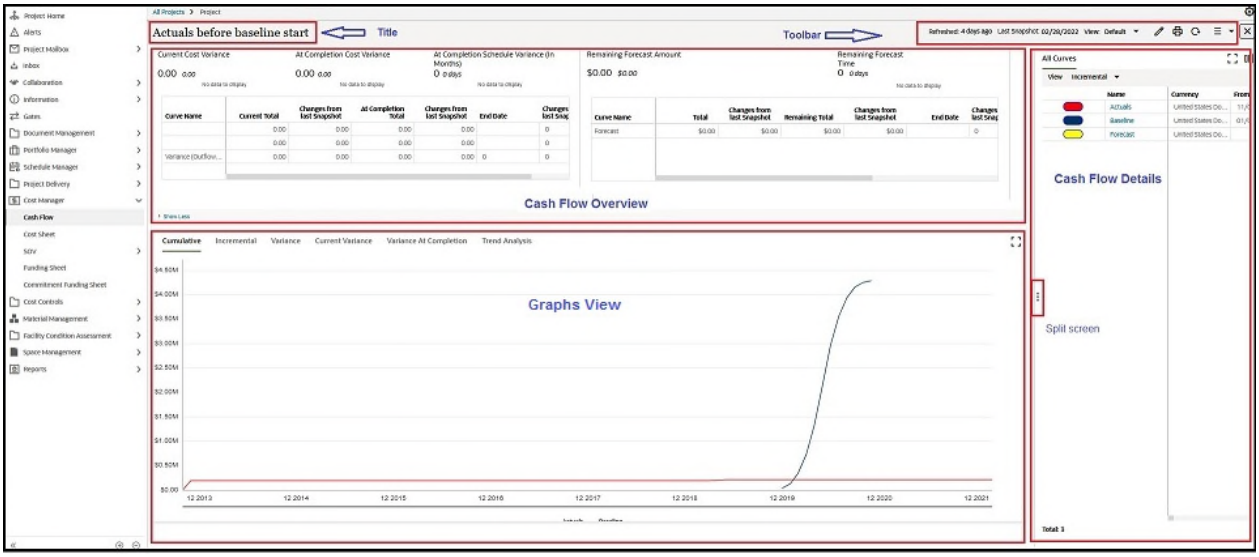
To open a project or shell cash flow worksheet for an existing curve:

1) Navigate to the **Cost Manager** and select **Cash Flow** node to open the **Cash Flow** log window.
2) Select a curve from the log and double-click the curve to open the cash flow worksheet window.

The project or shell cash flow worksheet is divided into the following sections, as shown in the following typical screen capture:

- Title
- Toolbar
- Cash Flow Overview
- Graphic View
- Cash Flow Details

The cash flow worksheet window is divided into the following parts, as highlighted in the following screen capture, and each part can be individually maximized.



The following explains each part in detail.

Project or Shell Level Cash Flow Worksheet Toolbar Options

The toolbar section of the project or shell cash flow worksheet (displays the worksheet title, and the following toolbar options:

- **View** drop-down

  Use this option to "**Create New View**" for the worksheet, or to "**Manage Views**" that have already been created.
- **Edit View**

  When you click the **Edit View** option, the **Edit View** window opens. In this window you can select the curves that you want to view on the log (for **Curves**, **Inflow**, and **Outflow**). In this window you can also add columns and group your columns when you click the **Group By** option.
- **Print**

  Use this option to open your browser's print options for the worksheet.
- **Refresh**

  This option lets you update the data in all of the curves that appear on the **Cash Flow** log. The refresh has three states: Refresh Now, In Progress, and Refresh Complete which includes the date and time. See ***Refreshing Data in Cash Flow Log*** (on page 84) for more details.
- **Snapshot** menu drop-down

  This menu contains the following snapshot options:
  - **Create Snapshot**

    To create a snapshot of the curve.
  - **Snapshot Log**

    To view, edit, or delete previous snapshots of the curve.
  - **Audit Log**

    To view change details to the curve.
  - **Properties**

    To view the properties of the Cash Flow.

  See ***Working with Project or Shell Level Snapshots and Audit Log*** for more details

Creating a New View and Managing an Existing View in the Cash Flow Worksheet

1. To create a new view in the cash flow worksheet:
2. Go to your project or shell (**User** mode).
3. From the left Navigator, click the **Cost Manager** node to expand.
4. Click the **Cash Flow** sub-node to open the **Cash Flow** log window (the **Cash Flow** log).
5. Select a curve from the log and double-click the curve to open the cash flow worksheet window.
6. From the **View** drop-down menu, select **Create New View**. The **New View** window opens.
7. In the **Save View As** field box, enter a name for the new view.
8. Set the other view parameters in the following tabs:

   Curves

In the **Curves** tab, select curves from the **Available Curves** list, and click the **Move** arrow to add curves to the **Selected Curves** list, or click the **Move All** double arrow to move all available curves to the **Selected Curves** list. The last column in the **Selected Curves** list is not available for locking.

Inflow

In the **Inflow** tab, select curves from the **Available Curves** list, and click the **Move** arrow to add curves to the **Selected Curves** list, or click the **Move All** double arrow to move all available curves to the **Selected Curves** list. The last column in the **Selected Curves** list is not available for locking.

Ouflow

In the **Outflow** tab, select curves from the **Available Curves** list, and click the **Move** arrow to add curves to the **Selected Curves** list, or click the **Move All** double arrow to move all available curves to the **Selected Curves** list. The last column in the **Selected Curves** list is not available for locking.

9. To save your changes, click **Save**. To discard your changes, or to close the window, click **Cancel**.

To manage a view in the cash flow worksheet:

1. Go to your project or shell (**User** mode).
2. From the left Navigator, click the **Cost Manager** node to expand.
3. Click the **Cash Flow** sub-node to open the **Cash Flow** log window (the **Cash Flow** log).
4. Select a curve from the log and double-click the curve to open the Cash Flow worksheet window.
5. From the **View** drop-down menu, select Manage Views to open the Manage Views window.

Provided that you have pertinent permissions, in the **Manage Views** window you can:

- Move the order of the views in the **View** menu on the toolbar.
- Make a particular view visible to the user.
- Delete a particular view.

The current view is marked with a green check-mark in the **Manage Views** window. To save your changes, click **Save**. To discard your changes, or to close the window, click **Cancel**.

Project or Shell Level Cash Flow Worksheet Overview Section

The project or shell level cash flow worksheet overview section provides a visualization of key information, snapshot changes, and system snapshots for faster understanding of project financial conditions. This section of the cash flow worksheet displays the current, at completion, and remaining cost-related information for the project, as well any remaining forecast amount and time, for the selected curve. click the **Show More** option, on the lower left-hand corner to expand the screen and see more details.

The following provides information about assigning inflow, outflow, variances, and forecast.

Assigning Inflow and Outflow

- **Inflow** = the amount assigned to the project as the budget. For example, this may come from either a cost sheet column or a system activity sheet in the system.
- **Outflow**= the amount that has been spent and forecasted to be spent. For example, the Actuals (Spends), Invoices, Forecast (coming from Cost Sheet), are considered Outflow in the system.

Variance Analysis

You can view inflow vs. outflow analysis in the three tiles at the top of the cash flow worksheet:

- **Current Cost Variance** shows the difference between the current cost inflow and the current cost outflow. The change in current cost variance against the last snapshot displays beside the total.
- **At Completion Cost Variance** shows the difference between the at completion cost inflow and the at completion cost outflow. The change in the at completion cost variance against the last snapshot displays beside the total.
- **At Completion Schedule Variance** shows the difference between the at completion schedule inflow and the at completion schedule outflow in months. The change in the at completion schedule variance against the last snapshot displays beside the total.

A bar chart corresponding to the colors of the curves is visible below the variance amount. Hover over a bar to display a tooltip with corresponding information, and click **Click to Open** to open the curve worksheet.

Variance Analysis Table

Click **Show More** at the bottom of the tile to view a Variance Analysis Table containing the following columns:

- Curve Name
- Current total
- Changes from last Snapshot
- At Completion Total
- Changes from last Snapshot
- End Date
- Changes from last Snapshot

Forecast Analysis

Forecast curves include a separate forecast analysis section in which you can view *Spends* versus *Forecast* analysis and *Forecast* versus *Baseline* analysis. This section contains the following tiles:

- **Remaining <Forecast Curve Name> Amount** shows the difference between the at completion forecast amount and the approved spends till date. The change in the remaining forecast amount against the last snapshot is displayed beside the total.

- **Remaining <Baseline Curve Name> Amount** shows the difference between the at completion baseline amount and the approved spends till date. The change in the remaining baseline amount against the last snapshot is displayed beside the total.
- **Remaining <Forecast Curve Name> Time** shows the difference in date between the forecast curve end date and the actuals end date. The change in the remaining forecast end date against the last snapshot displays beside the total.
- **Remaining <Baseline Curve Name> Time** shows the difference in date between the baseline curve end date and the actuals end date. The change in the remaining baseline end date against the last snapshot displays beside the total.

Forecast Analysis Table

Click **Show More** at the bottom of the tile to view a Forecast Analysis Table containing the following columns:

- Curve Name
- Total
- Changes from last Snapshot
- Remaining Total
- Changes from last Snapshot
- End Date
- Changes from last Snapshot
- Remaining Time
- Changes from last Snapshot

Project or Shell Level Cash Flow Worksheet Graphs View Section

The project or shell level cash flow worksheet Graphs view section displays the graphs view of your selected curve.

Multiple curves can display on the graph. You can add as many curves as you need to the worksheet. Each curve must be associated with a data source which is created in Administration Mode. The curves are color-coded; the color is determined by the data source.

In the graph, you have the option to filter out some curves and display a subset of the available curves, change the zoom level between monthly and yearly, or print the graph. You can switch between the following views:

- **Cumulative** curve

  A Cumulative curve displays the net of all cash flows over a period of time.
- **Incremental** curve

  An incremental curve displays the cash flow for a certain period.
- **Variance**

  Inflow and Outflow data is displayed in a bar chart. Variance (Difference between inflow and outflow) is shown as an area chart.
- **Current Variance**:

  A table displays the difference between the current cost inflow and the current cost outflow.
- **Variance At Completion**:

A table displays the difference between the at completion cost inflow and the at completion cost outflow.

- **Trend Analysis**:

  A graph displays at completion values of all the visible baseline and forecast curves against snapshots.

Project or Shell Level Cash Flow Worksheet Details Section

The cash flow details on the right, which you can open by using the split screen icon (icon with three vertical dots), or slider, lets you see cash flow details related to your project life cycle (iteration by iteration) and corresponding cumulative cost (total expenditures from all sources).

> **Note**: Use the **Expand** or **Dock** icons (top right corner) to maximize or to adjust the cash flow detail pane (**All Curves**) screen for better visibility.

The cash flow details is presented through a table in the right pane shows the data for the curves. Each row of the table corresponds to one of the curves on the graph and displays the curve data in columns. The data in these columns show the distribution of cost, and the total of cost is the value in the **Total** field.

- If you are doing an *auto distribution* by using a distribution profile, then the values in these columns will be calculated based on the distribution percentages.
- If you are doing a *manual distribution*, then you will enter the values into each time period (distributing the amount in the **Total** column).

The **Unassigned** column will display how much of the amount in the **Total** column is left to be distributed.

The following table describes each column in detail.

> **Note**: The system displays the cost data using the latest exchange rate table.

Curve Data Column Name	Description
Color	The color of the graph displays in the first column
Name	The name of curve, taken from the Data Source. You can click on the curve name to view the detail window of the curve.
Currency	The currency for the curve.
From Date	The starting point of the curve. This can be entered manually or taken from a date field on the project/shell master schedule sheet, as defined in the curve properties.

To Date	The ending point of the curve, also manually entered or pulled from the schedule sheet. This can be entered manually or taken from the schedule sheet.
Total	This amount is the cost portion of the curve. It can be pulled from a specified cost sheet column or business process. This total amount will then be distributed over the time period (From Date to To Date) to generate the cash flow curve. This is defined in the curve properties.
Unassigned	Any amount left over from the Total amount that has not yet been distributed.
Time Period Columns	These are the incremental time periods for the duration of the cash flow time period. That is, the From Date to the To Date, entered above. For monthly distribution, these will display each month and year from the From Date to the To Date. If shown Yearly, then each period is one year.

The following explains the options that are available within the cash flow detail pane for *Detail Curves* and *Summary Curves.*

Detail Curve

Within a detail curve, next to the title, the following toolbar options enable you to:

- Alter the view (**View** > **Default**)
- Create new view (**View** > **Create New View**)
- Make existing views visible or hide existing views (**View** > **Manage Views**)
- Edit the view (**View** > **Edit View**)
- Print the view (**Print**)
- Update data (**Refresh**)
- Produce a snapshot, view snapshot log, access audit log, and access properties (**Snapshot** menu > **Create Snapshot** - **Snapshot Log** - **Audit Log** - **Properties**)

> **Note**: In the cash flow detail pane, any view, the values are not editable and cannot be distributed.

Within a detail curve, under the title, the **View** option lets you select one of the following options to access their pertinent information:

- **Incremental**
- **Cumulative**

The following explains each view option in detail.

Detail Curve View (Incremental)

The **Incremental** view lets you see the details for:

- **Actuals** (Spends)
- **Baseline**
- **Forecast**

Double-click on each cost-related scenario to open it and see pertinent details.

Actuals (Spends)

If you select the **Incremental** view and click **Actuals** (Spends) (under the **Name** column), the actual spent amounts, per time period, are displayed. These values are not editable and cannot be distributed. You can use the toolbar options to:

- **Export**

  To export one or more curves to a CSV file, which is automatically named after the cash flow worksheet.
- **Refresh**

  To update the data, or amounts, on the page.
- **Find on Page**

  To find a particular amount.

Baseline

If you select the **Incremental** view and click **Baseline** (under the **Name** column), the baseline amounts, per time period, are displayed. These values are not editable and cannot be distributed. You can use the toolbar options to:

- **Bulk Edit**

  You can conduct bulk edit on one or more curves. When you click **Bulk Edit**, the **Bulk Edit** window opens, and you can select values for the following elements:

  Note: The **Bulk Edit** option is unavailable if in project currency mode (in the details window). See below for details.

  - **Distribution Profile** (**Back Loaded** - **Front Loaded** - **Linear** - **S curve**)
  - **From Date**
  - **To Date**
  - **Total** (not applicable to Baseline)

  Note: Elements in the window that have the "**Update**" option checked for them will be updated with the selected value. If you do not specify a value for an element and leave the element empty, the system will will clear any existing value.

  Click **Update** when finished.
- **Import**

Your import options are **Curve Setup** and **Curve Distribution**. The **Curve Distribution** option is not available.

- **Export**

  To export one or more curves to a CSV file, which is automatically named after the cash flow worksheet.

- **Refresh**

  To update the data, or amounts, on the page.

- **Find on Page**

  To find a particular amount.

In Commitment-based curves:

- The system shows cash flow in the transaction currency of record creation.

  The system stores the data in project currency. If the project currency is different from the transaction currency, both the main and detail windows contain a currency drop-down list, which you can use to show costs in the project currency; however, you can only edit data in the transaction currency mode. Currency conversion is based on the active company-level Exchange Rates table. The **Bulk Edit** option is unavailable if the Detail Curve detail window is in project currency mode.

- The Detail Curve detail window shows columns from the Business Process. For example, **Number**, **Name**, **Line No**, **CBS Code**, **Description (Short Description)** columns.

Forecast

If you select the **Incremental** view and click **Forecast** (under the **Name** column), the baseline amounts, per time period, are displayed. These values are not editable and cannot be distributed. You can use the toolbar options to:

- **Bulk Edit**

  You can conduct bulk edit on one or more curves. When you click **Bulk Edit**, the **Bulk Edit** window opens, and you can select values for the following elements:

  - **Distribution Profile** (not applicable to Forecast)
  - **From Date**
  - **To Date**
  - **Total**

  Note: Elements in the window that have the "**Update**" option checked for them will be updated with the selected value. If you do not specify a value for an element and leave the element empty, the system will will clear any existing value.

  Click **Update** when finished.

- **Import**

  Your import options are Curve Setup and Curve Distribution. The Curve Distribution option is not available.

- **Export**

To export one or more curves to a CSV file, which is automatically named after the cash flow worksheet.

- **Refresh**

  To update the data, or amounts, on the page.

- **Find on Page**

  To find a particular amount.

Detail Curve View (Cumulative)

The **Cumulative** view lets you see the details for:

- **Actuals** (Spends)
- **Baseline**
- **Forecast**

Double-click on each cost-related scenario to open it and see pertinent details.

Actuals (Spends)

If you select the **Cumulative** view and click **Actuals** (Spends) (under the **Name** column), the actual spent amounts, per time period, are displayed. These values are not editable and cannot be distributed. You can use the toolbar options to:

- **Export**

  To export one or more curves to a CSV file, which is automatically named after the cash flow worksheet.

- **Refresh**

  To update the data, or amounts, on the page.

- **Find on Page**

  To find a particular amount.

Baseline

If you select the **Cumulative** view and click **Baseline** (under the **Name** column), the baseline amounts, per time period, are displayed. These values are not editable and cannot be distributed. You can use the toolbar options to:

- **Bulk Edit**

  You can conduct bulk edit on one or more curves. When you click **Bulk Edit**, the **Bulk Edit** window opens, and you can select values for the following elements:

  - **Distribution Profile** (**Back Loaded** - **Front Loaded** - **Linear** - **S curve**)
  - **From Date**
  - **To Date**
  - **Total** (not applicable to Baseline)

> **Note**: Elements in the window that have the "**Update**" option checked for them will be updated with the selected value. If you do not specify a value for an element and leave the element empty, the system will will clear any existing value.

Click **Update** when finished.

- **Import**

  Your import options are **Curve Setup** and **Curve Distribution**. The **Curve Distribution** option is not available.

- **Export**

  To export one or more curves to a CSV file, which is automatically named after the cash flow worksheet.

- **Refresh**

  To update the data, or amounts, on the page.

- **Find on Page**

  To find a particular amount.

Forecast

If you select the **Cumulative** view and click **Forecast** (under the **Name** column), the baseline amounts, per time period, are displayed. These values are not editable and cannot be distributed. You can use the toolbar options to:

- **Bulk Edit**

  You can conduct bulk edit on one or more curves. When you click **Bulk Edit**, the **Bulk Edit** window opens, and you can select values for the following elements:

  - **Distribution Profile** (not applicable to Forecast)
  - **From Date**
  - **To Date**
  - **Total**

> **Note**: Elements in the window that have the "**Update**" option checked for them will be updated with the selected value. If you do not specify a value for an element and leave the element empty, the system will will clear any existing value.

Click **Update** when finished.

- **Import**

  Your import options are Curve Setup and Curve Distribution. The Curve Distribution option is not available.

- **Export**

  To export one or more curves to a CSV file, which is automatically named after the cash flow worksheet.

- **Refresh**

  To update the data, or amounts, on the page.

- **Find on Page**
  To find a particular amount.

Importing Cash Flow Data

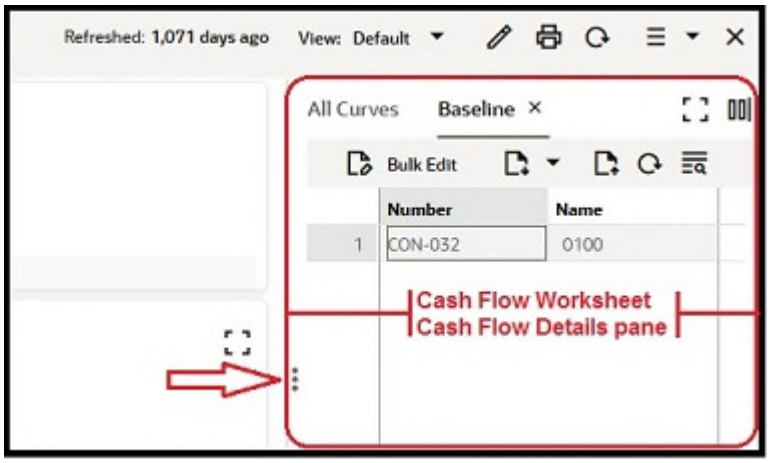
You can import cash flow data via CSV file. This includes curve setup data (From and To dates, Profile, and Total columns) and curve distribution data (distribution values of the Total amount entered in the date period columns). It is important to observe the order of curve operations: import the setup values first, then import the distribution values.

- Manual entry generally allows data import but depends upon the curve set up.
- Auto-distribution precludes data import.
- Fields that display data from other sources (schedule sheet, cost column, business process record) cannot be edited via CSV import.

You can change curve distribution settings; however, the system will replace your data with data collected by the new distribution method. For example, if you change a manual entry field to auto, all manually entered data will be lost and replaced with the auto-generated data.

To import curve setup data into the Cash Flow Worksheet by CSV import

1) Go to the Project/Shell (**User** mode).
2) From the left Navigator, click the **Cost Manager** node to expand it.
3) Click the **Cash Flow** sub-node to open the **Cash Flow** log window (the **Cash Flow** log).
4) Select a curve from the log and double-click the curve to open the Cash Flow worksheet window.
5) Open the right-hand pane by way of moving the split screen to display the Cash Flow Worksheet Cash Flow Details pane, as shown below, and click **Baseline** or **Forecast**.



If you are importing both setup and distribution data, then import the setup data first to establish the distribution time period.

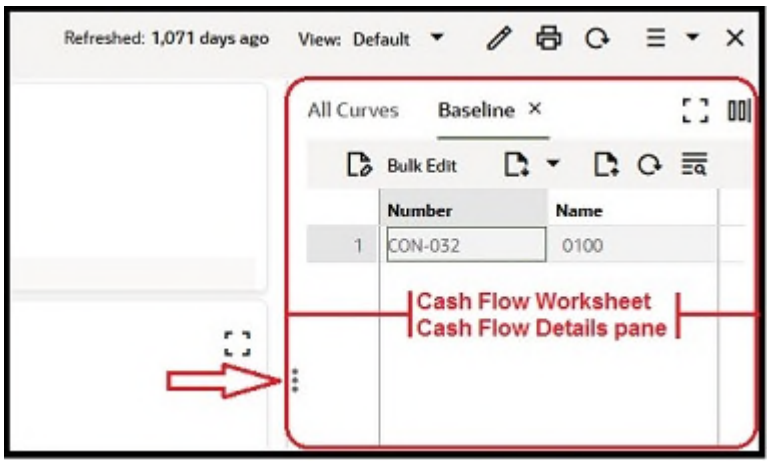
6) Click the **Export** icon (down arrow) in the tool bar to export the CSV template. The CSV opens in Microsoft Excel®. You can **Save** the CSV file to your desktop first or **Open** it directly.

> **Note**: Cash flow data exports the currency and the values to the CSV template.

7) Add the Curve Distribution data to the CSV file.
   - **From Date, To Date**: use the date format.
   - **Profile**: If using auto-profile, enter the name of the default profile you want to use. This is from the Distribution Profiles list maintained in Administration Mode.
   - **Total**: Enter a value to use as the cost total.
   - **Save** the CSV file.
8) Import the CSV file.
   - In the Details sheet, click the **Import icon** (up arrow), then select **Curve Setup** from the drop-down menu. The File Upload window opens.
   - Locate the CSV file and click **Open**. The data will populate edited fields on the Details sheet.

To import curve distribution data into the Cash Flow Worksheet by CSV import

1) Go to the Project/Shell (**User** mode).
2) From the left Navigator, click the **Cost Manager** node to expand.
3) Click the **Cash Flow** sub-node to open the **Cash Flow** log window (the **Cash Flow** log).
4) Select a curve from the log and double-click the curve to open the Cash Flow worksheet window.
5) Open the right-hand pane by way of moving the split screen to display the Cash Flow Worksheet Cash Flow Details pane, as shown below, and click **Baseline** or **Forecast**.



6) Click the **Export** icon (down arrow) to export the CSV template. You can Save the CSV file to your desktop first, or Open it directly.
7) Add the Curve Distribution data to the CSV file.
   - Enter values in the time period distribution fields. Do not exceed the amount for Unassigned.
   - The Currency field must have the currency listed.
   - **Save** the CSV file.

8) Import the CSV file.
   - In the Details sheet, click the **Import icon** (up arrow), then select **Curve Distribution** from the drop-down menu. The File Upload window opens.
   - Locate the CSV file and click **OK**. The data will populate edited fields on the Details sheet.
9) **Save** the Details window.

> **Note**: You can import data into cash flow by commitment curves in either transaction or project currencies. If you try to import data in an incorrect currency, you will be notified. For example, if the transaction currency is in Yen and the project currency is in USD, and you try to import in Euro, you will get an error message in the CSV file. You will need to correct the errors in the CSV before re-importing.

Bulk Edit Cash Flow

Bulk Edit is available on the Cash Flow Worksheet Cash Flow Details pane. Bulk Edit is useful when there are multiple items to be edited that are associated with the curve data.

For example, if you are doing cash flow by CBS, the data in the Details window displays the CBS codes in use. You can enter curve data for one or multiple CBS codes using Bulk Edit.

If you are doing cash flow by commitment, and are including change orders in the curves (for cost information and auto distribution), then you will see all commitment records in the Details window -- the base commit and any change commits. You can enter curve data for one or multiple records using Bulk Edit.

> **Note:** If you are editing a Contract-type BP, the total in the Bulk Edit will be highlighted in the details screen of the cash flow by contract curve.

To enter cash flow data using Bulk Edit

1) Go to the Project/Shell (**User** mode).
2) From the left Navigator, click the **Cost Manager** node to expand.
3) Click the **Cash Flow** sub-node to open the **Cash Flow** log window (the **Cash Flow** log).
4) Select a curve from the log and double-click the curve to open the Cash Flow worksheet window.
5) Open the right-hand pane by way of moving the split screen to display the Cash Flow Worksheet Cash Flow Details pane, and click **Baseline** or **Forecast**.
6) Select one or more rows and click **Bulk Edit**. The Bulk Edit window opens.
7) The fields that are editable for the curve (based on the Properties window options) will display.
8) Enter values for the fields.
9) Select the **Update** checkbox for the fields you want to update.

> **Note**: You can use the Bulk Edit button to edit multiple items in the chosen currency. The total in the Bulk edit window will be interpreted in the currency selected in the details screen (lower part of the worksheet window.)

10) Click the **Update** button.

Summary Curve

Within a summary curve, next to the title, the following toolbar options enable you to:

- Alter the view (**View** > **Default**)
- Create new view (**View** > **Create New View**)
- Make existing views visible or hide existing views (**View** > **Manage Views**)
- Edit the view (**View** > **Edit View**)
- Print the view (**Print**)
- Update data (**Refresh**)
- Produce a snapshot, view snapshot log, access audit log, and access properties (**Snapshot** menu > **Create Snapshot** - **Snapshot Log** - **Audit Log** - **Properties**)

> **Note**: In the cash flow detail pane, any view, the values are not editable and cannot be distributed.

Within a summary curve, under the title, the **View** option lets you select one of the following options to access their pertinent information:

- **Incremental**
- **Cumulative**

Project or Shell Cash Flow Properties

You can access the project or shell **Cash Flow Properties** window in two ways:

a) **Cash Flow** log
b) Cash flow curve worksheet

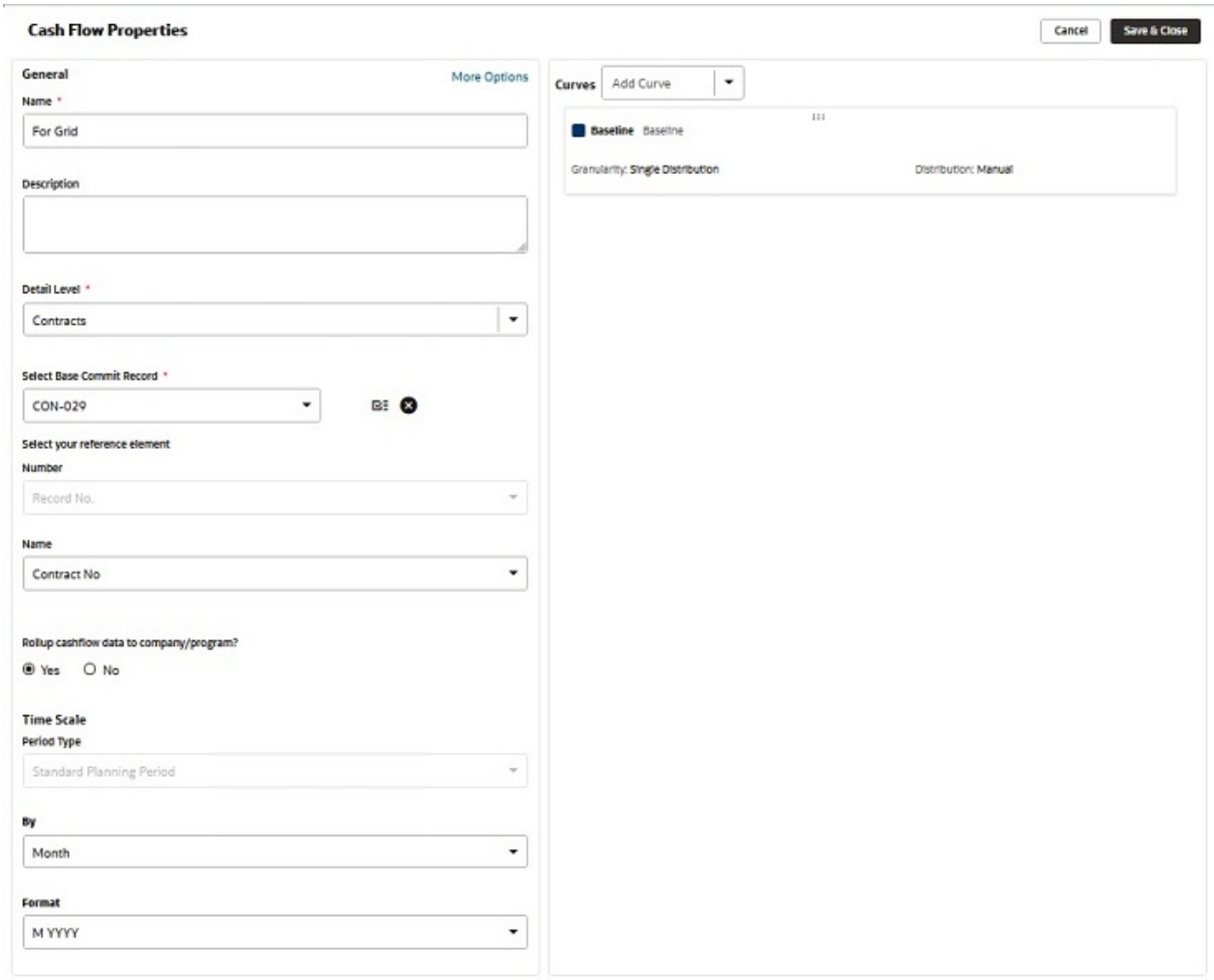
To access the **Cash Flow Properties** window through the **Cash Flow** log:

1. Go to your project or shell (**User** mode).
2. From the left Navigator, click the **Cost Manager** node to expand.
3. Click the **Cash Flow** sub-node to open the **Cash Flow** log window (the **Cash Flow** log).
4. Click to select a cash flow curve from the log.
5. Click the *gear menu* and click **Properties** to open the **Cash Flow Properties** window of the selected record.

To access the **Cash Flow Properties** window through the cash flow curve worksheet:

1. Go to your project or shell (**User** mode).
2. From the left Navigator, click the **Cost Manager** node to expand.
3. Click the **Cash Flow** sub-node to open the **Cash Flow** log window (the **Cash Flow** log).
4. Click to select a cash flow curve from the log.
5. Click the *gear menu* and click **Open** to open the cash flow curve worksheet of the selected record. Alternatively, you can double-click on the record to open the worksheet.
6. Click the **Snapshot** menu to open.
7. Click the **Properties** option to open the **Cash Flow Properties** window of the selected record.

The **Cash Flow Properties** window is divided into two panes. The left pane shows the **General** block and the right pane shows the **Curves** block, as shown below.



The following explains the components of each pane in detail.

Project or Shell Cash Flow Properties (General Pane)

The following explains the fields under the **General** block. The next topic will explain the fields under the **General** block: **More Options**.

> **Note**: The red asterisk next to a field box indicates that the field is a required field. You will not be able to save your changes without entering a value in that field.

Under the **General** block, you can manage the following cash flow properties:

- **Name**

  Enter a unique name for the curve in the Name field.
- **Description**

  (Optional) Enter a brief description in the Description field.
- **Detail Level**

  Select a detail level option from the Detail Level box. The selected option determines the level-of-data the cash flow curves will display. Choose one:
  - **Project/Shell**

    Choose this to track cash flow for the entire project or shell. For example, Baseline and Actuals curves might chart the budget and cash outlay across the entire project.
  - **Summary CBS**

    Choose this option to track cash flow by summary CBS codes. In order to select this option, the cost sheet used in the project or shell must be a tree structure.
  - **CBS**

    Choose this to track cash flow within a project or shell at the CBS code level. This allows you to track cash flow across the project for specific CBS codes, or for all CBS codes.
  - **Business Process (Commitments)**

Choose this option to track cash flow associated with a particular commitment record and its line items. This includes, for example, a base contract and optionally their referenced Change Commits. Select a business process.

Items listed are the project or shell level business processes of type "Base Commit." When creating a template, choose the one that is likely to be used in the projects/shells the template will be used in. When creating the curve in a project or shell from the template, you may need to verify that the business process chosen here is active in the project or shell, or pick another from the list.

- **Select Base Commit Record**

  This is selectable in a project or shell, but not in a template. Click the Select button. Choose the commitment record from the list of available records in the project or shell. Each commitment record can be selected only once.

  You can set up the automatic creation of a cash flow curve when a Base Commit record is created and completed or reaches a particular step. This is done in the BP Setup for the business process.

- **Select your reference element**

  The worksheet will display the reference elements. By default, the **Record No.** will display as the **Number**. You can click the drop-down list and choose an element to display for the **Name** field (Contract No., Contract Terms, or Title).

- **Rollup cashflow data to company/program?**
  - **Yes**: The curve will roll up to program or company cash flow the next time the curves are refreshed.
  - **No**: The curve will not roll up to program or company cash flow the next time the curves are refreshed.

- **Time Scale**

  If you edit the time scale, the period close settings will be reset, and you will need to enter new ones for the new time scale.

  The time scale determines the scale and format in which the data is shown on the cash flow workSheet.

  By Month or Year: The default is Month.

  Format: Choose the format that you want the month and year displayed on the graphs. The default is M YYYY.

To save your changes, click **Save & Close**. You can continue adding curves that will make up the detail curves. To discard your changes, or close the **Cash Flow Properties** window, click **Cancel.**

Project or Shell Cash Flow Properties (General Pane - More Options)

The following explains the fields under the **General** block: **More Options**.

> **Note**: The red asterisk next to a field box indicates that the field is a required field. You will not be able to save your changes without entering a value in that field.

When you click **More Options**, the **More Options** window opens which contains the following tabs, on the left-hand pane. Each tab provides additional options for the Cash Flowcash flow which are described below.

Period Close Settings tab

This tab allows you to set the option: **Enable auto snapshot**

The **Period Close Settings** tab allows you to choose some automatic settings that will happen at the end of each period (month or year, as chosen in the Time Scale field).

When you select the **Enable auto snapshot** option, you determine when the system must take an automatic snapshot of the data.

If you selected Month for Time Scale:

You can choose a specific date each month to automatically take a snapshot, or specify a particular day (such as the first Monday of the month).

If you selected Year for Time Scale:

You can specify the exact date to take the snapshot each year (or a particular day such as the first Monday of January).

After an auto snapshot is taken, the curve will be refreshed immediately. Actuals (Spends) will resume after the auto snapshot is completed.

Examples of using the options: **Enable auto snapshot**, **Cutoff spends**, and **Resume Spends**

Company A wants to take an auto snapshot of its cash flow data every time period. Company A would choose a particular date (such as the 3rd of the month for Month, or January 3 for Year). The system would take the snapshot and refresh the cash flow curve. They do not select the Cut off spends option.

Company B regularly reviews and revises forecast projections during fixed days every time period. Because it does not want new Spends records to hit the cash flow worksheet during this period, they choose the **Cut off spends** option. This option requires that Enable auto snapshot be selected first. The company sets this option so that an auto snapshot is taken of their changes just before spends are resumed. Snapshots can then be used for comparison of previous forecasts with the current month. Any spends records that came in during the forecast period are not lost; the **Resume Spends** option determines whether those spends records will be included in the previous month's cash flow, or pushed to the next time period.

Cutoff spends

This option is applicable for Actuals (Spends) type curves.

Selecting this option will temporarily stop spends business processes (for example, Invoices) from hitting the cash flow worksheet during analysis periods.

The **Enable auto snapshot** option must be selected first. Actuals (Spends) will resume after the auto snapshot is completed.

If no value is specified, then the last date of the current month is presumed.

The system marks the time of the **Cutoff spends** date at the beginning of the day. For example, on June 30, the data can become locked at the beginning of the day and not at the end of the day, therefore, preventing the user from making any last minute changes before the start of the next month.

Apply Spends to

The selections under this period close settings option allow you to apply spends to an effective date or before/after a **Cutoff spends** date.

By default, **Cutoff spends** will resume immediately after an auto-snapshot is taken.

Note: If there is a gap between the Cutoff spends date and the **Enable auto snapshot** date, any spends that came during that period are not lost.

For example, if a **Cutoff spends** date is October 26 and the Enable auto snapshot on date is November 2, (and the Time Scale is monthly) that defines the freeze period. Any spends that come in on October 27, 28, 29, 30, 31, and November 1 will not hit the cash flow sheet during the freeze period. After the Enable auto snapshot on date is reached, spends will be included back in October for spends (Oct 27-31) or November for spends (Nov 1-2), and the effective date will be retained.

The same month/year as the effective date

The text of the options under **Apply Spends to** change based on the selection that you made for the Time Scale (By: Month or By: Year).

If this option is chosen, spends data is included back in the current period after the freeze period is lifted. The final output is similar to the case where no period close settings are applied since the effective date is retained. Spends for Oct 26-31 will be included in October and Nov. 1-2 spends will be included for November.

For example, if the cutoff date is the 26th of October and the snapshot date is the 2nd November, the freeze period is Oct 26 - Nov 2nd. Any spends that come in on Oct 27, 28, 29, 30, 31 and Nov. 1, and 2 will not show on the cash flow sheet during the freeze period. After the auto snapshot date is reached, these spends will be included back in either Oct for spends (Oct 27-31) or Nov for spends (Nov 1- 2) and the effective date will be retained.

The next month/year if after the cutoff date

After the freeze period is lifted, spends data from the cutoff date to the end of the month will be included in the next month/year. Spends for Oct 26-31 will be included in November and Nov. 1-2 spends will be included for November.

The previous month/year if on or before the cutoff date

After the freeze period is lifted, spends data from the start of the month up to the cutoff date will be included in the previous month/year. Spends for Oct 26-31 will be included in September and Nov. 1-2 spends will be included for November.

During the **Cutoff spends** period, even if automatic refresh of the curve occurs as set in the **Schedule** tab, spends data will not hit the cash flow sheet until spends are resumed again.

Summary tab

This tab allows you to auto add the selected curve to a selected summary curve. This tab contains a list of available summary curves to choose from.

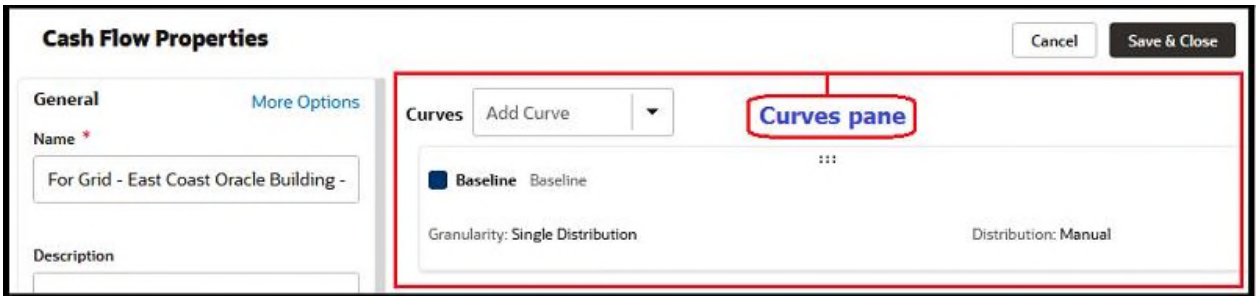
Decimal Options tab

This tab provides two options:

- **Decimal Options**: To specify the number of decimal places supported for amounts throughout the cash flow, select this option.
- **Use Currency Decimal Precision**: To ensure that the cash flow honors the number of decimals used within areas such as Base Currency, Project Currency, and Transaction Currency, select this option.

Project or Shell Cash Flow Properties (Curves Pane)

As shown in the screen capture below, the **Cash Flow Properties** window **Curves** pane contains the **Curves** drop-down list, which lets you add or remove curves.



After you add a curve, the system adds an interactive image representation of the added curve to the **Curves** pane.

The following explains the elements of the **Curves** pane.

Curves

Click the **Curves** drop-down list to open a list that contains the list of available curves.

These curves, or data sources, have been defined by the Administrator in the **Standards & Libraries** module. **Company Workspace** > **Admin** mode > **Standards & Libraries** module > **Cash Flow** > **Data Sources**.

The **Cashflow Datasources** window, where the Administrator edits the list of data sources, contains a list of data sources that are categorized by name, curve type and color. For example, the name of a data source can be **Actuals** which is assigned to a **Spends** curve type, or the name of a data source can be **Original Budget** which is assigned to a **Portfolio Budget** curve type.

Different names can be assigned to on curve type. That is to state, depending on the curve type, the curve setup options will differ. The admin can define one curve for every data source.

Refer to the *Unifier Administration Help* for details.

> **Note**: The **Portfolio Budget** curve is linked to scenarios in the **Portfolio Manager**. The Project Manager must create this curve. After it is created, the curve shows the initial budget projections.

The list of available curves include:

- **Baseline** curve
- **Actual** (Spends) curve
- **Forecast** curve
- **Derived** curve
- **Portfolio** Budget curve
- **Custom** curve

When you open a curve, you can view the data in the transaction currency, if the transaction currency is different than the project currency.

If a curve, or data source, is available within the **Curves** pane (interactive image representation of the added curve), double-click anywhere on the image to open the curve window. In this window, you can see the curve type information as well as information related to the curve, as described in the following table. If you make any changes, click **Update** to save your changes; otherwise, click **Cancel** to discard your changes or close the window.

Granularity	▸ Single distribution of sum of Base Commit and all changes ▸ By individual record (base commit and all changes separately) ▸ By line items within each individual record
Distribution Method	▸ Manual entry of values for each cash flow period ▸ Manual dates and manual profile selection ▸ Business process dates and default profile selection
Select change orders you want to include	▸ List of Business Processes and corresponding statuses are presented.Manual entry of values for each cash flow period ▸ Manual dates and manual profile selection ▸ Business process dates and default profile selection ▸ You have the option to add methods to the distribution method, or remove methods from the distribution method.
Variance	Your options are: **Inflow** or **Outflow**. See the following topics for details about **Variance** values.

To add a curve:

1. Click the **Curves** drop-down list.
2. Select a data source, or curve, from the list (for example, select **Forecast**) to open the data source window.
3. Enter values in the fields and click **Add**, when finished.

Project or Shell Cash Flow Properties Curves Pane and Curve Types

This topic provides details about adding curves to the cash flow.

You can construct cash flow curves by:

- **Project/Shell**
- **Summary CBS** (Summary CBS Code)
- **CBS** (CBS Code)
- **Commitment** (a specific commitment BP and record)

The following topics explains the process for adding the following curves to a cash flow worksheet, for comparison:

- **Baseline** curve
- **Actuals** (Spends) curve
- **Forecast** curve
- **Portfolio Budget** curve
- **Derived** curve
- **Custom** curve

> **Notes**: The procedures that follow:
>
> - Assume that you have created your data sources.
> - Describe how to add a curve type to an *existing* cash flow (**Cash Flow** log > **Detail Level** column > **Project / Shell**) that does not have a curve.

Baseline Curve

The following topics explain how to add a **Baseline** curve for cash flow by:

- **Project/Shell**
- **Summary CBS or CBS**
- **Commitment** or **Business Process (Commitments)**

> **Notes**: The procedures that follow:
>
> - Assume that you have created your data sources.
> - Describe how to add a curve type to an *existing* cash flow (**Cash Flow** log > **Detail Level** column > **Project / Shell**) that does not have a curve.

Adding a Baseline Curve for Cash Flow by Project or Shell

To add a Baseline curve for cash flow by project or shell:

1) Go to your project or shell (**User** mode).
   This is the project or shell that contains the cash flow that you want.
2) From the left Navigator, click the **Cost Manager** node to expand.
3) Click the **Cash Flow** sub-node to open the **Cash Flow** log window (the **Cash Flow** log).
   The **Cash Flow** log is the starting place for cash flow operations. The log displays all existing cash flow curves and also provides options for creating new curves, copying curves, viewing curve properties, and assigning curve usage privileges to other users.
4) Select the cash flow from the **Cash Flow** log window.
5) Click the *gear menu* and click the **Properties** option to open the **Cash Flow Properties** window (or the **Cash Flow Properties** worksheet).
6) In the **Cash Flow Properties** window **General** pane, ensure that the **Project/Shell** option is selected from the **Detail Level** drop-down list. The options under the **Detail Level** drop-down list are:

- **Project/Shell**
- **Summary CBS**
- **CBS**
- **Business Process (Commitments)**

When you select the **Project/Shell** option in the **Detail Level** drop-down list, you have the option to filter for either the CBS Codes, or filter for the Summary CBS Codes.

7) In the **Cash Flow Properties** window **Curves** pane, click the **Curves** drop-down list and select **Baseline** to open the **Baseline** window.
8) Complete the fields in this window by using the following information. When finished click **Save & Close** to save your work and open the cash flow worksheet that you have added.

When you select the **Project/Shell** option in the **Detail Level** drop-down list (**General** pane) and in the **Curves** pane you add **Baseline** curve (from the **Curves** drop-down list), proceed to set up the following parameters:

Cost

> **Note**: You can choose the cost column when creating a curve in a project or shell but not in templates.

Select *one* of the following options:

- **Manual**
  - Lets you manually enter amounts for each period. This option will be available if you have chosen **Manual** in the **Distribution** drop-down list.
  - You can enter cost information in the **Total** field on the worksheet.
- **Distribute amount from Cost Sheet Column**
  - Lets you use the default distribution profile. This option will be available if you have chosen **Auto by default profile** in the **Distribution** drop-down list
  - Examples of column:
  - Approved Budget Revisions, Approved Commitment Changes, Approved Contracts, and so forth.

Schedule

Lets you define the range of dates (what dates to start the curve and end the curve) to use to plot the cash flow data.

> **Note:** If you choose to take dates from the schedule sheet elements, the system uses the Master schedule sheet for the project or shell.

Select *one* of the following options for each date:

- **Manual**

  Lets you manually enter the date in the cash flow worksheet.

- **Use dates from Schedule Sheet**

  Lets you select a schedule sheet (from the **Select schedule sheet** drop-down). You can populate the **From** and **To** dates according to the schedules available (Example: Actual Start Date and Actual Finish Date) pertinent to the schedule sheet that you have selected for the **Select schedule sheet** drop-down.

  If these dates are changed on the selected schedule sheet, then the changes will be reflected on cash flow after the next refresh of the curves.
- **Use dates from Activity Sheet**

  Lets you select an activity sheet (from the **Select Activity Sheet** window).

  After you select using dates from an activity sheet, then you need to determine the values for the **Project Type**, **From Date**, and **To Date** fields.

Distribution

Distribution profiles are used to distribute data automatically in the cash flow worksheet. This option lets you select a distribution profile to use as the default distribution profile for the curve.

Select *one* of the following options for how to distribute the data automatically between cash flow time periods:

- **Manual**

  Lets you enter values into each field manually.
- **Company Level**

  Lets you select a pre-determined method for distribution. Your options are:
  - Linear
  - S curve
  - Front Loaded
  - Back Loaded
- **Project Level**

  Lets you select from a list of available project levels.

The distribution profiles are defined in the:

- Company Workspace > **Admin** mode > **Standards & Libraries** > **Cash Flow** > **Distribution Profiles**, or
- <Project or shell> > **User** mode > **Cost Manager** > **Cash Flow** > **Cash Flow** log > **Actions** > **Manage Distribution Profiles**.

The default profile is used for the initial display and calculations in the cash flow worksheet. You can change the distribution profile from the worksheet. If you do this, the default profile will automatically update to reflect the current selection.

When you build a **Baseline** curve for individual line items, the Schedule of Value (SOV) type influences the distribution options.

- If the SOV lists individual line items by CBS you can distribute cost for each line item individually.
- If the SOV groups line items, you cannot distribute cost for each line item individually.

Variance

Your choices are:

- **Inflow**
- **Outflow**

For **Project/Shell**, typically, the **Variance** is set to **Inflow** for a **Baseline** type curve.

The value will be used to calculate variances against the **Outflow** type curves.

Adding a Baseline Curve for Cash Flow by Summary CBS or CBS

To add a Baseline curve for cash flow by Summary CBS or CBS:

1) Go to your project or shell (**User** mode).
   This is the project or shell that contains the cash flow that you want.
2) From the left Navigator, click the **Cost Manager** node to expand.
3) Click the **Cash Flow** sub-node to open the **Cash Flow** log window (the **Cash Flow** log).
   The **Cash Flow** log is the starting place for cash flow operations. The log displays all existing cash flow curves and also provides options for creating new curves, copying curves, viewing curve properties, and assigning curve usage privileges to other users.
4) Select the cash flow from the **Cash Flow** log window.
5) Click the *gear menu* and click the **Properties** option to open the **Cash Flow Properties** window (or the **Cash Flow Properties** worksheet).
6) In the **Cash Flow Properties** window **General** pane, ensure that either **Summary CBS** (for summary CBS codes) option or **CBS** (for cash flow by individual CBS codes) is selected from the **Detail Level** drop-down list. The options under the **Detail Level** drop-down list are:
   - **Project/Shell**
   - **Summary CBS**
   - **CBS**
   - **Business Process (Commitments)**
7) In the **Cash Flow Properties** window **Curves** pane, click the **Curves** drop-down list and select **Baseline** to open the **Baseline** window.

The following explains the details regarding the following selections:

- **Summary CBS**
- **CBS**

You can cost-load a schedule sheet by assigning roles and resources to project-related activities. When you associate a CBS code with an activity in the schedule sheet, the system can distribute its cost over a period of time based on activity dates and the calendar. You will be able to view this distributed cost along with other cash flow curves related to the project.

You can create another Baseline curve by selecting Cost Sheet as the source for cost or create a Forecast, Spends, and Custom curve. In all these cases, the list of CBS codes will be from the cost sheet and will not be filtered by the schedule sheet.

The cash flow will pull distribution data (Linear, S-Curve, On Start and Finish) from a schedule sheet.

When you select the **Summary CBS** option in the **Detail Level** drop-down list (**General** pane) and in the **Curves** pane you add **Baseline** curve (from the **Curves** drop-down list), proceed to set up the following parameters:

Cost	**Note**: You can choose the cost column when creating a curve in a project or shell but not in templates. Select *one* of the following options: ▸ **Manual** Lets you manually enter amounts for each period. This option will be available if you have chosen **Manual** in the **Distribution** drop-down list. You can enter cost information in the **Total** field on the worksheet. ▸ **Distribute amount from Cost Sheet Column** Lets you use the default distribution profile. This option will be available if you have chosen **Auto by default profile** in the **Distribution** drop-down list Examples of column: Approved Budget Revisions, Approved Commitment Changes, Approved Contracts, and so forth.

Schedule	Lets you define the range of dates (what dates to start the curve and end the curve) to use to plot the cash flow data. **Note**: If you choose to take dates from the schedule sheet elements, the system uses the Master schedule sheet for the project or shell. Select *one* of the following options for each date: ▸ **Manual** Lets you manually enter the date in the cash flow worksheet. ▸ **Use dates from Schedule Sheet** Lets you select a schedule sheet (from the **Select schedule sheet** drop-down). You can populate the **From** and **To** dates according to the schedules available (Example: Actual Start Date and Actual Finish Date) pertinent to the schedule sheet that you have selected for the **Select schedule sheet** drop-down. If these dates are changed on the selected schedule sheet, then the changes will be reflected on cash flow after the next refresh of the curves. Selecting **Use dates from Schedule Sheet** option allows you to access the individual **Schedule Sheet**. The **CBS** (or **Summary CBS**) code shows the dates of the actual **CBS** (or **Summary CBS**) related activities. ▸ **Use dates from Activity Sheet** Lets you select an activity sheet (from the **Select Activity Sheet** window). After you select using dates from an activity sheet, then you need to determine the values for the **Project Type**, **From Date**, and **To Date** fields.

Distribution	Distribution profiles are used to distribute data automatically in the cash flow worksheet. This option lets you select a distribution profile to use as the default distribution profile for the curve. • **Manual** Lets you enter values into each field manually. • **Auto by Default profile CBS** Click **CBS Profile Distribution** to open the **Distribute by default profile CBS** window. From the **Set Profile** drop-down field select a pre-determined method for distribution (from **Company Level** or **Project Level**). Select one or more WBS codes from the list, and click **Update**. This field lets you select one of the distribution profiles are defined in the: • Company Workspace > **Admin** mode > **Standards & Libraries** > **Cash Flow** > **Distribution Profiles**, or • <Project or Shell> > **User** mode > **Cost Manager** > **Cash Flow** > **Cash Flow** log > **Actions** > **Manage Distribution Profiles**. The default profile is used for the initial display and calculations in the cash flow worksheet. You can change the distribution profile from the worksheet. If you do this, the default profile will automatically update to reflect the current selection.

Variance	Your choices are: ▸ **Inflow** ▸ **Outflow** For **Summary CBS**, typically, the **Variance** is set to **Inflow** for a **Baseline** type curve. The value will be used to calculate variances against the **Outflow** type curves.

When you select the **CBS** option in the **Detail Level** drop-down list (**General** pane) and in the **Curves** pane you add **Baseline** curve (from the **Curves** drop-down list), proceed to set up the following parameters:

Bring Baseline Data From	▸ **General** Lets you select to bring data from a general CBS code. ▸ **Schedule Sheet** The cash flow by Summary CBS - Baseline does not have this option. This option lets you choose a schedule sheet and view the cost distribution information by CBS. To use data from schedule sheet, click the select icon to open the **Select schedule sheet** window and select a schedule sheet name from the drop-down list. The selected schedule sheet appears in the **Use dates from Schedule Sheet** field. ▸ **P6 Summary Sheet** The cash flow by Summary CBS - Actuals does not have this option. The data picker lists all the P6 data sources. The P6 data sources are listed the **Cashflow Datasources** window (Company Workspace > Admin mode > Standards & Libraries > Cash Flow > Data Sources). This option is not available (greyed out) when the project or shell Schedule Type = Duration Based. If you select this option, Cost and Dates information data come from P6 Summary Sheet (spread), based on the P6 Data Sources. A secondary drop-down list, Data Type, contains the data types available: At Completion and Planned. If you select At Completion, the system draws the Baseline curve using the At Completion Cost spread. If you select Planned, the system draws the Baseline curve using the Planned Cost spread. ▸ **Activity Sheet** ▸ Select an activity sheet from the **Sheet Name** drop-down list. ▸ Select a project type from the **Project Type** drop-down list. **Note:** Cash flow worksheet data will not show accurate amounts when multiple CBS Codes are associated with a single resource. If you assign a resource to multiple activities with

Cost	**Note**: You can choose the cost column when creating a curve in a project or shell but not in templates. Select *one* of the following options: ▸ **Manual** Lets you manually enter amounts for each period. This option will be available if you have chosen **Manual** in the **Distribution** drop-down list. You can enter cost information in the **Total** field on the worksheet. ▸ **Distribute amount from Cost Sheet Column** Lets you use the default distribution profile. This option will be available if you have chosen **Auto by default profile** in the **Distribution** drop-down list Examples of column: Approved Budget Revisions, Approved Commitment Changes, Approved Contracts, and so forth.

Schedule	Lets you define the range of dates (what dates to start the curve and end the curve) to use to plot the cash flow data. **Note**: If you choose to take dates from the schedule sheet elements, the system uses the Master schedule sheet for the project or shell. Select *one* of the following options for each date: ▸ **Manual** Lets you manually enter the date in the cash flow worksheet. ▸ **Use dates from Schedule Sheet** Lets you select a schedule sheet (from the **Select schedule sheet** drop-down). You can populate the **From** and **To** dates according to the schedules available (Example: Actual Start Date and Actual Finish Date) pertinent to the schedule sheet that you have selected for the **Select schedule sheet** drop-down. If these dates are changed on the selected schedule sheet, then the changes will be reflected on cash flow after the next refresh of the curves. ▸ **Use dates from Activity Sheet** Lets you select an activity sheet (from the **Select Activity Sheet** window). After you select using dates from an activity sheet, then you need to determine the values for the **Project Type**, **From Date**, and **To Date** fields.

Distribution	Distribution profiles are used to distribute data automatically in the cash flow worksheet. This option lets you select a distribution profile to use as the default distribution profile for the curve. • **Manual** Lets you enter values into each field manually. • **Auto by Default profile CBS** Click **CBS Profile Distribution** to open the **Distribute by default profile CBS** window. From the **Set Profile** drop-down field select a pre-determined method for distribution (from **Company Level** or **Project Level**). Select one or more WBS codes from the list, and click **Update**. This field lets you select one of the distribution profiles are defined in the: • Company Workspace > **Admin** mode > **Standards & Libraries** > **Cash Flow** > **Distribution Profiles**, or • <Project or Shell> > **Cost Manager** > **Cash Flow** > **Cash Flow** log > **Actions** > **Manage Distribution Profiles**. The default profile is used for the initial display and calculations in the cash flow worksheet. You can change the distribution profile from the worksheet. If you do this, the default profile will automatically update to reflect the current selection.

Variance	Your choices are: ▸ **Inflow** ▸ **Outflow** For **CBS**, typically, the **Variance** is set to **Inflow** for a **Baseline** type curve. The value will be used to calculate variances against the **Outflow** type curves.

Adding a Baseline Curve for Cash Flow by Business Process (Commitments)

A Commitment BP (such as a Base Commit or a Change Commit) is a sub-type of a Cost type BP.

You can build one **Baseline** curve per **Business Process (Commitments)** record.

To add a Baseline curve for cash flow by Business Process (Commitments):

1) Go to your project or shell (**User** mode).
   This is the project or shell that contains the cash flow that you want.
2) From the left Navigator, click the **Cost Manager** node to expand it.
3) Click the **Cash Flow** sub-node to open the **Cash Flow** log window (the **Cash Flow** log).
   The **Cash Flow** log is the starting place for cash flow operations. The log displays all existing cash flow curves and also provides options for creating new curves, copying curves, viewing curve properties, and assigning curve usage privileges to other users.
4) Select the cash flow from the **Cash Flow** log window.
5) Click the *gear menu*, and click the **Properties** option to open the **Cash Flow Properties** window (or the **Cash Flow Properties** worksheet).
6) In the **Cash Flow Properties** window **General** pane, ensure that a record under the **Business Process (Commitments)** label is selected from the **Detail Level** drop-down list.
   The options under the **Detail Level** drop-down list are:
   - **Project/Shell**
   - **Summary CBS**
   - **CBS**
   - **Business Process (Commitments)**
7) In the **Cash Flow Properties** window **Curves** pane, click the **Curves** drop-down list, and select **Baseline** to open the **Baseline** window.

When you select the **Business Process (Commitments)** option in the **Detail Level** drop-down list, and a **Base Commit** record (from **Select Base Commit Record**) in the **General** pane, and in the **Curves** pane you add **Baseline** curve (from the **Curves** drop-down list), proceed to set up the following parameters:

Granularity	The cash flow **Granularity** option that you select determines the: • **Distribution Method** options that are available. • Level of record detail available in the cash flow curve. You can roll up Base Commit and Change Commit and see individual records separately, or you can drill to individual line items in a **Business Process (Commitments)** record. The options that you can select from are: • **Single distribution of sum of base commit and all changes:** Selecting this option limits the Distribution Method to Manual entry of values per cash flow period, only. In User mode, you must open the cash flow details window to complete time scale fields and distribute the rolled up values of the Base Commit record and any Change Commit records. • **By individual record (base commit and all changes separately):** Selecting this option lets you choose from the following options for the **Distribution Method**: ◦ **Manual entry of values per cash flow period:** Use this option to enter the time scale manually and to distribute costs. ◦ **Manual Dates and manual profile selection:** Use this option to enter the time scale manually and select a distribution curve. ◦ **Business process dates and default profile selection:** Use this option to select the time scale from fields on the business process. Click **Details** to open the selection window. Use this option to enter dates manually and select a distribution profile. In User mode, the curve data is read-only, but you can change the distribution profile. This selection requires a sub-selection. There are four columns in the **Auto Distribution** window: ▪ **Business Process:** The list comes from the Cost-type business processes available in your company. ▪ **From Data Element:** Select the date on which you want the distribution to start. You can only select a Date element from the Upper Forms and not from the Business Process Detail forms. ▪ **To Data Element:** Select the date on which you want the distribution to end. ▪ **Default Profile:** If desired, select a pre-defined profile. • **By line items within each individual record:** Selecting this option lets you select from the following **Distribution Method** options: ◦ **Manual entry of values per cash flow period:** Use this option to select record line items. In **User** mode you can: ▪ See each selected line item in the cash flow details window; the columns come from the business process. ▪ Select a profile on the detail window for each line. ▪ Select the distribution profile manually. ◦ **Manual Dates and manual profile selection:** Use this option to enter the time scale manually and select a distribution curve.

Distribution Method	The **Cash Flow Granularity** option that you select determines the **Distribution Method** options that are available, as described earlier, and the level of record detail available in the cash flow curve. By default, the system displays **Business Process (Commitments)** curve cost data in the record transaction currency, which is stored in project currency (using the active currency exchange rate table). If the transaction currency is different from the project currency, you can change the currency view between transaction and project currencies, but you can only edit data in the transaction currency. If there is a more recent value in the exchange rate table, refreshing the curve will refresh the cost data. For more information, see ***Transaction Currency in Baseline Curve for Cash Flow by Business Process (Commitments)*** (on page 127).
Select change orders you want to include	Add or remove business process from the list. Add Change Commit BPs, according to the status. These line items are also seen in the cash flow curve details window.
Variance	Your choices are: ▸ **Inflow** ▸ **Outflow** For **Business Process (Commitments)**, typically, the **Variance** is set to **Inflow** for a **Baseline** type curve. The value will be used to calculate variances against the **Outflow** type curves.

Transaction Currency in Baseline Curve for Cash Flow by Business Process (Commitments)

For costs distributed in the transaction currency, the system calculates and stores the distribution in project currency using the exchange rate table.

As a result, in curves based on a Business Process (Commitments) record, the system shows cash flow in the transaction currency of the record when it was created. The system stores the data in project currency.

If the project currency is different from the transaction currency, then both the main and detail windows contain a currency drop-down list which you can use to show costs in the project currency; however, you can only edit data in the transaction currency mode.

Currency conversion is based on the active company-level Exchange Rates table.

Bulk edit is unavailable if the detail window is in project currency mode.

In curves based on a Business Process (Commitments) record, the detail window shows columns from the Business Process. For example, Number, Name, Line No, CBS Code, Description (Short Description).

Actuals (Spends) Curve

The Actuals (or "spends") curve tracks the actual invoice transactions. Actuals pulls the data from a column of the cost sheet. As a result, you need to select a column associated with the data source for the **Spends** type business process and status that you want to track.

> **Note**: These curves display actual spent amounts per time period, and are not editable or distributed.

The following topics explain how to add a **Actuals** (Spends) curve for cash flow by:

- **Project/Shell**
- **Summary CBS or CBS**
- **Commitment** or **Business Process (Commitments)**

> **Notes**: The procedures that follow:
>
> - Assume that you have created your data sources.
> - Describe how to add a curve type to an *existing* cash flow (**Cash Flow** log > **Detail Level** column > **Project / Shell**) that does not have a curve.

Adding Actuals (Spends) Curve for Cash Flow by Project or Shell

To add Actuals (or "spends") curve for cash flow by project or shell:

1) Go to your project or shell (**User** mode).
   This is the project or shell that contains the cash flow that you want.
2) From the left Navigator, click the **Cost Manager** node to expand.
3) Click the **Cash Flow** sub-node to open the **Cash Flow** log window (the **Cash Flow** log).
   The **Cash Flow** log is the starting place for cash flow operations. The log displays all existing cash flow curves and also provides options for creating new curves, copying curves, viewing curve properties, and assigning curve usage privileges to other users.
4) Select the cash flow from the **Cash Flow** log window.
5) Click the *gear menu* and click the **Properties** option to open the **Cash Flow Properties** window (or the **Cash Flow Properties** worksheet).
6) In the **Cash Flow Properties** window **General** pane, ensure that the **Project/Shell** option is selected from the **Detail Level** drop-down list. The options under the **Detail Level** drop-down list are:
   - **Project/Shell**
   - **Summary CBS**
   - **CBS**
   - **Business Process (Commitments)**

   When you select the **Project/Shell** option in the **Detail Level** drop-down list, you have the option to filter for either the CBS Codes, or filter for the Summary CBS Codes.

7) In the **Cash Flow Properties** window **Curves** pane, click the **Curves** drop-down list and select **Actuals** to open the **Actuals** window.
8) Complete the fields in this window by using the following information. When finished click **Save & Close** to save your work and open the cash flow worksheet that you have added.

When you select the **Project/Shell** option in the **Detail Level** drop-down list (**General** pane) and in the **Curves** pane you add **Actuals** (or "spends") curve (from the **Curves** drop-down list), proceed to set up the following parameters:

Cost	**Note**: You can choose the cost column when creating a curve in a project or shell but not in templates (since there is no cost sheet to reference in a template). (Required) Lets you select a cost sheet column (for example: Approved Budget Revisions, Approved Commitment Changes, and so forth). If you are creating a detail curve template, you will not be able to add an **Actuals** (or "spends") curve.
Variance	Your choices are: ▸ **Inflow** ▸ **Outflow** For **CBS**, typically, the **Variance** is set to **Outflow** for a **Actuals** (Spends) type curve. The value will be used to calculate variances against the **Inflow** type curves.

Adding Actuals (Spends) Curve for Cash Flow by CBS Summary or CBS

To add an **Actuals** (or "spends") curve for cash flow by Summary CBS or CBS:

1) Go to your project or shell (**User** mode).

This is the project or shell that contains the cash flow that you want.

2) From the left Navigator, click the **Cost Manager** node to expand.
3) Click the **Cash Flow** sub-node to open the **Cash Flow** log window (the **Cash Flow** log).

   The **Cash Flow** log is the starting place for cash flow operations. The log displays all existing cash flow curves and also provides options for creating new curves, copying curves, viewing curve properties, and assigning curve usage privileges to other users.
4) Select the cash flow from the **Cash Flow** log window.
5) Click the *gear menu* and click the **Properties** option to open the **Cash Flow Properties** window (or the **Cash Flow Properties** worksheet).
6) In the **Cash Flow Properties** window **General** pane, ensure that either **Summary CBS** (for summary CBS codes) option or **CBS** (for cash flow by individual CBS codes) is selected from the **Detail Level** drop-down list. The options under the **Detail Level** drop-down list are:
   - **Project/Shell**
   - **Summary CBS**
   - **CBS**
   - **Business Process (Commitments)**
7) In the **Cash Flow Properties** window **Curves** pane, click the **Curves** drop-down list and select **Actuals** to open the **Actuals** (**Curves Type**: **Spends**) window.

The following explains the details regarding the following selections:

- **Summary CBS**
- **CBS**

When you select the **Summary CBS** option in the **Detail Level** drop-down list (**General** pane) and in the **Curves** pane you add **Actuals** (or "spends") curve (from the **Curves** drop-down list), proceed to set up the following parameters:

Cost

You can choose the cost column when creating a curve in a project or shell but not in templates (since there is no cost sheet to reference in a template).

(Required) Lets you select a cost sheet column (for example: Approved Budget Revisions, Approved Commitment Changes, and so forth).

If you are creating a detail curve template, you will not be able to add an **Actuals** (or "spends") curve.

Set Effective Date for CBS

The data of the curve before this date will not be included in the cash flow.

(Optional) Select whether you want to set an effective date for the Cost Based Schedule (CBS) code, or not.

For setting the date for CBS and Summary CBS type cash flow curves, see the information below.

Variance

This is set, typically, to **Outflow** for an **Actuals** (or "spends") curve.

This will be used to calculate variances against the Inflow type curves.

When you select the **CBS** option in the **Detail Level** drop-down list (**General** pane) and in the **Curves** pane you add **Actuals** (or "spends") curve (from the **Curves** drop-down list), proceed to set up the following parameters:

Bring Actuals Data From

Your options are:

- **Generic**

  Enables you to select to bring data from a general CBS code.
- **P6 Summary Sheet**

  The cash flow by Summary CBS - Actuals does not have this option.

  The data picker lists all the P6 data sources. The P6 data sources are listed the **Cashflow Datasources** window (Company Workspace > Admin mode > Standards & Libraries > Cash Flow > Data Sources).

  This option is not available (greyed out) when the project or shell Schedule Type = Duration Based.

  If you select this option, the system draws the **Actuals** (or "spends") curve by using the Actual Cost spread from the selected P6 data source.
- **Activity Sheet**

  Select an activity sheet from the **Sheet Name** drop-down list.

  Select a project type from the **Project Type** drop-down list.

  (Required) Select your cost source from the **Cost** drop down list. Your options are:
  - **From Activity Sheet Column**
  - **From Cost Sheet Column**

  (Required) Select the schedule and distribution method from the **Schedule & Distribution** drop-down list.

Cost

You can choose the cost column when creating a curve in a project or shell but not in templates (since there is no cost sheet to reference in a template).

(Required) Lets you select a cost sheet column (for example: Approved Budget Revisions, Approved Commitment Changes, and so forth).

If you are creating a detail curve template, you will not be able to add a Actuals (or "spends") curve.

Set Effective Date for CBS

The data of the curve before this date will not be included in the cash flow.

(Optional) Select whether you want to set an effective date for the Cost Based Schedule (CBS) code, or not.

For setting the date for CBS and Summary CBS type cash flow curves, see the information below.

Variance

This is set, typically, to **Outflow** for an **Actuals** (or "spends") curve.

This will be used to calculate variances against the Inflow type curves.

CBS and Summary CBS Type Cash Flow Curves (Actuals)

For CBS and Summary CBS type cash flow curves, where the data is coming from cost sheet, if you do not want the Actuals amounts to be used until a certain date, so that the cash flow is accurate, you can set an effective date for the cash flow curve.

Either after you have created a new cash flow worksheet, or you have an existing cash flow worksheet, to determine to whether set an effective date for CBS and Summary CBS type cash flow curves, or not:

1) In the Cash Flow log, click the gear menu of your CBS, or Summary CBS, type cash flow and select Properties.
2) In the Cash Flow Properties window, open the Actuals curve.
3) In the Actuals window, click the Set Effective Date for CBS drop-down field and select one of the following choices:
   - **No** (Default value)
   - **Yes**

   If you select **No**, then the effective date will remain as is.

   If you select **Yes**, then the Define Effective Dates option will appear on the Actuals window. This date represents the date from which the Actuals data are included in the cash flow curve.

   1. Click the **Define Effective Dates** option to open the **Define Date per CBS** window.
   2. In the **Define Date per CBS** window, select the CBS items that you need to set an effective date for. You can select one or more rows (CBS codes) and bulk select the date time.
   3. Click to select a date and time (in the **Select Date Time** field).

The effective date serves as a cut-off date and time. Any data before this effective date (time) will not be included in cash flow curve.

The Variance calculations and the Forecast curve calculations will retain the data of Actuals curve.

The Distribution profiles of the Forecast curve will also use the effective date as the start for the Actuals.

If the cash flow is used for rollup, then the cash flow data will roll up, considering the effective date.

The date reset options (Remove Effective Dates) enables you clear the effective date, from the selected CBS codes.

Shell templates that contain CBS and Summary CBS type cash flow curves (Actuals) with a set effective date can be used to update existing shell templates.

You can set effective date (date and time) for CBS and Summary CBS type cash flow curves (Actuals) in a shell template, instead of defining the dates for every new curve individually, and push the template.

When integrated with Web Services, the effective date can be included in order to help the users create the cash flow curve directly, without having to change the dates in Unifier.

Adding Actuals (Spends) Curve for Cash Flow by Business Process (Commitments)

A Commitment BP (such as a Base Commit or a Change Commit) is a sub-type of a Cost type BP.

You can build one **Actuals** (Spends) curve per **Business Process (Commitments)** record.

To add an **Actuals** (Spends) curve for cash flow by Business Process (Commitments):

1) Go to your project or shell (**User** mode).
   This is the project or shell that contains the cash flow that you want.
2) From the left Navigator, click the **Cost Manager** node to expand.
3) Click the **Cash Flow** sub-node to open the **Cash Flow** log window (the **Cash Flow** log).
   The **Cash Flow** log is the starting place for cash flow operations. The log displays all existing cash flow curves and also provides options for creating new curves, copying curves, viewing curve properties, and assigning curve usage privileges to other users.
4) Select the cash flow from the **Cash Flow** log window.
5) Click the *gear menu* and click the **Properties** option to open the **Cash Flow Properties** window (or the **Cash Flow Properties** worksheet).
6) In the **Cash Flow Properties** window **General** pane, ensure that a record under the **Business Process (Commitments)** label is selected from the **Detail Level** drop-down list. The options under the **Detail Level** drop-down list are:
   - **Project/Shell**
   - **Summary CBS**
   - **CBS**
   - **Business Process (Commitments)**
7) In the **Cash Flow Properties** window **Curves** pane, click the **Curves** drop-down list and select **Actuals** (Spends) to open the **Actuals** (**Curve Type**: **Spends**) window.

When you select the **Business Process (Commitments)** option in the **Detail Level** drop-down list, and a **Base Commit** record (from **Select Base Commit Record**) in the **General** pane, and in the **Curves** pane you add **Actuals** (Spends) curve (from the **Curves** drop-down list), proceed to set up the following parameters:

Granularity	The options that you can select from are: ▸ By Business Process ▸ By line items from Schedule of Values (SOV) The cash flow **Granularity** option that you select determines the: ▸ **Distribution Method** options that are available. ▸ Level of record detail available in the cash flow curve. You can roll up Base Commit and Change Commit and see individual records separately, or you can drill to individual line items in a **Business Process (Commitments)** record.
Cost	Under the **Select Spends Business Process** field: Add or remove business process from the list.
Variance	Your choices are: ▸ **Inflow** ▸ **Outflow** For **Business Process (Commitments)**, typically, the **Variance** is set to **Inflow** for a **Baseline** type curve. The value will be used to calculate variances against the **Outflow** type curves.

Cash Flow by Commitment and Cash Flow Family Curves for Actuals (Spends) Curve

In the cash flow family curves for **Actuals** (or "spends") curve for the cash flow by Business Process (Commitments) for:

- Base Commits
- Change Commits
- Payment Application BPs of Summary Payment Application SOV type

If the **Effective Date** (uuu_effective_date) field has been defined in the **Detail Form** design, then this date is used as the effective date for the **Costed Line Items**. In the absence of the **Effective Date** (uuu_effective_date) field, the workflow **End Date** will be used for the **Cash Flow**.

You can see the **Costed Amount** for the **Cash Flow** curves of **Actuals** (Spends) type level **CBS** and **Summary CBS**.

You can see the **Line Item** amount for the **Cash Flow** curves of **Actuals** (Spends) type level **Project/Shell**.

Actuals (Spends) Curve and Forecast Curve

The system complies with the initial profile. If Actuals (or "spends") are received for a portion of the curve, and the Forecast curve is connected to Actuals (or "spends"), the system takes the already-consumed-profile portion out of the equation and redistributes the unconsumed pending profile portion.

Examples

- The Forecast curve starts from Jan 2012- Dec 2014, stretching the system's default 20 point distribution profile over 36 periods.
- Actuals were received January 2012 February 2012, and March 2012.
- These three periods of Forecast curve already consumed 1.67 points of period distribution.
- The Forecast end date is now changed to December 2015.
- The Forecast curve is now March 31 2012 to December 2015.
- The system then distributes the remaining 18.33 points of profile over 45 periods.

If there are some CBS codes that have received Actuals (or "spends") and some CBS codes that did not, then the CBS codes that did not receive Actuals (or "spends") will be replaced by 0 at the end of the month, or on the cutoff date (depending on the UI settings).

If there are some CBS codes that have received future Actuals (or "spends") and some CBS codes that did not, then the Forecast curve will not reflect future Actuals (or "spends") until they become current.

The following section explains the **Forecast** curve.

Forecast Curve

As a part of cash flow management, forecasting is about calculating the future expenditures, based on the project schedules.

The following topics explain how to add a **Forecast** curve for cash flow by:

- **Project/Shell**
- **Summary CBS or CBS**
- **Commitment** or **Business Process (Commitments)**

Notes: The procedures that follow:

- Assume that you have created your data sources.
- Describe how to add a curve type to an *existing* cash flow (**Cash**

Flow log > **Detail Level** column > **Project / Shell**) that does not have a curve.

Adding Forecast Curve for Cash Flow by Project or Shell

To add Actuals (or "spends") curve for cash flow by project or shell:

1) Go to your project or shell (**User** mode).
   This is the project or shell that contains the cash flow that you want.
2) From the left Navigator, click the **Cost Manager** node to expand.
3) Click the **Cash Flow** sub-node to open the **Cash Flow** log window (the **Cash Flow** log).
   The **Cash Flow** log is the starting place for cash flow operations. The log displays all existing cash flow curves and also provides options for creating new curves, copying curves, viewing curve properties, and assigning curve usage privileges to other users.
4) Select the cash flow from the **Cash Flow** log window.
5) Click the *gear menu* and click the **Properties** option to open the **Cash Flow Properties** window (or the **Cash Flow Properties** worksheet).
6) In the **Cash Flow Properties** window **General** pane, ensure that the **Project/Shell** option is selected from the **Detail Level** drop-down list. The options under the **Detail Level** drop-down list are:
   - **Project/Shell**
   - **Summary CBS**
   - **CBS**
   - **Business Process (Commitments)**

   When you select the **Project/Shell** option in the **Detail Level** drop-down list, you have the option to filter for either the CBS Codes, or filter for the Summary CBS Codes.
7) In the **Cash Flow Properties** window **Curves** pane, click the **Curves** drop-down list and select **Forecast** to open the **Forecast** window.
8) Complete the fields in this window by using the following information. When finished click **Save & Close** to save your work and open the cash flow worksheet that you have added.

When you select the **Project/Shell** option in the **Detail Level** drop-down list (**General** pane) and in the **Curves** pane you add **Forecast** curve (from the **Curves** drop-down list), proceed to set up the following parameters:

Cost	**Note**: The distribution method that you select determines the Cost options that are available. Select *one* of the following options: ▸ **Manual** Lets you manually enter amounts for each period. This option will be available if you have chosen **Manual** in the **Distribution** drop-down list. You can enter cost information in the **Total** field on the worksheet. ▸ **Distribute amount from Cost Sheet Column** Lets you use the default distribution profile. This option will be available if you have chosen **Auto by default profile** in the **Distribution** drop-down list Examples of column: Approved Budget Revisions, Approved Commitment Changes, Approved Contracts, and so forth.

Schedule	This parameter enables you to plot the cash flow data. You can select *one* of the following options: ▸ **Manual** ▸ **Use dates from Schedule Sheet** Lets you select a schedule sheet (from the **Select schedule sheet** drop-down). You can populate the **From** and **To** dates according to the schedules available (Example: Actual Start Date and Actual Finish Date) pertinent to the schedule sheet that you have selected for the **Select schedule sheet** drop-down. If these dates are changed on the selected schedule sheet, then the changes will be reflected on cash flow after the next refresh of the curves. After you select **Use dates from Schedule Sheet**, then you need to determine the values for the **From Date** and **To Date** fields. ▸ **Use dates from Activity Sheet** Enables you to select an activity sheet (from the **Select Activity Sheet** window). Once you select **Use dates from Activity Sheet**, then you need to determine the values for the **Project Type**, **From Date**, and **To Date** fields.

Distribution	Distribution profiles are used to distribute data automatically in the cash flow worksheet. This option enables you to select a distribution profile to use as the default distribution profile for the curve. Select *one* of the following options for how to distribute the data automatically between cash flow time periods: ▸ **Manual** Lets you enter values into each field manually and therefore distribute the amount form the cost sheet column. ▸ **Company Level** Lets you select a pre-determined method for distribution. Your options are: ▸ Linear ▸ S curve ▸ Front Loaded ▸ Back Loaded ▸ **Project Level** Lets you select from a list of available project levels. **Note**: If the initial **Forecast** uses a distribution profile, and it has a configuration start at the end of Actuals (or "spends"), then the profile does not impact the **Forecast** distribution when you receive Actuals (or "spends"). The distribution profiles are defined in the: ▸ Company Workspace > **Admin** mode > **Standards & Libraries** > **Cash Flow** > **Distribution Profiles**, or ▸ <Project or Shell> > **User** mode > **Cost Manager** > **Cash Flow** > **Cash Flow** log > **Actions** > **Manage Distribution Profiles**.
	The default profile is used for the initial display and calculations in the cash flow

Variance	Your choices are: ▸ **Inflow** ▸ **Outflow** For **CBS**, typically, the **Variance** is set to **Outflow** for a **Actuals** (Spends) type curve. The value will be used to calculate variances against the **Inflow** type curves.
Begin calculations at the end of curve	Select this option if you want to automatically start the **Forecast** at the end of a selected **Actual** (or "spends") curve for each time period. Select **Begin calculations at end of curve**, click the drop-down list below, and select your desired option (for example, you can select **Actuals** (or "spends") curve, if this curve exists in the list).
Replace current period forecast with Actuals on cut off date	If you select this option and the period close settings have not been specified, the system replaces the **Forecast** curve with the **Actuals** (or "spends") curve at the end of the month. **Note**: The cumulative graph will not show the **Forecast** connected to **Actuals** (or "spends") until the system overwrites the **Forecast** with the **Actuals**.

Allow edit of current period forecast until replacement actuals	This option enables you to reconfigure the Forecast until the date set to replace the Foretasted values with **Actuals** (or "spends"). **Note**: If the cutoff date is not specified, but the **Replace current period forecast with Actuals on cut off date** and **Allow edit of current period forecast until replacement by Actuals** options are selected, the system does not allow edits to the **Forecast** curve after the end of the month.
Distribute unassigned amounts from Spends	Your options for unassigned amounts are: ▸ **Using weighted average over all remaining periods** ▸ **Using weighted average over ___ next periods** You can enter the number of time periods (1 or more) not exceeding the number of periods remaining. The options above are available only if you have chosen to: ▸ Select a distribution profile to use as the default distribution profile for the curve. ▸ Select **Begin calculations at the end of curve** option to automatically start the Forecast at the end of a selected Actual (or "spends") curve for each time period.
Select Baseline curve for comparison	Click the drop-down list and select a **Baseline** curve to compare with the **Forecast** curve.

Adding Forecast Curve for Cash Flow by CBS Summary or CBS

To add Forecast curve for cash flow by CBS Summary or CBS:

1) Go to your project or shell (**User** mode).
   This is the project or shell that contains the cash flow that you want.
2) From the left Navigator, click the **Cost Manager** node to expand.
3) Click the **Cash Flow** sub-node to open the **Cash Flow** log window (the **Cash Flow** log).
   The **Cash Flow** log is the starting place for cash flow operations. The log displays all existing cash flow curves and also provides options for creating new curves, copying curves, viewing curve properties, and assigning curve usage privileges to other users.
4) Select the cash flow from the **Cash Flow** log window.
5) Click the *gear menu* and click the **Properties** option to open the **Cash Flow Properties** window (or the **Cash Flow Properties** worksheet).
6) In the **Cash Flow Properties** window **General** pane, ensure that either **Summary CBS** (for summary CBS codes) option or **CBS** (for cash flow by individual CBS codes) is selected from the **Detail Level** drop-down list. The options under the **Detail Level** drop-down list are:
   - **Project/Shell**
   - **Summary CBS**
   - **CBS**
   - **Business Process (Commitments)**

   When you select the **Project/Shell** option in the **Detail Level** drop-down list, you have the option to filter for either the CBS Codes, or filter for the Summary CBS Codes.
7) In the **Cash Flow Properties** window **Curves** pane, click the **Curves** drop-down list and select **Forecast** to open the **Forecast** window.

The following explains the details regarding the following selections:

- **Summary CBS**
- **CBS**

When you select the **Summary CBS** option in the **Detail Level** drop-down list (**General** pane) and in the **Curves** pane you add **Forecast** curve (from the **Curves** drop-down list), proceed to set up the following parameters:

Cost	**Note**: You can choose the cost column when creating a curve in a project or shell but not in templates. Select *one* of the following options: ▸ **Manual** Lets you manually enter amounts for each period. This option will be available if you have chosen **Manual** in the **Distribution** drop-down list. You can enter cost information in the **Total** field on the worksheet. ▸ **Distribute amount from Cost Sheet Column** Lets you use the default distribution profile. This option will be available if you have chosen **Auto by default profile** in the **Distribution** drop-down list Examples of column: Approved Budget Revisions, Approved Commitment Changes, Approved Contracts, and so forth.

Schedule	Lets you define the range of dates (what dates to start the curve and end the curve) to use to plot the cash flow data. **Note**: If you choose to take dates from the schedule sheet elements, then Unifier uses the Master schedule sheet for the project or shell. Select *one* of the following options for each date: ▸ **Manual** Lets you manually enter the date in the cash flow worksheet. ▸ **Use dates from Schedule Sheet** Lets you select a schedule sheet (from the **Select schedule sheet** drop-down). You can populate the **From** and **To** dates according to the schedules available (Example: Actual Start Date and Actual Finish Date) pertinent to the schedule sheet that you have selected for the **Select schedule sheet** drop-down. If these dates are changed on the selected schedule sheet, then the changes will be reflected on cash flow after the next refresh of the curves. ▸ **Use dates from Activity Sheet** Lets you select an activity sheet (from the **Select Activity Sheet** window). After you select using dates from an activity sheet, then you need to determine the values for the **Project Type**, **From Date**, and **To Date** fields.

Distribution	Distribution profiles are used to distribute data automatically in the cash flow worksheet. This option lets you select a distribution profile to use as the default distribution profile for the curve. • **Manual** Lets you enter values into each field manually. • **Auto by Default profile CBS** Click **CBS Profile Distribution** to open the **Distribute by default profile CBS** window. From the **Set Profile** drop-down field select a pre-determined method for distribution (from **Company Level** or **Project Level**). Select one or more WBS codes from the list, and click **Update**. This field lets you select one of the distribution profiles are defined in the: • Company Workspace > **Admin** mode > **Standards & Libraries** > **Cash Flow** > **Distribution Profiles**, or • <Project or Shell> > **User** mode > **Cost Manager** > **Cash Flow** > **Cash Flow** log > **Actions** > **Manage Distribution Profiles**. The default profile is used for the initial display and calculations in the cash flow worksheet. You can change the distribution profile from the worksheet. If you do this, the default profile will automatically update to reflect the current selection.

Begin calculations at the end of curve	Select this option if you want to automatically start the **Forecast** at the end of a selected **Actual** (or "spends") curve for each time period. Select **Begin calculations at end of curve**, click the drop-down list below, and select your desired option (for example, you can select **Actuals** (or "spends") curve, if this curve exists in the list).
Replace current period forecast with Actuals on cut off date	If you select this option, and the period close settings have not been specified, the system replaces the **Forecast** curve with the **Actuals** (or "spends") curve at the end of the month. **Note**: The cumulative graph will not show the **Forecast** connected to **Actuals** (or "spends") until the system overwrites the **Forecast** with the **Actuals**.

Allow edit of current period forecast until replacement actuals	This option lets you reconfigure the Forecast until the date set to replace the Foretasted values with **Actuals** (or "spends"). **Note**: If the cutoff date is not specified, but the **Replace current period forecast with Actuals on cut off date** and **Allow edit of current period forecast until replacement by Actuals** options are selected, the system does not allow edits to the **Forecast** curve after the end of the month.
Distribute unassigned amounts from Spends	Your options for unassigned amounts are: ▸ **Using weighted average over all remaining periods** ▸ **Using weighted average over ___ next periods** You can enter the number of time periods (1 or more) not exceeding the number of periods remaining. The options above are available only if you have chosen to: ▸ Select a distribution profile to use as the default distribution profile for the curve. ▸ Select **Begin calculations at the end of curve** option to automatically start the Forecast at the end of a selected Actual (or "spends") curve for each time period.
Select Baseline curve for comparison	Click the drop-down list and select a **Baseline** curve to compare with the **Forecast** curve.

Variance	Your choices are: ▸ **Inflow** ▸ **Outflow** For **CBS**, typically, the **Variance** is set to **Outflow** for an **Actuals** (Spends) type curve. The value will be used to calculate variances against the **Inflow** type curves.

When you select the **CBS** option in the **Detail Level** drop-down list (**General** pane) and in the **Curves** pane you add **Baseline** curve (from the **Curves** drop-down list), proceed to set up the following parameters:

Bring Forecast Data From	▸ **General** Lets you select to bring data from a general CBS code. ▸ **Schedule Sheet** The cash flow by Summary CBS - Forecast does not have this option. This option lets you choose a schedule sheet and view the cost distribution information by CBS. To use data from schedule sheet, click the select icon to open the **Select schedule sheet** window and select a schedule sheet name from the drop-down list. The selected schedule sheet appears in the **Use dates from Schedule Sheet** field. ▸ **P6 Summary Sheet** The cash flow by Summary CBS - Actuals does not have this option. The data picker lists all the P6 data sources. The P6 data sources are listed the **Cashflow Datasources** window (Company Workspace > Admin mode > Standards & Libraries > Cash Flow > Data Sources). This option is not available (greyed out) when the project or shell Schedule Type = Duration Based. If you select this option, Cost and Dates information data come from P6 Summary Sheet (spread), based on the P6 Data Sources. A secondary drop-down list, Data Type, contains the data types available: At Completion and Planned. If you select At Completion, the system draws the Baseline curve using the At Completion Cost spread. If you select Planned, the system draws the Baseline curve using the Planned Cost spread. ▸ **Activity Sheet** ▸ Select an activity sheet from the **Sheet Name** drop-down list. ▸ Select a project type from the **Project Type** drop-down list. **Note:** Cash flow worksheet data will not show accurate amounts when multiple CBS Codes are associated with a single resource. If you assign a resource to multiple activities with multiple CBS codes in the Activity Sheet and the cash flow curve has **Baseline** selected as the **Project Type**, the curve data will be incorrect. ▸ (Required) Select your cost source from the **Cost** drop down list. Your options are: ▪ **From Activity Sheet Column** ▪ **From Cost Sheet Column** ▸ (Required) Select the schedule and distribution method from the **Schedule & Distribution** drop-down list.

Cost	**Note**: You can choose the cost column when creating a curve in a project or shell but not in templates. Select *one* of the following options: ▸ **Manual** Lets you manually enter amounts for each period. This option will be available if you have chosen **Manual** in the **Distribution** drop-down list. You can enter cost information in the **Total** field on the worksheet. ▸ **Distribute amount from Cost Sheet Column** Lets you use the default distribution profile. This option will be available if you have chosen **Auto by default profile** in the **Distribution** drop-down list Examples of column: Approved Budget Revisions, Approved Commitment Changes, Approved Contracts, and so forth.

Schedule	Lets you define the range of dates (what dates to start the curve and end the curve) to use to plot the cash flow data. **Note**: If you choose to take dates from the schedule sheet elements, the system uses the Master schedule sheet for the project or shell. Select *one* of the following options for each date: ▸ **Manual** Lets you manually enter the date in the cash flow worksheet. ▸ **Use dates from Schedule Sheet** Lets you select a schedule sheet (from the **Select schedule sheet** drop-down). You can populate the **From** and **To** dates according to the schedules available (Example: Actual Start Date and Actual Finish Date) pertinent to the schedule sheet that you have selected for the **Select schedule sheet** drop-down. If these dates are changed on the selected schedule sheet, then the changes will be reflected on cash flow after the next refresh of the curves. ▸ **Use dates from Activity Sheet** Lets you select an activity sheet (from the **Select Activity Sheet** window). After you select using dates from an activity sheet, you need to determine the values for the **Project Type**, **From Date**, and **To Date** fields.

Distribution	Distribution profiles are used to distribute data automatically in the cash flow worksheet. This option enables you to select a distribution profile to use as the default distribution profile for the curve. ▸ **Manual** Lets you enter values into each field manually. ▸ **Auto by Default profile CBS** Click **CBS Profile Distribution** to open the **Distribute by default profile CBS** window. From the **Set Profile** drop-down field select a pre-determined method for distribution (from **Company Level** or **Project Level**). Select one or more WBS codes from the list, and click **Update**. This field lets you select one of the distribution profiles, which are defined in the: ▸ Company Workspace > **Admin** mode > **Standards & Libraries** > **Cash Flow** > **Distribution Profiles**, or ▸ <Project or Shell> > **Cost Manager** > **Cash Flow** > **Cash Flow** log > **Actions** > **Manage Distribution Profiles**. The default profile is used for the initial display and calculations in the cash flow worksheet. You can change the distribution profile from the worksheet. If you do this, the default profile will automatically update to reflect the current selection.
Variance	Your choices are: ▸ **Inflow** ▸ **Outflow** For **CBS**, typically, the **Variance** is set to **Outflow** for a **Actuals** (Spends) type curve. The value will be used to calculate variances against the **Inflow** type curves.

Adding Forecast Curve for Cash Flow by Business Process (Commitments)

A Commitment BP (such as a Base Commit or a Change Commit) is a sub-type of a Cost type BP.

You can build one **Forecast** curve per **Business Process (Commitments)** record.

To add a Forecast curve for cash flow by Business Process (Commitments):

1) Go to your project or shell (**User** mode).
   This is the project or shell that contains the cash flow that you want.

2) From the left Navigator, click the **Cost Manager** node to expand.
3) Click the **Cash Flow** sub-node to open the **Cash Flow** log window (the **Cash Flow** log).

   The **Cash Flow** log is the starting place for cash flow operations. The log displays all existing cash flow curves and also provides options for creating new curves, copying curves, viewing curve properties, and assigning curve usage privileges to other users.
4) Select the cash flow from the **Cash Flow** log window.
5) Click the *gear menu* and click the **Properties** option to open the **Cash Flow Properties** window (or the **Cash Flow Properties** worksheet).
6) In the **Cash Flow Properties** window **General** pane, ensure that a record under the **Business Process (Commitments)** label is selected from the **Detail Level** drop-down list. The options under the **Detail Level** drop-down list are:
   - **Project/Shell**
   - **Summary CBS**
   - **CBS**
   - **Business Process (Commitments)**
7) In the **Cash Flow Properties** window **Curves** pane, click the **Curves** drop-down list and select **Forecast** to open the **Forecast** window.

When you select the **Business Process (Commitments)** option in the **Detail Level** drop-down list, and a **Base Commit** record (from **Select Base Commit Record**) in the **General** pane, and in the **Curves** pane you add **Forecast** curve (from the **Curves** drop-down list), proceed to set up the following parameters:

Granularity	The options that you can select from are: ▸ Single distribution of sum of Base Commit and all changes ▸ By individual record (Base Commit and all changes separately) ▸ By line items within each individual record The cash flow **Granularity** option that you select determines the: ▸ **Distribution Method** options that are available. ▸ Level of record detail available in the cash flow curve. You can roll up Base Commit and Change Commit and see individual records separately, or you can drill to individual line items in a **Business Process (Commitments)** record.
Distribution Method	The options that you can select from are: ▸ Manual entry of values for each cash flow period ▸ Manual entry and Auto distribution of Unassigned - for New records ▸ Manual dates and manual profile selection ▸ Business process dates and default profile selection
Select change orders you want to include	Add or remove business process from the list.
Variance	Your choices are: ▸ **Inflow** ▸ **Outflow** For **Business Process (Commitments)**, typically, the **Variance** is set to **Outflow** for a **Forecast** type curve. The value will be used to calculate variances against the **Inflow** type curves.

Forecast Curve Behavior Test Cases

The following table provides cases, conditions, and times regarding various Forecast curve tests:

Cases	Condition	Time
Forecast Curve	NA	NA
Set in the past	Forecast with Actuals (no Actuals data)	Start Date
Set in the past	Forecast with Actuals (no Actuals data)	End Date
Set in the past	Forecast with Actuals (with Actuals data)	Start Date
Set in the past	Forecast with Actuals (with Actuals data)	End Date
Set in the future	Forecast with Actuals (no Actuals data)	Start Date
Set in the future	Forecast with Actuals (no Actuals data)	End Date
Set in the future	Forecast with Actuals (with Actuals data)	Start Date
Set in the future	Forecast with Actuals (with Actuals data)	End Date

Portfolio Budget Curve

The **Portfolio Manager** allows you to pull the **Baseline**, or **Forecast**, data from more than one project or shell into the following **Portfolio Budget** curves:

- **Approved Budget**
- **Original Budget**
- **Shared Budget**

For an explanation of these options see ***Portfolio Manager Budget Curves*** (on page 215).

The following topics explain how to add a **Portfolio Budget** curve for cash flow by:

- **Project/Shell**
- **Summary CBS or CBS**
- **Commitment** or **Business Process (Commitments)**

Notes: The procedures that follow:

- Assume that you have created your data sources.
- Describe how to add a curve type to an *existing* cash flow (**Cash Flow** log > **Detail Level** column > **Project / Shell**) that does not have a curve.

Adding Portfolio Budget Curve for Cash Flow by Project or Shell

To add Portfolio Budget (**Approved Budget**) curve for cash flow by **Project/Shell**:

1. Select the cash flow from the **Cash Flow** log window.
2. Click the *gear menu* and click the **Properties** option to open the **Cash Flow Properties** window (or the **Cash Flow Properties** worksheet).
3. In the **General** pane select **Project/Shell**.
4. In the **Curves** pane select **Approved Budget**.
5. The **Approved Budget** window (**Curve Type: Portfolio Budget**) opens.
6. Proceed to set up the following parameters:

Cost	Select an option (from the Distribute amount) from field list. The choices are: ▸ **Original** ▸ **Shared** ▸ **Approved**
Currency	Click to open the **Select Currency** window and select the currency for the Portfolio Budget type curve. See ***Portfolio Budget Curve and Currency*** (on page 163) for more information.
Variance	Select **Inflow** or **Outflow** or leave the field empty.

To add Portfolio Budget (**Original Budget**) curve for cash flow by **Project/Shell**:

1. Select the cash flow from the **Cash Flow** log window.
2. Click the *gear menu* and click the **Properties** option to open the **Cash Flow Properties** window (or the **Cash Flow Properties** worksheet).
3. In the **General** pane select **Project/Shell**.
4. In the **Curves** pane select **Original Budget**.
5. The **Original Budget** window (**Curve Type: Portfolio Budget**) opens.
6. Proceed to set up the following parameters:

Cost	Select an option (from the Distribute amount) from field list. The choices are: ▸ **Original** ▸ **Shared** ▸ **Approved**
Currency	Click to open the **Select Currency** window and select the currency for the Portfolio Budget type curve. See ***Portfolio Budget Curve and Currency*** (on page 163) for more information.
Variance	Select **Inflow** or **Outflow** or leave the field empty.

To add Portfolio Budget (**Shared Budget**) curve for cash flow by **Project/Shell**:

1. Select the cash flow from the **Cash Flow** log window.
2. Click the *gear menu* and click the **Properties** option to open the **Cash Flow Properties** window (or the **Cash Flow Properties** worksheet).
3. In the **General** pane select **Project/Shell**.
4. In the **Curves** pane select **Shared Budget**.
5. The **Shared Budget** window (**Curve Type: Portfolio Budget**) opens.
6. Proceed to set up the following parameters:

Cost	Select an option (from the Distribute amount) from field list. The choices are: ▸ **Original** ▸ **Shared** ▸ **Approved**
Currency	Click to open the **Select Currency** window and select the currency for the Portfolio Budget type curve. See ***Portfolio Budget Curve and Currency*** (on page 163) for more information.
Variance	Select **Inflow** or **Outflow** or leave the field empty.

Adding Portfolio Budget Curve for Cash Flow by Summary CBS or CBS

Summary CBS

To add Portfolio Budget (**Approved Budget**) curve for cash flow by **Summary CBS**:

1. Select the cash flow from the **Cash Flow** log window.
2. Click the *gear menu* and click the **Properties** option to open the **Cash Flow Properties** window (or the **Cash Flow Properties** worksheet).
3. In the **General** pane select **Summary CBS**.
4. In the **Curves** pane select **Approved Budget**.
5. The **Approved Budget** window (**Curve Type: Portfolio Budget**) opens.
6. Proceed to set up the following parameters:

Cost	Select an option (from the Distribute amount) from field list. The choices are: ▸ **Original** ▸ **Shared** ▸ **Approved**
Currency	Click to open the **Select Currency** window and select the currency for the Portfolio Budget type curve. See ***Portfolio Budget Curve and Currency*** (on page 163) for more information.
Variance	Select **Inflow** or **Outflow** or leave the field empty.

To add Portfolio Budget (**Original Budget**) curve for cash flow by **Summary CBS**:

1. Select the cash flow from the **Cash Flow** log window.
2. Click the *gear menu* and click the **Properties** option to open the **Cash Flow Properties** window (or the **Cash Flow Properties** worksheet).
3. In the **General** pane select **Summary CBS**.
4. In the **Curves** pane select **Original Budget**.
5. The **Original Budget** window (**Curve Type: Portfolio Budget**) opens.
6. Proceed to set up the following parameters:

Cost	Select an option (from the Distribute amount) from field list. The choices are: ▸ **Original** ▸ **Shared** ▸ **Approved**

Currency	Click to open the **Select Currency** window and select the currency for the Portfolio Budget type curve. See ***Portfolio Budget Curve and Currency*** (on page 163) for more information.
Variance	Select **Inflow** or **Outflow** or leave the field empty.

To add Portfolio Budget (**Shared Budget**) curve for cash flow by **Summary CBS**:

1. Select the cash flow from the **Cash Flow** log window.
2. Click the *gear menu* and click the **Properties** option to open the **Cash Flow Properties** window (or the **Cash Flow Properties** worksheet).
3. In the **General** pane select **Summary CBS**.
4. In the **Curves** pane select **Shared Budget**.
5. The **Shared Budget** window (**Curve Type: Portfolio Budget**) opens.
6. Proceed to set up the following parameters:

Cost	Select an option (from the Distribute amount) from field list. The choices are: ▸ **Original** ▸ **Shared** ▸ **Approved**
Currency	Click to open the **Select Currency** window and select the currency for the Portfolio Budget type curve. See ***Portfolio Budget Curve and Currency*** (on page 163) for more information.
Variance	Select **Inflow** or **Outflow** or leave the field empty.

CBS

To add Portfolio Budget (**Approved Budget**) curve for cash flow by **CBS**:

1. Select the cash flow from the **Cash Flow** log window.
2. Click the *gear menu* and click the **Properties** option to open the **Cash Flow Properties** window (or the **Cash Flow Properties** worksheet).
3. In the **General** pane select **CBS**.

4. In the **Curves** pane select **Approved Budget**.
5. The **Approved Budget** window (**Curve Type: Portfolio Budget**) opens.
6. Proceed to set up the following parameters:

Cost	Select an option (from the Distribute amount) from field list. The choices are: ▸ **Original** ▸ **Shared** ▸ **Approved**
Currency	Click to open the **Select Currency** window and select the currency for the Portfolio Budget type curve. See ***Portfolio Budget Curve and Currency*** (on page 163) for more information.
Variance	Select **Inflow** or **Outflow** or leave the field empty.

To add Portfolio Budget (**Original Budget**) curve for cash flow by **CBS**:

1. Select the cash flow from the **Cash Flow** log window.
2. Click the *gear menu* and click the **Properties** option to open the **Cash Flow Properties** window (or the **Cash Flow Properties** worksheet).
3. In the **General** pane select **CBS**.
4. In the **Curves** pane select **Original Budget**.
5. The **Original Budget** window (**Curve Type: Portfolio Budget**) opens.
6. Proceed to set up the following parameters:

Cost	Select an option (from the Distribute amount) from field list. The choices are: ▸ **Original** ▸ **Shared** ▸ **Approved**
Currency	Click to open the **Select Currency** window and select the currency for the Portfolio Budget type curve. See ***Portfolio Budget Curve and Currency*** (on page 163) for more information.

Variance	Select **Inflow** or **Outflow** or leave the field empty.

To add Portfolio Budget (**Shared Budget**) curve for cash flow by **CBS**:

1. Select the cash flow from the **Cash Flow** log window.
2. Click the *gear menu* and click the **Properties** option to open the **Cash Flow Properties** window (or the **Cash Flow Properties** worksheet).
3. In the **General** pane select **CBS**.
4. In the **Curves** pane select **Shared Budget**.
5. The **Shared Budget** window (**Curve Type: Portfolio Budget**) opens.
6. Proceed to set up the following parameters:

Cost	Select an option (from the Distribute amount) from field list. The choices are: ▸ **Original** ▸ **Shared** ▸ **Approved**
Currency	Click to open the **Select Currency** window and select the currency for the Portfolio Budget type curve. See ***Portfolio Budget Curve and Currency*** (on page 163) for more information.
Variance	Select **Inflow** or **Outflow** or leave the field empty.

Adding Portfolio Budget Curve for Cash Flow by Business Process (Commitments)

To add Portfolio Budget (**Approved Budget**) curve for cash flow by **Business Process (Commitments)**:

1. Select the cash flow from the **Cash Flow** log window.
2. Click the *gear menu* and click the **Properties** option to open the **Cash Flow Properties** window (or the **Cash Flow Properties** worksheet).
3. In the **General** pane select **Business Process (Commitments)**.
4. In the **Curves** pane select **Approved Budget**.
5. The **Approved Budget** window (**Curve Type: Portfolio Budget**) opens.
6. Proceed to set up the following parameters:

Cost	Select an option (from the Distribute amount) from field list. The choices are: ▸ **Original** ▸ **Shared** ▸ **Approved**
Currency	Click to open the **Select Currency** window and select the currency for the Portfolio Budget type curve. See ***Portfolio Budget Curve and Currency*** (on page 163) for more information.
Variance	Select **Inflow** or **Outflow** or leave the field empty.

To add Portfolio Budget (**Original Budget**) curve for cash flow by **Business Process (Commitments)**:

1. Select the cash flow from the **Cash Flow** log window.
2. Click the *gear menu* and click the **Properties** option to open the **Cash Flow Properties** window (or the **Cash Flow Properties** worksheet).
3. In the **General** pane select **Business Process (Commitments)**.
4. In the **Curves** pane select **Original Budget**.
5. The **Original Budget** window (**Curve Type: Portfolio Budget**) opens.
6. Proceed to set up the following parameters:

Cost	Select an option (from the Distribute amount) from field list. The choices are: ▸ **Original** ▸ **Shared** ▸ **Approved**
Currency	Click to open the **Select Currency** window and select the currency for the Portfolio Budget type curve. See ***Portfolio Budget Curve and Currency*** (on page 163) for more information.
Variance	Select **Inflow** or **Outflow** or leave the field empty.

To add Portfolio Budget (**Shared Budget**) curve for cash flow by **Business Process (Commitments)**:

1. Select the cash flow from the **Cash Flow** log window.
2. Click the *gear menu* and click the **Properties** option to open the **Cash Flow Properties** window (or the **Cash Flow Properties** worksheet).
3. In the **General** pane select **Business Process (Commitments)**.
4. In the **Curves** pane select **Shared Budget**.
5. The **Shared Budget** window (**Curve Type: Portfolio Budget**) opens.
6. Proceed to set up the following parameters:

Cost	Select an option (from the Distribute amount) from field list. The choices are: ▸ **Original** ▸ **Shared** ▸ **Approved**
Currency	Click to open the **Select Currency** window and select the currency for the Portfolio Budget type curve. See ***Portfolio Budget Curve and Currency*** (on page 163) for more information.
Variance	Select **Inflow** or **Outflow** or leave the field empty.

Portfolio Budget Curve and Currency

When you define a Portfolio Budget curve within any curve family type (**Project/Shell**, **Summary CBS**, **CBS**, and **Business Process (Commitments)**), you have the option to select the currency (**Currency** field under **Cost**) of the Portfolio Budget data source, from the **Portfolio Manager**.

The **Currency** field is a *required field* (default value: **Project Currency**), if you have **Portfolio Budget** curves. You can change the value of the **Currency** field to another value by opening the curve configuration window.

> **Note**: When you run a report, the value of **Currency**, in the report, is also **Project Currency** unless you have selected another value.

The **Currency** field lists all **Active** and future currencies from the **Exchange Rates** (**Company Workspace** > **Admin mode** > **Standards & Libraries** > **Exchange Rates**). The **Show Currency List** window lists the available currencies that you can select.

Derived Curve

The cash flow Data Sources of type = **Derived** is available to create cash flow curves within any family (**Project/Shell**, **Summary CBS**, **CBS**, and **Business Process (Commitments)**).

When creating a new cash flow curve within any cash flow family:

- Data Sources of type = **Derived** must be enabled only when there is at least one non-Derived (i.e., Baseline, Spends, Forecast, Portfolio Budget, or Custom) type curve exists in the family.
- If there is no non-Derived type curve exists in the family, all Data Sources of type = **Derived** are grayed out.

When the **Derived** type data sources are enabled, and the user clicks at such a data source, then a window is displayed that enables the user to enter the details for creating the new curve.

The following table explains the fields in the **Derived** type cash flow curve configuration window:

Option	Description	Behavior
Name	Captures the name of the cash flow curve as defined in cash flow data sources in Company Workspace > Admin mode	Same behavior as in existing cash flow curves-
Type	Captures the type of cash flow curve viz., Baseline, Custom, Forecast, Spends, Portfolio Budget, Derived.	Same behavior as in existing cash flow curves-
Base Currency	Captures the base currency for user to see and make exchange rate decisions.	Behavior: Read-Only Displays the Base Currency as a read-only value
Source Curve	To select an existing curve which should be used as the basis of the 'Derived' curve.	Behavior - Drop-down List all the non-Derived existing curves within the family in which the 'Derived' curve is being configured. Values are: <Curve Name> (<Type>), example: Shared (Portfolio Budget). **Note**: Derived curve cannot be a source curve to create another Derived curve. Required? (Not Null) - Required option. The user must select a value for this drop-down to complete the curve configuration.

Option	Description	Behavior
Derived Curve Currency	To select the currency that must be used to convert the 'Source Curve'	Behavior - Currency Selector User has the ability to select any currency from Company Workspace > Standard & Libraries > Exchange Rates (active and future) Required? (Not Null) - Required option. The user must select a value for this selector to complete the curve configuration.
Exchange Rate	To define how the exchange rates must be used so that those can be applied to the source curve data. That is to say, should the exchange rate be picked up from as defined in Company Workspace > Standards & Libraries, or should the rate be 'Pegged' to a value as chosen by user.	Behavior: Radio button, two options: Float, Peg Default Value = Float When user selects the option 'Float', another drop-down option appears: 'Use Rate as' (see below) .
Use Rate as	To choose how to make use of exchange rate data from Company Workspace > Standards & Libraries, especially if more than one rate is found for a given period (month / year)	Behavior -Radio button Values: - At the beginning of the period - At the end of the period - A weighted average for the period Required? (Not Null) - Required option if 'Exchange rate' = 'Float'. If the user clicks 'OK' on the window without selecting this option, the following message appears: Invalid data entered in the following field(s): Input Required: Use rate as.

If you choose the option ‘Exchange Rate' = ‘Peg', the system provides another block titled ‘Peg Rate as':

- If Base Currency = Project Currency, then Peg Rate options should be available for conversion Base Currency -> Derived Curve Currency
- If Base Currency ≠ (not equal) Project Currency and Project Properties list the conversion Base Currency -> Project Currency as ‘Peg' option, then also behavior should be same as above, i.e., list options only for Base Currency -> Derived Curve Currency
- If Base Currency ≠ (not equal) Project Currency but Project Properties list the conversion Base Currency -> Project Currency as ‘Float' option, then peg rate options are available for both:
  - Base Currency -> Derived Curve currency
  - Base currency -> Project Currency

The following explains the Derived' curve ‘Peg' Rate options:

Option: Peg Rate options

Description: To define the value by which the exchange rate must be pegged. The user will have to enter a value manually, or point to an attribute on shell attribute form / single record BPs within the shell, or choose if they wish to use the pegged rate from shell properties. In the latter case, the system will look into the value of the data element each time when rendering the curve.

Behavior: Behavior - Radio button

Base Currency -> Derived Curve Currency: There should be helpful text informing user that conversion is for 1.0 Base Currency -> Derived Currency (text: 1.0 Base Currency =) This is be followed by three options:

- Constant
- Dynamic
- Use Project Rate

Default Radio Option: Constant

If you select 'Constant', the system opens a field (DD = Decimal Amount). The decimal places appear when user types a digit after decimal point, only; otherwise, an integer value will appear. The field lets the user enter an Integer or Decimal value.

Default Radio Option: Dynamic

If you select ‘Dynamic', the system enables two drop-downs which will capture the Data Source for the multiplication factor:

Drop-down 1:

The shell attribute form of the current shell within which curve is being created.

The shell attribute forms of all parent/grandparent shells of current shell in which curve is being created (i.e., attribute forms of all shells in hierarchy of current shell, up to the root)

All single record BPs within the shell in which curve is being created.

The above should be prefixed by identifiers ‘Shell Attribute Form / <Shell name>', or ‘Single Record BPs / <BP name>. For example:

Shell Attribute Form / All Properties

Shell Attribute Form / Buildings

Shell Attribute Form / Sites

Single Record BPs / Project Information

Single Record BPs / Important Contacts

…

Drop-down 2:

Lists all linked and custom Data Elements from the selected source form whose Data Definition = Integer / Decimal Amount / Currency Amount. (No standard elements)

The user can change the location / hierarchy of a shell. So the above two drop-down values must be refreshed each time the curve is refreshed.

> **Note**: If the user chooses the options ‘Constant' / ‘Dynamic', then the user must define a value (Constant integer/decimal or Dynamic data source). If not selected, the user will see a standard prompt after clicking ‘OK':

‘Invalid data entered in the following field(s): Input Required: ‘Constant' or ‘Data Source'

The user can choose to use the third option: ‘Use Project Rate' Selecting this option does not open up any additional field, but the system picks up the exchange rate as defined in project properties (described in Peg rate as ‘Use Project Rate' section below). The user receives an applicable error message in either of following scenarios:

- The user selects a ‘Derived Curve Currency' which does not exist in Project Properties (Message: Selected currency is not defined in project.), or
- The user selects a ‘Derived Curve Currency' which is listed in Project Properties, but its conversion rate is set to ‘Float' (Message: Selected currency does not have pegged rate within project.).

Error should be presented when user clicks ‘OK' on curve configuration window.

Base Currency -> Project Currency

The radio options are for user to select how to use the rate from Company Workspace > Standards & Libraries (label: Use Rate as).

The radio options are visible only if Base Currency ≠ Project Currency AND rate Base Currency -> Project Currency is set as ‘Float' in project properties.

Options same as when user chooses to ‘Float' rate:

You can choose to use the rate as:

- At the beginning of the Period
- At the end of the period
- A weighted average for the period

Default value: At the beginning of the period.

> **Note**: This block ‘Peg Rate options' is displayed only if ‘Exchange Rate' is selected as ‘Peg'.

The following provides some scenarios.

User selects the Peg Rate option for Base Currency -> Derived Curve Currency as = ‘Use Project Rate', and the curve configuration is successful (i.e., ‘Derived Curve Currency' is listed in Project Rate with a pegged conversion rate).

The user then goes to Project Properties and changes the exchange rate for Base Currency -> Derived Curve Currency as ‘Float', and reopens the cash flow.

Since the curve has not been refreshed, the cash flow worksheet continues to show data as per previous value.

If user opens the ‘Derived' curve configuration window, the message, "Selected currency does not have pegged rate within project" appears.

If user refreshes the curve, then cash flow worksheet shows all values as zero as the curve configuration is not longer valid.

If user opens the ‘Derived' curve configuration window, the message, "Selected currency does not have pegged rate within project" appears.

In case Base currency ≠ Project Currency

User selects the Peg Rate option for Base Currency -> Derived Curve Currency as either of the three possible options,

Base Currency -> Project Currency is set as ‘Peg' in project properties. So there are no additional options to choose from, the curve configuration is successful

Then user goes to Project Properties and changes the exchange rate for Base Currency -> Project Currency as ‘Float'

Then reopens the cash flow

Since the curve has not been refreshed, the cash flow worksheet continues to show data as per previous value.

If user opens the ‘Derived' curve configuration window, the options for Base Currency -> Project currency appears, and the default value is selected as ‘At the beginning of the period'.

If user refreshes the curve, then cash flow worksheet values are refreshed as per the options for Base Currency -> Project Currency.

When user selects a currency to derive the curve, the system uses the data from source curve per period and convert it into the selected currency as per the float or peg exchange rate option as selected by user within curve definition:

If user chooses the ‘Float' option, the system uses the exchange rates as defined in Company Workspace > Standards & Libraries > Exchange Rates.

If the user chooses ‘Peg' option, exchange rate values should be as per user selection in the block ‘Peg Rate as'.

See following sections on how the derived curve should calculate its data per period.

> **Note**: The user can select the currency to be same as source curve currency. In that case, the derived curve would be same as source curve, exchange rates would not apply.

Exchange Rate = Float (Rate at beginning of the period)

The user can select the Derived curve definition such that the exchange rate for currency conversion from source to destination is picked up from Company Workspace > Standards & Libraries in such a way that the Rate from the beginning of the period is used.

In other words, when doing the currency conversion, of all the available rates for a given period, the system selects the Rate closest to the beginning of the period.

> **Note**: If more than one rate is defined for the same day, the system picks the latest rate on that day. If no exchange rate is available for a past date, the system uses zero.

Exchange Rate = Float (Rate at the end of the period)

The user can select the Derived curve definition such that if multiple exchange rates are available for a given period (month / year), the system uses the rate ‘At the end of the period'.

In other words, when doing the currency conversion, of all the available rates for a given period, the system selects the Rate closest to the end of the period.

Exchange Rate = Float (A weighted average for the period)

If the user chooses to apply the exchange rate as a weighted of all values for a given period (Exchange Rate = ‘Use a weighted average for the period'), then the value will be based on the number of days in a given month. That is to say, the total of all "Rate * No. of days it is applicable during the period" divided by "Total number of days within the period~" (~Month / Year).

When the Exchange Rate = ‘Float', Oracle recommends that the user set a ‘Refresh' frequency (Cost Manager > Cash Flow > Refresh drop-down > Set Frequency...), for the Derived curves, to cover the following scenarios:

Scenario 1

Future Exchange Rates from ‘Company Workspace > Standards & Libraries' can get changed with time. If ‘Derived' cash flow curve is not set to automatic refresh, it will continue to hold values as per older exchange rate values (unless manually opened & refreshed)

Scenario 2

The ‘Source Curve' might undergo a change in its configuration / values. If ‘Derived' cash flow curve is not set to automatic refresh, it will continue to hold values as per older source curve data (unless manually opened & refreshed).

Exchange Rate = Peg

This option means that the user does not want to use exchange rate as captured within Company Workspace > Standards & Libraries > Exchange Rates, but the user prefers to define the rate as one of the following:

- Constant
- Dynamic
- Use Project Rate

If Constant:

To do the currency conversion (1.0 Base Currency = <constant value> Derived Curve currency), the system uses the constant value entered by the user.

The source curve defaults to be in Project currency. If Base Currency ≠ Project Currency, the system picks the exchange rate for Base Currency -> Project Currency from Project Properties and makes appropriate conversion to calculate the Derived curve in Derived Currency as selected by user.

If Base Currency -> Project Currency in Project properties is set as ‘Float', the system uses the option as selected by user for ‘Base Currency -> Project currency' conversion.

The system picks rates from Company Workspace > Standards & Libraries > Exchange Rates by using one of the following options selected by user:

- At the beginning of the period
- At the end of the period
- A weighted average for the period

If Dynamic:

When rendering the curve, the system accesses the Data Element (DE) selected by the user and uses the value as the exchange rate to do conversion (1.0 Base Currency = <Selected DE value> Derived Curve currency).

If the DE value is blank/null (in source shell attribute form/single record BP), the system applies zero as the exchange rate.

If Base Currency ≠ Project Currency, the system does one of the following:

- Picks the exchange rate for Base Currency -> Project Currency from Project Properties
- Calculates the Derived curve (in Derived Currency) as selected by user.

If Use Project Rate:

The exchange rate is pegged as specified in the shell properties.

If Base Currency ≠ Project Currency, the system does one of the following:

- Picks exchange rate for Base Currency -> Project Currency from Project Properties
- Calculates the Derived curve (in Derived Currency) as selected by user.

Note: For Commitment type curves, user can flip the view between Project and Transaction currencies. The system calculates for Source Curve data -> Derived Curve data by taking the source data in Project currency.

When the Exchange Rate = ‘Peg', Oracle recommends that the user set a ‘Refresh' frequency (Cost Manager > Cash Flow > Refresh drop-down > Set Frequency...), for the Derived curves, to cover the following scenarios:

Scenario 1

Peg rates as defined in project properties might undergo a change. If ‘Derived' cash flow curve is not set to automatic refresh, it will continue to hold values as per older pegged exchange rate values (unless manually opened & refreshed).

Scenario 2

The ‘Source Curve' might undergo a change in its configuration / values. If ‘Derived' cash flow curve is not set to automatic refresh, it will continue to hold values as per older source curve data (unless manually opened & refreshed).

For all types of Cash flow families, the ‘Derived' curve values are always displayed in its currency, as selected by user in curve configuration window.

For Commitment type cash flow families, the user can choose to view the family curves in ‘Project' / ‘Transaction' currency.

In either case, the ‘Derived' curve renders in the currency, as selected by user for the ‘Derived' curve configuration window--irrespective of whether the rate is ‘Float' or ‘Pegged'.

The following explains special scenarios related to the exchange rate.

Special Scenario 1

The user selects a ‘Source Curve' while configuring the ‘Derived' curve

Completes ‘Derived' curve configuration and clicks ‘OK'

Removes the ‘Source Curve' itself from the cash flow family definition.

In this scenario:

When the user opens the curve worksheet, the derived curve will render all values as zero--irrespective of whether the cash flow family has been refreshed or not.

When the user opens the curve configuration window, the ‘Source Curve' drop-down continues to show original value. When the user clicks ‘OK', the message, "Invalid curve configuration" is displayed.

Special Scenario 2

The user selects the ‘Exchange Rate' as ‘Peg' > Peg as ‘Dynamic', and then chooses a data source DE from grandparent shell attributes.

The user completes ‘Derived' curve configuration and clicks 'OK'.

The user changes the location of shell in which the curve was defined.

In this scenario:

If the new parent is the same type of shell (or another shell having the data Source DE on its attribute form), then this is not an error scenario. The curve renders by using the Rate value from new location.

If, however, the new parent does not have the Data Source DE on its attribute form, then the curve configuration is invalid:

When the user opens the curve worksheet, the Derived curve renders all values as zero.

When the user opens the curve configuration window, the Data Source continues to show original value. When the user clicks ‘OK', the message, "Invalid curve configuration" is displayed.

Special Scenario 3

The user selects a ‘Source Curve' while configuring the ‘Derived' curve,

The user completes ‘Derived' curve configuration and clicks 'OK'.

The user removes the ‘Source Curve' Datasource from company Workspace Cash Flow Datasources definitions.

In this scenario:

When the user opens the curve worksheet, the Derived curve (as well as the source curve) renders all values as zero--irrespective of whether the cash flow family has been refreshed or not.

When the user opens the Derived curve configuration window, the ‘Source Curve' drop-down shows original value, and when the user clicks ‘OK', the message, "Invalid curve configuration" is displayed.

Monthly Actuals (Spends) for Derived Forecast Curve

If the checkbox is checked in the configuration and then in the Portfolio Manager, the user will be able to the see the monthly breakdown for actuals and the values seen would be read-only for months prior to the current month for the current year. The behavior and validation, which exist in support for monthly actuals for Forecast curve, is available for Derived forecast curve as well.

Actuals (Spends) for Derived Actuals (Spends) Curve

If Derived Actuals (Spends) curve is defined, the system uses the Derived Actuals (Spends) curve data, and the derived forecast data will be pushed from Cash Flowcash flow to PPM. The Derived Actuals (Spends) data links to the source actuals.

In case of multiple Derived curve for the same project with inconsistent settings (either different currency or settings such as float versus peg), a cumulative data value is displayed in the project currency, which is used by PPM, and the red triangle is displayed against that cell to depict the inconsistency.

When you hover over, this warning message is displayed: `{ppmname} Portfolio Manager received data from multiple actuals curves that have inconsistent settings.`

The correct value will be seen after the settings are corrected.

Custom Curve

You can create a **Custom** curve when you want to create and compare curves in a Cash Flow worksheet, but you do not want to associate them with data sources of the other curve types (Baseline, Forecast, Actuals (or "spends"), or Portfolio).

The following topics explain how to add a **Custom** curve for cash flow by:

- **Project/Shell**
- **Summary CBS or CBS**

Custom curves are not available for cash flow by **Business Process (Commitments)**.

The **Custom** curve setup is essentially the same as setting up **Baseline** curves.

> **Note**: The following procedures describe how to add a curve type to an *existing* cash flow (**Cash Flow** log > **Detail Level** column > **Project / Shell**) that does not have a curve.

Adding Custom Curve for Cash Flow by Project or Shell

To add a **Custom** curve for cash flow by **Project/Shell**:

1. Select the cash flow from the **Cash Flow** log window.

2. Click the *gear menu* and click the **Properties** option to open the **Cash Flow Properties** window (or the **Cash Flow Properties** worksheet).
3. In the **General** pane select **Project/Shell**.
4. In the **Curves** pane select **Custom**.
5. The **Custom** window opens.
6. Proceed to set up the following parameters:

Cost	**Note**: You can choose the cost column when creating a curve in a project or shell but not in templates. Select *one* of the following options: ▸ **Manual** Lets you manually enter amounts for each period. This option will be available if you have chosen **Manual** in the **Distribution** drop-down list. You can enter cost information in the **Total** field on the worksheet. ▸ **Distribute amount from Cost Sheet Column** Lets you use the default distribution profile. This option will be available if you have chosen **Auto by default profile** in the **Distribution** drop-down list Examples of column: Approved Budget Revisions, Approved Commitment Changes, Approved Contracts, and so forth.

Schedule	Lets you define the range of dates (what dates to start the curve and end the curve) to use to plot the cash flow data. **Note**: If you choose to take dates from the schedule sheet elements, the system uses the Master schedule sheet for the project or shell. Select *one* of the following options for each date: ▸ **Manual** Lets you manually enter the date in the cash flow worksheet. ▸ **Use dates from Schedule Sheet** Lets you select a schedule sheet (from the **Select schedule sheet** drop-down). You can populate the **From** and **To** dates according to the schedules available (Example: Actual Start Date and Actual Finish Date) pertinent to the schedule sheet that you have selected for the **Select schedule sheet** drop-down. If these dates are changed on the selected schedule sheet, then the changes will be reflected on cash flow after the next refresh of the curves. ▸ **Use dates from Activity Sheet** Lets you select an activity sheet (from the **Select Activity Sheet** window). After you select using dates from an activity sheet, then you need to determine the values for the **Project Type**, **From Date**, and **To Date** fields.

Distribution	Distribution profiles are used to distribute data automatically in the cash flow worksheet. This option lets you select a distribution profile to use as the default distribution profile for the curve. Select *one* of the following options for how to distribute the data automatically between cash flow time periods: ▸ **Manual** Lets you enter values into each field manually. ▸ **Company Level** Lets you select a pre-determined method for distribution. Your options are: ▸ Linear ▸ S curve ▸ Front Loaded ▸ Back Loaded ▸ **Project Level** Lets you select from a list of available project levels.
Variance	Select **Inflow** or **Outflow** or leave the field empty.

Adding Custom Curve for Cash Flow by Summary CBS and CBS

The following explains how to add a **Custom** curve for cash flow by both **Summary CBS** and **CBS**.

To add a **Custom** curve for cash flow by **Project/Shell**:

1. Select the cash flow from the **Cash Flow** log window.
2. Click the *gear menu* and click the **Properties** option to open the **Cash Flow Properties** window (or the **Cash Flow Properties** worksheet).
3. In the **General** pane select **Summary CBS**, or **CBS**.
4. In the **Curves** pane select **Custom**.
5. The **Custom** window opens.
6. Proceed to set up the following parameters, for **Summary CBS**, or **CBS**:

Cost	Select *one* of the following options: ▸ **Manual** Lets you manually enter amounts for each period. This option will be available if you have chosen **Manual** in the **Distribution** drop-down list. You can enter cost information in the **Total** field on the worksheet. ▸ **Distribute amount from Cost Sheet Column** Lets you use the default distribution profile. This option will be available if you have chosen **Auto by default profile** in the **Distribution** drop-down list Examples of column: Approved Budget Revisions, Approved Commitment Changes, Approved Contracts, and so forth.

Schedule	Lets you define the range of dates (what dates to start the curve and end the curve) to use to plot the cash flow data. **Note**: If you choose to take dates from the schedule sheet elements, the system uses the Master schedule sheet for the project or shell. Select *one* of the following options for each date: ▸ **Manual** Lets you manually enter the date in the cash flow worksheet. ▸ **Use dates from Schedule Sheet** Lets you select a schedule sheet (from the **Select schedule sheet** drop-down). You can populate the **From** and **To** dates according to the schedules available (Example: Actual Start Date and Actual Finish Date) pertinent to the schedule sheet that you have selected for the **Select schedule sheet** drop-down. If these dates are changed on the selected schedule sheet, then the changes will be reflected on cash flow after the next refresh of the curves. ▸ **Use dates from Activity Sheet** Lets you select an activity sheet (from the **Select Activity Sheet** window). After you select using dates from an activity sheet, then you need to determine the values for the **Project Type**, **From Date**, and **To Date** fields.

Distribution	Distribution profiles are used to distribute data automatically in the cash flow worksheet. This option enables you to select a distribution profile to use as the default distribution profile for the curve. ▸ **Manual** Lets you enter values into each field manually. ▸ **Auto by Default profile CBS** Click **CBS Profile Distribution** to open the **Distribute by default profile CBS** window. From the **Set Profile** drop-down field select a pre-determined method for distribution (from **Company Level** or **Project Level**). Select one or more WBS codes from the list, and click **Update**. This field lets you select one of the distribution profiles, which are defined in the: ▸ Company Workspace > **Admin** mode > **Standards & Libraries** > **Cash Flow** > **Distribution Profiles**, or ▸ <Project or Shell> > **User** mode > **Cost Manager** > **Cash Flow** > **Cash Flow** log > **Actions** > **Manage Distribution Profiles**. The default profile is used for the initial display and calculations in the cash flow worksheet. You can change the distribution profile from the worksheet. If you do this, the default profile will automatically update to reflect the current selection.
Variance	Select **Inflow** or **Outflow** or leave the field empty.

Creating Project or Shell Level Cash Flow Curves

There are multiple ways to create a new cash flow curve or worksheet.

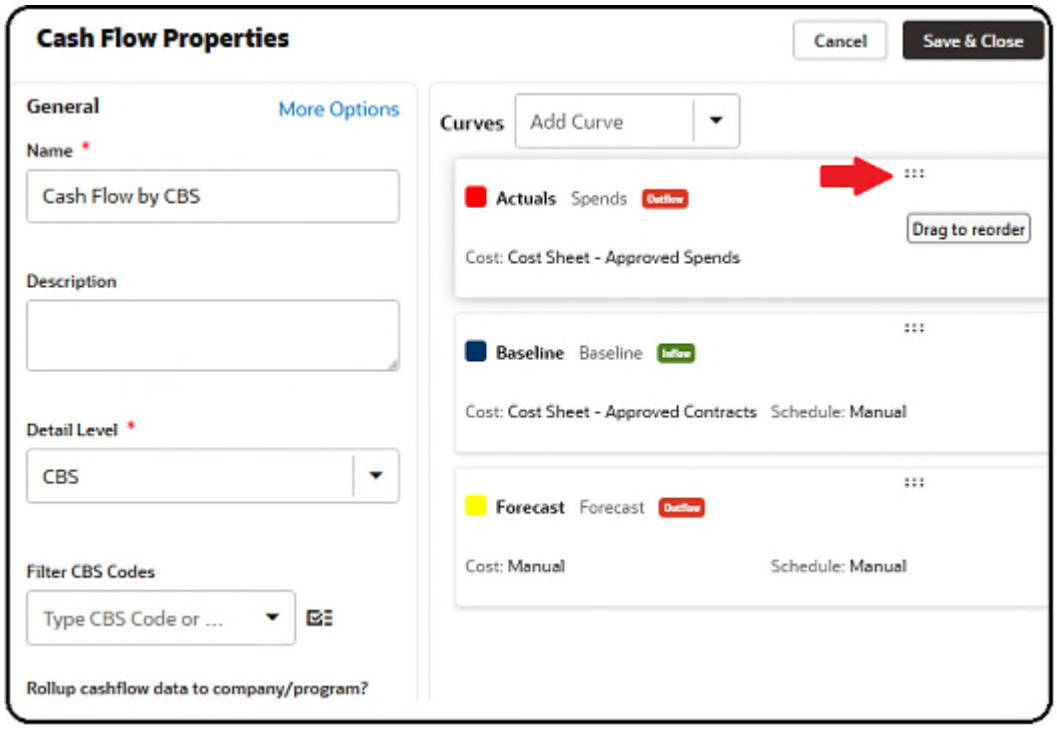
- You can create a new cash flow curve *manually*. (**Create** > **Manual**)
- You can create a new cash flow curve *from a template*. (**Create** > **From Template**)
- You can create a **Summary Cash Flow** curve. See ***Creating a New Summary Cash Flow Curve*** (on page 210). (**Create** > **Summary Curve**)
- You can also create a new cash flow curve by *coping* an existing cash flow curve.

Cash flow curves require a data source which your administrator can create in the **Standards & Libraries** module (Company Workspace > **Admin** mode). For details, refer to the *Unifier Modules Setup Administration Guide*.

> **Note:** You must have permission to access and configure cash flows.

To change the order of the Cash Flow curves, on the cash flow worksheet graph:

1) Go to the **Cash Flow** log and click to select the cash flow.
2) Open the *gear menu* (⚙) for the selected cash flow and select **Properties** to open the **Cash Flow Properties** window.
3) On the right pane, hover over the **Drag to order** icon (⋮⋮) for the curve that you want to move, right-click on the icon and hold.
4) Move the curve to where you want it to be displayed on the cash flow worksheet graph and release the hold.



> **Note**: Changing the curves order in the **Cash Flow Properties** window

will also change the curve order in the **All Curves** tab of the cash flow worksheet.

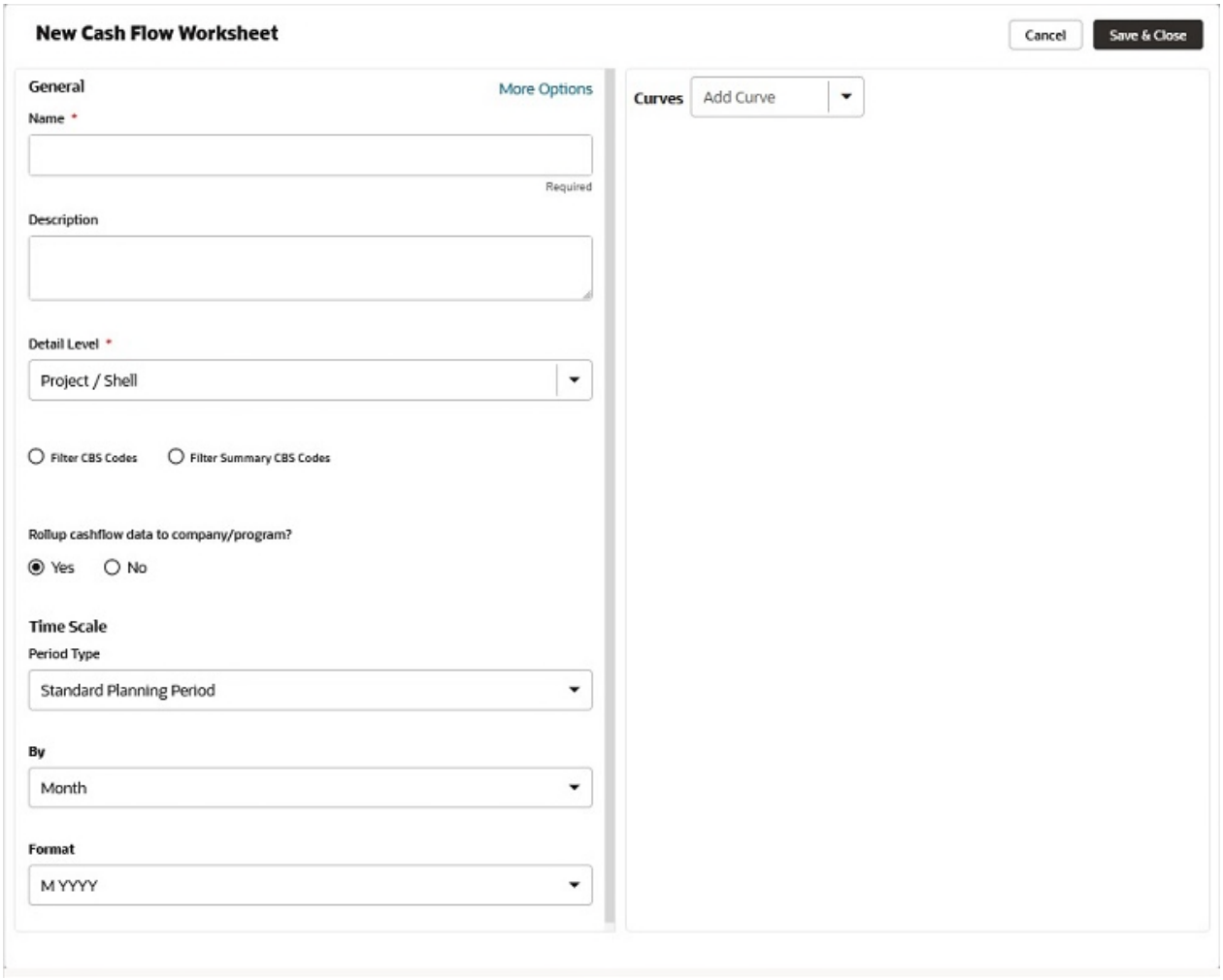
The following sections describe the basics of how to create a new project or shell level cash flow curve worksheet.

Creating a New Project or Shell Cash Flow Curve Manually

To create a new project or shell cash flow curve manually:

Note: The red asterisk next to a field box indicates that the field is a required field. You will not be able to save your changes without entering a value in that field.

1) Go to the project or shell (**User** mode).
2) From the left Navigator, click the **Cost Manager** node to expand.
3) Click the **Cash Flow** sub-node to open the **Cash Flow** log window (the **Cash Flow** log).
4) From the toolbar, click **Create** drop-down list and select **Manual** to open the **New Cash Flow Worksheet** window, as shown below.
5) Enter values in the fields, as explained in the following sections.
6) To save your changes and create a new cash flow, click **Save & Close**. To discard your changes, or close the window, click **Cancel**.



Entering Values in General Pane

Enter values in the following fields, as described below.

Name

Enter a unique name for the curve in this field.

Description

(Optional) Enter a brief description in this field.

Detail Level

The selected option determines the level of data the cash flow curves will display. You can select one of the following options:

Project/Shell

To track your cash flow for the entire project or shell. For example, Baseline and Actuals curves might chart the budget and cash outlay across the entire project.

Summary CBS

To track cash flow by summary CBS codes. In order to be able to select this option, the Cost Sheet used in the project or shell must be a tree structure.

CBS

To track the cash flow within a project or shell at the CBS Code level. This allows you to track the cash flow across the project for specific CBS Codes, or for all CBS Codes.

Oracle recommends that you define unique leaf level cost codes, in cost sheets, and use those unique leaf level cost codes in their cash flows.

Business Process (Commitments)

To track the cash flow associated with a particular BP record and its line items. This includes, for example, a base contract and optionally their referenced Change Commits. This option lets you select from:

- **Business Process**: Click the drop down menu and choose a business process. Listed are the Project/Shell level business processes of type "Base Commit." When creating a template, choose the one that is likely to be used in the projects/shells the template will be used in. When creating the curve in a Project/Shell from the template, you may need to verify that the business process chosen here is active in the project or shell, or pick another from the list.
- **Reference Elements**: The worksheet will display the reference elements. By default, the Record Number will display as the number. You can click the drop down menu and choose an element to display as the Name (Record Number, Status or Title).
- **Base Commit Record**: This is selectable in a project or shell, but not in a template. Choose the commitment record from the list of available records in the project or shell. Each commitment record can be selected only once.

You can set up the automatic creation of a cash flow curve when a Base Commit record is created and completed or reaches a particular step. This is done in the BP Setup for the business process.

Filter CBS Codes

Specify **Filter CBS Codes** (for hierarchical CBS structures only) that are included in the cash flow data. If no codes are specified, then the cash flow curves will reflect all of the CBS codes present on the project cost sheet.

Filter Summary CBS Codes

Specify **Filter Summary CBS Codes** (for hierarchical CBS structures only) that are included in the cash flow data. If no codes are specified, then the cash flow curves will reflect all of the CBS codes present on the project cost sheet.

Rollup cashflow data to company/program?

Yes: The curve *will roll up* to program or company cash flow the next time the curves are refreshed.

No: The curve *will not roll up* to program or company cash flow the next time the curves are refreshed.

Time Scale

Your **Period Type** options are:

- **Standard Planning Period**

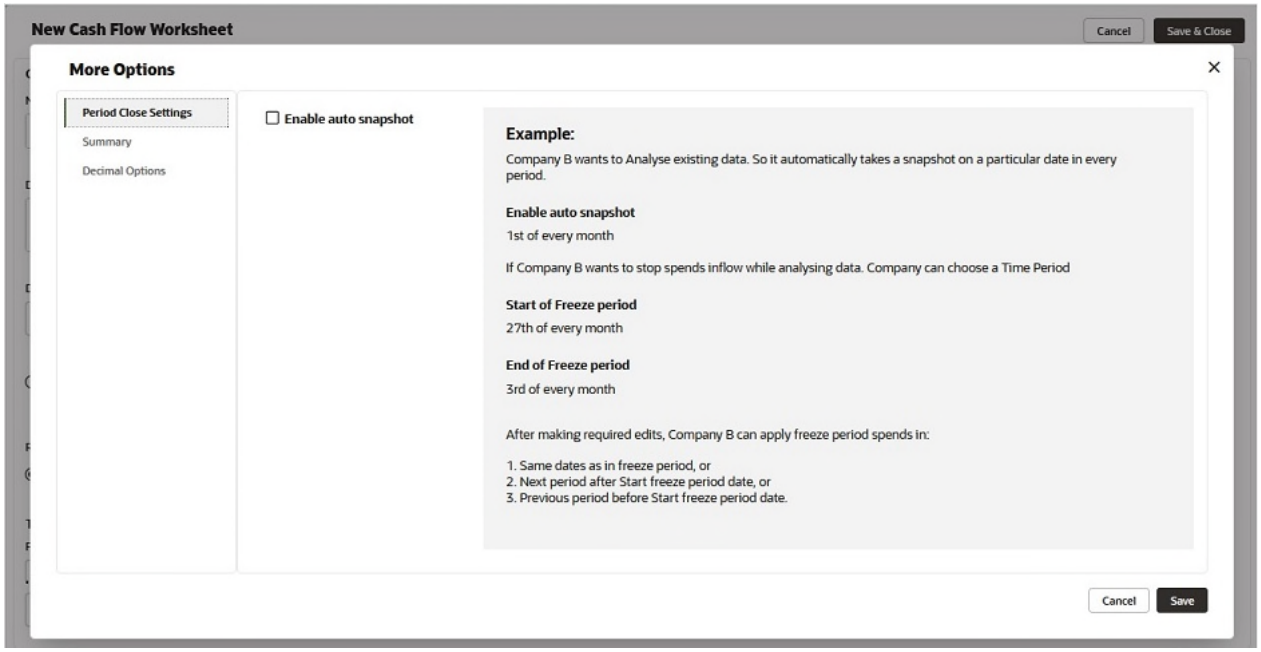
- **Financial Periods**

Proceed to set the time (monthly or yearly) and format.

To save your changes, click **Save & Close**. To discard your changes, or close the **Cash Flow Properties** window, click **Cancel**.

Entering Values in General Pane (More Options)

When you click the **More Options** link in the **General** pane, the **More Options** window opens, as shown.



The **More Options** window contains the following tabs on the left-hand pane, and each tab provides additional options for the cash flow. Enter values in the fields of the following tabs, as described below.

Period Close Settings tab	This tab allows you to set the option: **Enable auto snapshot** If you select this option, then: If you selected Month for Time Scale: You can choose a specific date each month to automatically take a snapshot, or specify a particular day (such as the first Monday of the month). If you selected Year for Time Scale: You can specify the exact date to take the snapshot each year (or a particular day such as the first Monday of January). After an auto-snapshot is taken, the curve

	will be refreshed immediately. Actuals (or "spends") will resume after the auto-snapshot is completed. Examples of using Enable auto snapshot on, Cutoff spends, and Resume Spends Company A wants to take an auto snapshot of its cash flow data every time period. Company A would choose a particular date (such as the 3rd of the month for Month, or January 3 for Year). The system would take the snapshot and refresh the cash flow curve. They do not select the Cut off spends option. Company B regularly reviews and revises forecast projections during fixed days every time period. Because it does not want new Spends records to hit the Cash Flow WorkSheet during this period, they choose the Cut off spends option. This option requires that Enable auto snapshot be selected first. The company sets this option so that an auto snapshot is taken of their changes just before spends are resumed. Snapshots can then be used for comparison of previous forecasts with the current month. Any spends records that came in during the forecast period are not lost; the Resume Spends option determines whether those spends records will be included in the previous month's cash flow, or pushed to the next time period. **Cutoff spends** This option is applicable for Actuals (or "spends") type curves. Selecting this option will temporarily stop spends business processes (for example, Invoices) from hitting the Cash Flow WorkSheet during analysis periods. The **Enable auto snapshot** option must be selected first. Actuals (or "spends") will resume after the auto-snapshot is completed. If no value is specified, then the last date

	of the current month is presumed. The system marks the time of the Cutoff spends date at the beginning of the day. For example, on June 30, the data can become locked at the beginning of the day and not at the end of the day, therefore, preventing the user from making any last minute changes before the start of the next month. **Apply Spends to** The selections under this period close settings option allow you to apply spends to an effective date or before/after a Cutoff spends date. By default, Cutoff spends will resume immediately after an auto-snapshot is taken. If there is a gap between the Cutoff spends date and the Enable auto snapshot date, any spends that came during that period are not lost. For example, if a Cutoff spends date is October 26 and the Enable auto snapshot on date is November 2, (and the Time Scale is monthly) that defines the freeze period. Any spends that come in on October 27, 28, 29, 30, 31, and November 1 will not hit the cash flow sheet during the freeze period. After the Enable auto snapshot on date is reached, spends will be included back in October for spends (Oct 27-31) or November for spends (Nov 1-2), and the effective date will be retained. The same month/year as the effective date The text of the options under Apply Spends to change based on the selection that you made for the Time Scale (By: Month or By: Year). If this option is chosen, spends data is included back in the current period after the freeze period is lifted. The final output is similar to the case where no period close settings are applied since the

	effective date is retained. Spends for Oct 26-31 will be included in October and Nov. 1-2 spends will be included for November. For example, if the cutoff date is the 26th of October and the snapshot date is the 2nd November, the freeze period is Oct 26 - Nov 2nd. Any spends that come in on Oct 27, 28, 29, 30, 31 and Nov. 1, and 2 will not show on the cash flow sheet during the freeze period. After the auto snapshot date is reached, these spends will be included back in either Oct for spends (Oct 27-31) or Nov for spends (Nov 1- 2) and the effective date will be retained. The next month/year if after the cutoff date After the freeze period is lifted, spends data from the cutoff date to the end of the month will be included in the next month/year. Spends for Oct 26-31 will be included in November and Nov. 1-2 spends will be included for November. The previous month/year if on or before the cutoff date After the freeze period is lifted, spends data from the start of the month up to the cutoff date will be included in the previous month/year. Spends for Oct 26-31 will be included in September and Nov. 1-2 spends will be included for November. During the Cutoff spends period, even if automatic refresh of the curve occurs as set in the Schedule tab, spends data will not hit the cash flow sheet until spends are resumed again.
Summary tab	This tab allows you to auto add the selected curve to a selected summary curve. This tab contains a list of available summary curves to choose from.

Decimal Options tab	This tab provides two options: ▸ **Decimal Options**: To specify the number of decimal places supported for amounts throughout the cash flow, select this option. ▸ **Use Currency Decimal Precision**: To ensure that the cash flow honors the number of decimals used within areas such as Base Currency, Project Currency, and Transaction Currency, select this option.

When finished, click **Save**. To discard changes, or to close window, click **Cancel**.

Entering Values in Curves Pane

In the **Curves** pane, the **Curves** drop-down list enables you to add the following curves, based on available data sources:

- **Actuals**
- **Approved Budget**
- **Baseline**
- **Custom**
- **Forecast**
- **Original Budget**
- **Shared Budget**

To save your changes, click **Save & Close**. To discard your changes, or close the window, click **Cancel**.

The following provides additional details about cash flow (Detail Curves) levels in a project or shell.

For Cash Flow by Project/Shell Detail Level

Curves pane

Distribute amount from a Cost Sheet column field and From/To Dates. This is where you add the curves based on available data sources.

Baseline, **Forecast**, **Portfolio Budget**, **Derived**, and **Custom** curves

If you want to automatically distribute a Cost amount from a cost column, the column must be selected in the project or shell. You can choose a curve for a project or shell template as long as you are creating a new project or shell from the template and are copying both the curve and the cost sheet.

Actuals (or Spends) curve

Because you must select a cost sheet column associated with Spends data in the project or shell, a Spends curve can only be created in a project or shell (or similar to the above, in a project/shell template). You will not be able to add an Actuals (Spends) curve in a Company level template.

Forecast curve

If you define Forecast to start at the end of the Actuals (Spends) curve, the Forecast options use data from the Spends curve. Forecast options can only be set if a Spends curve is present.

Portfolio Budget curve

The Portfolio Budget curve shows current project-row plan data from a Portfolio Sheet. When plan data changes, it becomes visible in the cash flow graph as a parallel curve so project managers can clearly see the variance between their projections and portfolio planner-initiated changes.

From Date and To Date

These fields can be set up to pull start and finish dates from the master schedule sheet in the project or shell. These can be selected in a project or shell template. At runtime, be sure the master schedule sheet is set up and has dates in the date element fields chosen for the curves.

In manual mode, the system pegs cost data distribution to the From Date. If there are date changes, the system shifts the curve on the timeline based on From Date modifications. Each time period (month or year) on the curve retains the value of the original distribution as long as the duration remains the same. If date changes make the cash flow curve duration longer or shorter, the system will not re-balance or redistribute cost data to match the modified curve length (the data will change).

For Cash Flow by CBS Detail Level

Curves pane

Use dates from Schedule Sheet field - Effective for the baseline curve only, you can view cost distribution information by CBS code in a schedule sheet.

The properties window for each curve type displays these settings:

Distribute amount from cost sheet column field and From/To Date fields. This is similar to the "For Cash Flow by Project/Shell Detail Level" above.

Auto by default profile by CBS field.

For Baseline, Forecast and Custom curves, you cannot select "Auto by default profile by CBS" in a Company level template, but you can in the Project/Shell, since this setting relies on the CBS codes used in the project or shell. You can choose it for a Project/Shell template as long as you are creating a new project or shell from the template and are copying both the curve and the cost sheet.

You will not be able to double-click the CBS Summary to view the CBS details.

For Cash Flow by Summary CBS Detail Level

Curves pane

Distribute amount from cost sheet column field and From/To Date fields. This is similar to the "For Cash Flow by CBS Detail Level" above.

Auto by default profile by Summary CBS field. Similar to CBS detail level, for Baseline, Forecast and Custom curves, you cannot select "Auto by default profile by Summary CBS" in a company level template, but you can in the project or shell, and a project or shell template as long as you are creating a new project or shell from the template and are copying both the curve and the cost sheet.

For Cash Flow by Commitment Detail Level

General pane

Business Process and Base Commit Record fields.

For a Commitment detail level, you must select the Base Commit type business process to use. Ensure that you select business processes that are being used in the project or shell.

In the Base Commit Record field, you must select the record at runtime. This is not selectable in the template, since records do not exist in templates. The list displays all records you have permission to view. If a detail curve exists for that record, you will not be able to choose the same record again.

Curves tab

Include Change Commits and Spends business processes.

If you chose these options, ensure that you have selected Change Commits that are being used in the project or shell, and are associated with the selected Base Commit.

If the cash flow is attached to a Portfolio Manager scenario, the planner-modified baseline curve appears adjacent to the original baseline in the cash flow worksheet. This lets the project manager easily spot the difference between the initial projection and the planned suggestion.

Creating a New Project or Shell Cash Flow Curve by Auto-distribution

As stated, the Cash Flow module enables you to visualize the distribution of costs planned, spent, and forecasted against time periods.

Example

If you spent $1000, $1500, $800, and $1000 in four months, then you can manually enter each amount in the corresponding time period, and the data can be displayed in a graphical format.

The manual distribution occurs when you set the distribution as manual and manually enter the data in all monthly periods; however, you can switch between a manual and a distribution profile.

You can access the **Manual** option through the:

- **Profile** drop-down
- **Profile** drop-down in Bulk Edit

> **Note**: The Profile column in the worksheet will remain editable, regardless of the distribution type.

During the run time, the **Profile** column drop-down will have distribution profile options, and you can choose a distribution profile and amounts that must be distributed in each period. The remainder will remain in the unassigned column.

When you select the **Manual** option, the system will retain the amounts of the previous selections, and they are available for override.

The system uses the latest saved **Profile** for cash flow, while refreshing the data.

Distribution profiles are used to distribute data automatically in the cash flow worksheet. Since entering amounts for each period is sometimes a tedious task, you can use a combination of manual and auto distributions to enter amounts. So, to make the entry method simpler, you can select a distribution profile which would automatically distribute the amounts in each period.

Example

You have spent $1000 in 4 months, equally. Instead of entering $250 in each month I can select a linear distribution curve to distribute automatically.

The system allows you to switch to:

- Auto-distribution in the worksheet and manually override the amounts even if the curve configuration is set as manual.
- Manual and override auto-distributed amounts, when the curve configuration is set as auto-distribution.

To create a new project or shell cash flow curve by auto-distribution:

1) In your shell, click the **Cost Manager** grouping node and click **Cash Flow** to open the log.
2) Click **Create** and select **Manual** to open the **New Cash Flow Worksheet** window.
3) Enter the required information in the left pane, and on the right pane select the curve type (for example, **Baseline**) to open the curve type window.
4) In the curve type window, enter the values for the following fields:
   - **Cost**

     You can select **Manual** (to manually enter cost data), or you can select a cost under the **Distribute amount from Cost Sheet Column** (to have a set cost data).
   - **Schedule**

     You can select **Manual** (to manually enter the schedule data), or you can select dates from the **Schedule Sheet** or dates from the **Activity Sheet**.
   - **Distribution**

     You can select **Manual** (to manually enter the distribution data), or you can select a distribution method from the **Company Level**, or the **Project Level**. For example, you can select **S curve** from the Company Level block.
   - **Variance**

     You can select
     - **Inflow** (the amount assigned to the project as the budget) or
     - **Outflow** (the amount that has been spent and forecasted to be spent).
5) When you finish, click **Add**.

   The **New Cash Flow Worksheet** window opens. On the **New Cash Flow Worksheet** window, the **Curves** block on the right pane, the distribution method is set as manual (**Distribution: Manual**).
6) Click **Save & Close** to go back to the **Cash Flow** log window.
7) From the **Cash Flow** log window, click to open the cash flow that you have created.

8) Click the split screen icon (icon with three vertical dots), or slider, to see the cash flow details pane. Proceed to use the **Expand** or **Dock** icons  (top right corner) to maximize or to adjust the cash flow detail pane (**All Curves**) screen for better visibility.

   The cash flow details (the right pane) is presented through a table in the right pane shows the data for the curves. Each row of the table corresponds to one of the curves on the graph and displays the curve data in columns. The data in these columns show the distribution of cost, and the total of cost is the value in the **Total** field.

   - If you are doing an *auto distribution* by using a distribution profile, then the values in these columns will be calculated based on the distribution percentages.
   - If you are doing a *manual distribution*, then you will enter the values into each time period (distributing the amount in the **Total** column).

9) In the cash flow details pane click the curve that you have selected curve type (for example, **Baseline**) to open the curve type window. The following scenarios will explain how to switch manual distribution to auto distribution and vice versa.

   Scenario 1 (Manual to Auto):

   The cash flow worksheet with default distribution profile is set to empty or manual distribution. The user is trying to override the manually distributed amounts with the auto-distributed profile selection, and save the worksheet.

   In this scenario, the **Profile** column will be editable so that user can quickly select the profile for distribution, but the selection will not be saved.

   The user does not need to provide the distribution for each month in the request to update the distribution values. The user can use the profile value to distribute the values automatically.

   Scenario 2 (Auto to Manual)

   The cash flow worksheet with default distribution profile is set as S Curve. The user is trying to override the auto-distributed values, and save the worksheet.

   In this scenario, although the distribution profile is set as auto amounts in each period, the fields will be editable.

   The user can choose to manually override the auto-distributed values, and the Profile will automatically change to **Manual**.

   The user can also choose a distribution profile and override the distributed amount manually.

Editing data (Manual to Auto)

When you switch from manual to a Profile the system updates the amounts in each period accordingly. When you override the auto distributed value, the Profile will change to empty, automatically.

You must save your changes to the **Manual** values by clicking **Save**, on the worksheet.

If you click Cancel, then the worksheet will reset to the previously saved state.

Profile Options Menu in auto-distributed curve

The **Profile** drop-down field displays **Manual**, as an option. The profile will be manual when no distribution profile is selected in the auto-distribution profile, in the **Properties** window. You can switch between manual and distribution regardless of the profile selection, in the **Properties** window.

Bulk Edit

The **Profile** drop-down field in the bulk edit dialog is editable when the distribution is set to both auto-distribution or manual distribution. You can bulk update the **Profile** for multiple rows from **Profile** to manual or vice versa using the **Bulk Edit** option within the worksheet.

Refresh

When you refresh the cash flow log, the system will check against each CBS to identify whether the distribution is manual, or the distribution uses a distribution profile and then updates the amounts in each period accordingly.

> **Note**: You can have a combination of manual and auto-distributed values in the same curve.

CSV import

Export in Manual Distribution

You can override the manual distributed costs by using a profile from the **Profile** column, in the worksheet.

In the Exported CSV template, the **Profile** column will be empty, but you can provide a valid profile name to quickly allow the distribution of that row by using profile through a CSV input request.

User can import the setup or distribution data by using the **Import** option. The system will combine the **Import** options as one single import option.

You can update the values within the **Profile** column in the worksheet.

If you select a profile as input

In the input CSV template, if you select profile, then the system will override the manual distributed costs with the profile, after a successful import.

Export in Auto-Distribution

The **Export** option in the worksheet, when the curve has auto-distribution selected should show all the worksheet column data and Profile column should show 'Manual' option if selected in UI. User can update the distributed costs when profile is selected as 'Manual' through CSV import.

When auto-distribution is selected for a curve, the **Export** option shows data for all of the worksheet, and the **Profile** column shows **Manual**.

You can update the distributed costs when the profile is selected as **Manual**, through CSV import.

Rest Services

You can update the cash flow curve or the distribution by using RESTful web services. You can:

- Update profile to manual in auto-distributed curve, or
- Update manual to profile in manual distributed curve.

Creating a New Project or Shell Cash Flow Curve From a Template

There are two types of cash flow templates:

- **Company level templates**
  Created in the Company Workspace (**Admin** mode).
- **Project or shell level templates**
  Created in a project or shell.

When creating new curves from templates, only the properties of the curve are copied; data and permissions are not copied.

In addition, curve properties such as cost sheet column selections will not be copied, even if they have been selected in a project or shell template (because you can select a template from any project or shell template).

You can pre-set curve options, except, for example, the business process records and cost sheet columns, which are set at run time.

To create a new project or shell cash flow curve from a template:

> **Note**: The red asterisk next to a field box indicates that the field is a required field. You will not be able to save your changes without entering a value in that field.

1) Go to the project or shell (**User** mode).
2) From the left Navigator, click the **Cost Manager** node to expand.
3) Click the **Cash Flow** sub-node to open the **Cash Flow** log window (the **Cash Flow** log).
4) From the toolbar, click **Create** drop-down list and select **From Template** to open the **Cashflow Templates** window.
5) Click to select the template that you want from the list and click **Select** to open the **New Cash Flow Worksheet** window.
   Note that the following required fields have values per the template that you have selected:
   - **Name**
   - **Detail Level**
6) Enter values in the fields, or edit the properties where necessary.
7) To save your changes and create a new cash flow, click **Save & Close**. To discard your changes, or close the window, click **Cancel**.

When you create a new cash flow curve from a template, the curves configured in a template are automatically included and within each curve the following details are captured:

- **Distribution**
  The Distribution field is populated either with a distribution profile or manually.
- **Cost**
  The Cost field is populated manually or with a particular cost sheet column.
- **Schedule**
  The Schedule field is populated manually or with obtaining schedules from activity sheets or schedule sheets.

- **Variance**
  The Variance field remains not selected.

Within the **Forecast** curve, all additional values are pulled into their respective fields.

Creating a New Project or Shell Cash Flow Curve by Copying

You can copy the data from one curve to another, but the destination curve must be a manual curve which means that the Distribution, From, and To dates must be manually entered data.

You cannot copy data to a curve that pulls data from a business process record, cost sheet or schedule sheet. You can, however, copy data from an auto-distribution curve.

- For example, Spends curves pull actual spends transaction data from a cost sheet column (usually, cost sheet columns that show spends business process transactions). If you want to work with this data manually, you can create a custom curve in the Properties, be sure that all data entry is manual, then copy the spends curve data to the manual custom curve.
- For another example, you can make a copy of the original Baseline curve, make adjustments, and save the revised version.

When you copy data, any existing data in the destination curve will be overwritten with the data from the source curve.

To create a new project or shell cash flow curve by copying:

1) Open the **Cash Flow** log.
2) Select a curve from the log and click **Copy** from the gear menu to open the **New Cash Flow Worksheet** window.
3) Enter a unique **Name** for the new curve. The **Name** field in this window will be prefixed with "Copy of."
4) Make changes as needed and click **Save & Close** to complete creating the new cash flow curve and add it to the log.

Auto-creating a Cash Flow Curve from a Base Commit Record

As long as cash flow is set up in the project or shell you are working in, and you have permissions to both the cash flow and to the commit BP record, you can create and view a Commitment detail level cash flow worksheet directly from the business process record. There can only be one cash flow curve per record; that is, if you create the commitment curve through the record, the base commit cannot be referenced in a new cash flow curve.

The following explains how the auto creation of a Commitment cash flow curve takes place.

- Auto-creation is enabled in the Business Process Workflow Setup for the project or shell. It is only available for base commit business processes and requires a Commitment detail level template.

- For a workflow business process, the administrator can specify the step on which to auto-create a commitment cash flow curve. The curve is created upon reaching that step when a user accepts the task.
- For a non-workflow business process, the administrator specifies the business process status that will trigger curve auto-creation from the commitment cash flow template specified in the business process setup.
- Given the proper permissions, you will see the **Cash Flow** button on the business process record regardless of whether the auto-create feature has been enabled in the business process setup. This means that you have the option to create a commitment cash flow curve manually if the curve has not yet been auto-created.
- Creating the curve manually (by completing the curve properties, or by copying a project/shell level template) means the system will ignore an auto-create trigger when the record reaches the specified step or status.

A few things to keep in mind:

- If a detail curve exists for the record, clicking the **Cash Flow** button will open the cash flow worksheet, which is view-only when opened from here.
- If there are changes to the base commit record (such as additional or modified line item amounts), these changes will be reflected on the commitment cash flow curve the next time it is refreshed.
- If the base commit record is terminated after the cash flow curve has been created, the curve will not be deleted. However, the next time the curve is refreshed, any data will be removed.

To auto-create a Commitment detail level curve from a Base Commit BP record:

1. Open the base commit business process record. If cash flow is set up and you have permissions set, a **Cash Flow** button is available.
2. Click the **Cash Flow** button on the business process toolbar.
    - If a cash flow **Commitment detail level** curve exists, the cash flow worksheet opens.
        - If at least one curve summary exists in your project, you can add this commitment curve to a summary curve listed on the Properties Summary tab.
        - From the View menu click
    - If the curve does not yet exist, you will be prompted to create a new curve. The Cash Flow by Commitment window opens. Choose one of the options:
        - **Manual**. This allows you to create a new curve manually.
        - **From Template**. This allows you to copy from a template. Click the **Select** button. The Templates log opens. Select a template to copy then click **Select**.
3. Click **OK** on the Cash Flow by Commit window. The Properties window opens.
4. Complete the Properties window and click **OK**. The cash flow worksheet will open to display the data. The curve will be saved in the Cash Flow log.

To open a cash flow worksheet from a Base Commit record

1. Open the base commit business process record. If cash flow is set up and you have permissions set, a **Cash Flow** button is available.
2. Click the **Cash Flow** button on the toolbar.

- If a cash flow Commitment detail level curve exists, a view-only cash flow worksheet opens.
- If the curve does not exist, you will be prompted to create a new curve manually or by copying a template.

Company Level Cash Flow and Roll up Curve

Similar to the **Cash Flow** *Detail Curves* in projects or shells, you can conduct the following operations on a Company level (**User** mode) Roll up Cashflow curve (**Company Workspace** > **User** mode > **Cost Manager** node > **Cash Flow** sub-node > **Cash Flow** log):

> **Note**: If you are working in a project or shell, the **Cash Flow** log displays cash flow **Detail Curves**. If you are working in a program or company (**User** mode), the log displays the company level Roll up Cashflow curves.

- Create a new **Roll up Cashflow**
- Set up the status of one or more **Roll up Cashflows** to **Active** or **Inactive**
- Set up the permissions for one or more **Roll up Cashflows**
- Delete one or more **Roll up Cashflows**
- Print **Roll up Cashflows**
- Find **Roll up Cashflows** within the **Cash Flow** log
- Select one **Roll up Cashflow** and preview the associated cash flow curve

However, you cannot work with the data presented in the Company level Roll up Cashflow curve. This is because a Company level Roll up Cashflow curve data is generated at the project or shell level and then the data is rolled up to the Company level.

The procedures involved in working with a Company level Roll up Cashflow curve are similar to the *Detail Curves* in a project or shell.

The following topics explain the components of a Company level Roll up Cashflow curve.

Company Level Cash Flow Log

To access the Company level **Cash Flow** log window follow these instructions:

1) Go to the **Company Workspace** tab.
2) Switch to **User** mode.
3) From the left Navigator, click **Cost Manager** node to open. You should see the **Cash Flow** sub-node. If you cannot see the **Cash Flow** sub-node, ensure that your company administrator has granted you the necessary permissions to the sub-node.
4) Click the **Cash Flow** sub-node to open the *Company level* **Cash Flow** log window.

The *Company level* **Cash Flow** log window is divided into the following sections, as shown in the following screen capture:

- Title
- Log

- Properties tabs

Company Level Cash Flow Log Toolbar Options

The Company level **Cash Flow** log window has the following toolbar options:

- **Create**
  - **Roll up Cashflow**

    Click this option to open the **New Roll up Cashflow** window.

    Enter values in all of the fields under the **General**, **Status**, and **Data Sources**. To save your changes, click **Save & Close**. To discard your changes, or close the window, click **Cancel**.
- **Actions**

  The **Actions** drop-down list lets you set the status and permissions for one or more Company level Roll up Cashflow curves. It also lets you delete one or more Company level Roll up Cashflow curves. The options within the **Actions** drop-down list are:
  - **Status**
    - **Active**
    - **Inactive**
  - **Permissions**

    Lets you open the **Permissions** window and add permissions permissions for the detail curve or details curves that you have selected. In the **Add** field box you can type in the name of the user, users/group, or group. You can also select to view (**View** drop-down list) **Users**, **Users/Groups**, or Groups. Use the **Find on Page** icon to search and find users listed within the **Permissions** window. Use the arrow to go to the next page. When finished, click **Save**. To discard changes, or to close window, click Cancel.

Click the **Select** icon to open the **User and Group Picker** window. This window lets you select users, groups, or both from the **View** drop-down list (**Users/Groups**, **Groups**, **Users**) and see pertinent details about your selection, as explained below:

- **Users/Groups**: Displays the **Name** and **Company** information for the **Users/Groups**, in two columns.
- **Groups**: Displays the **Name** information for the **Groups**, in one column.
- **Users/Groups**: Displays the following information for the **Users**: **Name** - **User Type** - **Company** - **Employee ID** - **Title** - **Department** - **Manager Name**

When finished, click **Done**. To discard changes, or to close window, click **Cancel**.

- **Delete**

  Lets you delete one or more Company level Roll up Cashflow curves.

- **Print**

  Select one or more cash flow curves from the log and click **Print** from the toolbar to access the following print options:

  - **Print**

    To open a window that allows you to select a method to print the selected curves.

  - **Export to CSV**

    To open a dialog box that allows you to save a Microsoft Excel Comma Separated Values (CSV) File version of the selected curves, so you can export the file to a desired destination.

  - **Export to Excel**

    To open a dialog box that allows you to save a Microsoft Excel Worksheet version of the selected curves, so you can export the file to a desired destination.

- **Find on Page**

  Use this option to find specific items in the Cash Flow log. Type the desired values in the boxes that appear above each column.

Company Level Cash Flow Log

The *Company level* **Cash Flow** log lists all of the Roll up Cashflow curves.

When you select a Company level Roll up Cashflow curve, in the Company level **Cash Flow** log, the *gear menu* (⚙) becomes active. Use the *gear menu* (⚙) to:

- **Open**

  To open the selected Company level Roll up Cashflow curve worksheet. See ***Company Level Cash Flow Roll up Curve Worksheet (Standard View)*** (on page 196) for details.

- **Copy**

  Lets you copy the information of the selected Company level Roll up Cashflow curve in order to create a new Company level Roll up Cashflow curve. When you click this option, the **New Roll up Cashflow** window open which allows you to change the copied information in order to create a new Company level Roll up Cashflow curve. The **Name** field will contain the name of the copied, or selected, Company level Roll up Cashflow curve with the word "Copy" added at the beginning of the name.

- **Delete**

Lets you delete one or more Company level Roll up Cashflow curves.

- **Status**
  - **Active**
  - **Inactive**
- **Permissions**

  Lets you open the **Permissions** window and add permissions for the Company level Roll up Cashflow curve, or the Company level Roll up Cashflow curves, that you have selected.

  In the **Add** field box you can type in the name of the user, users/group, or group.

  You can select to view (**View** drop-down list) **Users**, **Users/Groups**, or Groups.

  Use the **Find on Page** icon to search and find users listed within the **Permissions** window.

  Use the arrow (bottom of the page, right-hand side) to go to the next page. When finished, click **Save**. To discard changes, or to close window, click **Cancel**.

  Click the **Select** icon to open the **User and Group Picker** window. This window lets you select users, groups, or both from the **View** drop-down list (**Users/Groups**, **Groups**, **Users**) and see pertinent details about your selection, as explained below:
  - **Users/Groups**: Displays the **Name** and **Company** information for the **Users/Groups**, in two columns.
  - **Groups**: Displays the **Name** information for the **Groups**, in one column.
  - **Users/Groups**: Displays the following information for the **Users**: **Name** - **User Type** - **Company** - **Employee ID** - **Title** - **Department** - **Manager Name**

  When finished, click **Done**. To discard changes, or to close window, click **Cancel**.
- **Properties**

  Use this option to open the **Roll up Cashflow Properties** window. In this window, you can modify the general, status, data sources, and time scale information of your selected Company level Roll up Cashflow curve.

When you select more than one Company level Roll up Cashflow curve in the Company level **Cash Flow** log, the *gear menu* (⚙) becomes active and allows you to just delete the selected Company level Roll up Cashflow curve.

Company Level Cash Flow Log Columns

The Company level **Cash Flow** log window has the following columns:

- **Name**

  Displays the name of the Roll up Cashflow curve.
- **Description**

  Displays the description of the Roll up Cashflow curve, if available.
- **Time Scale**

  Displays of the time scale (by month or year, for the period type) for the Roll up Cashflow curve.
- **Status**

  Displays whether the by month or year, for the Roll up Cashflow curve is active or inactive.
- **Last Saved**

Displays the date the Roll up Cashflow curve was last saved.

Company Level Cash Flow Log Properties Tabs

The following lists the Company level **Cash Flow** log properties tab:

- **Preview**

  When a Company level Roll up Cashflow curve is selected, this tab shows a preview of the graph.

- **Permissions**

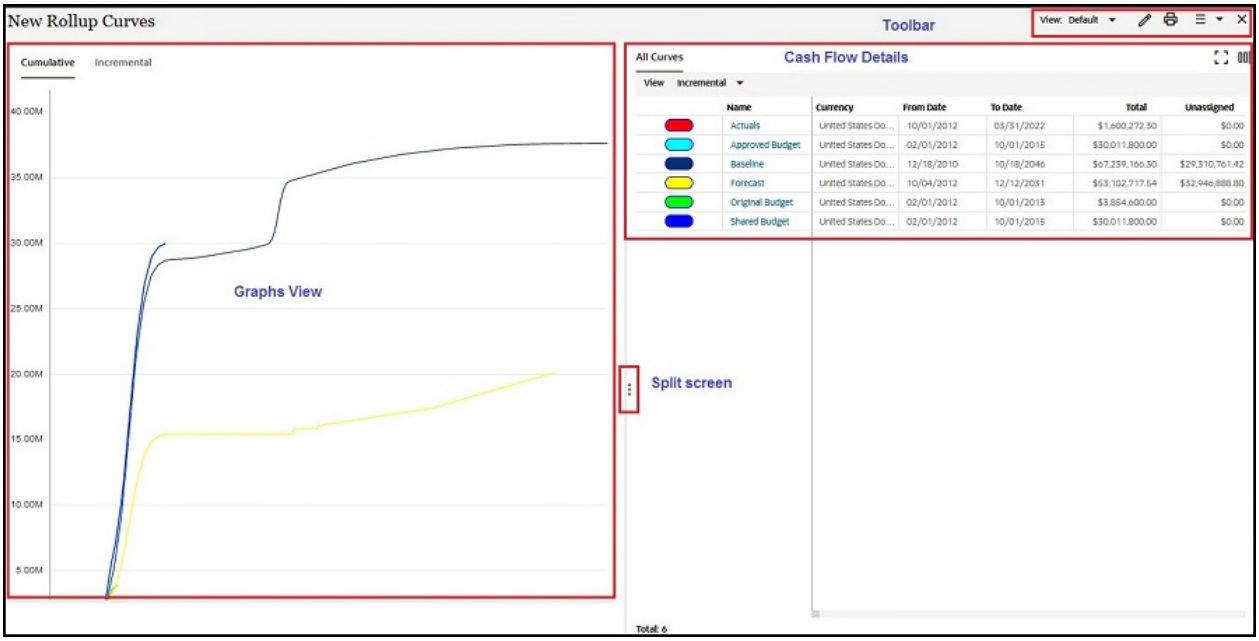
  When a Company level Roll up Cashflow curve is selected, this tab shows, this tab shows the types of permissions that have been assigned to each user or group.

Company Level Roll up Cashflow Curve Worksheet

To open a Company level Roll up Cashflow curve worksheet for an existing curve:

1) Go to the **Company Workspace** tab.
2) Switch to **User** mode.
3) From the left Navigator, click **Cost Manager** node to open. You should see the **Cash Flow** sub-node. If you cannot see the **Cash Flow** sub-node, ensure that your company administrator has granted you the necessary permissions to the sub-node.
4) Click the **Cash Flow** sub-node to open the **Cash Flow** log window.
5) Select a Company level Roll up Cashflow curve from the Company level **Cash Flow** log and double-click the curve to open the Company level Roll up Cashflow curve worksheet window.

The Company level Roll up Cashflow curve worksheet window is divided into two panes. You can open the right-hand pane by way of moving the split screen (slider) to display the cash flow details pane, as shown in the following typical screen capture.



Company Level Roll up Cashflow curve worksheet Window Toolbar

The toolbar options are:

- **View** drop-down

  Use this option to "**Create New View**" for the worksheet, or to "**Manage Views**" that have already been created.

  Similar to the errors and warnings in BPs, if there are any alerts or errors on the cash flow curve (errors due to mismatch in time scale of project cash flows), then an error icon is displayed the "View" controls that shows the number of errors. When you click on the error icon, a window opens that lists the error messages corresponding to the project cash flow curves.
- **Edit View**

  When you click the **Edit View** option, the **Edit View** window opens. In this window you can select the curves that you want to view on the log (for **Curves**, **Inflow**, and **Outflow**). In this window you can also add columns and group your columns when you click the **Group By** option.
- **Print**

  Select one or more cash flow curves from the log and click **Print** from the toolbar to access the following print options:
  - **Print**

    To open a window that allows you to select a method to print the selected curves.
  - **Export to CSV**

    To open a dialog box that allows you to save a Microsoft Excel Comma Separated Values (CSV) File version of the selected curves, so you can export the file to a desired destination.
  - **Export to Excel**

    To open a dialog box that allows you to save a Microsoft Excel Worksheet version of the selected curves, so you can export the file to a desired destination.
- **Snapshot** menu drop-down

  For important details about this option, see ***Working with Company Level Snapshots*** (on page 204).

Company Level Roll up Cashflow curve worksheet Window Graphs View

The graphs view pane provides graphs presentation for the following Roll up Cashflow curves:

- **Cumulative** curve

  A Cumulative curve displays the net of all cash flows over a period of time.
- **Incremental** curve

  An incremental curve displays the cash flow for a certain period.

Company Level Roll up Cashflow curve worksheet Window Cash Flow Details

Note: Use the **Expand** or **Dock** icons  (top right corner) to maximize or to adjust the cash flow details pane (**All Curves**) screen for

better visibility.

The **View** option in the cash flow details pane lets you switch between the **Incremental** and **Cumulative** data values. The data sources that have been selected in the properties, are listed within each view selection. If you double-click and open each of the data sources, as described below, then you can see pertinent details for that data source, as described below.

Actuals (Spends)

If you select the **Incremental** view and click **Actuals** (Spends) (under the **Name** column), then the actual spent amounts, per time period, are displayed. These values are not editable and cannot be distributed. You can use the toolbar options to:

- **Export**

  To export one or more curves to a CSV file, which is automatically named after the cash flow worksheet.
- **Refresh**

  To update the data, or amounts, on the page.
- **Find on Page**

  To find a particular amount.

If you select the **Cumulative** view, then the net of all cash flows, over a period of time is displayed, with the same toolbar options as for the **Incremental** view.

Approved Budget

If you select the **Incremental** view and click **Approved Budget** (under the **Name** column), then the actual spent amounts, per time period, are displayed. These values are not editable and cannot be distributed. You can use the toolbar options to:

- **Export**

  To export one or more curves to a CSV file, which is automatically named after the cash flow worksheet.
- **Refresh**

  To update the data, or amounts, on the page.
- **Find on Page**

  To find a particular amount.

If you select the **Cumulative** view, then the net of all cash flows, over a period of time is displayed, with the same toolbar options as for the **Incremental** view.

Baseline

If you select the **Incremental** view and click **Baseline** (under the **Name** column), then the actual spent amounts, per time period, are displayed. These values are not editable and cannot be distributed. You can use the toolbar options to:

- **Export**

  To export one or more curves to a CSV file, which is automatically named after the cash flow worksheet.
- **Refresh**

  To update the data, or amounts, on the page.

- **Find on Page**

  To find a particular amount.

If you select the **Cumulative** view, then the net of all cash flows, over a period of time is displayed, with the same toolbar options as for the **Incremental** view.

Forecast

If you select the **Incremental** view and click **Forecast** (under the **Name** column), then the actual spent amounts, per time period, are displayed. These values are not editable and cannot be distributed. You can use the toolbar options to:

- **Export**

  To export one or more curves to a CSV file, which is automatically named after the cash flow worksheet.
- **Refresh**

  To update the data, or amounts, on the page.
- **Find on Page**

  To find a particular amount.

If you select the **Cumulative** view, then the net of all cash flows, over a period of time is displayed, with the same toolbar options as for the **Incremental** view.

Original Budget

If you select the **Incremental** view and click **Original Budget** (under the **Name** column), then the actual spent amounts, per time period, are displayed. These values are not editable and cannot be distributed. You can use the toolbar options to:

- **Export**

  To export one or more curves to a CSV file, which is automatically named after the cash flow worksheet.
- **Refresh**

  To update the data, or amounts, on the page.
- **Find on Page**

  To find a particular amount.

If you select the **Cumulative** view, then the net of all cash flows, over a period of time is displayed, with the same toolbar options as for the **Incremental** view.

Shared Budget

If you select the **Incremental** view and click **Shared Budget** (under the **Name** column), then the actual spent amounts, per time period, are displayed. These values are not editable and cannot be distributed. You can use the toolbar options to:

- **Export**

  To export one or more curves to a CSV file, which is automatically named after the cash flow worksheet.
- **Refresh**

  To update the data, or amounts, on the page.
- **Find on Page**

  To find a particular amount.

If you select the **Cumulative** view, then the net of all cash flows, over a period of time is displayed, with the same toolbar options as for the **Incremental** view.

Working with Company Level Snapshots

A snapshot displays the graph, curves, and curve data on the worksheet. Snapshots are not editable. You can take a snapshot and view it in project, transaction currencies, and reports. You can manually save a snapshot of a cash flow curve at any time.

When you open a company level Roll up Cashflow curve (from the **Cash Flow** log), you can click the **Snapshot** menu icon (the three horizontal line icon) and access the following options:

Option	Description
Create Snapshot	Use this option to create, or to take a snapshot of a cash flow curve, at any time. See "To take a snapshot at any time," below.
Snapshot Log	Use this option to view, open, or delete the snapshots that have been created or taken of a cash flow curve. The Title, Creator, and Created on data is also provided on this window.
Properties	Use this option to open the **Roll up Cashflow Properties** window. You can see the following cash flow properties information: ▸ **General** (Name, Description, Decimal Places, Status, and Data Sources) ▸ **Time Scale** (Period Type, By, and Format) ▸ **Status** (Active and Inactive) ▸ **Data Sources** (Available Sources and Selected Sources)

To take a snapshot at any time:

1. Open your cash flow curve.
2. Click the **Snapshots** menu icon (the three horizontal line icon) and select **Create Snapshot**. The **Create Snapshot** window opens. The window also displays the time-stamp of snapshot for reference.
3. Enter a title for your snapshot, in the **Title** field, and click **Create**.

To view a created snapshot:

1. Open the cash flow curve.
2. Click the **Snapshots** menu icon (the three horizontal line icon) and select **Snapshot Log**. The **Snapshot Log** window opens.
3. Choose a snapshot to view and double-click on the snapshot to open the cash flow curve or worksheet snapshot.

4. Maximize the window to be able to identify the following elements:
    - Top block
    - Containing cost-related at-glance numeric data as well as detailed information, when you click the **Show More** option.
    - Bottom block
    - Containing curves corresponding to the cost periods and variances.
    - Screen split (icon with three vertical dots)
    - Click on the icon and drag to expand the window. You can use the **Expand** and **Dock** icons (top right-hand corner) to adjust this screen. This screen lets you access detail information for actuals, baseline, forecast, and most other interactive elements, but the snapshot data is not editable.

To search for a snapshot:

1. Open the cash flow worksheet. Click the **Snapshots** menu (hamburger) icon and choose **Snapshot Log**. The **Snapshot Log** window opens.
2. In the **Snapshot Log** window, click **Find on Page** to open the find box for each column (**Title**, **Creator**, and **Created On**).
3. Proceed to enter a value in one or all of the boxes to search and find your desired snapshot.
4. To restore the entire list, click the **Find on Page**.

To delete a snapshot:

1. Open the cash flow worksheet. Click the **Snapshots** menu (hamburger) icon and choose **Snapshot Log**. The **Snapshot Log** window opens.
2. In the **Snapshot Log** window, click to select a snapshot, click the **Delete** icon, and follow the prompts.

To print a snapshot:

1. Open the cash flow worksheet. Click the **Snapshots** menu (hamburger) icon and choose **Snapshot Log**. The **Snapshot Log** window opens.
2. In the **Snapshot Log** window, click to select the **Print** icon and select one of the following options:
    - **Print**
    - To open a window that allows you to select a method to print the selected curves.
    - **Export to CSV**
    - To open a dialog box that allows you to save a Microsoft Excel Comma Separated Values (CSV) File version of the selected curves, so you can export the file to a desired destination.
    - **Export to Excel**
    - To open a dialog box that allows you to save a Microsoft Excel Worksheet version of the selected curves, so you can export the file to a desired destination.

Creating Company Level Roll up Cashflow Curve

Creating and managing a Company level Roll up Cashflow curve is similar to creating detail curves in a project or shell.

> **Note**: The administrator must grant runtime permission to users so the users can have access to each curve.

Data rolls up to the Company level Roll up Cashflow curve based on the data sources used to add the individual Baseline, Forecast, Actual (or Spends), Portfolio Budget, Derived, and Custom curves that make up the project or shell detail curves.

> **Note**: Only project or shell level cash flow curves with Roll-up Status equal to **Active** will roll up to the Company level Roll up Cashflow curve.

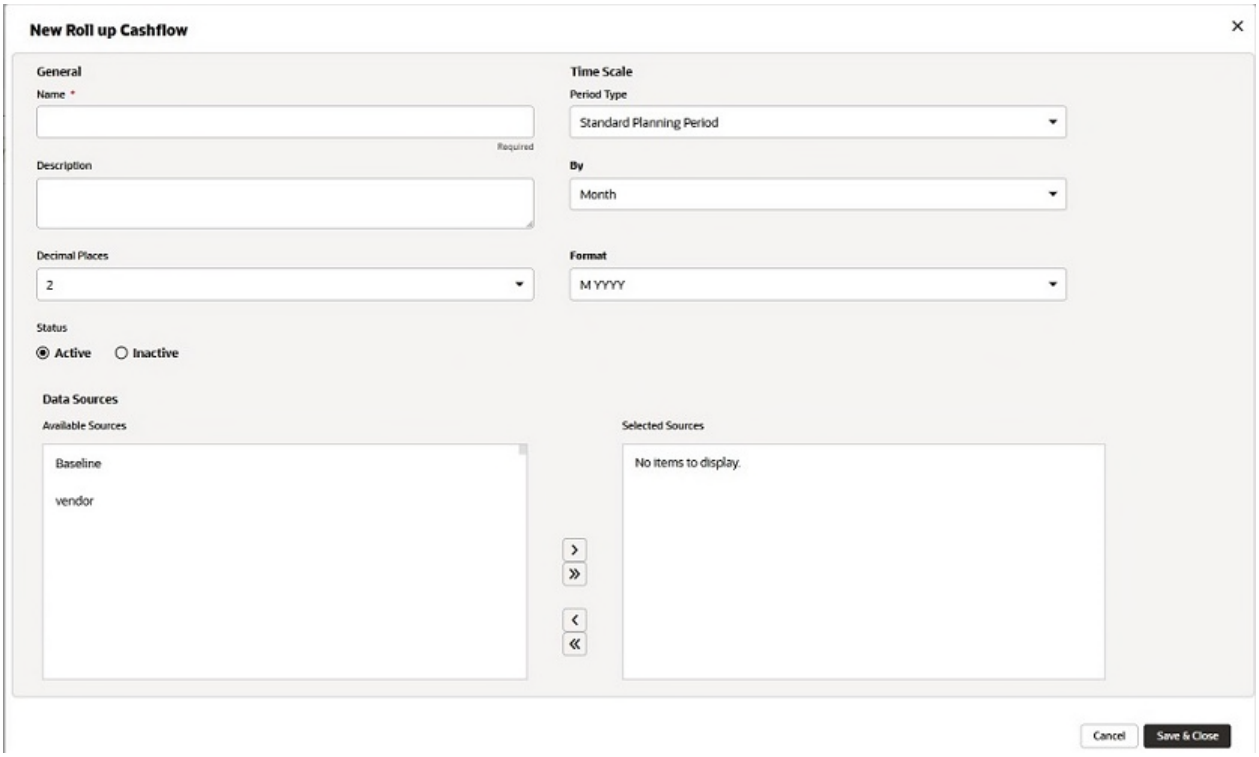
To create a Company level Roll up Cashflow curve, in the Company Workspace (**User** mode):

1) Go to the **Company Workspace** tab.
2) Switch to **User** mode.
3) From the left Navigator, click **Cost Manager** node to open. You should see the **Cash Flow** sub-node. If you cannot see the **Cash Flow** sub-node, ensure that your company administrator has granted you the necessary permissions to the sub-node.

   You will have all of the permissions for the Roll up Cashflow curves that you have created.
4) Click the **Cash Flow** sub-node to open the Company level **Cash Flow** log window.
5) From the toolbar options, click **Create** to expand the menu and click **Roll up Cashflow** to open the **New Roll up Cashflow** window, as shown below.
6) Proceed to complete the fields in the **New Roll up Cashflow** window.

   The **Data Sources** block lists the available sources for you to select.

7) When finished, click **Save & Close**. to add the new Roll up Curve to the **Cash Flow** log.



Company Level Cash Flow and Roll up Cashflow Properties

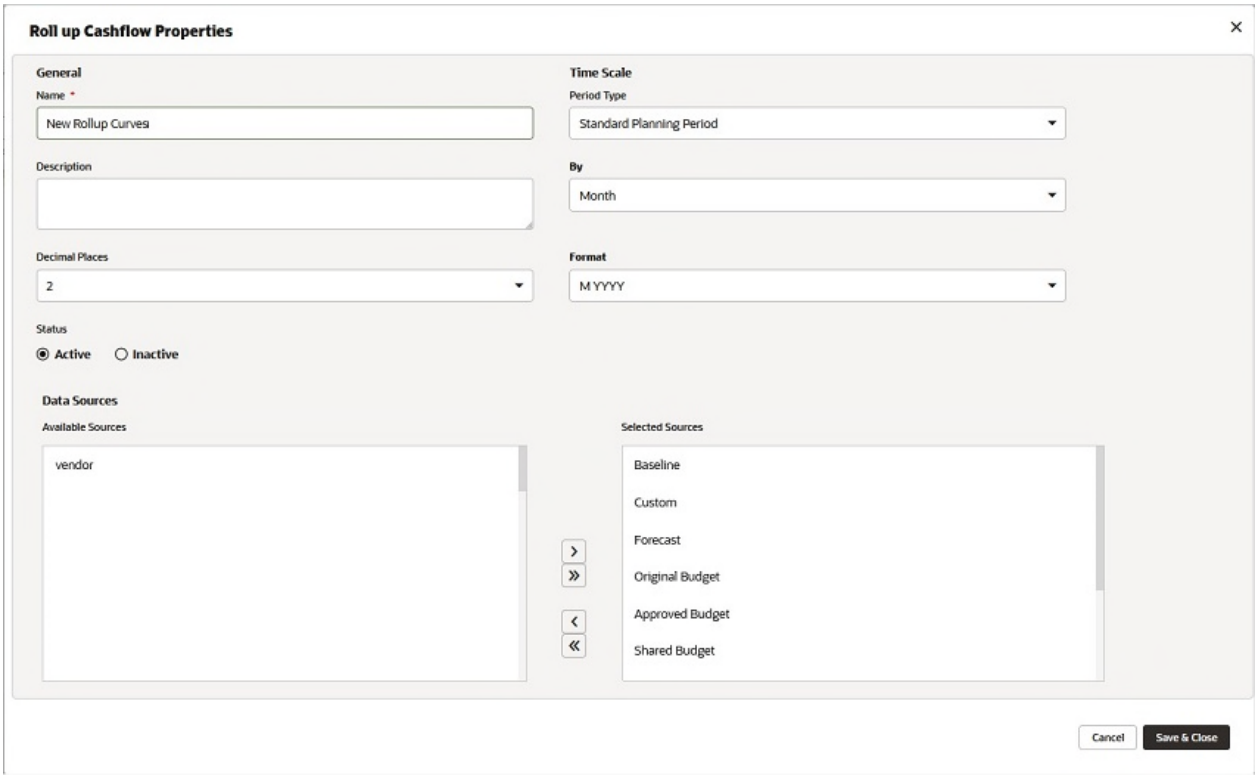
You can access the Company level **Roll up Cashflow Properties** window in two ways:

a) Company level **Cash Flow** log
   1. Select a Roll up Cashflow curve.
   2. Click the *gear menu* and select **Properties**.

b) Company level Roll up Cashflow curve worksheet
   1. Select a Roll up Cashflow curve.
   2. Double-click to open the selected Roll up Cashflow curve worksheet.
   3. Click the **Snapshot** menu and select **Properties** to open the **Roll up Cashflow Properties** window as shown below.
   4. Proceed to complete the fields in the **Roll up Cashflow Properties** window.

      The **Data Sources** block lists the available sources for you to select.

5. When finished, click **Save & Close**. to add the new Company level Roll up Cashflow curve to the **Cash Flow** log.



Cash Flow Curves in Cost Controls Base Product

With the Cost Controls Base Product, you receive a cost control cash flow that shows Baseline, Forecast, Actual (or Spends), Portfolio Budget, Derived, and Custom curves using an S-curve distribution profile.

Once your project is in operation, your manager sheets are set up, and the Business Processes are in use, Unifier will retrieve the curve data from the Project Cost Sheet to render the Cost Controls cash flow curves.

For Baseline and Forecast curves, you can enter dates manually or set the Schedule Manager to automatically control the start and finish dates.

You can create as many Baseline, Forecast, Actual (or Spends), Portfolio Budget, Derived, and Custom curves as you need in a Cash Flow WorkSheet.

Within a Project/Shell, each curve can be created in one of the following detail levels:

- Cash Flow Curve by Project/Shell
- Cash Flow Curve by CBS
- Cash Flow Curve by Summary CBS
- Cash Flow Curve by Commitment (one per base contract)

Note: For a Company level Roll up Cashflow, see ***Company Level***

Cash Flow and Roll up Curve (on page 196).

The cash flow workSheet allows you to:

- View or enter data
- View and compare the curves that you added

There are several ways to create a cash flow curve, including:

- Manual creation

  You define all curve properties from scratch.
- Templates

  You can pre-set curve options, except, for example, actual business process records, and cost sheet columns, which are set at run time. There are two types of cash flow templates:
  - Company level templates, which are created in Standards & Libraries (in **Admin** mode).
  - Project or shell-level templates, which are created within a Project /Shell template (in **User** mode).

  See ***Creating a New Project or Shell Cash Flow Curve From a Template*** (on page 193).
- Auto-creation

  Auto-creation of a commitment curve from a base commit record. In the base commit business process workflow set up you can associate a cash flow template with any step except the Creation step. When the base commit record reaches that step, Unifier will automatically create a cash flow curve.

  See ***Auto-creating a Cash Flow Curve from a Base Commit Record*** (on page 194).
- Copy

  You can copy existing curves from the Cash Flow log, or you can copy data from existing curves.

  See ***Creating a New Project or Shell Cash Flow Curve by Copying*** (on page 194).

Summary Cash Flow or Summary Cash Flow Curves

A summary cash flow curve is designed to present a consolidated view of cash flows.

A summary cash flow curve:

- Uses the detail cash flow curves to compare the movement of curves against the previous snapshots, and in the process show differences among curves with respect to time and schedule.
- Displays Variance and Forecast analyses, similar to the detail cash flow curves.

When you click on a summary cash flow, whether it has been manually defined, or it has been system-defined, the right-hand pane shows the following tabs:

Preview tab

The **Preview** tab lets you see the graph or chart for the summary cash flow that you have clicked on or selected. Under the X axis, you can click on **Baseline**, **Actuals**, or **Forecast** curves to display their graphs or charts for comparison.

Properties tab

The **Properties** tab lets you see the properties of the summary cash flow that you have clicked on or selected. The **Summary Curve Properties** block on the **Properties** tab contains the following information:

- **Name**
- **Status**
- **Description**
- **Detail Curves**
  - **Available Curves**
  - **Selected Curves**

Creating a New Summary Cash Flow Curve

To create a new project or shell summary cash flow curve:

> **Note**: The red asterisk next to a field box indicates that the field is a required field. You will not be able to save your changes without entering a value in that field.

1) Go to the project or shell (**User** mode).
2) From the left Navigator, click the **Cost Manager** node to expand.
3) Click the **Cash Flow** sub-node to open the **Cash Flow** log window (the **Cash Flow** log).
4) From the toolbar, click **Create** drop-down list and select **Summary Curve** to open the **Create Summary Curve** window.
5) Enter values in the Name, Status, Description fields, and select the detail curves that you want to summarize or compare.
6) To save your changes and create a new summary cash flow, click **Save & Close**. To discard your changes, or close the window, click **Cancel**.

Activity Sheet as a Schedule Source for the Cash Flow

An activity sheet can be a source for cash flow used for Resource and Cost Load Schedules. The following topics explain the details.

Cash Flow Analysis

Performing cash flow analysis lets you develop an idea about the financial health and liquidity of your business and determine what is available for you to be used for your business needs. You can perform cash flow analysis based on the following information when using Planned costs, Remaining costs, and Actual costs, from the activity sheet:

- Budgets
- Forecast projections
- Actuals

Unifier uses the **Cash Flow** module to determine the financial health of portfolio of projects, or a single project, or contracts. You can use the Activity Sheet data as a source for the cash flow curves. Furthermore, you can bring the activities, or assigned resources units or costs, into the cash flow to track the Budget, Baseline, Forecast, and Spends estimates and compare them to see the distribution over time.

When you use the Activity Sheet to manage activities and resource assignments from P6, you can track the **Baseline**, **Forecast**, and **Actual** (Spends) estimates in the cash flow by using the activity sheet data.

You can manage scheduling in P6, and you can manage costs either in P6 or Unifier (depending on the schedule type).

When you use P6, you bring the activities, resource assignments, and spread data from P6 into the Unifier Activity Sheet, and from the Activity Sheet the costs and units are rolled up to the Cost Sheet, by way of the CBS Code, and into the **Earned Value Management** module.

You can use an activity sheet, as a schedule source in:

- Project or shell detail level
- Data from early start and late finish date from activity sheet
- Cost Breakdown Structure (CBS) detail level
- Data from CBS code assign to the activities in the activity sheet
- Summary CBS detail level
- Date of the summary CBS code in the activity sheet

Cash flow can support Activity Sheet Schedules in the following cash flow curves:

- **Baseline** curve
- **Forecast** curve

The following is an example for how to create a cash flow based on an Activity Sheet schedule:

1) Go to your project or shell, in **User** mode.
2) From the left hand Navigator, click **Cost Manager** node to expand.
3) Click **Cash Flow** sub-node to open the **Cash Flow** log.
4) Click **Create** to open and select **Manual**. The **New Cash Flow Worksheet** log opens.

The **New Cash Flow Worksheet** log has two panes with the following toolbar options, blocks and fields:

Toolbar options:

- **Cancel**
- **Save & Close**

General block:

- **Name**
- **Description**
- **Detail Level**

  To select the needed detail level, for example project or shell.
- **Filter CBS Codes**
- **Filter Summary CBS Codes**
- **Rollup cashflow data to company/program?**

Time Scale block:

- **Period Type**
- **By**
- **Format**

Right-hand pane:

- **Curves**

  To select the needed curve, for example baseline curve. When you select a curve, the curve window, for example Baseline window, opens. In this window you can select values for the following:
- **Cost**

  Options include a manual cost creation or from cost sheet columns such as: **Approved Budget Revisions**, **Initial Budget**, **Pending Budget Revisions**, and so forth.
- **Schedule**

  To establish a schedule manually, or use dates from a schedule sheet, or use dates from an activity sheet. Depending on your initial selection, the picker field enables you to open a window and specify your selection.

  Example

  You can select a type of active manual activity sheet (custom, import, manual, or profile) or the System Activity Sheet in the Select Activity Sheet window. The inactive manual activity sheets will not be displayed in the Select Activity Sheet window. In the Select Activity Sheet window, click Manual to open the curve type window (Baseline window). In the Baseline window, you can enter values for the following fields:
  - Cost
  - Schedule

  If the manual activity sheet does not have a Baseline schedule, then only the "Current" schedule option will be made available, in the Project Type drop-down.

  If you select a system activity sheet, then the date values (From Date) are from the system activity sheet attribute form.
  - Project Type
  - From Date

  The values are from the manual activity sheet or the system activity sheet.
  - To Date
  - Distribution

You have the option of selecting a manual distribution, or a distribution based on a set profile which is displayed in the drop-down.

- Variance

When finished, click **Add** to go to the **New Cash Flow Worksheet** log.

In the **New Cash Flow Worksheet** log, right-hand pane, click the **Curves** drop-down field and select a pertinent option, such as Actuals. This will open the select option window (**Actuals** window). In the **Actuals** window, click to select the values for the following fields:

- Cost
- Variance

When finished, click **Add** to go to the **New Cash Flow Worksheet** log. In the **New Cash Flow Worksheet** log, right-hand pane, you will see the added curve, in this case Actuals.

Use the **Curves** drop-down field to select more curves, such as Forecast, and enter values for each curve.

When finished, click **Add** to go to the **New Cash Flow Worksheet** log. In the **New Cash Flow Worksheet** log, top right-hand corner, click **Save & Close** to create the cash flow.

When the **Cash Flow** log displays, you can click on a profile (from the left pane) to see the preview of the curve on the right pane.

- Click on a profile to open the profile window.
- Click on a curve type tab, for example Baseline, to see the details about that curve type.

At this point, for example, you can check the date values in the curve with the values in the manual activity sheet (**Schedule Manager** > **Activity Sheet** sub-node > manual activity sheet).

You can update your dates from the manual activity sheet, within the **Activity Sheet** sub-node. After changing the dates, click **Save**, click **Actions**, and click **Update Baseline**. When finished, go to the **Cash Flow** sub-node, find the item, open the item, and click **Refresh** to see the new dates.

If you select more than one item, or date, you can change the values by using the **Bulk Edit** option (toolbar option).

You can use the import and export features to update values.

CBS Type Cash Flow Curve

In a CBS type cash flow curve, you can access the units, or cost data, from the activity sheet according to the CBS Code at one of the following levels:

- Activity
- Resource

Baseline Type Cash Flow Curve

In a Baseline type cash flow curve, you can access the following, from the activity sheet, per CBS code:

- Planned units or costs
- Remaining units or costs
- At Completion units or costs

In this scenario, the costs information originates from one of the following resources within an activity sheet:

- Cost sheet column
- Planned units or costs
- At Completion units or costs

Forecast Type Cash Flow Curve

In a Forecast type cash flow curve, you can access the following, from the activity sheet, per CBS code:

- Planned units or costs
- Remaining units or costs
- At Completion units or costs

Spends Type Cash Flow Curve

In an **Actual** (or "spends) curve type cash flow curve, you can access actual costs, from the activity sheet, in addition to costs from the Cost Sheet Column or from P6 Summary Sheets.

In summary, for:

- **Cash Flow CBS Detail Curves--Baseline and Forecast (Activity level)**, you can define the Baseline and Forecast cash flow curves with the Activity Sheet (Activity level) selected as a source for distribution or cost.
  - The period distribution for each CBS Code will be received at the Activity level from the selected Activity Sheet. It is the sum of all of the Planned units for each CBS code, by day, which will be used to distribute the costs. The schedule will be disabled after you select Activity Sheet as distribution source.
  - The cost distribution for each period can either be calculated based on units and total cost received from the cost sheet column, or from the cost spread received from the Activity Sheet (Activity level).
  - You can get the data either from the current project or the Baseline.
- **Cash Flow CBS Detail Curves--Baseline and Forecast (Resource level)**, you can define Baseline and Forecast curves with the Activity Sheet (Resource level) selected as a source for distribution or cost.
  - The period distribution for each CBS Code will be received at the Resource level from selected Activity Sheet. It is the sum of all the Planned units for each CBS code, by day, which will be used to distribute the costs. The schedule will be disabled after you select Activity Sheet as distribution source.
  - The cost distribution for each period can either be calculated based on units and total cost received from cost sheet column, or from the cost spread received from the Activity Sheet (Resource level).
  - You can get the data either from the current project or the Baseline.

- **Cash Flow CBS Detail Curves--Spends (Activity level)**, you can define **Actual** (or "spends) curve with the Activity Sheet (Activity level) selected as a source for cost. It will be the sum of all of the actual costs for each CBS code, per day, across the activities.
- **Cash Flow CBS Detail Curves--Spends (Resource level)**, you can define **Actual** (or "spends) curve with Activity Sheet (Resource level) selected as a source for cost. It will be the sum of all of the actual costs for each CBS code, per day, across the resources.

Portfolio Manager Budget Curves

The Portfolio Budget curve is linked to scenarios in the Portfolio Manager. The project manager must create this curve. After it is created, the curve shows the initial budget projections.

When you open a Portfolio Budget curve, you can view the data in the transaction currency, if different from the project currency.

> **Note**: If the currencies of your data sources are different, you can create a base currency using the Derived curve as your data source.

For cash flow purposes, the Portfolio Manager extracts a project's baseline or forecast budget numbers for use in a scenario sheet.

During a portfolio analysis, the Portfolio Manager can produce three different Portfolio Budget curves:

1) **Shared Budget curve**
2) **Approved Budget curve**
3) **Original Budget curve**

> **Note**: Before you can use these curves, you must add them to your project.

You can pull data from the three different Portfolio Budget curves (Portfolio Manager) into the cash flow curves within your project or shell.

> **Note**: If the currency of data pulled from any of the three different Portfolio Budget curves (Portfolio Manager) is different from the project or shell currency, you can create a Derived curve (using the existing curves within a family) that converts data from existing curves to a different currency.

Shared Budget curve

This curve shows the portfolio planner's proposed number for the project. You will not have access to this curve until the planner shares a scenario. You can include this curve on the cost worksheet, along with the forecast budget, or any other budget curve, in order to see the difference between your project's numbers and the planner's proposed budget numbers.

Approved Budget curve

When a scenario is approved in the Portfolio Manager, the budgets for each project in the scenario are marked "approved." They are then locked and stored in the Portfolio Manager. An Approved Budget curves shows the approved budget for the project for that planning period (usually a year).

Original Budget curve

This curve is for a project in execution. This budget is the last approved budget for the project before it moves into its execution phase. This approved budget becomes the project's original budget; and this original budget, plus any changes that occur to the numbers during the life of the project, becomes the project's approved budget.

Portfolio Manager Budget Curves and Financial Period in Cost Manager

The Portfolio Budget curves (Shared, Approved, and Original), in cash flow, are linked to Portfolio Manager scenarios.

User can attain data from the Portfolio Budget curves (Shared, Approved, and Original), from the Portfolio Manager scenario in Parent Shell, into the cash flow curves within a project or shell.

During a portfolio analysis, the Portfolio Manager can produce the following Portfolio Budget curves:

Shared Budget curve

The Shared Budget curve displays the portfolio planner's proposed number for the project.

The User can include the Shared Budget curve on the Cost worksheet (along with the forecast budget or any other budget curve) in order to see the difference between the project numbers and the planner's proposed budget numbers.

Approved Budget curve

When a scenario is approved in the Portfolio Manager, the budgets for each project in the scenario are marked "approved."

The system locks and stores the budgets in Portfolio Manager.

An Approved Budget curve displays the approved budget for the project for the planning period (usually a year).

Original Budget curve

The Original Budget is the last approved budget for the project before it moves into its execution phase.

The approved Original Budget becomes the project original budget. This original budget (and any changes that occur to the numbers during the life of the project) becomes the project approved budget.

The Portfolio Manager scenario (with Financial Period as the Period Structure) created in the parent Shell will push/pull the data from respective curve only. That is to say:

- For the child Shell, it has the same Financial Period in its options, and

- It will consolidate the data for only those cash flows where the timescale has been selected as Financial Period.

If the user selects a financial period from the 'by' drop-down list, then the corresponding drop-down list for financial period will get populated with the Financial Period present in the Shell options.

Other options, in timescale, will be disabled (for format and so forth), and it will remain blank with other options enabled (for format and so forth).

For Baseline and Forecast type curves, the summary sheet spreads and schedule manager spreads will be assigned to the relevant period.

For the Actuals, the cost sheet columns and effective dates will be used to assign the values to the relevant period.

> **Note**: For a cash flow curve, the X-axis for graph will still remain the same but the points in the curve will be based on the *Financial Period* that has been selected. The columns in the grid will be based on the Financial Period that has been selected, also.

Adding a Portfolio Roll up Curve for Cash Flow by Program (Classic View)

You can add a Portfolio Curve for each cash flow detail level after you create portfolio budget data sources. See the following for details.

To add a Portfolio roll up curve for cash flow by Program:

1) Access the program in **Projects/Shells**. To do so:
   a. Open **Unifier** and go to the **Company Workspace** (**Admin** mode).
   b. From the left Navigator, click **Programs** node or module to expand.
   c. Click the program name to open it.
2) Switch to **User** mode.
3) Add the cash flow to the Program: To do so:
   a. From the left Navigator, click **Cost Manager** node or module to expand.
   b. Click **Cash Flow** sub-node.
   c. From the toolbar, click **New** and click **Rollup Curves**. Your other option is **From Template**. When you click **Rollup Curves**, the **Properties** window opens containing the following tabs:
      - **General** tab
        - Enabling you to enter the name and description for the cash flow and set the status (you must set the status to **Active**).
        - Enabling you to select one or more data sources from the Data Sources block. For example, proceed to select Data Source: "Original Budget" and Type: "Portfolio Budget."
        - Enabling you to set the parameters for the time scale.

- **Options** tab
  - Enabling you to set the numbering format.

When finished, click **OK** to save your changes and generate and open the **Cashflow Worksheet** window. To discard your changes, or to close the window, click **Cancel**.

To set permission on a cash flow curve:

In the **Cash Flow** log, from the toolbar, click **Permission** to open the **Edit Permission** window. In this window you can add or remove users or groups and grant the following permissions: **Modify**, **Edit Data**, and **View**.

To create a snapshot of the cashflow worksheet:

1) In the **Cash Flow** log, open the cash flow. The **Cashflow Worksheet** window opens.
2) From the toolbar, click **File** and then click **Create Snapshot** to open the **Snapshot** window. Enter a name for the newly created snapshot in the **Title** field and click **OK**.

To open a snapshot, from the toolbar click **View** and click **Snapshot Log** to open the **Snapshots** window and access the list of available snapshots taken from the cashflow worksheet. To open one, double-click on the snapshot title.

To filter for a specific curve type:

1) In the **Cash Flow** log, open the cash flow. The **Cashflow Worksheet** window opens.
2) From the toolbar, click **View** and click **Filter** to open the **Filter** window.
3) Select the curve types that you want and enter a name for the filter in the **Save As** field and click **Save**.

Use the **Zoom** tool to adjust the graph view on the cashflow worksheet.

The lower portion of the cashflow worksheet window (**Curves**) lists the curves shown in the cashflow worksheet, based on the value in the **View** drop-down field. The values are:

- **Incremental**
- **Cumulative**

Cost Sheet

A cost sheet captures data from data sources such as cost code data values, budget, business processes (by status), and manager sheets (for example Schedule Manager).

The system *dynamically* updates the **Company Cost Sheet** with information from the project or shell cost sheets. See **Company Cost Sheet** below for more details.

Project/Shell Cost Sheet

The project or shell cost sheet is a detailed accounting of the project or shell budget and costs. A cost sheet works like a spreadsheet within the system to calculate and maintain the project or shell cost information stored in the project or shell. The project or shell cost sheet rows contain unique CBS codes (or cost codes), which can be used to link project or shell or program costs to the general ledger for finance. Cost information can be entered manually, pulled from work packages or worksheets, or rolled up automatically, into the project or shell cost sheet, from business processes when transactions occur in the system.

Project/Shell Cost Sheet Column Properties

- The Datasource drop-down list contains a list of Single, Logical, and P6 datasources (only Published P6 Data sources as defined in the Standards & Libraries -- Administration mode).
- The Element drop-down contains a list of options as defined in the Cost Sheets Templates.
- The Data Format option, Decimal, is selected for all the "Unit" fields that you have selected from the Element drop-down list.

> **Note**: The data sources do not list the P6 Summary Sheets in a Shell. Instead, the P6 Summary Sheets are from P6 Data Sources node, under Standards and Libraries. The system identifies the P6 Summary Sheet that is required for supplying data to the Cost Sheet by mapping the Summary Sheet "Type" to the column data source.

Program Cost Sheet

Program cost sheets are created automatically once a project cost sheet has been created in at least one project within the program. The columns of the program cost sheet can be set up to allow cost sheet data to roll up automatically from individual project cost sheets. The program cost sheet will display cost data for all projects within the program that have a status of active or on hold. The currency used is the company base currency. Projects on the program cost sheet are sorted automatically by ascending project number. As new projects are added to the program, and cost sheets are created for them, the new projects will be automatically added to the program cost sheet. The data displayed on the program cost sheet is view only.

Projects and Programs (Program Cost Sheet Column Properties)

- The **Datasource** drop-down list contains a list of Single, Logical, and P6 datasources (only Published P6 Data sources as defined in the Standards and Libraries--Administration mode).
- The Element drop-down list contains a list of available options.
- The Data Format option, Decimal, is selected for all the "Unit" fields that you have selected from the Element drop-down list.

Work packages

In addition to a project or shell cost sheet, multiple work packages may also be defined. A work package is a group of cost sheet rows that is a subset of the project or shell cost sheet. Work packages provide insight into the budget without providing full access to the details of the project or shell cost sheet.

Worksheets

Cost worksheets can be created to support the project or shell cost sheet. They can be used as sub-cost sheets, enabling specific calculations or data entry in a separate sheet, which can then be rolled up into a defined project or shell cost sheet column. For example, a worksheet can be used to offload complex calculations, which can be rolled up into a single cost sheet column. Worksheets support manual data entry and formulas. Business processes do not roll up to worksheets. Permissions can be controlled for individual worksheets. Worksheets are not independently reportable; however, cost sheet columns that reference worksheets can be reported on.

For Base Commits, Change Commits, and Payment Application BPs of Summary Payment Application SOV type.

- The Costed line items (in Base Commits, Change Commits, and Payment Applications with SOV type, "Summary Payment Applications BPs) roll up to the Cost Sheet by using the "Amount" field.
- The Amount that rolls up to the Cost Sheet is the Costed Amount for each of the CBS codes that is added to the Cost Distribution grid.
- If the Line Item Amount = Costed Amount, you will see a discrepancy between the Total Amount seen in the Record > Line Item section, and the rolled up Amount to the Cost Sheet.
- You are able to go to the Line Item level details by opening the record in the Transactions section.

Company Cost Sheet

A **Company Cost Sheet** pulls cost information from across all of the CBS projects or shells that exist in a Unifier instance.

> **Note**: There is only one **Company Cost Sheet**.

The company administrator can create a company level cost sheet (the **Company Cost Sheet**) to display the cost data across all of the projects or shells.

Projects or shells included in the **Company Cost Sheet** are added by default as the project-level or shell-level cost sheets are created.

> **Note**: Only the **Active** and the **On-hold** projects or shells must be rolled up to the **Company Cost Sheet**.

Company Cost Sheet Columns Properties

Data rolls up to the **Company Cost Sheet** columns from the individual project or shell cost sheets columns, by data source.

The **Company Cost Sheet** columns headings provide the following information, upon hover over:

- **DataSource**
- **Total**
- **Formula** (when applicable to the data source)

For details about **Company Cost Sheet**, see ***Working with the Company Cost Sheet*** (on page 269) in this guide.

Types of Cost Sheet Data Entry

Cost sheet cells can be populated with data in the following ways, depending on how the column has been set up:

Manual entry: Your cost sheet may include some columns in which you can enter data through line items or directly into a cell. Line items can be added manually by copying data from an existing line item within the cell or from copying existing line item data from one column to another.

Business processes: Cost sheet data can also be rolled up automatically when cost-type business processes reach a specified status. For example, when a purchase order is approved, the amount can be rolled up to the appropriate column and CBS codes.

Formulas: Cell data is calculated from other column entries based on a formula defined for the column. The formula may include data from other columns.

Budget: Information from the project or shell budget can be rolled up to budget columns. This data is entered in the Budget window.

Worksheet: Data can be entered into worksheets and rolled up to cost sheet columns.

The following sections discuss how to view, enter, and manage cost sheet data and budget information.

Adding a New Cost Sheet

When adding a new cost sheet either by way of copying from a template or by way of copying from a CBS Shell instance, note the following:

Adding a new Cost Sheet by way of copying from a template

- If the CBS Shell instance *does not have* the Schedule Type Data Element on the attribute form, the templates that have the option "Enable P6 sources" selected are not available for use. That is to say, you are not able to add a cost sheet that has P6 Sources to the Shell.
- If the CBS Shell instance *does have* the Schedule Type Data Element on the attribute form, you can select the "Tree" structure cost sheet, only.

Adding a new Cost Sheet by way of copying from a Shell instance

- If the CBS Shell instance *does not have* the Schedule Type Data Element on the attribute form, the shell instance that have the option "Enable P6 sources" selected are not available for use. That is to say, you are not able to add a cost sheet that has P6 Sources to the Shell.
- If the CBS Shell instance *does have* the Schedule Type Data Element on the attribute form, you can select the "Tree" structure cost sheet, only.

More information about adding a new Cost Sheet

- Enable P6 sources

  You can select any Cost Sheet *with* the option "Enable P6 sources" selected, or *without* the option "Enable P6 sources" selected.

  After a new Cost Sheet is created within a CBS Shell instance, the option "Enable P6 sources" is carried over from the source. The "Enable P6 sources" option is editable as long as no columns are added to the Cost Sheet via the P6 Data sources. If a Cost Sheet contains columns that use P6 Data Sources, you cannot edit (Select or Deselect) the "Enable P6 sources."

Working with Project or Shell Cost Sheets

This section discusses working with cost sheets in Standard Projects and in CBS-code based shells.

For information about cost sheets in generic shells, see ***Generic Cost Manager*** (on page 355).

Cost Sheet Sub-node (Standard View)

When you click the **Cost Sheet** sub-node (Project or Shell > **User** mode > **Cost Manager**), the **Cost Sheet** log opens. This log displays the cost sheets, worksheets, and work packages (where available) within the project or shell. The log has the following elements:

- Toolbar
- Grid displaying the list of all the sheets within the project or shell
- Right-hand pane capturing the details of each sheet

The **Cost Sheet** log toolbar options:

Create	Lets you create a:
	• **Worksheet**
	  • **From Template**
	  • **From Projects**
	• **Work Package**

Actions	Lets you set the permissions (**Permissions**).
View	Lets you set the view of the log by showing all sheets or group the sheets by type, through selecting one of these options, respectively: • **All** • **Group by Type**
Refresh	Lets you update the information of the items listed on the log.
Print	Enables you to: • **Print** • **Export To CSV** • **Export To Excel**
Find on Page	Lets you activate the find cells for each column in order to find a particular item.

The **Cost Sheet** log grid column headings:

- **Name**
- **Reference No.**
- **Date Created**
- **Created By**
- **Type**
- **Status**

The **Cost Sheet** log tabs (right-hand pane), when you select a worksheet:

- **Properties** tab
- **Permissions** tab
- **Audit Log** tab

The **Cost Sheet** log tabs (right-hand pane), when you select a work package:

- **Properties** tab
- **Audit Log** tab

To open a sheet, you can double-click on the sheet or click the *gear menu* (⚙) and select **Open**. After you open a cost sheet, the **Cost Sheet** overlay opens. The following explains the elements of the **Cost Sheet** overlay.

Project or Shell Cost Sheet

When you open a project or shell cost sheet (**Cost Manager** node > **Cost Sheet** sub-node > <**Project Cost Sheet**>), the **Cost Sheet** overlay window opens and the following elements appear on the screen:

- Cost Sheet header and locked/unlocked indicator
- Toolbar enabling access to several actions
- Grid with rows (if available) and columns

The **Cost Sheet** overlay window toolbar options are as follows:

Manage Rows	**Note**: This option is available only to those users who have permission to modify the cost sheet rows. Clicking this option enables you to open a new grid sheet (inline), on top of the cost sheet, titled: **Manage Rows**. For a tree-structure cost sheets, the **Manage Rows** sheet has the following toolbar options: - **Add Sibling** - **Add Child** **Note**: When no cost code has been created yet, the toolbar has only the **Add** option (instead of the two separate **Add Sibling** and **Add Child** options). - **Refresh** - **Print**

- **Find on Page**
- **Expand All Groups** or **Collapse All Groups**

For a flat-structure cost sheets, the **Manage Rows** sheet has the following toolbar options:

- **Add**

  Clicking **Add**, when no row has been selected, adds a new row at the bottom of the existing rows.

  Clicking **Add**, when a row has been selected, insert a new row below the selected row.

  You can always drag the row to move it above or to any other valid place.
- **Refresh**
- **Print**
- **Find on Page**

When you make changes, the following additional options (appear on the top, right-hand corner of the screen) enable you to cancel or save your changes:

- **Cancel**
- **Save**

The **Manage Rows** sheet has the following columns that are stationary:

- Cost Code
- Code Name

Other columns on the **Manage Rows** sheet vary as per design (as defined in the cost sheet attribute form in uDesigner).

For each cost code row in the **Manage Rows** sheet, you have the following options columns at the very end:

- **Notes**

  An indicator to show if a cost code row is associated with notes.
- **Attachments**

  An indicator to show if a cost code row is associated with attachments.
- **Delete**

  If a row is eligible for deletion (i.e., there is no cost associated with that cost code), you can delete the row by using this option. When you click this option, the row and the child rows will be deleted.
- **Reorder**

  You can select multiple rows and drag them to another position. As long as there is no cost associated with a selected row, you can drag codes to another location below any parent. If any of

	the selected codes is associated with a cost, you cannot drag the group to another parent or hierarchy. For each cost code row in the Manage Rows sheet, there is a right pane (bottom) that captures more details on the code. This pane contains following tabs: ▸ **Breakdown** tab The **Breakdown** tab contains the following toolbar options: ▸ **Add** If you do not select any rows and click **Add**, then Unifier inserts a new row on the grid at the bottom of the existing rows. If you select a row, or multiple rows, and click **Add**, then Unifier inserts a new row below the selected row, or rows. ▸ **Find on Page** The **Breakdown** tab contains the following toolbar options: ▸ **Row #** This is the same as the row # column in main grid in this window. Unifier displays an error message if you: - Save your changes without entering a name. - Create a breakdown with a duplicated name. The red triangle symbol signifies the existence of an error in a row. The error pop-up displays Row # that contains the error, the CBS description (from the main sheet row that contains the error), the tab name, and the error description. ▸ **Name**: Mandatory field. To capture breakdown name. ▸ **Description**: To capture breakdown description. **Delete**: Column header is blank. Click to delete the selected row. **Reorder**: Enables you to reorder breakdowns through drag and drop (same as drag or drop at other places in Unifier--Manage Views screen, etc.). ▸ **Attachments** tab Same as the Attachments tab in Work Package (Standard View) and right pane of the Attachments tab in the Cost Sheet log. ▸ **Notes** tab Very similar to the Comments tab of a BP record (right pane). It cannot be used to add attachments to a comment. ▸ **Audit Log** tab

	Same as the Audit Log tab of a BP record (right pane). For a tree-structure cost sheet, the right-click option for a cost code row, within Manage Rows window, are: ▸ **Add Sibling** ▸ **Add Child** ▸ **Copy** ▸ **Delete** For a flat-structure cost sheet, the right-click option for a cost code row, within Manage Rows window, are: ▸ **Add** ▸ **Copy** ▸ **Delete** For both a tree-structure cost sheet and a flat-structure cost sheet, when you select multiple rows, the right-click options are: ▸ **Copy** ▸ **Delete**
Add Column	Enables you to open the **New Column** overlay window which contains the following fields: ▸ **Name** Enter the name of the new column. ▸ **Type** The drop-down menu enables you to select the values: ▸ From Business Processes (the default value for **Type**) Select the From Business Processes option if you want to have a column in the Cost Sheet log the pulls data from the **Amount** field of a Business Process. If you select this option, then: - The **New Column** form (overlay window) stays as is. - The **Data Source** drop-down menu gets updated to show a list of all Business Process datasources which can be used to create a column. **Note**: The datasources that have already been used to create a column will not be included in the list. You must populate the mandatory options, on the form, in order to create the new column successfully. ▸ Direct Entry Select the Direct Entry option when you want to enter **Numeric** values into the cell directly. When you select this option on the overlay form, similar to the "From Business Process" option, the form stays as is. The only difference is that the **Data Source** drop-down menu displays "Logical

	Sources," only. Also, those sources that have already been used to create a column will not be displayed in this list. ▸ Line Item Content Select the Line Item Content option when you want to enter data for each cell in the column in a line item format, allowing multiple line item entries per cell. The total is displayed in the cell. When you select this option on the overlay form, the overlay form stays as is. The behavior of the **Data Source** drop-down menu is the same as when you select the "Direct Entry" option. ▸ From Worksheet Select the From Worksheet option when you want to populate the data in the Cost Sheet column from another column in an already existing worksheet within the project or shell. When you select this option: - The **Data Source** drop-down menu displays a list of all those logical sources that allow the "Sheet" type entry method. - The sources that have already been used to create a column do not show up in the list. The Type drop-down menu will contain two additional options: - Sheet Name This is an editable drop-down menu. - Column This is a drop-down menu, which is enabled only when you select a sheet from the "Sheet Name" column; otherwise, the Column option is read-only. ▸ From EVA Sheet (for more information about EVA, refer to the *Earned Value Management User Guide*.) Select the From EVA Sheet option when you want to populate the data in the Cost Sheet column from an EVA sheet. When you select this option: - The **Data Source** drop-down menu displays a list of all those logical sources that allow the "Sheet" type entry method. - The sources that have already been used to create a column do not show up in the list. The Type drop-down menu will contain two additional options: - Sheet Name This is an editable drop-down menu. - Column This is a drop-down menu, which is enabled only when you

	select a sheet from the "Sheet Name" column; otherwise, the Column option is read-only. ▸ From Activity Sheet Select the From Activity Sheet option when you want to populate the data in the Cost Sheet column from an Activity Sheet. When you select this option: - The **Data Source** drop-down menu displays a list of all those logical sources that allow the "Sheet" type entry method. - The sources that have already been used to create a column do not show up in the list. The Type drop-down menu will contain two additional options: - Sheet Name This is an editable drop-down menu. - Column This is a drop-down menu, which is enabled only when you select a sheet from the "Sheet Name" column; otherwise, the Column option is read-only. **Note**: In Cash Flow, Cost Sheet, and Earned Value, you can replace the Summary Sheet with the Activity Sheet as a source. ▸ Formula Select the Formula option when you want to populate the Cost Sheet column as a formula-based on other existing columns in the sheet. When you select this option, the **Data Source** drop-down menu gets updated to show a list all the logical sources that allow the "Formula" type entry method. Also, those sources that have already been used to create a column will not be included in this list. In addition, the formula creator option is displayed below the **Data Source** field. When you click the formula creator, an interface to create a formula opens. ▸ P6 Sources You can select the P6 Sources option when the sheet is enabled to create column from P6 sources. You can select the P6 Sources option if you want to populate the Cost Sheet column from a P6 Datasource. When you select the P6 Sources option, the **Data Source** drop-down menu gets updated to show a list all available P6 sources (those sources that have not been used to create a column so far). In addition, the **Data Source** drop-down menu will be followed by the Element drop-down menu.

	▸ **Data Source** The **Data Source** drop-down menu changes as the value in the "Type" drop-down menu change. Each change is captured above. In some cases, the Datasource name is preceded by *** (asterisks). This indicates the statuses of a BP which does not exist in the design anymore. If there are any BP statuses that have been removed from the design and are displayed in the Data Source drop-down menu with *** (asterisks) next to them, when you select the **Type** as "From Business Process," the **Data Source** drop-down menu shows a tooltip next to it. Upon hover over, the tool-tip states: *** Indicates the status does not exist in the design. ▸ **Data Format** The **Data Format** option is available when a value is available to select; otherwise, it will not be visible. For example: The Single Source columns can be of data format "Currency" or "Decimal," only. So, for these columns, the "Percentage" radio option is not visible. ▸ **Display Mode** ▸ **Total** ▸ **Column Position after** The **New Column** overlay window has the following action options: ▸ **Cancel** ▸ **Save** ▸ **Save & Add New**
Forecasting	**Note**: This option is available only if the cost sheet is enabled for forecasting. When you click this option, the Classic View of **Forecast Adjustment** window opens.
Refresh	Enables you to see the added values to the columns of the sheet.
Print	Enables you to print or export the log content.
Find on Page	Enables you to search for a sheet on the log.
Expand All Groups or **Collapse All Groups**	Enables you to expand or collapse the sheets to see the subordinates.

Menu Options	Enables you to conduct and access:
	▸ **Import**
	  ▸ **Summary Budget**
	  ▸ **CBS Details**
	▸ **Export**
	  ▸ **Summary Cost Sheet**
	  ▸ **Summary Budget**
	  ▸ **CBS Details**
	  ▸ **Column Details**
	▸ **Columns**
	  ▸ **Unhide**
	  ▸ **Restrictions**
	▸ **Snapshots**
	  ▸ **Create**
	  ▸ **Open**
	▸ **Currency**
	  ▸ **Project Currency**
	  ▸ **Base Currency**
	▸ **Budget Distribution**
	  See Budget Distribution below for details.
	▸ **Row Coloring**
	  ▸ **Multi-Color**
	  ▸ **Single-Color**
	▸ **Properties**
	▸ **Audit Log**

Currency Toggle	Enables you to switch the cost sheet currency from Project Currency to Base Currency (or vice versa).

The **Cost Sheet** overlay window column options may vary. The following are a list of possible columns:

- Sequence No.
- CBS Code (or Cost Code): Static column
- CBS Item (or Code Name): Static column
- Assigned Budget
- Purchase Orders (Approved)
- Change Orders (Approved)
- Invoices (Approved)
- Contingencies
- LI Content
- Risks & Issues (Closed)

- Forecasts
- Budget Approval (Approved)
- Budget Transfers (Approved)
- CBS/WBS Actuals (Approved)
- Contract Change Orders (Approved)
- Contracts (Approved)

The bottom of the **Cost Sheet** log (underneath the second column from the left--after the Sequence No. column) displays the totals for the amounts for each column.

The bottom of the **Cost Sheet** log (left-hand corner) displays the total number of items.

When you right-click on a cell heading, you will see the following options:

- **Insert**
- **Properties**
- **Hide**
- **Delete**
- **Lock after this column**

When you right-click on a cell within the cost sheet, you will see the following options:

- **Add Sibling Row**
- **Add Child Row** (available only if the selected cell row is not associated with any cost item or line item data)
- **Insert Column Before** (not available if you select a cell within the CBS Code or the CBS Item columns)
- **Insert Column After** (not available if you select a cell within the CBS Code column column)
- **Copy**
- **Delete**

When you click on a cell, the **Cost Sheet** screen opens a pane on the right-hand side that has the following tabs:

- **General**
- **Attachments**
- **Notes**
- **Fund Assignment Order**

These tabs provide additional information about each cell. Where allowable, you can update the fields within each tab.

The **Budget Distribution** overlay window contains the following elements:

When the **Budget Distribution** is locked (padlock icon in locked position)	The following blocks (accordion menu) are visible: ▸ **Overview** If available, the right-hand pane of this block (accordion menu) contains the following tabs: ▸ **Attachments** ▸ **Audit Log** ▸ **Lock/Unlock History** ▸ **Distributed Amount** Enables you to see the **Cost Code**, **Code Name**, **Type**, and **Distributed Amount**. You can use the toolbar options to refresh, print (or export), find, and collapse the information in the log. The right-hand pane of this block (accordion menu) contains the following tabs: ▸ **General** ▸ **Attachments** ▸ **Notes** All of the fields are read-only. If you click **Unlock**, you must enter a reason.
When the **Budget Distribution** is unlocked (padlock icon in unlocked position)	You have all the options available in the locked position, and you can change the values in the editable fields. Once finished, you must click **Save & Lock**.

Cost Sheet Views

In addition to opening and viewing a cost sheet within a project or shell, you can create your own views with filters, groupings, and so on, to modify the default view of the cost sheet. You can view values from data sources such as activity sheets, as well as cost activities from the Cost Attribute form. When you create a view, you can select columns from the cost sheet as well Data Elements (DEs) from the Cost Attribute form. For example, you can view information for specific CBS Codes and then group them by their Status of Active and Inactive.

Notes:

- You can use all applicable DEs from the Cost Attribute form, including hidden blocks and Date and Date Only Picker DEs, but excluding all other Picker DEs and multiple-select input fields, if the DEs are included on the form.
- If you switch to the Base Currency view, no exchange currency rates will be applied. Currency DEs on the Cost Attribute form will be in the project currency format.

Upon navigating to the Cost Sheet node, a **Views** option is available after the **Add Column** option. This is similar to how views are seen in Business Process logs in the Standard interface. You can also add multiple filters to a view, and you can use the same data element multiple times. When adding multiple filters, you can use operators to specify that the view must match all listed filters or that it can match one or more of the listed filters.

When the cost sheet is created from the source template, the sheet has only one view. This view is the **Default** view, which is selected from the **View** drop-down list. You can also select the **Create New View** option to create new views or the **Manage Views** option to manage (Rearrange or Delete) existing views from the **View** list.

Similar to BP logs in the Standard interface, the View drop-down list within the cost sheet log is followed by the **Edit View** option.

Creating New Cost Sheet Views

When you choose **Create New View**, a **New View** window is displayed. A **Save View As** text box with **New View** as the default value can be seen at the top of the window. Validations are performed to ensure that the view has been given a unique name.

The **Save View As** text box is followed by the **Cancel** and **Save** options. If you choose **Cancel**, creation of the new view is canceled and you are brought to the previous view in the cost sheet. If you choose **Save**, the new view is saved and loaded into the cost sheet.

There are four tabs below the **Save View As** text box, including: **Columns**, **Filters**, **Group By**, and **Sort By**.

Columns Tab in the New View Window

The sections under the **Columns** tab are: **Available Columns**, **Selected Columns**, **Left Lock after Column**, and **Right Lock after Column**.

In addition to the previous sections, there are three options located after the **Selected Columns** section: **Group Management**, **Group Selected Columns**, and **Delete Group**.

For a new view, the **Available Columns** section displays a list of all the columns from the **Default** view. The **Cost Code** and **Cost Name** columns are not available in the list because they are part of all views by default. The columns that you have view restrictions for are also not available in the list.

The Cost columns listed under **Available Column** are grouped as **CBS Attributes** and **Sheet Columns**.

The **CBS Attributes** block items are sorted alphabetically.

In the case of a new view, the list in the **Selected Columns** section contains the **Cost Code** and **Cost Name** columns. You can select one or more columns from the **Available Columns** list and move those columns to the **Selected Columns** list.

> **Note**: If you select **Save** without choosing a column from the **Available Columns** list, a view with **Cost Code** and **Cost Name** columns is created.

When you select multiple columns in the **Selected Columns** list and then select the **Group Selected Columns** option, you are prompted to enter a name for the new column group. The maximum character limit for a group name is 255 characters.

You can click on two or more selected columns and group them under a new name, or create a column group first and then add columns to it.

The groups:

- Display with a distinct color in custom views.
- Only exist within the view in which they were created.

You cannot create a group just once, and then use it within multiple views.

Upon choosing the **Group Management** option, a new window that shows the created groups as tabs is displayed. You can update the **Group Title** for each group, but know that the **Group Title** is a mandatory field. Along with the lists of **Available Columns** and **Selected Columns in the Group**, there are also two checkboxes. You can select the **Show last column when group collapsed** checkbox as well as the **Collapse group by default** checkbox.

The **Available Columns** list displays the columns that exist in the default view of the cost sheet. One or more columns can be selected from the **Available Columns** list and moved to the **Selected Columns in the Group** list. Columns that are part of another group are italicized. Each group must contain at least one column, as empty groups are not retained. You can re-order the columns in a group by selecting any of the arrow options.

After you create a group, the group is displayed in the **Selected Columns** section of the previous window with a **Column Tree** icon and the group name. This group name contains a hyperlink that takes you to the **Group Management** window and selects the previously selected column.

All changes are saved upon selecting the **Save** option.

If you choose a column in the **Left Lock after column** drop-down list, the list for **Right Lock after column** displays the remaining columns and, if applicable, any groups that you created, from the **Selected Columns** list. For example, if there are 20 columns in the **Selected Columns** list and you choose column 4 in **Left Lock after column**, then **Right Lock after column** displays columns 4-19. Another scenario is if you select column 19 in **Left Lock after column**, then **Right Lock after column** displays column 19.

The **Left Lock after column** drop-down list initially displays every column from the **Selected Columns** list, except for the last column and any groups that you created. **None** is selected in the drop-down list by default. When **None** is the value in the drop-down list, it means that no column has been chosen to be locked from the left side of the sheet.

For the **Right lock after column** drop-down list, **None** is selected by default. When **None** is the value in the drop-down list, it means that a right lock column has not been chosen for the view. The remaining values in the drop-down list consist of a dynamic list that gets populated based on the value chosen in the **Left Lock after column** drop-down list.

Filters Tab in the Create New Views Window

For both Tree and Flat Structure cost sheets, there are three sections in the **Data Element** drop-down list on the **Filters** tab: **Cost Code segments**, **CBS Attributes**, and **Sheet Columns**. The **Cost Code segments** section displays each cost code segment as an attribute that can be used to apply filters to the cost sheet. The **CBS Attributes** section displays all "uuu" data elements (DEs), including hidden blocks but excluding Data Picker DEs and Multi Select DEs, defined for the cost breakdown structure (CBS) Attributes form in uDesigner. The **Sheet Columns** section displays all columns from the cost sheet in order.

Picker DEs and multiple-select input fields cannot be added as filters (**Filters** tab).

The system only applies filters to leaf-level codes within the cost sheet. The summary cost codes do not show up in the filter results.

To create a filter:

1) Click the **Add Filter** button.
2) Do the following:
   a. Choose a **Data Element**.
   b. Choose a **Condition**: This drop-down displays a list of conditions. This list is based on the type of data element selected.
   c. Choose a **Value**: Depending on the type of data element, choose a value that the query condition must meet.
      - Data Element: Lists the data elements on the fund attribute form.
      - Constant Value: You can enter a full or partial entry of the value to filter by. This is similar to entering search criteria.

      Note: The default value for an integer drop-down list is 0. Therefore, the integer list can be used as a CBS attribute DE and defined as a filter with the criteria **is not empty**, which will result in the display of data with the default value.
3) To add additional filters, click **Add Filter** again, and repeat the preceding steps.
   You can use the same data element multiple times.
4) If you are using multiple filters, click the applicable operator that should apply to the set:
   - **And**: To specify that the view must match all listed filters, select **And**.
   - **Or**: To specify that the view should match any of the listed filters, select **Or**.

Group By in the New View Window

Use the **Group By** tab to group rows in the Cost Sheet. The drop-down field in the **Group By** tab contains a list of columns that the user can see in the Cost Sheet, such as the cost code and cost item, as well as items from the Cost Attribute form.

Sort By in the New View Window

In the **Sort By** tab, all the columns from the default cost sheet are available, as well as items from the Cost Attribute form.

Managing Cost Sheet Views

Similar to BP logs in the Standard interface, the **Default** view and all the manually created views are available in the **Manage Views** window. This window has the same features as other logs, which also have the **Views** feature within them.

Editing Cost Sheet Views

In the **Edit View** window, you can update the name of the view or use it to create a view with a different name. (You cannot change the name of the Default view; however, you can use it to create a view with a different name.) The view name is followed by the options available for canceling the edit action, saving changes, and saving the view with a new name, or **Cancel**, **Save**, and **Save As**. When you select **Save As**, a small overlay form is displayed where you can save the view with a new name.

You can also update the settings defined on the **Columns**, **Filters**, **Group By**, and **Sort By** tabs as described earlier.

Functionality within Cost Sheet Views

In the **Default** view, you can perform any of the actions listed below:

- Drag and drop columns
- Rearrange column order
- Select a column header to change the **Sort By** column
- Right-click on a column header to choose the **Lock after this column** option

When you perform any of the above actions, the prefix of the view name becomes **Modified**. The **Edit View** option is disabled. Therefore, you cannot save the **Modified** view.

The remaining *gear menu* (⚙) for the rows and columns remain as they are in the Standard interface of the cost sheet. All of the toolbar options remain as they are in the Standard interface of the cost sheet. You must save any modifications that were made to the **Default** view without changing the view name to **Modified**.

In a manually created view, you cannot perform any of the actions listed below:

- Manage rows
- Add columns
- All Menu (A.K.A. Hamburger) actions
  - The only exceptions are Row Coloring in the case of a Tree structure cost sheet, and Import and Export options for both Flat and Tree structure of the cost sheet.

  - Import options: This has the sub-menu option ‘Column Details' using which customer can choose a column from the view and import data into it. The import action allows import into all leaf rows of the cost sheet and not just the ones present within the view.
  - Export options: Same as above, this has a sub-menu option: ‘Column Details'. Use this option to select the column from which data should be exported. Once chosen, customer can export of column data.This exports data from all leaf rows from the cost sheet and not just the ones present within the view.

- All *gear menu* (⚙) actions
- All Column Menu actions

When you select a value in any of the cost sheet cells, the **General** tab in the right pane is displayed as read-only.

You can drag and drop columns to any place on the cost sheet. When this action is performed, the prefix of the view name becomes **Modified**. However, in the case of a manually created view, you can select **Edit View** and ultimately choose **Cancel**, **Save**, or **Save As** after making modifications in the **Columns**, **Filters**, **Group By**, or **Sort By** tabs.

After the **View** drop-down, there are many available options from the Standard interface of the cost sheet, including: **Refresh**, **Print**, **Find on Page**, **Expand/Collapse**, **Menu Options—Row Coloring**, and **Currency**. If you make changes to the Row Coloring or the Currency of the cost sheet, these changes are not saved to the view.

The **Group By** options that are within the view definition are visible as a grouping section with the appropriate rows grouped in it. Each group, along with its appropriate rows, displays an additional column that shows the group's name before the **Cost Code** column. There is no column header for this grouping column.

When a **Group By** option applies to the view, the group's summary row displays the summary value that is based on the **Total** option in the column's properties.

A special case for creating views is the addition of a few columns. After creating a view, your administrator can take away your permissions to the columns that you added. When you try to open the view, those columns are no longer visible. The **Edit View** window does not show the columns in the **Selected Columns** section nor the **Available Columns** section.

Menu Options in Worksheet

A typical **Cost Sheet** log (<Project or Shell> > **Cost Manager** node > **Cost Sheet** sub-node) has the following types of sheets when you switch the view of the log from default to another type of view (**View** > **Group by Type**):

- **Cost Sheet**
- **Work Package**
- **Worksheet**

In the **Group by Type** view, the records are grouped under each category.

When you open the project cost sheet (**Cost Sheet**), when it is locked, you can use the **Menu Options** (the three horizontal line drop-down icon) to perform the following actions for the project cost sheet:

- **Import** - Column Details
- **Export** - Column Details
- **Row Coloring** - Multi-Color and Single-Color

The **Menu Options** (the three horizontal line drop-down icon) and sub-menu options are not available for work package (**Work Package**) records.

When you open a worksheet (**Worksheet**), you can use the **Menu Options** (the three horizontal line drop-down icon) to perform the following actions for the worksheet:

- **Note**: The view of the worksheet can be **Default**.
- **Import** - Column Details
- **Export** - Summary Work Sheet and Column Details
- **Columns** - Copy Column Data
- **Snapshots** - Create and Open
- **Currency** - Project Currency and Base Currency
- **Row Coloring** - Multi-Color and Single-Color
- **Properties**
- **Audit Log**

Open a Project or Shell Cost Sheet

The ability to open, view, enter data, work with the column structure or modify properties on a cost sheet is dependent upon the permissions that you have. Contact your project or company administrator if you have questions regarding your permission levels.

> **Note**: When you first open the sheet, the opening view will depend on the **Default View** option selected in the Properties window. Your cost sheet administrator can set this default view. Cost sheets can be resized and split/unsplit (see ***Resize cost sheet window*** (on page 241) or ***Split or unsplit cost sheet window*** (on page 241)).

To open a project or shell cost sheet

1) Open the project or shell.
2) Click **Cost Manager > Cost Sheet** in the left Navigator. The Cost Sheet log opens.
3) The cost sheet will be displayed in bold font in the log. Select the sheet from the log and click **Open**. The Project Cost Sheet opens.

This item	Does this
Save As	Click this button to save a snapshot copy of the cost sheet.
Rows	Opens the Rows window, from which you can add or manage rows.

This item	Does this
Columns	Opens the Columns log, from which you can add or manage cost sheet columns, or assign access restrictions.
Find	Click to search for a cost code.
Split	Splits the window vertically so you can scroll through the columns while maintaining a view of the CBS code.
Fund Assignment Order	Opens the Fund Assignment window (if the Funding Manager is used). Allows you to set the project or shell fund assignment order at the CBS level.
Cost Sheet cells	Click on a cell to view the Cell Details window.
CBS Code	Click on the CBS code name to open the CBS Detail window.
Column Heading	Click on a column heading to view more information about the column type.
File Menu > Open	Opens the Snapshot log.
File Menu > Import	Click and select one of the following: ▸ Summary Cost Sheet ▸ Summary Budget ▸ CBS Details ▸ Column Details
File Menu > Export	Click and select one of the following: ▸ Summary Budget ▸ CBS Details ▸ Column Details
File Menu > Properties	Opens the Properties window.
Edit Menu > Budget Distribution	Opens the Budget Distribution window, in which you can manage the budget or lock/unlock the budget.
Edit Menu > Copy > Column Data	Copy data from one column to another, from one or multiple rows.
View Menu > Currency	Click and select the display currency in which to display the cost sheet data.
View Menu > Audit Log	Opens the Audit log for the cost sheet.
View Menu > Expand	Expands all CBS codes. There is also an Expand button.
View Menu > Collapse	Collapses all CBS codes. There is also a Collapse button.

Cost Sheet Restrictions

Your Administrator can configure cost sheet restrictions to restrict users or groups from viewing or editing columns within a cost sheet. The behavior of these restrictions depends upon the Company-level Global setting **Override column restrictions**.

The following feature applies to the following cost sheets:

- Company-level
- Program-level
- Shell-level
- Project-level

For each type of cost sheet, the user's corresponding groups must be taken into account (company-level, program-level, and project/shell level) for the column restrictions.

If the option **Override column restrictions** *is not selected*, then:

If the user belongs to a group which does not allow editing or viewing a column in the cost sheet (or a user is individually restricted), then the user will be restricted from editing or viewing a column in the cost sheet.

If the option **Override column restrictions** *is selected*, then:

It allows user to view or edit a cost sheet column if any of the restricted groups or the individual user is allowed to view or edit the column.

For more details on Cost Sheet column behavior, when the checkbox is checked, consider the following scenarios:

For all the groups which are configured for restrictions on a cost sheet column, if all of the groups to which a user belongs are restricted from viewing or editing the column and if the user is individually configured and restricted to view or edit that column, then the user will be restricted from viewing that column.

If the user (who is configured for restrictions in the cost sheet) is not restricted from viewing or editing the column, or if the user belongs to a group that is not restricted from viewing or editing the column, then the user is not restricted from viewing or editing that column.

If the user does not belong to any groups that are configured for restrictions on a column in the cost sheet, and the user is not configured individually for restrictions in the cost sheet, then the user is not restricted from viewing or editing the column.

In order for the user to be able to view a cost sheet column, the user must have **View** permission for the cost sheet. If the user does not have **View** permission for the cost sheet, the user cannot view the cost sheet columns even if the user belongs to a group that is configured to view the cost sheet columns.

When you select or clear the **Override column restrictions** option and save the change, the system approves the change immediately, and you do not need to sign out and sign back in.

Resize cost sheet window

The cost sheet window can be resized by clicking the **Minimize** or **Maximize/Restore** buttons in the upper right corner of the window, or by dragging the edges of the window to the size that you need.

Split or unsplit cost sheet window

When working with a cost sheet with many columns, it can be useful to split the window using the **Split** and **Freeze** toggle buttons. This allows you to scroll through the columns in the right half of the window, while maintaining a view of the CBS Code and CBS Item columns in the left half.

To display the cost sheet in split window mode

1) In the cost sheet window, click the **Split** button. The sheet is split into two sections.
2) You can click on the vertical split line and move it horizontally to adjust the size of the panes, if desired.
3) Use the scroll bars at the bottom of the window to scroll horizontally through the columns. When you have the left portion of the window in the position you want (for example, to view the CBS Code or CBS Item column), click the **Freeze** button to lock it in place.
4) Scroll through the columns in the right half of the window to view or enter data as necessary.
5) You can click **Freeze** again to unlock the left half, or click **Split** again to restore the window.

Entering Data into a Cost Sheet

The following topics describe how to enter data into a cost sheet.

Add a Line Item to a Project or Shell Cost Sheet

A cost sheet column may be defined for manual data entry, depending on the column definition:

- **Manual, line item content:** The data is entered in a line item format, allowing multiple line item entries per cell. The total is displayed in the cell.
- **Manual, direct entry:** Numeric values are entered directly into the cell.

To add a line item to a project or shell cost sheet

1) From the project or shell Cost Sheet window, click the link in the line item cell. The Cell Detail window opens.
2) Click the **Add** button. The Line Item window opens.
3) Complete the Line Item window as described in the following table.
4) Click **OK**. The new line item will be added to the Cell Detail window.

In this field	Do this
Short Description	This description will appear on the Cell Detail window.
Long Description	Optional, to provide more information.
Work Package	Select a work package, if any, with which to associate the line item.

Spend Category	Select a spend category if this has been set up to be tracked.
Quantity	Enter a quantity (at least 1) as applicable.
Unit of Measure	Select the appropriate choice from the list.
Unit Cost	Enter this manually.
Amount	Automatically calculated as Quantity X Unit Cost.
Delete Line Item	Click this button to delete the line item from the Cell Detail window.

Note: For budget-related columns (for example, Assigned Budget), you can enter line item data as long as the undistributed balance is at least as large as the line item amount. The undistributed balance will adjust as line items are added, displaying the budget amount left.

To add a line item cost entry by copying an existing line item

1) In the project or shell Cost Sheet window, click the link in the line item cell. The Cell Detail window opens. Any existing line items will be listed in the lower portion of the window.
2) Select the line item to copy and click the **Copy Line Item** button. The Line Item window opens with the original line item entry information filled in.
3) You may make changes as necessary for the new entry, or leave as is to make an exact copy of the original line item.
4) Click **OK**. The new line item will be added to the Cell Detail window.

Enter data directly into a cell

Some manual entry cells are configured for direct entry, rather than line item entry. Data entry cells do not have links.

To enter data into direct entry cells

1) Click inside the cell. The cell becomes editable.
2) Enter the numeric value directly into the cell.

Copy data from one column to another

You can copy the data from any manual entry column to another.

To add line items by copying existing data from one column to another

1) Open the project or shell Cost Sheet window, click the **Edit** menu and choose **Copy > Column Data**. The Copy Column Data window opens.
2) Complete the Copy Column Data window as described in the table below.
3) Click **Copy**. The data in the first column will be copied into the second column.

In this field	Do this
Copy type	Choose one of the following: ▸ Cell total only: Copies the total value displayed in the cell. The new line item will be labeled as "Copy of *original column name*," ignoring quantity and unit cost. ▸ Cell detail: Copies all cell detail information from the original line item.
Copy from column	From the drop-down list, select the column to copy. Only line item entry columns will be listed.
Percentage	You may enter a percentage value to copy. For example, if you choose 10%, then 10% of the value of the original column value will be copied into the new column.
Copy to column	From the drop-down list, select the column into which you want the line items copied
Rows	Choose one of the following from which you want to copy the values: ▸ All: To copy values to all of the rows. ▸ Partial: To copy the values of selected rows only. Click the **Select** button to choose the rows to copy.

View column properties

To view column properties

Click the column heading. All column headings except the first two (CBS Details and CBS Item) are hyperlinks that open the View Column window. The window shows information about the column, such as the data source, entry method or formula, data format, and format of the last total row.

Change cost sheet currency

You can view cost sheet data in the company base currency or the project or shell currency, which may differ.

> **Note**: This is also applicable to work packages and worksheets.

To choose the display currency on a cost sheet or worksheet

1) Open the project or shell Cost Sheet or worksheet window.
2) From the **Edit** menu, click **Currency** and choose the currency from the list.

To choose the display currency on a work package

1) Open the work package window.
2) Click the currency drop-down list in the upper right corner of the sheet and choose the currency from the list.

Expand or collapse CBS codes

You can expand or collapse all CBS codes in a cost sheet. If you have a large number of CBS codes in a tree structure, you can expand that structure to view all of the CBS codes at once.

To expand or collapse CBS codes in a cost sheet

1) Open the project or shell Cost Sheet or worksheet window.
2) Click **View > Expand** to expand all of the CBS codes in the cost sheet. Click **View > Collapse** to collapse all of the CBS codes in the cost sheet. Alternatively, you can click the **Expand** and **Collapse** buttons.

View cost sheet cell details

The values displayed in a cost sheet cell may reflect information from multiple line items, business process transactions, or results of a calculation from other cells. The following procedures discuss how to view the details about an entry in a cost sheet cell.

To open the Cell Detail window

In the project or shell Cost Sheet dialog, click the link of the cost code. The Cell Detail tab in the right pane displays the contents of the cost attribute form.

> **Note:** If the data elements in the Cost Attribute form have tooltips, then they will appear in the form of a questions mark (?) symbol. You can hover over the question mark (?) symbol to see more information.

To view manual line item entry details

From the Cell Detail window, double-click a listed line item. The Line Item window opens.

To view business process transaction details

1) From the Cell Detail window, double-click a listed line item. A copy of the business process transaction opens. In here, you can view or take action on the BP transaction.
2) Double-click a BP line item. The BP's Line Item window opens.

To view formula cell details

1) In the Cell Detail window, if line items from manual entry columns or BP transaction columns are included in the calculation, they will be listed in the lower portion of the window, with the calculated value for each line item.

> **Note**: In the Forecasts and Forecasts (Unaccepted) columns, if data sources are from a business process enabled for costs sheet forecasting, the Cell Detail window contains an Include in Forecast button.

2) Click a listed line item. If the line item is a BP transaction, the BP form opens. If the line item is a manual entry, the Line Item window opens.
3) To view the formula used for the column, click the **Formula** link.

To view budget cell details

The Cell Detail window displays as line items information generated from the budget, as applicable. Typical budget columns include assigned budget. The undistributed balance amount will be displayed as a line item. You may add line items if the undistributed balance is at least as large as the line item amount.

This item	Does this
Attach	Lets you attach files to the cell from your local machine (My Computer) or from the Document Manager. You can view existing file attachments by clicking the **Attachments** link in the upper portion of the window.
Add Notes	Click to add a note to the cell. You can view existing notes by clicking the **Notes** link in the upper portion of the window.
Add	Click to add a line item (transaction) to the cost sheet (applicable for manual transaction columns).
Remove	Allows you to remove a selected line item.
Copy	Adds a line item by copying an existing one.
View Menu > Audit Log	Opens the Audit Log for the cell.

To open a workflow BP record from cost sheet

For a workflow BP, you can:

- Accept task, if the BP record is not in the end-step
- Modify the BP record and route it to the next step. The cost sheet will be refreshed if the record is routed to next step. If you edit the BP record and save it, the system saves a draft.

To open a non-workflow BP record from cost sheet

You can open and take action on a non-workflow BP record if you have Edit permission. If the BP record is in non-edit mode, then the Edit option is available.

If you do not have Edit permission, you can view the BP record, only.

If you do not have View permission, the system will display the message, "You do not have permission to view record."

To open a BP record from cost sheet (Record Editors or Step Editors)

When the BP record editor, or step editor, opens the BP record from cost sheet, the editor can update the BP record if the BP record is in accepted state and the editor has View permissions to view the BP record.

Upon opening the record, the editor will see the Save option, only. The editor can edit the BP record but cannot route the BP record to the next step, or submit the BP record.

Add Notes or Attachments to a Cell

You can add notes or attach files to any cell in the cost sheet. Files can be uploaded from your local environment (My Computer) or from the Document Manager.

To access cell detail notes and attachments

1) In the Cost Sheet window, click in any cell that displays as a link (line item entry, formula, or automatic entry from a BP). The Cell Detail window opens.
2) You can add a note, view existing notes, add a file attachment, or view attached files.

To add notes to a cell

1) In the Cell Detail window, click **Add Notes**. The Add Notes window opens.
2) Type the note in the text box and click **OK**. Each time you add a new note, the **Notes counter** in the Cell Detail window updates to reflect the number of notes that exist for the cell.

To view notes attached to a cell

1) If any notes have been added to the cell, the **Notes** link on the Cell Detail window will display the number of notes.
2) Click the **Notes** link. The Notes List opens, displaying all of the notes that have been added. Each note displays the user who added the note, and the date and time it was added.

To modify or delete cell detail notes

Notes added to a cost sheet cell cannot be modified or deleted.

To attach files to a cell

In the Cell Detail window, click **Attach** and choose:

- **My Computer** to attach the file from your local system. The procedure is the same as for uploading files to the Document Manager. For rules on attaching files, see the *Unifier General User Guide*.
- **Primavera Unifier Folder** to attach documents from the Document Manager. The window opens, displaying the project or shell documents files and folders. Select the files and folders to attach and click **OK**.

Note: Folders are not attached. The contents of selected folders are attached in a flat list. Documents with duplicate file names will not attach.

To view attached files

1) If any files have been attached to the cell, the **Attachments** link on the Cell Detail window will display the number of attached files.
2) Click the **Attachments** link. The Attachments window opens.
3) Choose a file and click **Open**. The document will open in the viewer selected in your user preferences.

To delete an attached file

1) In the Cell Detail window, click the **Attachments** link to open the Attachments window.
2) Select the file to be deleted, then click the **Delete** button.

To download a copy of an attached file

1) In the Cell Detail window, click the **Attachments** link to open the Attachments window.
2) Select the file to be downloaded and click **Download**.
3) Browse to a location on your local system and click **OK**. Click **Yes** to confirm.

Search for CBS codes (rows)

You can search for a particular cost code by searching for one or multiple segments.

To search for a cost code

1) In the Cost Sheet window, click **Find**. The Cost Code Find window opens.
2) Select the cost code segments you want to search by and click **OK**.

   The results will be shown in a separate cost sheet window. The new window also has split capability so that you can keep the CBS code in view and scroll through the columns.

Edit cost sheet data

The following procedures discuss how to modify cost sheet data. Manually entered cost sheet data can be edited or modified directly from the cost sheet (assuming you have modify permissions).

Cost sheet entries rolled up from transaction BPs or calculated in formula columns are not editable. Data rolled up through business processes can only be modified by submitting business processes such as change orders. Formula column cells will reflect changes made to other column data used in the calculations.

To edit direct entry data

1) In the project or shell Cost Sheet window, click inside the cell to edit. The cell becomes editable.
2) Enter the new value.

To edit line item data

1) In the project or shell Cost Sheet window, click the link in the cell to edit. The Cell Detail window opens. Line items are listed in the lower portion of the window.
2) Double-click the line item to edit. The Line Item window opens.
3) Edit the Line Item window as needed.
4) Click **OK** to save changes and close the Line Item window.

To delete a line item

1) From the project or shell Cost Sheet window, click the link in the cell in which to delete the line item. The Cell Detail window opens.
2) Do one of the following:
   - Select the line item to delete, then click **Remove**. The line item is deleted.
   - Double-click the line item to open the Line Item window. Click the **Delete** button.
3) Click **Yes** to confirm.

To edit or delete data rolled up from a business process

Cost sheet data originating from a business process cannot be edited from the cost sheet.

Data must be edited in the business process record if it is still active or through an appropriate change BP, such as a change order.

To edit or delete data calculated in a formula column

Formula column cells will reflect changes made to other column data used in the calculations. Click the column heading to view the formula and display the cost sheet columns used in the calculation. This will help you determine whether to edit the formula, the data on another column, or other source.

Save or view cost snapshots

You can save a snapshot or a read-only view of the project or shell cost sheet and worksheets. You can view a snapshot in both project and transaction currencies. Snapshots cannot be deleted.

To save a snapshot of the cost sheet or worksheet

1) Open the cost sheet or work sheet.
2) Click the **Save As** button. The Save As Snapshot window opens.
3) Enter a title and click **OK**.

To view the snapshot

1) Open the cost sheet, work package, or worksheet.
2) Click the **File** menu and choose **Open**. The Snapshot Log window opens, displaying the list of snapshots.
3) Select a snapshot and click **Open**. A non-editable view of the cost sheet or worksheet opens, displaying the sheet at the time the snapshot was taken.

Importing and Exporting Cost Sheet Data

You can import CBS detail information into a cost sheet manual entry column from a comma-delimited-value (CSV) file, such as a Microsoft Excel spreadsheet saved in CSV format.

> **Note**: For information about internationalization and CSV files refer to *Unifier General User Guide*.

To import project or shell cost sheet information

1) In the project or shell cost sheet, click **File** > **Import** and then choose one of the following:
   - **Summary Budget:**
     Summarizes the budget information.
   - **CBS Details:**
     Lists CBS codes and CBS details information for each.
   - **Column Details:**
     Summarizes column details for specific columns.
     For a project level cost sheet, the following columns are available for import/export:
     - Assigned Budget
     - Yet To Buy
     - AFC
     - Project Cost 1 to Project Cost 100, for columns where the Entry Method is set to Manual Entry for either Direct entry into cell or Line Item content (either visible or hidden)
2) Browse to the CSV file to import, select it, and click **OK**.
   Note the following:

Import Option	Rules
Summary Budget	The following rules apply when importing into the cost sheet: ▸ Negative numbers are not allowed for budget distribution amount. ▸ There is no check on import whether the total capital or expense budget was exceeded. After the import is completed, return to the Budget Distribution page and save and lock the budget. Once the budget is locked, the system performs the necessary check to determine if the total capital or expense budget has exceeded the original budget.
CBS Details	The following rules apply to the CBS details when importing into the cost sheet: ▸ CBS details are updated, and new, valid CBS details are added in the order specified in the CSV file. ▸ The complete CBS code, including the parent code, must be valid and in the correct order in the CSV file.

Column Details	The following rules apply to the column details when importing into the cost sheet: ▸ This selection adds a column to the cost sheet and is usually done as part of the administration of the cost sheet. ▸ For the Assigned Budget (or Budget Remaining Balance) column and Manual Entry column, all of the existing budget line items are deleted and replaced with the new budget line items defined in the CSV file, even if the CSV file only provides a partial list of CBS codes. ▸ Values in the Distributed Budget column are for reference only.

Once you have constructed the cost sheet and distributed the budget, you can export specific cost sheet information, saving it to a local file system in a comma-separated-value (CSV) format.

To export project or shell cost sheet data

1) In the project or shell cost sheet, select **File** > **Export** and then choose one of the following options.
   - **Summary Cost Sheet:**
     Creates a summary of all rows, columns, and data on the cost sheet.
   - **Summary Budget:**
     Creates a summary of the budget window information.
   - **CBS Details:**
     Lists all of the CBS codes on the cost sheet and the CBS details information for each.
   - **Column Details:**

     Creates a summary of column details for the selected column.

     For a project level cost sheet, the following columns are available for import/export:

     - Assigned Budget
     - Yet To Buy
     - AFC
     - Project Cost 1 to Project Cost 100, for columns where the Entry Method is set to Manual Entry for either Direct entry into cell or Line Item content (either visible or hidden)

   The Summary Cost Sheet option only supports saving the structure for reference purposes. The other three exported files can be modified and then imported into a new or existing project or shell cost sheet.
2) Read the confirmation message and click **Yes** to continue.

   You can open the file in a compatible program, such as Microsoft Excel, to review it before saving.
3) Click **Save** and specify the location in which to save the CSV file.

> **Note**: If you open the CSV file, you will see that it contains notes regarding modifying the columns and data in the exported file for

re-importing into a cost sheet. Follow the notes embedded in the CSV file for modifying columns and data in the exported file.

You can create Cost Based Structure (CBS) Codes in Cost Sheets.

Importing Cost Sheet Data from P6

P6 Schedule contains CBS Structure, or Codes, and sends the CBS codes to Unifier Cost Sheet CBS Codes, also called CBS Codes.

- If you select to use, or run, the Synchronization "Create CBS in Unifier Cost Sheet" within the Gateway, the Unifier Cost Sheet within the integrated Unifier Projects receive the CBS Codes created via integration.
- If the Unifier Cost Sheet contains preexisting CBS Codes, or contains no Cost Codes, you can choose to run the Synchronization to create CBS Codes in Unifier, via integration.

CBS Codes created in P6 have "imported" root to Leaf Structure and are not under any hierarchy that has been created manually. An "imported" Leaf CBS Code appears under an "imported" root and non-root Summary CBS Codes; however, you can create "manual" Leaf CBS Codes under "imported" Summary CBS Codes.

Notes:

- When you are creating Summary CBS Codes by using a CSV file, ensure that you select the corresponding "Exposed to P6" correctly.
- When you are creating a Summary CBS Codes by using Web Services, the "Exposed to P6" option remains deselected.
- If you hide a parent Summary CBS Code, all the corresponding children will be hidden.
- If you do not select a Summary CBS Code, the corresponding Leaf codes will remain unselected.
- If you select one Leaf code, the corresponding parent Summary CBS Code will be selected.
- If you hide a Leaf code, the hidden Leaf code remains hidden in P6 CBS picker, but the Summary CBS Codes stay as they were.

About Synchronization methods

Note: The Synchronization Methods are defined in P6 and not Unifier.

Complete:

When Synchronization Method = Complete, P6 sends *all* CBS levels/codes to Unifier via Gateway.

The application receives the attributes for each CBS and uses the "Default" value of each Cost Segment to create Cost Codes within the Cost Sheet.

If the number of CBS levels in P6 Schedule is fewer than the number of Cost Segments in the corresponding Cost Sheet, then Unifier creates two CBS Codes for each lowest level CBS code sent from P6:

- One Summary CBS code
- One dummy Leaf CBS Code under the Summary CBS code

Levels:

When Synchronization Method = Levels, P6 sends *selected* CBS levels/codes to Unifier via Gateway. The selected CBS levels/codes are the codes that are up to a defined number of levels within the P6 Schedule. The remaining CBS codes are not sent.

Unifier receives the attributes for each CBS and uses the "Default" value of each Cost Segment to create Cost Codes within the Cost Sheet.

If the number of CBS levels in P6 Schedule is fewer than the number of Cost Segments in the corresponding Cost Sheet, then Unifier creates two CBS Codes for each lowest level CBS code sent from P6:

- One Summary CBS code
- One dummy Leaf CBS Code under the Summary CBS code

Partial:

When Synchronization Method = Partial, P6 sends selected CBS levels/codes to Unifier via Gateway. The selected CBS levels/codes are the codes that are selected as "Integrated." The remaining CBS codes are not sent.

Unifier receives the attributes for each CBS and uses the "Default" value of each Cost Segment to create Cost Codes within the Cost Sheet.

If the number of CBS levels in P6 Schedule is fewer than the number of Cost Segments in the corresponding Cost Sheet, then Unifier creates two CBS Codes for each lowest level CBS code sent from P6:

- One Summary CBS code
- One dummy Leaf CBS Code under the Summary CBS code

Notes:

- You can switch between the synchronization methods at any point.
- When CBS codes are sent from P6 to Unifier, mark the codes as Imported from P6.

Defining the budget

After the project or shell cost sheet is defined, you can define the project or shell capital and expense budget amounts and begin distributing the budget to the various CBS accounts. Budgets are managed in the Budget Distribution window.

About budget and budget distribution

After the project or shell cost sheet is defined, you can define the project or shell capital and expense budget amounts and begin distributing the budget to the various CBS accounts. Budgets are managed in the Budget Distribution window.

Note: Users with module-level modify permission can lock and unlock the budget distribution. An exception to this is if Assigned Budget is one

of the cost sheet columns, and the user has view restrictions on the column. If a user cannot view the Assigned Budget column, the Budget Distribution menu option is not available. In addition, the user cannot import a summary budget.

Open the Budget Distribution window

To open the Budget Distribution window:

1) Open the project or shell cost sheet.
2) Click the **Edit** menu and select **Budget Distribution**. The Budget Distribution window opens.
3) Use the information in the table below to enter budget information as necessary.
4) Click **OK** to save and exit.

Item	Description
Project or Shell Capital Budget	
Project or Shell Expense Budget	
Scope of Budget	
Comments	A text field for any budget-related comments.
Undistributed Capital Amount	
Undistributed Expense Amount	
Lock Date	If the budget is currently locked, the lock date displays.
Status	Shows if the budget is currently locked or unlocked.
Lock/Unlock Explanation (View)	Click the **View** link to open an audit log that lists the dates, times, and explanations for lock and unlock budget instances.
Project or Shell Currency	Displays the currency used in the project or shell. This may differ from the base currency.
Base Currency	Displays the base currency used for your company.
Exchange Rate	This is the calculation that is used to convert the base currency to the project or shell currency.
No. of Attachments	Displays the number of files, if any, attached to the budget window. Click on the link to view or download.

Item	Description
Budget Distributed Amount	The lower part of the window displays each CBS code row that appears on the cost sheet. Enter the budget amount for each one. Clicking on a CBS code link will open the CBS Detail window.
Attach	Click this button to attach files to the budget distribution window.
Save & Lock	This button is available if the budget is currently unlocked. Clicking it locks and distributes the budget. You will be prompted to provide an explanation for this action.
Unlock	This button is available if the budget is currently locked. Clicking it unlocks the budget to allow for modification to the budget window and cost sheet rows. You will be prompted to provide an explanation for this action.
Audit Log	This button accesses the audit log, which records budget activity.

Distribute and lock the budget

After the Budget Distribution window has been completed, you can distribute the budget and lock the budget.

To distribute and lock the budget

1) Complete the Budget Distribution window.
2) Click **Apply** to save changes.
3) Click **Save & Lock**.
4) When prompted, enter an explanation for locking the budget, then click **OK**.
5) Click **Close** to close the Budget Distribution window.

Unlock the budget

If the budget has been locked, you must unlock it to make any budget changes or certain cost sheet modifications, such as adding or modifying cost sheet rows.

To unlock the budget

1) From the Budget Distribution window, click the **Unlock** button.
2) When prompted, enter an explanation for unlocking the budget, then click **OK**.
3) You can make edits to the budget or cost sheet as needed, then save and lock the budget again.

Permission matrix for the Budget Distribution window

Assigned Budget			Budget Distribution				Import Summary Budget
Not Added	Added		Lock	Unlock	View	Edit	
X	X		Yes	Yes	Yes	Yes	Yes
	Restrictions (View)	Restrictions (Edit)					
	Yes		No	No	Yes	No	No
	Yes	Yes	Yes	Yes	Yes	Yes	Yes
	No		No	No	No	No	No

Managing Project/Shell Cost Sheets and Properties

The ability to modify cost sheet rows, columns or properties is dependent on your user permissions. Contact your project or company administrator regarding your permission levels.

View or edit cost sheet properties

Cost sheet properties include the name, description, structure definition (flat or tree), CBS code, CBS item titles, and switches for forecast details and forecast inclusion functionality.

Most properties are not editable in the cost sheet after it has been created. The exception is the **Default View**, which can be edited.

To open the cost sheet Properties window

1) Open the cost sheet Properties window by doing one of the following:
   - Select the cost sheet from the log and click the **Properties** button on the toolbar.
   - Open the cost sheet. Click the **File** menu and choose **Properties**.
2) The Properties window opens.
   - The **General** tab displays the Title and Description, and enables the administrator to set a Default View for when the cost sheet is opened from the log.
   - The **Structure** tab displays the CBS Code segment and display structure used in the cost sheet. This information is view-only after the cost sheet has been created.
   - The **Options** tab displays display and forecasting information used in the cost sheet. This information is also view-only after the cost sheet is created.

Working with Cost Sheet Forecasting

Cost sheet forecasting allows you to manage the forecast process by detail line items. It utilizes cost-type base commits, change commits, or generic business processes that were included in the Forecasts (Unaccepted) formula.

Here is a high level overview of the Cost sheet forecasting process.

1) When a forecast-enabled commitment routes to a terminal status it attains "Unaccepted" status, for example, Base Commits (Unaccepted). Note: this is different from Base Commits (Approved) or any other routing status.
2) In this example Base Commits (Unaccepted) line items become available for inclusion in the cost sheet forecast.
3) When you click the Forecasting button, the Forecast Adjustment log opens, where you can see all unaccepted line items, based upon the formula used in the Forecasts (Unaccepted) column.
4) As these line items are accepted into the forecast, the unaccepted status changes to accepted, for example, Base Commits (Accepted).
5) Depending upon cost sheet configuration, for the amount accepted into the forecast:
   - Yet To Buy automatically decreases
   - Forecast (Unaccepted) decreases
   - Forecast increases

To accept line items into the forecast

1) In the cost sheet, click the **Forecast** button. The Forecast Adjustment log opens.
2) Select the line items that you want to include in the forecast and click the **Include in Forecast** button. Select either **All Line Items** or **Selected Line Items**. The Select Adjustment Option window opens.
3) In the Select Adjustment Option window you have three options. Your selection of an option controls how your cost sheet uses the Yet To Buy (YTB) and Allowance For Change data sources to construct the forecast. Option behavior is as follows:

   Automatically adjust YTB

   - The system automatically changes the line item to Accepted status, subtracts the amount from the YTB (or adds it if designed to do so), and includes the line item amount in the forecast, if configured to do so.
   - Cell Details displays a line item for System Auto Adjustment that shows the transaction in the YTB column
   - Because the value of the YTB cannot become negative, each transaction will be processed individually. This may result in only certain transactions being processed, and others staying at Unaccepted status. If the transaction was not processed because doing so would have yielded a negative YTB, the system will cause an alert. The unaccepted line items will be available to view in the Forecast Adjustment window.

   Manually adjust YTB and AFC

   - This option becomes available in the Cell Detail window when you click the Include in Forecast button
   - You can add, delete, or modify line items before including commits into the forecast
   - The system does not validate the entry or automatically update the YTB in the cost sheet

   No adjustment

- The system will automatically add the commitment into the forecast, if configured, and change the status to Accepted. It will not update the Yet To Buy or Allowance For Change columns.

Working with Yet to Buy (YTB) and Allowance for Change (AFC) data sources

Cost sheet forecasting is designed to leverage the YTB and AFC data sources. If your company's forecast process uses the YTB and AFC data sources, you can configure the system to reduce the YTB automatically as you accept commits into the forecast.

Example:

The Total Commits is at $4,000, Yet To Buy is at $2,000, Pending Forecasts (that is, Forecasts (Unaccepted)) is at $2,000, and Forecasts is at $2,000.

When the $2,000 in the Pending Forecasts column is accepted into the Forecasts column, then the Yet To Buy decreases by that amount. The Total Commits and Forecasts columns will read $4,000, and the Yet To Buy and Pending Forecasts columns will read 0.00. The Yet To Buy value may never go below zero.

If designed to do so, the line item commitment may increase the YTB instead of reducing it. For example, if you have a change commit that adds scope to a project, when that change commit is approved you may want to add scope to the YTB.

If your company's forecast process does not use YTB or AFC, you may still use cost sheet forecasting. When the Yet To Buy column is added to the cost sheet, column details will show any actions previously taken with the YTB.

To adjust YTB and AFC manually

1) Click the link in the cost sheet cell to open the Cell Detail window.

   In any column built with the Forecast(Unaccepted) data source, the Cell Detail window will have an Include in Forecast button.
2) Select the line item in the Transactions log, and then click **Include in Forecast**.

   The Select Adjustment Option window is now available.
3) Select **Manually adjust YTB and AFC**. The Forecast Adjustment window opens.
4) To include items in Transactions in the forecast:
   a. Select a line item.
   b. In the **Action** field select **Mark**. The system refreshes the sheet.
   c. Repeat the last step and select Include marked in Forecast.

      The option Include marked in Forecast changes the status of any marked transactions to Accepted and becomes a data source for use in the forecast, if included in the Forecast formula.

      Manual actions taken are not validated; you can include a value in the forecast without touching the YTB or AFC.

Working with Work Packages

A work package is a group of cost sheet rows that is a subset of the project or shell cost sheet. Work packages display view-only data taken directly from the project or shell cost sheet and is not editable in the Work Package window. Data must be edited in the project or shell Cost Sheet window.

Create a Work Package

The following procedure discusses how to create a work package.

> **Note**: After a work package has been created, it cannot be deleted.

To create a work package

1) Go to your project or shell (**User** mode).
   This is the project or shell that contains the cash flow that you want.
2) From the left Navigator, click the **Cost Manager** node to expand it.
3) Click the **Cost Sheet** sub-node to open the **Cost Sheet** log.
4) Click the **Create** button, and select **Work Package**. The Work Package Properties window opens.
5) Use the information in the following table to complete the Work Package Properties window, and click **Save**.

In this field	Do this
Title	Enter a title, which displays in the log.
Reference No.	Enter a unique reference number.
Description	You may enter a description of the work package here.
Creator	This will be populated automatically with the name of the user creating the work package.
Date Initiated	This is populated automatically with the initiated date.
Status	Select **Active** or **Inactive**.
Owner	Select an owner for the record.
Vendor	Select a vendor for the work package.

You can attach files to the work package after creation with the **Attachments** tab, which appears in the right pane when the record is selected.

Open a Work Package

To open a work package:

1) Open the project or shell.
2) Click **Cost Manager > Cost Sheet** in the left Navigator. The Cost Sheet log opens.
3) Double click on a work package from the log, or hover over the work package, click the *Gear menu,* and click **Open**. The Work Package opens.

> **Note**: You can click the **Split** button to split the window to scroll through the columns while maintaining the CBS code in view. A summary of the work package data can be exported into a CSV file from this window.

Change Work Package Currency

You can view work packages in the company base currency or the project currency, which may differ.

To choose the currency in which to display the work package data

Open the Work Package window. In the top toolbar, click the **Switch to Base Currency** icon (). If you want to switch back to project currency, click the same button again.

View Work Package Properties

To open the Work Package Properties tab:

From the project or shell Cost Sheet log, select the work package. The **Properties** tab is visible in the right pane.

Export Work Package Data

You can save summary work package data to a local file system in a CSV or Excel format.

To export work package data

1) Open the Work Package
2) From the Work Package window, click the **Print** button.
3) Select one of the following options:
   - **Print**
   - **Export To CSV**
   - **Export To Excel**

Depending on your browser or your export selection, the file will be downloaded automatically, or you will be prompted to download the file manually.

Working with Worksheets

Worksheets are extensions of the cost sheet. They can be used as subcost sheets, enabling specific calculations or data entry in a separate sheet, which can then be rolled up into a defined project or shell cost sheet column. The rows equal the CBS codes on the cost sheet. Worksheets can have multiple columns for data entry or formula calculations, but do not support data rolled up from business processes.

Example uses of a worksheet:

- A worksheet can be used to off-load complex calculations requiring multiple columns. The final value can be rolled up into a single cost sheet column.
- Worksheets are governed by individual permissions. You can design worksheets to use as a method of data entry or review for users that you do not want to have any access to the project or shell cost sheet, for example, a contractor who is developing an estimate.

A cost sheet column can be associated with a worksheet as the data entry method. A worksheet column can also be associated with another worksheet, as long as there is not a circular reference. There can be multiple worksheets in a project or shell.

> **Note**: A circular reference is referred to a reference in which the last field references the first field and creates a closed loop.

A worksheet template can be created in Administration Mode. Permissions can be controlled for individual worksheets. Worksheets are not independently reportable; however, cost sheet columns that reference worksheets can be reported on.

Create a Worksheet

You can create a worksheet by copying a worksheet template or copying a worksheet from another project or shell.

To create a worksheet from a template

1) In User Mode, click **Cost Manager > Cost Sheet** in the left Navigator. The Cost Sheet log opens.
2) Click **New** and select **Worksheet > Copy from Template**. The Copy from Template window opens.
3) Select the template to copy and click **OK**. The worksheet appears in the log.

To create a worksheet from another worksheet

1) In User Mode, click **Cost Manager > Cost Sheet** in the left Navigator. The Cost Sheet log opens.
2) Click **New** and select **Worksheet > Copy from Project or Copy from Shell**. The Copy from Project or Shell window opens. The window lists each worksheet in each project or shell. If there are multiple worksheets in a project or shell, each will be listed separately.
3) Select the project or shell worksheet to copy and click **OK**. The worksheet appears in the log.

You can add manual-entry or formula columns to a worksheet. Rows are created automatically from the CBS codes in the cost sheet.

Open a Worksheet

To open a worksheet directly from the log

1) In User mode, click **Cost Manager > Cost Sheet** in the left Navigator.
   The Cost Sheet log opens.
2) Select the worksheet from the log, and click **Open**.

> **Note**: When you first open the sheet, the opening view will depend on the **Default View** option selected in the Properties window. Your cost sheet administrator can set this default view. Worksheets can be resized and split/unsplit the same way as cost sheets (see ***Resize cost sheet window*** (on page 241) or ***Split or unsplit cost sheet window*** (on page 241)).

To open a worksheet from the cost sheet

Click on cost sheet column data that refers to a worksheet as data entry.

Adding a column to a worksheet is similar to adding a column to the cost sheet. You can add manual-entry (direct or line item) columns or formula columns. You can also add columns that reference other worksheets. This allows interaction between worksheets.

The available data sources are Project Worksheet Cost 1 through 50.

To add a column

1) Open the worksheet and click the **Columns** button. The Columns Log opens.
2) Click **New**. The Column Properties window opens.
3) Complete the column properties as usual for a column.
   If you are creating a formula, the data sources that are available for the formula are limited to the other columns on the worksheet.
4) Complete the window and click **OK**.

View or edit worksheet properties

Worksheet and worksheet type properties can be viewed and edited. The ability to edit worksheet properties is dependent on your user permission settings. Contact your project or company administrator if you have questions regarding your user permission settings.

To view or edit worksheet properties

When you click on your existing project cost sheet from the **Cost Sheet** log (<Project/Shell> > **Cost Manager** node > **Cost Sheet** sub node), the right pane of the log displays the following tabs:

- **Properties tab**
- **Audit Log tab**

When you open (*gear* (⚙) menu or double-click) your existing project cost sheet from the **Cost Sheet** log (<Project/Shell> > **Cost Manager** node > **Cost Sheet** sub node), the Cost Sheet window opens and displays the currency, series of toolbar options, and the project cost sheet.

> **Note**: You cannot edit your existing project cost sheet from the **Cost Sheet** log.

When you click on a worksheet type in the **Cost Sheet** log (<Project/Shell> > **Cost Manager** node > **Cost Sheet** sub node), the right pane of the log displays the following tabs:

- **Properties tab**
- **Permissions tab**
- **Audit Log tab**

These tabs enable you to edit or change the name or description of a worksheet type, view permissions for it, and view a log listing the changes in it.

When you open (*gear* (⚙) menu or double-click) a worksheet type in the **Cost Sheet** log (<Project/Shell> > **Cost Manager** node > **Cost Sheet** sub node), the worksheet overlay window opens which contains details about the worksheet. If you click on any of the cells, under any column in the worksheet, the **Cell Detail** window opens which enable you to view the information, add attachments, add notes, and so forth.

Modify worksheet default view

You cannot modify a worksheet default view, but you can create new views and set any newly created view as the default view.

Add a worksheet column to the cost sheet

You can roll up the data from a worksheet column into a project or shell cost sheet column.

To add a worksheet column to the cost sheet

1) In the cost sheet, click **Columns**, then click **New**. The Column Properties window opens.
2) In the **Datasource** column, choose any of the project or shell cost data sources **Project Cost 1** through **Project Cost 25**.
3) For Entry Method, choose **Worksheet**.
4) Choose the worksheet (name), and then the column within the worksheet.
5) Complete the rest of the Properties window and click **OK**.

Worksheet data in cost sheet column:

When a worksheet is used as a source for a cost sheet column, you can open the source worksheet by clicking on a cell in the cost sheet column and proceed to make necessary data changes in the worksheet and click Save to save the updated source worksheet.

When you update the source worksheet using this method, the system saves the updated worksheet in the database, but the system does not show the updates in the cost sheet window, immediately.

To see the updates in the cost sheet, you must do one of the following:

- Refresh the cost sheet (click Refresh), or
- Close the cost sheet and open it again.

  Example:

  You enter $8,888.00 in the your project Work Sheet Column (Cost 1 column, row 3) for cost code 00800 and save your input.

  As per design, the system will save your updates in the project worksheet, but it does not display the updates in the cost sheet until you click Refresh (in the cost sheet) or close the cost sheet and open it again.

Assign permissions to the worksheet

You can configure the permission settings for each worksheet, allowing you to control access to each worksheet individually. The owner of the worksheet is granted permission to access and modify it automatically. The owner must grant permissions for other users or groups to access a worksheet.

To assign permissions to a worksheet

1) In User mode, click **Cost Manager > Cost Sheet** in the left Navigator. The Cost Sheet log opens.
2) Select one or more worksheets and click **Actions > Permissions**. You can also click the *gear menu* (⚙) and click **Permissions** to assign permissions to only one worksheet. The Permissions window opens.
3) In the Permissions table, type the user or group name in the **Add** box and select the user or group to grant access.
4) By default, each listed user or group will be granted **View** permission, allowing them to open the worksheet. To grant additional permissions, select the checkboxes that correspond to the user or group:
   - **All**: User will have **View**, **Edit**, and **Modify Permission**.
   - **Modify Permissions:** Allows user to control the worksheet's permission settings.
   - **Edit Data:** User can import worksheet information, save a snapshot, edit worksheet properties, and add columns.
   - **View**: User can view the worksheet.
5) Click **Save,** or click **Save & Next** to go to the next worksheet.

You can Remove user or group permission by clicking the trash-can icon in the **Remove** column.

> **Note**: Permissions can only be set for worksheets. You cannot set permissions for cost sheets or work packages.

Import worksheet column details

You can only import data into columns that are defined as manual data entry.

To import column details

1) Click **File > Import > Column Details**, or click the **Import** button and choose **Column Details**. The Select Column window opens.
2) Select the column and click **OK**.

Export worksheet details

This will allow the user to export details of the worksheet. The following options are available under Export:

- **Summary Worksheet:** This option will export the entire worksheet similar to cost sheets.
- **Column Details:** You can only export data from manual data-entry columns.

To export a summary worksheet

Click **File > Export > Summary Worksheet**, or click the **Export** button and choose **Summary Worksheet**.

Project or Shell Cost Sheet Log

When you click the Cost Sheet sub-node in the left Navigator (User mode), you can see the Cost Sheet log layout.

> **Note**: The functions of the options presented in this section have been explained in the preceding sections of the Working wit Project or Shell Cost Sheet. This section explains new functions and procedural differences.

The log contains the following types of records:

- Cost Sheet
- Worksheets
- Work Packages

Cost Sheet Log

When you select a cost sheet row (click on a cost sheet row) the right-hand pane opens. The right-hand pane has the following tabs that provide more details on a cost sheet that you have selected:

- **Properties**
- **Audit Log**

The **Properties** tab contains the following fields:

- **Name**
  Cost Sheet Name. Read only field.
- **Description**
  Cost Sheet Description. Read-only field.
- **Structure**
  Read-only field. Displays the selected Radio option only. For example, if cost sheet Structure is 'Flat', then this field displays the 'Flat' only (and not 'Tree') structure.
- **Sort WBS**
  Editable checkbox that is displayed only if the structure is 'Flat'.
- **Segments**
  Displays a preview of the cost code structure using the segments and cost code separator as defined by the user.
- **CBS Code Label**
  Read-only field.
- **CBS Item Label**
  Read-only field. This is same as existing field 'CBS Item' within the block 'Labels' and tab 'Options.'
- **Forecast Details**
  Read-only. Displays the radio option selected by the user when defining the cost sheet.
- **Forecast Inclusion**
  Read-only. Displays the radio option selected by the user when defining the cost sheet.
- **Enable Cost Sheet Forecasting**
  Read-only checkbox. It is displayed only if the user has selected this option.
- **Enable P6 sources**
  Editable checkbox.

The **Audit Log** tab displays the Audit log (View > Audit Log) for the cost sheet.

The right-hand pane has the 'Expand' icon at the top right. Use it to expand or collapse the pane.

The left-hand pane lists all of the shell instances of the same type (the shell in which cost sheet is being created).

If you create a cost sheet in a standard project, then the list shows a list of all standard project instances in the company, and you can copy cost sheet from any source.

The Cost Sheet log layout contains the following columns:

- **Name**
- **Type**
  This will be the default sort column, followed by sort on **Name**

- **Status**
- **Date Created**
- **Created By**
- **Reference No.**

  This column does not appear in an empty log or if there are no work packages in the log. That is to say that this column appears only if there are work packages within the log.

The following options are available on the toolbar:

- **Create**
- **Actions > Permissions**
- **View**
- **Refresh**
- **Print**
- **Find**

The following explains each option in detail.

Create

When *no* Cost Sheet has been created yet, there are two sub-menu options available:

- **from Template**

  Lists all the available Cost Sheet Templates within the company. You can create a Cost Sheet within the project/shell when you click New > Cost Sheet > Copy from Template.
- **from <shell type>**

  When you select this option, the Create Cost Sheet from Project window opens. In this window you can:
  - See the selected project
  - Manually enter columns from a list of available columns
  - Determine the shell size, location, and duration

  The fields in this window capture the factors that you can copy over manual entry columns from source project/shell cost sheet to destination. The Available Columns displays a list of all manual entry columns from the selected project cost sheet. You can select none or any number of available columns in the right section. The Factors fields enable you to enter a factor to copy over the manual entry columns into the cost sheet.

  When you click **Done**, a new cost sheet will be created in the project.

Actions > Permissions

Lets you configure the permission settings for a worksheet. For more information, see ***Assign permissions to the worksheet***.

View

The default view is **All** which results in the display of all sheets in the log. You can select **Group by Type** view which results in the cost sheets grouped by type, with the cost sheet at the top.

Refresh

Updates the data that is displayed.

Print

Lets you print the list of cost sheets displayed (**Print**) or export the list to an external file (**Export to CSV** or **Export to Excel**).

Find

To find an item on the log. You can do a text based 'Find' on each column.

When no records have been created within the log, the right-hand pane is blank. You can collapse the right-hand pane.

When there are records within the Cost Sheet node, the Project Cost Sheet is selected by default, and the **Create** option has the following sub-menu options:

- **Worksheet:** (Same as creating the cost sheet from a template or from another project. Selecting any template creates a new worksheet in the project by copying the selected template.)
  - **from Template:** Selecting any template creates a new worksheet in the project by copying the selected template.

    Project Cost Sheet - Template 1 < listing all the available WorkSheet Templates in the Company

    Project Cost Sheet - Template 2 < listing all the available WorkSheet Templates in the Company
  - **from Projects:** Selecting this option lets you select a worksheet from another shell of the same type in which the worksheet is being created. This picker is similar to the 'Select Project' picker in 'Create Cost Sheet from Project' window. Similar to 'Select Project' picker in 'Create Cost Sheet from Project' form, when you click at the 'Select Project' picker a flat list of all worksheets from all shells of same type as the one in which the worksheet is being created. You can select 'Create Worksheet (from project) and then navigate to some other log within the system without taking any action in the resulting overlay form. In such a scenario, when you return to the Cost Sheet log, the previously opened overlay form will continue to show up in the log.
- **Work Package**

  When you select to create a new Work Package, you will see a new overlay window (Create Work Package). The 'Owner' picker is similar to a single-select type-ahead user picker at other places in the system (For example: Transfer Ownership action within BP logs). The 'Vendor' picker is a single select type-ahead Company picker (similar to the single select user picker). Both pickers provide suggestive text informing you that these are type-ahead boxes.

If you select more than one record from the cost sheet log at the same time, the right-hand pane will be blank with message: Details of multiple records cannot be viewed.

> **Note**: If you select more than one worksheet at the same time, the right-hand pane displays the **Permissions** tab.

Worksheet Log

When you select a project or shell worksheet (click the row), the right pane opens and displays the following tabs:

- **Properties**
- **Audit Log**

The **Properties** tab is displayed by default and contains properties of the Worksheet. The General block in this tab has the following tabs:

- **Name**: Worksheet Name. Editable Text Box, DD will be same as existing
- **Description**: Worksheet description. Editable text box, DD will be same as existing.

The **Audit Log** tab displays the Audit log (View > Audit Log) for the Worksheet.

The right pane has the 'Expand' icon at the top right. Use it to expand or collapse the pane.

If you select more than one record from the worksheet at the same time, the right pane displays the Permissions tab. This lets you set permissions for more than one worksheet at the same time.

To grant permission to a worksheet

1) In User Mode, click **Cost Manager > Cost Sheet** in the left Navigator. The Cost Sheet log opens.
2) Select one or more worksheets and click **Actions > Permissions**. You can also click the *gear menu* (⚙) and click Permissions to assign permissions to only one worksheet. The Permissions window opens.
3) In the Permissions table, type the user or group name in the **Add** box and select the user or group to grant access.
4) By default, each listed user or group will be granted **View** permission, allowing them to open the worksheet. To grant additional permissions, select the checkboxes that correspond to the user or group:
   - **All**: User will have **View**, **Edit**, and **Modify Permission**.
   - **Modify Permissions:** Allows user to control the worksheet's permission settings.
   - **Edit Data:** User can import worksheet information, save a snapshot, edit worksheet properties, and add columns.
   - **View**: User can view the worksheet.
5) Click **Save.**
6) When editing one record at a time, click the **left arrow** to view the previous worksheet or the **right arrow** to view the next worksheet.
7) After exiting the Permissions window, the Permissions tab will be refreshed with the updated information.

You can Remove user or group permission by clicking the trash-can icon in the **Remove** column.

Work Packages

When you hover over a Work Package row, the *gear menu* (⚙) displays.

When user will select a Work Package row (click on the Work Package row), the right-hand pane opens and displays the following tabs:

- **Properties**
- **Attachments**

> **Note**: The 'Vendor' is a company picker.

The **Properties** tab is displayed by default and contains properties of the Work Package. The General block contains all of the elements of the Work Package properties window.

The **Attachments** tab has the same elements of the Attachments tab in a BP log. You can add attachments from a Document Manager, or your local computer, from this tab.

The *gear* (⚙) menu, for any attachment has the following options:

- **Review**
- **AutoVue Review**
- **Download**
- **Remove**

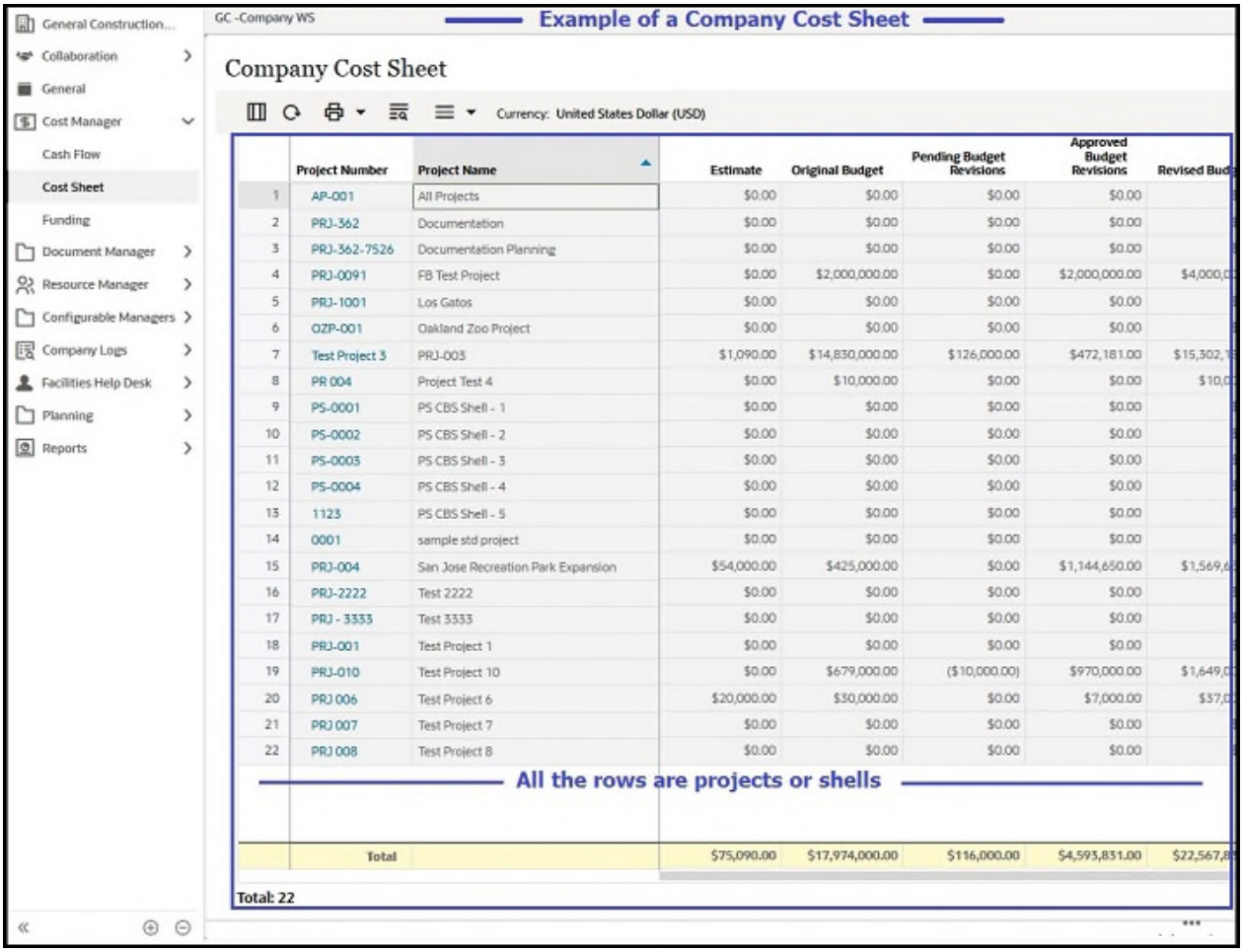
You can right-click on multiple attachments and perform download or remove.

Working with the Company Cost Sheet

Like other cost sheets, the ability to work with the **Company Cost Sheet** depends on the permissions that you have.

> **Note**: Contact your project or company administrator if you have questions regarding your permission levels.

A **Company Cost Sheet**, as shown in the example below, is comprised of a series of company projects or shells represented in rows.



	Project Number	Project Name	Estimate	Original Budget	Pending Budget Revisions	Approved Budget Revisions	Revised Bud
1	AP-001	All Projects	$0.00	$0.00	$0.00	$0.00	
2	PRJ-362	Documentation	$0.00	$0.00	$0.00	$0.00	
3	PRJ-362-7526	Documentation Planning	$0.00	$0.00	$0.00	$0.00	
4	PRJ-0091	FB Test Project	$0.00	$2,000,000.00	$0.00	$2,000,000.00	$4,000,0
5	PRJ-1001	Los Gatos	$0.00	$0.00	$0.00	$0.00	
6	OZP-001	Oakland Zoo Project	$0.00	$0.00	$0.00	$0.00	
7	Test Project 3	PRJ-003	$1,090.00	$14,830,000.00	$126,000.00	$472,181.00	$15,302,1
8	PR 004	Project Test 4	$0.00	$10,000.00	$0.00	$0.00	$10,0
9	PS-0001	PS CBS Shell - 1	$0.00	$0.00	$0.00	$0.00	
10	PS-0002	PS CBS Shell - 2	$0.00	$0.00	$0.00	$0.00	
11	PS-0003	PS CBS Shell - 3	$0.00	$0.00	$0.00	$0.00	
12	PS-0004	PS CBS Shell - 4	$0.00	$0.00	$0.00	$0.00	
13	1123	PS CBS Shell - 5	$0.00	$0.00	$0.00	$0.00	
14	0001	sample std project	$0.00	$0.00	$0.00	$0.00	
15	PRJ-004	San Jose Recreation Park Expansion	$54,000.00	$425,000.00	$0.00	$1,144,650.00	$1,569,6
16	PRJ-2222	Test 2222	$0.00	$0.00	$0.00	$0.00	
17	PRJ - 3333	Test 3333	$0.00	$0.00	$0.00	$0.00	
18	PRJ-001	Test Project 1	$0.00	$0.00	$0.00	$0.00	
19	PRJ-010	Test Project 10	$0.00	$679,000.00	($10,000.00)	$970,000.00	$1,649,0
20	PRJ 006	Test Project 6	$20,000.00	$30,000.00	$0.00	$7,000.00	$37,0
21	PRJ 007	Test Project 7	$0.00	$0.00	$0.00	$0.00	
22	PRJ 008	Test Project 8	$0.00	$0.00	$0.00	$0.00	
	Total		$75,090.00	$17,974,000.00	$116,000.00	$4,593,831.00	$22,567,8

> **Note**: There is only one **Company Cost Sheet**.

Within the **Company Cost Sheet**, the projects or shells are listed in order by **Project Number** and then by **Project Name** followed by other data sources, all shown in columns.

Data rolls up to the **Company Cost Sheet** columns from the individual project or shell cost sheets columns, by data source.

The **Company Cost Sheet** columns headings provide the following information, upon hover over:

- **DataSource**
- **Total**
- **Formula** (when applicable to the data source)

If the *Base Currency* is different from the *Shell Currency*, then the current "Active" *Exchange Rate* is used to display Costs in the **Company Cost Sheet**.

Only published P6 data source, as defined by the Administrator (in the **Standards & Libraries** (**Admin** mode)), can be used for P6 as data source. If you add a column to the **Company Cost Sheet** and select P6 as the data source, then the data is acquired from the corresponding **P6 Source** column of the shells in the company.

The following explains how to work with the **Company Cost Sheet**.

Opening Company Cost Sheet

To open the **Company Cost Sheet**:

1) Go to your Company Workspace and switch to **User** mode.
2) From the left Navigator, click the **Cost Manager** node to expand it.
3) Click **Cost Sheet** sub-node to open the **Company Cost Sheet** to access all of the CBS projects or shells that the **Company Cost Sheet** pulls data from.

Searching for Projects or Shells in Company Cost Sheet

To search for projects or shells that are listed (rows) in the **Company Cost Sheet**:

1) From the toolbar, click **Find on Page** to open a row on top of the rows within the **Company Cost Sheet**.
2) Enter values in the desired column to start a search for a specific project or shell that contains the information that you are searching for.

To deactivate the search, click on **Find on Page**.

Importing Company Cost Sheet Data

To export the **Company Cost Sheet** data:

1) From the toolbar, click **Menu Options** (the icon with three horizontal lines and a down-arrow) and select **Import**.
2) Click **Column Details** to open the **Import Column Details** window.
3) Click the **Column Name** drop-down and select the column that you want to import.
4) Click **Import**.
5) Follow the prompts.

Exporting Company Cost Sheet Data

To export the **Company Cost Sheet** data:

1) From the toolbar, click **Menu Options** (the icon with three horizontal lines and a down-arrow) and select **Export**.
2) Select one of the following options:
   a. **Summary Cost Sheets**

      Enables you to create a comma-separated values (CSV) file (**Summary_Cost_Sheet.csv**) for export. This options allows you to export complete cost sheet information, including project or shell name, number, and data from all columns.
   b. **Column Details**

To open the **Export Column Details** window and select the column that you want to export. Click the **Column Name** drop-down and select the column that you want to export. This option exports only Company Cost 1 to Column Cost 25 logical data sources that are configured as manual entry.

3) Click **Export**.
4) Follow the prompts.

Adding a Column to Company Cost Sheet

The **Project Number** and **Project Name** columns in the **Company Cost Sheet** are static. This means that you cannot delete or hide these columns. Also, you cannot add columns to the static columns or see or access their properties. These two columns are separated from the rest of the columns through a vertical separator.

The rest of the columns in the **Company Cost Sheet** are dynamic. This means that you can delete or hide these columns. Also, you can add columns to the dynamic columns or see or access their properties. To access these options, right-click on the column heading and select from the following available options:

- **Hide**
- **Delete**
- **Lock after this Column**
- **Insert**
- **Properties**

With the exception of the very first column (one of the static columns), if you click inside a cell and right click, you get the **Insert Column Before** and **Insert Column After** options. The second column (**Project Name**) allows you to **Insert Column After**, only.

To add a column to the **Company Cost Sheet**:

> **Note**: The red asterisk next to a field box indicates that the field is a required field. You will not be able to save your changes without entering a value in that field.

1) From the toolbar, click the **Add Column** icon to open the **New Column window**.
2) Enter values, or select options, in the following fields:

- **Name**

  (Required) Enter the name of the new column that you want to add to the existing **Company Cost Sheet**.

- **Type**

  (Required) Select the source type. Your options are:

  - **From Business Process**
  - **Direct Entry**
  - **Line Item Content**
  - **Formula**

    (Required) When you select this option the **Formula** field box opens in the **New Column** window to enable you to enter the formula.

To create or build a formula, click the **Select** icon (top right-corner of the **Formula** field box) to open the **Formula Creation** window. In this window, you can select the column that you want to contain the formula and use the features to create or build your formula.

- **Datasource**

  (Required) Select your data source.

  > **Note**: The options made available in **Datasource** drop-down list changes based on the selection that you make in the **Type** drop-down list.

- **Data Format**

  Selecting one of options under this field depends on your previous selections. The option for **Data Format** are:

  a. **Currency**
  b. **Decimal**

- **Display Mode**

  Enables you to determine whether to display the column, after you add it to the sheet, or not.

  a. **Show**
  b. **Hide**

- **Total**

  Enables you to set how the totals are displayed. The options are:

  a. **Blank**
  b. **Sum of All Rows**

- **Column Position After**

  Enables you to determine the position of the added column.

1) When finished, you can do one of the of the following:
   a. Click **Save** to save your changes and close the window.
   b. Click **Save & Add New** to save your changes and begin the process of adding a new ...

   To discard changes, or to close window, click **Cancel**.

Restricting a Column on the Company Cost Sheet

Restricting columns on the **Company Cost Sheet** refers to allowing or disallowing users or groups to edit or view columns.

To place restrictions on a column on the **Company Cost Sheet:**

From the toolbar, click **Menu Options** (the icon with three horizontal lines and a down-arrow) and select **Columns**.

1) Click **Restrictions** to open the **Restrictions** window.
2) To select users or groups, click the **Select** icon to open the **User and Group Picker** window. After you select your users or groups, click **Done** to add the users or groups and close the window and go back to the **Restrictions** window.
3) Proceed to select the column (under the **Column**) that you want to be restricted for the users or groups.

4) Restrict users or groups by preventing (disallowing) them to edit or view the column.

   If you do not see the **Disallow Editing** or **Disallow Viewing** columns, right-click on the **Column** header to open the menu, click **Columns** and click to select the **Disallow Editing** and **Disallow Viewing** one at a time.

   The **Column** header menu also enables you to sort, lock and unlock columns: **Sort Ascending**, **Sort Descending**, **Lock after this Column**, and **Unlock**

5) When finished, you can do one of the of the following:
   a. Click **Save** to save your changes and close the window.
   b. Click **Save & Close** to save your changes and close the **Restrictions** window.

   To discard changes, or to close window, click **Cancel**.

Changing the Properties of a Column on the Company Cost Sheet

To change the properties of an existing column on the **Company Cost Sheet**:

1) To open the **Column Properties** window, right-click the column heading and select **Properties**.
2) Proceed to change or update the values, or selections, for the following fields:
   - **Name**
   - **Type**
   - **Datasource**
   - **Data Format**
   - **Display Mode**
   - **Total**
   - **Column Position After**

   For details about each of the preceding fields, see ***Adding a Column to Company Cost Sheet*** (on page 272).
3) When finished, click **Save** to save your changes and close the window.

To discard changes, or to close window, click **Cancel**.

Creating and Opening a Snapshot of the Company Cost Sheet

Snapshot provides a rendering of the **Company Cost Sheet** at the time that the snapshot was taken. It is similar to take a photo of the **Company Cost Sheet** at a specific time.

To create a snapshot of the Company Cost Sheet:

1) From the toolbar, click **Menu Options** (the icon with three horizontal lines and a down-arrow) and select **Snapshots**.
2) Click **Create** to open the **Create Snapshot** window.
3) (Required) Enter a title for the snapshot. Note that the date and time is displayed.
4) Click **Create**.

   To discard changes, or to close the window, click **Cancel**.

To open your snapshot, or any previous snapshots:

1) From the toolbar, click **Menu Options** (the icon with three horizontal lines and a down-arrow) and select **Snapshots**.

2) Click **Open** to open the **Snapshot Log** window.
3) The **Snapshot Log** lists all of the **Company Cost Sheet** snapshots in a table, categorized according to the snapshot title, date that it was created, and the user who created it.

   You can use the toolbar options to refresh the list, print or export the list, or find items in the list.
4) Click on the desired snapshot on the list, click the *gear menu*, select **Open** to open the snapshot. Alternatively, you can double-click on the selected snapshot to open it.

You can open several snapshots, if available, in order to compare past values with the current ones.

You can close the **Snapshot Log** window after you have open your snapshots.

Accessing Project or Shell Cost Sheet from Company Cost Sheet

You can access project or shell cost sheet through the **Company Cost Sheet**. This enables you to access any specific cost information (about the project or shell cost sheet) that "rolls up" to the **Company Cost Sheet**.

To access the project or shell cost sheet through the **Company Cost Sheet**:

1) Go to your Company Workspace and switch to **User** mode.
2) From the left Navigator, click the **Cost Manager** node to expand it.
3) Click the **Cost Sheet** sub-node to open the **Company Cost Sheet** to access all of the CBS projects or shells that the **Company Cost Sheet** pulls data from.

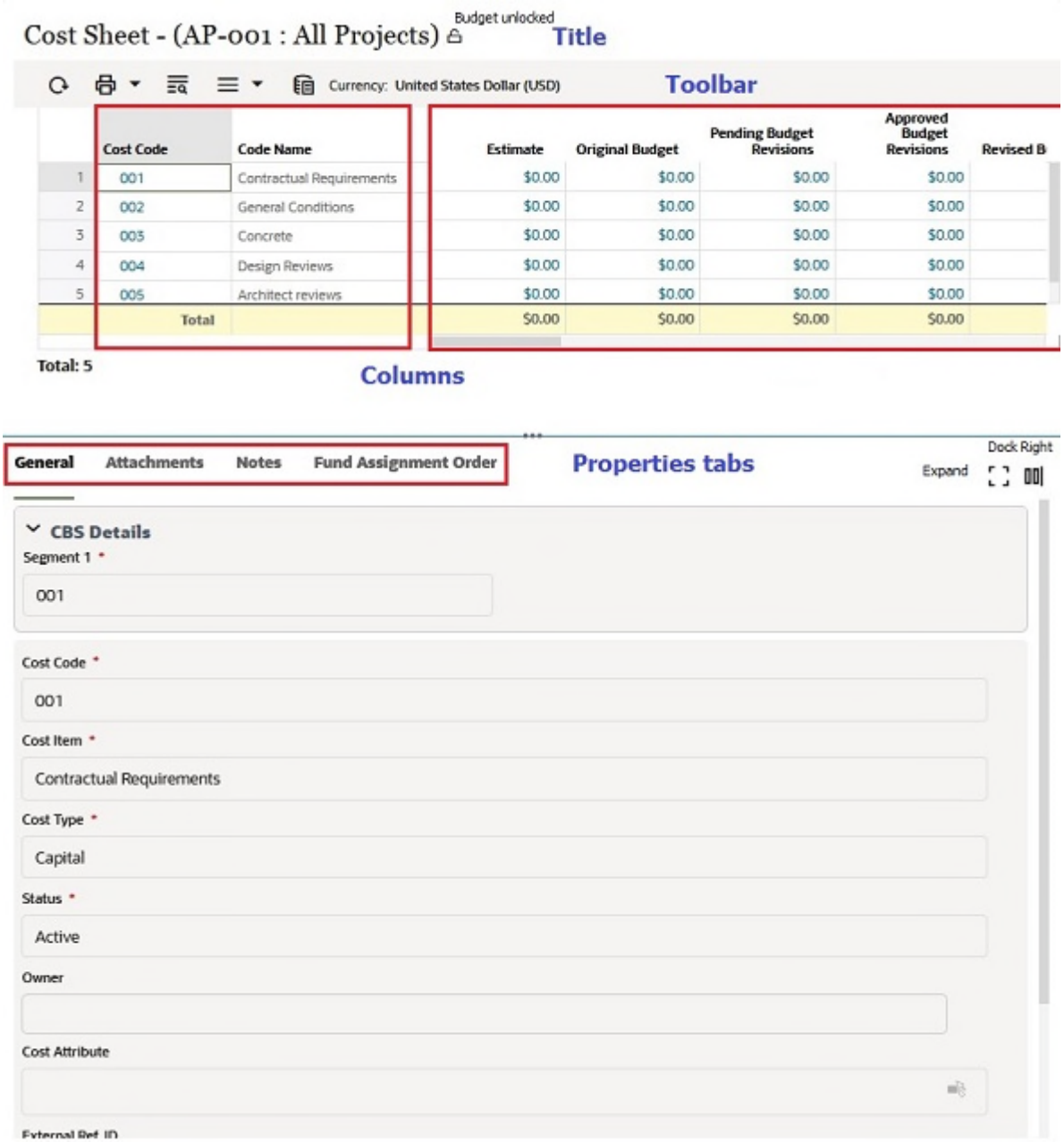
> **Note**: If the selected source cost sheet has duplicate columns that the system cannot auto-correct, an alert is displayed to the user to take further action.

4) From the first column, identify the project or shell that you want to access, and click in the cell (click on the link) to open the cost sheet for that project or shell in a window.

As shown in the image below, the cost sheet window has the following parts:

- Title
- Toolbar
- Columns

- Properties tabs



- Title

  Displaying the title of the cost sheet and an icon (open padlock or closed padlock) indicating whether the budget for the project or shell is unlocked or locked.

- Toolbar

  Enabling to conduct various operations within or with the cost sheet. See the "***Project or Shell Toolbar Options*** (on page 277)" topic below for details.

- Columns

  There are two sets of columns:

- Cost Code and Code Name columns
- Other columns

See the "***Project or Shell Cost Sheet Columns*** (on page 280)" topic below for details about the columns.

- Properties tabs

  The properties tabs provide additional information about each cost code, as well as the associated budget, included in the project or shell cost sheet. With the exception of the **Code Name** column, each column in the cost sheet has a corresponding properties that are shown in a series of tabs, displayed at the lower section of the project or shell cost sheet window. In case you cannot see these properties tabs, click and drag the split screen icon (the three horizontal dots) to adjust the size of the lower pane.

  See the Project or Shell Cost Sheet Columns below for details about the columns and properties tabs.

  The following explains the elements of project or shell cost sheet when you access it from the company cost sheet.

Project or Shell Cost Sheet Toolbar Options

The following explains the project or shell cost sheet toolbar options, after you open the project or shell cost sheet from the company cost sheet.

Refresh

Use this option to update the information displayed on the screen.

Print

Use this option to print the information displayed on the screen (**Print**), export the list displayed to an external files (**Export to CSV** or **Export to Excel**).

Find on Page

Use this option to search the information displayed on the screen in order to find a particular item or entry.

Clicking this option will open a row on top of the rows within the log, and you can enter values in each column to start a search for a specific item in the log.

Menu Options (the three horizontal lines with an arrow)

This option enables you to access the following features:

Feature	Description
Export	Enables you to export the following: ▸ Summary Cost Sheet ▸ Summary Budget ▸ CBS Details ▸ Column Details
Snapshots	To open the **Snapshot Log** window and access all of the snapshots taken from the cost sheet.

Feature	Description
Currency	To select one of the following currency options for the cost sheet: ▸ **Project Currency** ▸ **Base Currency**
Budget Distribution	To open the **Budget Distribution** window. Note that the open padlock icon signifies that the budget for this cost sheet is unlocked. See the "Working with Budget Distribution Overview" and the "Working with Budget Distribution Distributed Amount" topics below for details.
Row Coloring	To apply color to the columns. Your options are: ▸ **Multiple Colors** ▸ **Single Color**
Properties	To open the **Properties** window. This option enables you to review properties such as CBS code label, CBS item label, whether the cost sheet has been enabled to received data from P6, and so forth. The Properties fields are read-only.
Audit Log	To see a record of all of the actions that have been taken on the project or shell cost sheet. The following are captured in the **Audit Log** window: ▸ **Date** ▸ **Event** ▸ **Action** ▸ **Field** ▸ **Old Value** ▸ **New Value** ▸ **User Name** ▸ **Proxy User** ▸ **Attachment** Use the toolbar options to refresh, print, or find items within the **Audit Log** window.

Currency

This is a toggle key enabling you to switch to Base Currency or switch to Project Currency.

Working with Budget Distribution Overview

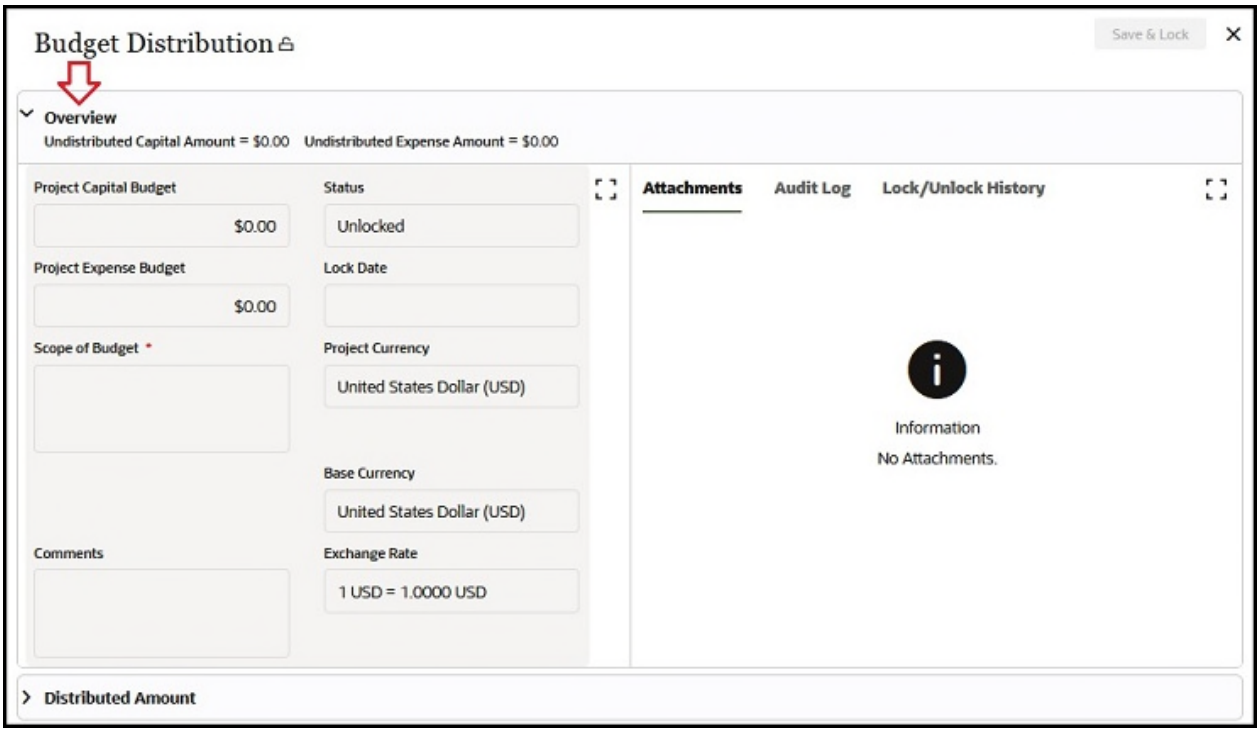
When you click **Budget Distribution** from the **Menu Options**, as shown in the image below, the **Overview** block provides two sets of information within two panes. For example, the left pane provides information about the project budget capital, expense, and scope, and the right pane provides properties information within the following tabs:

- **Attachments** tab

  Contains any available files that have been attached to the budget as supporting record.
- **Audit Log** tab

  Lists all of the actions taken on the budget.
- **Lock/Unlock History** tab

  Provides a history regarding the times that the budget has been locked or unlocked, which includes date, time, explanation, and user name.



Working with Budget Distribution Distributed Amount

When you click **Budget Distribution** from the **Menu Options**, as shown in the image below, the **Distribution Amount** block shows cost code details and properties. The **Distribution Amount** block is divided into two panes:

- The left pane lists the cost codes and the cost codes information related to the budget distribution.
- The right pane is the properties pane which contains the information to a selected cost code that is listed in the left pane.

These properties pane has the following tabs:

General tab

When you select a cost code from the left pane, this tab shows the CBS details for that cost code. All the fields are read-only.

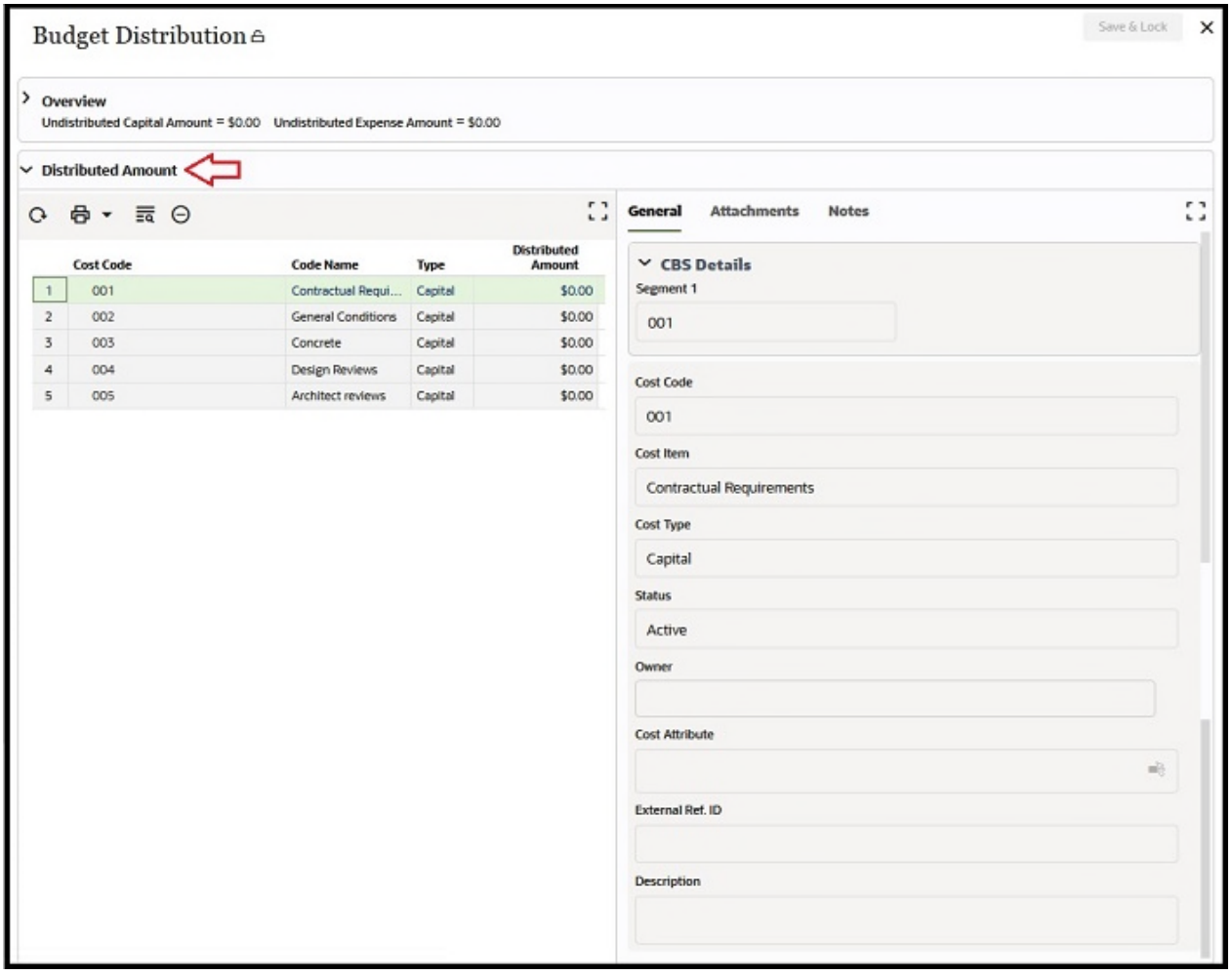
Attachments tab

When you select a cost code from the left pane, this tab lists any files that are attached to that cost code.

Notes tab

When you select a cost code from the left pane, this tab lists any notes related to that cost code.

Use the **Distribution Amount** block toolbar options to refresh, print, find, or collapse-expand the groups of cost codes listed (if any).



Project or Shell Cost Sheet Columns

There are two sets of columns in a project or shell cost sheet:

- Cost code and code name columns

- Other columns

In the first column, **Cost Code**, you can click inside a cell, then right-click, and do one of the following:

- **Add Sibling Row**

  This selection will open the **Add Rows** window which enables you to enter CBS details for the sibling row.
- **Add Child Row**
- This selection will open the **Add Rows** window which enables you to enter CBS details for the child row.

In the second column, **Cost Name**, you can click inside a cell, then right-click, and do one of the following:

- **Add Sibling Row**
- **Add Child Row**
- **Insert Column After**

  This selection will open the **New Column** window which enables you to name the new column, select the source type (form BP, worksheet, activity sheet, line item, etc.), select a data source, data format, display mode, total, and determine the column position.

If you right click in a cell within other columns, then you can:

- **Add Sibling Row**
- **Add Child Row**
- **Insert Column Before**
- **Insert Column After**

Project or Shell Cost Sheet Columns and Properties Tabs

If you click inside a cell under the **Cost Code** column, then the following properties tabs will be displayed at the lower section of the project or shell cost sheet window:

- **General** tab

  The **General** tab will display the CBS details, Cost Code, Cost Item, Cost Type, Status, and other information related to the selected Cost Code. The information on the **General** tab is read-only.
- **Attachments** tab

  The **Attachments** tab will include attachments, if available.
- **Notes** tab

  The **Notes** tab will include any related notes, if available.
- **Fund Assignment Order** tab

  The **Fund Assignment Order** tab will include information if the Funding Manager is used to set the project or shell fund assignment order at the CBS level.

If you click inside a cell under the other columns, then the following properties tabs will be displayed at the lower section of the project or shell cost sheet window:

- **Transactions** tab

Which, depending on the column that you select, you can group and view the details. For example, if you select a cost code cell under the column named Original Budget, you can view th Transactions by selecting the Budget Approval (Approved), for the View By drop-down field, and see the details for that transaction such as the title, work package, description, and amount.

- **Cell Details** tab

  As the name of the tab suggests this tab provides read-only fields containing details about the CBs code that you have selected.

- **Attachments** tab

  To access any attached files related to the cost code.

- **Notes** tab

  To access any notes related to the cost code.

- **Audit Log** tab

  To see a record of all of the actions that have been taken on the column that the selected cost code is a part of.

Working with the Program Cost Sheet

The following sections describe how to open a program cost sheet, search for listed project or shell cost sheets, and import and export cost sheet information.

Data rolls up to the program cost sheet columns from individual project or shell cost sheet columns by data source. The data displayed on the program cost sheet is view only.

Open the program cost sheet

To open a program cost sheet:

1) Open the program and click **Cost Manager > Cost Sheet** in the left Navigator. The Cost Sheet log opens.
2) Select the program cost sheet from the log and click **Open**. The Program Cost Sheet opens.

> **Note**: You can click the **Split** button to split the window to scroll through the columns while maintaining the CBS code in view. A summary of the work package data can be exported into a CSV file from this window.

This item	Does this
Save As	Click this button to save a snapshot copy of the cost sheet.
Export	Click and select one of the following: Summary Cost Sheet Column Details
Import	Imports column details.

This item	Does this
Columns	Opens the Columns log, from which you can add or manage cost sheet columns.
Find	Click to search for a cost code.
Split	Splits the window vertically so you can scroll through the columns while maintaining a view of the project or shell number.
Cost Sheet cells	Click on a cell to view the Cell Details window.
Project or Shell Number	Click on the project or shell number to open the project or shell cost sheet.
Column Heading	Click on a column heading to view more information about the column type.
File Menu > Open	Opens the Snapshot log.

Search for project or shells (rows)

You can search for projects or shells by project or shell type and project or shell site. A new Program Cost window will open, displaying only those project or shells meeting the search criteria.

To search for a project or shell

1) In the Program Cost Sheet window, click **Find**. The Search window opens.
2) Select the search criteria and click **OK**.

Export program cost sheet data

To export program-level cost sheet data

1) In the program cost sheet, click the **Export** button and then choose one of the following:
   - **Summary Cost Sheet:** This allows you to export complete cost sheet information, including project or shell name, number, and data from all columns.
   - **Column Details:** This exports only Program Cost 1 to Program Cost 25 logical data sources that are configured as manual entry. Click **Column Details** to open the Select Column window and select the columns to export.
2) Read the confirmation message and then click **Yes** to continue.
3) You may choose to open the file in a compatible program such as Microsoft Excel to review it before saving.
4) Click **Save** and specify the location in which to save the CSV file.

Import program cost sheet data

You can import manual entry columns into the Cost Sheet from a comma-delimited (CSV) file (such as a Microsoft Excel spreadsheet saved in CSV format).

To import program cost sheet information

1) From the program cost sheet, click the **Import** button then choose **Column Details**.
2) Browse to the CSV file to import, select it, and click **OK**.

Schedules of Values (SOV)

The Schedule of Values (SOV) feature provides a way to assemble information from Contract, Change Order, Invoice, and Payment Business Process into an SOV sheet and streamline the process of invoicing for completed phases of a project. The following is a list of Schedule of Values (SOV) types:

- **General Spends**
- **Payment Applications**
- **Summary Payment Applications**

SOV functionality is available with uDesigner-created Cost BPs for which the **Allow creation of SOV** option is defined. The business processes can be designed to create an SOV sheet automatically upon reaching the designated step.

When a Base Commits Business Process (BP) is approved, it creates a Schedule of Values (SOV) sheet. The SOV sheet is the "working document" on which committed amount are entered. The committed monies shown on the SOV sheet are rolled up to the Company Cost Sheet.

> **Note**: The Change Commit BPs continue to change or add costs to the SOV during the life of the Project/Shell.

The Schedule of Values (SOV) functionality provides a way to assemble information from contract, change order, and invoice/payment BPs into a SOV sheet, streamlining the process of invoicing for completed phases of a Project/Shell.

SOV functionality is available for Cost type BPs in which the "Allow creation of Schedule of Values" option is defined, or selected, in the design properties. The BPs can be designed to create an SOV sheet automatically upon reaching the designated step.

You may define one SOV sheet per Commit BP, for example, a Purchase Order or a Contract. Rows are automatically populated based on the CBS/Cost/Accounts codes defined in the Commit BP.

Similar to the Cost Sheet, you can create SOV sheet views for better view of data. From the SOV sheet log (User mode > **Cost Manager** > **Schedule of Values** > **General Spends)**, you can open:

- BP records

- Base Commits BP records

When you double-click the SOV Sheet of a Base Commits BP record, a window opens that enable you to see the SOV of the Base Commits BP record.

In the **Schedule of Values: General Spends** window, when you select a **SOV Base Record**, you can click the *gear menu* (*) and perform one of the following:

- Open a record (**Open**)

  You can also open a record by clicking the record number link in the **Properties** tab (right-hand pane of the log window).
- Set permissions for a record (**Permissions**)
- Open a SOV Base Record in Standard View (**Open Base Record**)
- Open a record in Classic View (**Open Classic Interface**)

When you open an SOV Base Record, the **Lineitem Type** column includes an active data element link, which enables you to access the line item and edit the data.

When you open an SOV Base Record, the following tabs are displayed on the right-pane:

- **General**
- **Breakdown**
- **Attachments**

  In classic view, you could add attachments, but in the standard view this option is not supported.
- **Notes**
- **Fund Assignment Order**

The contents of these tabs are read-only, and the View Transactions is similar to Cost Sheet.

Types of SOV Sheets

The following lists the types of Schedule of Values (SOV) sheets:

- General Spends
- Payment Applications
- Summary Payment Applications

> **Note**: In an SOV sheet, Unifier will round the field values, including the Decimal Amount type field values, to two decimal places.

General Spends

Use the General Spends SOV type for any Commit Business Process and associated Change Commits and Spends/Invoices.

Payment Applications

Use the Payment Applications SOV type:

- In association with Commit and Spends Business Processes that are designed for payment applications. This allows direct entry of values in an SOV sheet, which are automatically added to a payment application.
- For invoicing at the CBS or breakdown level. Payment Applications auto-populate data to and from the SOV to manage balance-forward formulas. The breakdown is similar to the General Spends SOV sheet.

> **Note**: The General Spends and Payment Applications SOV types can show CBS information either by grouping CBS codes (CBS mode) or as individual line items from commits (base commit and change commit together). The information that the SOV displays is dependent upon the design of the base commit.

Summary Payment Applications

The Summary Payment Applications SOV allows users to allocate cost to line items based on the line item type (Lump Sum or Unit Cost).

Use the Summary Payment Applications SOV type in association with Commit and Spends Business Processes (BPs) that are designed for Summary payment applications SOV type.

> **Note**: The Summary Payment Applications sub-node will be available under the Schedule of Values node only if a Base Commits, or Change Commits, of SOV type Summary Payment Applications is deployed in uDesigner.

Creating an SOV Structure

The SOV structure is defined at the Project level (User Mode). Any modifications applied to an SOV structure will be reflected on all SOV sheets using that structure, that is, all SOV sheets used in a Project. If an SOV structure does not exist when you auto-create an SOV sheet with a Cost type Business Process (BP), one will be created automatically with the default columns CBS Code, CBS Item, and Breakdown. You can edit this structure as needed. The default columns are not editable.

This section explains how to create, view, add columns to, and edit an SOV sheet structure.

Follow these steps to create an SOV sheet structure:

1) Open the Project/Shell, switch to **User** mode, and click **Cost Manager** > **Schedule of Values** in the left Navigator.
2) In the Navigator, click one of these options: **General Spends**, **Payment Applications**, or **Summary Payment Applications** to open the Schedule of Values log.

   If SOV sheets related to your options are already present, then a structure already exists and you can click **Update Structure** to update the existing structure.
3) Click the **Create Structure** button. The Select Template window opens.

4) Select an SOV template from the list and click **OK**.
5) Read the confirmation message and click **Yes** to confirm. The SOV sheets will be created using the structure defined by the template. You can use this structure as is or make edits as necessary.

Follow these steps to view, or to set up, the SOV structure:

1) From the Schedule of Values log, click the **Update Structure** button the toolbar to open the SOV Structure window and view the contents and information that is listed under each column.
2) Click the **Columns** button to begin the process of adding additional columns.
3) In the Columns log window, click **New** to open the Column Properties window.
4) Enter a name for the column in the **Name** field.
5) Select a data source from the **Datasource** drop-down list.
6) Select a Display Mode to determine whether the new column should appear on the SOV sheet or not.
7) Select a position for the new column from the **Column Position After** field.
8) Click **OK**.

Notes:

- While setting up the SOV structure, you may click the **Split** button to divide the window in half. This allows you to scroll through columns and rows on the right while maintaining a view of the activity column on the left. Clicking the **Split** button again restores the whole window. While the window is split, you may click the **Freeze** button to lock the left half of the window in place. Click **Freeze** again to unfreeze.
- The structure may contain hidden columns. For example, one or more columns used in the formulas for other columns where the information in the hidden columns is not important to be viewed may have been hidden, leaving more room in the display for the formula column. Hidden columns otherwise behave normally.

Follow these steps to edit an existing SOV structure:

1) From the Schedule of Values log, click **Update Structure** to open the SOV Structure window.
2) Click the **File** menu and choose **Properties** to open the Properties window.
3) Make edits as needed in both General and Options tabs and when finished, click **OK**.

Note: You cannot edit read-only (grayed-out) fields.

Creating General Spends SOV Sheet

Typically, Commit Business Processes (BPs) such as Contracts and Purchase Orders, are designed to automatically create an SOV sheet upon reaching a specified status. Occasionally, the Business Process (BP) may allow manual sheet creation.

When you create and send a Cost-type BP in a Project, the system automatically creates a Schedule of Values (SOV) sheet for that BP record. The General Spends SOV sheet column structure must include the required columns and correct formulas for validating summary commitments (by Cost code) and remaining commits balance. You need to define a formula for remaining commits balance, which reflects the amount of commits minus actual spends. This is to ensure that the Spends BP line items are not overdrawn from SOV breakdowns.

After the SOV template structure is set up for a General Spends SOV sheet, the rest of the SOV sheets are created based on the same structure.

> **Note:** If you manually create an SOV sheet, you can only create one based on an approved commit BP record.

Follow these steps to create a General Spends SOV sheet manually:

1) In the **Schedule of Values** log, click the **New** button. The **Select Commit** window opens.
2) Select a commit BP (e.g., a purchase order) and click **OK**. The SOV sheet is added to the log.

> **Note**: If the commit BP has been set up to automatically create an SOV sheet upon the end step, the above procedure is not required.

To view cell details, click a link (e.g., **Amount** or **Ref**) to open the Cell Detail window. Double-clicking on a record from the list window shows the details of the record.

The columns with decimal values preserve, or maintain, the decimal values specified in the data element of the following business processes and SOV types:

- Schedule of Values (SOV) sheet: Payment Application and Summary Payment Applications
- Payment Application Line Items
- Summary Payment Application Line Items

As a result, the system will not round the decimal value to two decimals, for the preceding DEs.

Creating Payment Applications SOV Sheet

You can define the structure of a Payment Applications SOV sheet based on a Payment Application Business Process (BP) in the Project/Shell.

The Payment Applications SOV type:

- Allows tracking of payment schedule against your commits similar to industry-standard forms.
- Allows you to create a breakdown for line items.

The Payment Applications SOV sheet column structure uses Data Elements (DEs) from the Detail form. After the SOV template structure is set up for a Payment Applications SOV sheet, the rest of the SOV sheets are created based on the same structure.

Follow these steps to create a Payment Applications SOV sheet, manually:

1) Open the Project/Shell, switch to **User** mode, and click **Cost Manager** > **Schedule of Values** in the left Navigator.
2) Select **Payment Applications**.
3) Click the **New** button to open the Select Commit window.
4) Select a Commit BP such as a Purchase Order and click **OK**. The SOV sheet is added to the log.

Note: If a BP has been set up to automatically create a Payment Applications SOV sheet upon the end step, the above procedure is not required.

From the right-hand pane, **Schedule of Values: Payment Applications** window, you have the option to click the record number and open the base record. The *gear menu* (⚙), for each SOV Base Record, enables you to:

- **Open**
  Open a record.
- **Permissions**
  Set permissions to a record.
- **Open Base Record**
  Open the base record.
- **Open Classic Interface**
  Open the base record in Classic View.

In the **Schedules of Values** window of a base record, the **Ref** column displays information when you select an SOV line item type as individual Commit Lines. The **Ref** column is not displayed when you select an SOV line item type as Group by Commit Codes.

The right-hand pane tabs of the CBS Code, when you click a CBS Code, are:

- **General** tab
- **Breakdown** tab
  You can add breakdown for each row in the right-hand pane, under the **Breakdown** tab.
- **Attachments** tab
  The added attachments will be shown in a grid similar to cost sheet. You cannot not add attachments in this tab.
- **Notes** tab

The CBS notes added in the cost sheet will be displayed here. You cannot add notes in this tab.

In the **Schedules of Values** window of a base record, the **Schedule Value** lists a series of values, when you click on a value, the following tabs are displayed on the right-hand pane:

- **Line Items** tab

  The tab displays all of the transactions in the cell.
- **Cell Details** tab
- **Attachments** tab
- **Notes** tab

You can reorder rows by drag and drop in the sheet, similar to General Spends SOV.

The columns with decimal values preserve, or maintain, the decimal values specified in the data element of the following business processes and SOV types:

- Schedule of Values (SOV) sheet: Payment Application and Summary Payment Applications
- Payment Application Line Items
- Summary Payment Application Line Items

As a result, the system will not round the decimal value to two decimals, for the preceding DEs.

Creating Summary Payment Applications SOV Sheet Structure

The Summary Payment Applications SOV is associated with the Base Commits, Change Commits, and Payment Applications Business Processes of Summary Application type.

You can access the Summary Payment Applications node based on your permission, which is set in Access Control.

The log window (Schedule of Values: Summary Payment Application for <BP name>) is similar to the Payment Applications log window, except the title. The log window displays multiple application type.

In the log, you can create or update the structure of a Summary Payment Applications SOV sheet, related to a Base Commits Business Process of SOV Type = Summary Payment Applications. You also add items to, or remove items from, the columns and modify the SOV structure.

The following is a list of default structure within a column

- Ref.
- Cost Code [CBS Code/bitemID]
- Code Name
- Cost Line item Type [uuu_cost_li_type (Label comes from DE label of uuu_cost_li_type]
- Description

> **Note**: Different Summary Payment Applications might have different columns, but the default structure will always be the same.

You can modify the following default column names:

- Ref.
- Cost Line Item Type
- Description

To modify the default column names, use the Options tab of the SOV Structure Properties window.

> **Note**: The Cost Code [CBS Code/bitemID] and Item labels will be based on the Cost Sheet and are disabled.

If you auto-populate the Payment Application with the Line Item fields from the Base Commits (done in Options tab of the Base Commits in uDesigner), then these fields are available to be added as columns in the SOV.

> **Note**: If there are any picker fields that refer to other sources, such fields cannot be added as a column. The drop-down list of the Auto-populate on Payment Application field includes the datasources.

Adding columns is similar to adding columns for Payment Applications SOV (including all Data elements from Payment Applications BP, and additional sources such as Scheduled Value, Commits Remaining Balance, etc.).

Additional system fields introduced in the Detail form of the Payment Application BP should be available to be added as columns.

> **Note**: Summary and Detail line items are displayed for the logical source that you have added to the SOV sheet, for example, Commits Remaining Balance.

From the right-hand pane, **Schedule of Values: Summary Payment Applications** for <BP NAME> window, you have the option to click the record number and open the base record. The *gear menu* (⚙), for each SOV Base Record, enables you to:

- **Open**

  Open a record.
- **Permissions**

  Set permissions to a record.
- **Open Base Record**

  Open the base record.
- **Open Classic Interface**

  Open the base record in Classic View.

When you open a record, in the **Schedules of Values: Summary Payment Application** window of a base record (, the following toolbar options are available:

- **Refresh**
- **Print**
- **Find on Page**
- Menu drop-down option (three-horizontal lines icon)

This option enables you to export or access the record properties.

Use Expand-Collapse option (the plus or minus icon) to adjust the list view.

When you open a record, in the **Schedules of Values: Summary Payment Application** window of a base record (Payment Application BPs of Summary Payment Application SOV type), the **Ref** column displays information when you select an SOV line item type as individual Commit Lines. The **Ref** column is not displayed when you select an SOV line item type as Group by Commit Codes.

The right-hand pane tabs of the CBS Code, when you click a CBS Code, are:

- **General** tab
- **Attachments** tab

  The added attachments will be shown in a grid similar to cost sheet. You cannot not add attachments in this tab.
- **Notes** tab

  The CBS notes added in the cost sheet will be displayed here. You cannot add notes in this tab.

In the **Schedules of Values** window of a base record, the **Schedule Value** lists a series of values, when you click on a value, the following tabs are displayed on the right-hand pane:

- **Line Items** tab

  The tab displays all of the transactions in the cell.
- **Cell Details** tab
- **Attachments** tab
- **Notes** tab

You can reorder rows by drag and drop in the sheet, similar to General Spends SOV.

Granting Permissions to Other Users

The SOV sheets can only be seen for project-level or shell-level Commit BPs. The following applies to the project-level or shell-level SOV sheets.

The creator of a Commit BP becomes the owner of the associated SOV sheet and can grant permission to other users to view or modify the SOV sheet.

Follow these steps to grant permissions to other users or groups:

1) Open the **Schedule of Values** log (**User** mode > **Cost Manager > Schedule of Values >** for example: **General Spends**).

   The SOV sheet displays a structure with fields that are populated by the values in the Commit BP.
2) Select the applicable record.
3) From the **Actions** toolbar option, select **Permissions**, or click the *gear menu* (⚙) and select **Permissions**.
4) Use the **Add** field or **Select** option to locate and select users or groups.
5) Select the permissions that you want to grant (All, **Modify Permissions**, **Edit Data**, or **View**).

6) Click **Save**.

Project Level or Shell Level SOV Sheets (Standard View)

The following details apply to logs of all the following types of the SOV Sheets:

- General Spends
- Payment Applications
- Summary Payment Applications

When you open the SOV sheet from the **Schedule of Values** log (**Cost Manager** > **User** mode > **Schedule of Values** > for example: **General Spends**), you will see:

- General Spends
- Payment Applications

When you open the SOV sheet from the **Schedule of Values** log (**User** mode > **Financial Analysis** > **Schedule of Values** > for example: **General Spends**), you will see:

- Toolbar options
- Grid
- Right-hand pane

The following explains the toolbar options. The explanations for the grid and the right-hand pane will follow.

Create	**Note**: This option is available in toolbar of the General Spends type and the Payment Application type SOV logs, only. This option is not available for the Summary Payment Application type SOV log. Enables you to create an SOV. This option is available only if: - You have permission to create an SOV. - There are Commits BP records (without a created SOV) in Terminal step. When you click **Create**, the **Commits** window opens that lists all of the Commit BPs for which an Schedule of Value (SOV) has not been created, yet. Use the **Find on Page** option to search for a particular Commits BP record. The column headers are according to the Commits BP log column headers in uDesigner. After you select a Commits BP record from the list, the system creates the SOV for the selected record.

Create Structure	You will see this option on the toolbar if: ▸ You have permission to edit the SOV structure. ▸ The SOV structure has not been created, yet. The **Create Structure** option in the *General Spends* type SOV sheets: ▸ When an SOV sheet has not been created and there are no General Spends SOV templates defined at the company-level (**Company Workspace** > **Templates**), when you click this option, the system displays this message, "No General Spends SOV Template exists." ▸ When an SOV sheet has not been created and there is one, or more, General Spends SOV templates defined at the company-level (**Company Workspace** > **Templates**), when you click this option you will see a list of templates that have been defined at the company-level (**Company Workspace** > **Templates**). When you select a template from this list, the system displays this message, "You may create only one SOV structure per project. Do you want to continue?" If you select Yes, the system creates a default SOV structure and displays this message, "Structure created successfully." The **Create Structure** option in the *Payment Applications* or *Summary Payment Applications* type SOV sheets: When you click **Create Structure**, the **SOV Structure** window opens. See "**Update Structure**" for the details on the **SOV Structure** window.

Update Structure	You will see this option on the toolbar if you have permission to edit the SOV structure when an SOV structure has been created. When you click this option, the **SOV Structure** window opens. The following elements are accessible in this window:
	- **Add Column** (the plus symbol icon): When you click this option, the **New Column** window opens which enables you to set the column properties. You can edit fields that are allowed, only.
	- **SOV Structure Properties** (the grid and plus symbol icon): When you click this option, an overlay window (**SOV Properties**) opens which contains the following blocks:
	  - **General**: Displays the Name and Description fields.
	  - **Labels**: displays all the fields in the Classic View of of the **Options** tab (**Update Structure** > **File** > **Properties** window).
	- **Find On Page**
	- **Name** column
	- **Data Source** column
	- **Data Format** column
	- **Visible** column
	For each SOV structure that is listed you have the following options:
	- Delete
	- Menu (the three horizontal bar icon): Enables you to open the **Permissions** window (similar to Non-Workflow BP or Cost Sheet log). You can use this window to grant or edit permissions to user or groups. All permission fields are read-only.

Actions	To access the **Permissions** window.
Refresh	To update the list on the screen.
Print	To print the items on the log.

Search	To search for a SOV structure.
Find on Page	To find an item on the page.

When you open the SOV sheet from the **Schedule of Values** log (**Cost Manager** > **User** mode > **Schedule of Values** > for example: **General Spends**), you will also see the grid and the right-hand pane.

The grid displays the columns shown in the *General Spends* SOV sheet log (Classic View).

The right-hand pane displays details related to a record and if there are no details, the following message, "You do not have any details for this view." is displayed on the screen.

SOV Sheet: Description/Breakdown Column

BP forms such as contracts are created with high-level descriptions (in the line items) during the beginning of the project life cycle, and once a contract is approved, the high-level description needs to be updated to provide more details (for example, explaining or adding the payments for the SOV).

Since it is important to be able to update the line items descriptions, once a contract is approved, the **Description/Breakdown** column will become editable.

Example

Once a contract is approved, and the SOV is created, the owner asks the contractor to update the SOV line items descriptions so that the owner can accurately determine the payments for those SOV line items.

Similarly, a user can add a breakdown to the SOV line items in the *General Spends* and *Classic Payment Applications type SOV Sheet*.

The length of the **Description/Breakdown** column is the same as the length for the short_desc field of the line item.

You can edit the description or breakdown in the following SOV sheet types:

- General Spends (within each individual Commit line item)
- Classic Payment Applications (within each individual Commit line item)
- Summary Payment Applications

> **Note**: Only Users or Groups who have **Edit** data at the record level, or **Full Access**, permissions will be able to edit, or modify, or update the data for the **Description/Breakdown** column.

The following explains how updating the description or breakdown will impact:

- Invoices already reached terminal status or end step

  Records that already in terminal status or end step (where user cannot update line items) will not have any impact on the SOV line item description updates.
- Invoices that are in inflight status

When you modify or add a line item and edit the SOV picker for the records that are inflight status you will be able to view the latest SOV description for the lines.

- Invoice records

  The SOV picker in line item for the new records will display the latest description for the SOV line item.

- Change orders selecting reference picker to update existing SOV line item

  When you select a reference picker to update an existing SOV line item scheduled value the reference picker displays the latest description for the SOV lines.

  There is no impact on existing change orders, where the SOV line items are not modified.

- Records created through CSV, Integration, Auto-creation, and BP Templates

  All the invoices created using CSV import, CreateBPRecord, CreateBPRecord with attachments using REST V1/V2 services will show the SOV line items with the latest updated description, when the description is set to auto-populate in to the line items.

  All the invoices updated using UpdateBPRecord, UpdateBPRecord with attachments using REST V1/V2 services will show the line items with updated SOV descriptions.

  All the invoices created through auto-creation and BP Templates will have the latest descriptions for the SOV line items selected.

- Breakdown name

  The **Breakdown** name can be updated in the SOV Sheet in the **Description/Breakdown** column. The breakdowns can be defined for an SOV line item and can be updated from the **Breakdown** tab.

  Only Users or Groups who have **Edit** data at the record level, or **Full Access**, permissions will be able to edit, or modify, or update the data in the SOV Sheet and the breakdown for the **Scheduled Values** and other direct entry columns.

  When exporting the SOV summary sheet, the updated Description/Breakdown will be included in the exported file.

- Audit Log

  The Audit log will display the updated description or breakdown. The Audit log will also display the old and new values.

For the Classic Payment Applications SOV sheet type, the following explains how updating the description or breakdown will impact:

- Payment Application records that have already reached terminal status or end step

  Records that already in terminal status or end step (where user cannot update line items) will not have any impact on the SOV line item description updates.

- Payment Application records that are inflight and Draft status

  When SOV restrictions are allowed

  - SOV sheet will be locked for the inflight payment records (accepted or nonaccepted state); therefore, the updated description will be displayed in the inflight payment record.
  - Draft payment records will show the updated description as well as other SOV merge updates.

  When SOV restrictions are not allowed

- Both inflight (accepted and nonaccepted) and draft payment records will show the latest description for the SOV lines.

- New Payment Application records

  When a new Payment Application record is created, the new SOV line items that have been added to the payment grid will show the latest descriptions.

- Change orders selecting Reference picker to update existing SOV line item

  When you select a reference picker to update an existing SOV line item or the **Scheduled Values**, the reference picker displays the latest description for the SOV line items.

  > **Note**: There will be no impact on the existing change orders, where line items are not modified.

- Change commits when updating committed line item

  When updating a committed line item (by using Add > Modify Committed line item option) the commit line item picker window will show the updated description for both summary SOV line items and cost breakdown SOV line items.

- Records created through CSV, Integration, Auto-creation, and BP Templates

  All the payments created using CSV import, CreateBPRecord, CreateBPRecord with attachments using REST V1/V2 services will show the SOV line items with the latest updated description, when the description is set to auto-populate in to the line items.

  All the payments updated using UpdateBPRecord, UpdateBPRecord with attachments using REST V1/V2 services will show the line items with updated SOV descriptions.

  All the invoices created through auto-creation and BP Templates will have the latest descriptions for the SOV line items selected.

- Audit Log

  The Audit log will display the updated description or breakdown. The Audit log will also display the old and new values.

For Summary Payment Applications, the following explains how updating the description or breakdown will impact:

> **Note**: You can update the description for both the Summary and Cost breakdown SOV line items, in the SOV Sheet.

- Summary Payment Application records that have already reached terminal status or end step

  Records that already in terminal status or end step (where user cannot update line items) will not have any impact on the SOV line item description updates.

- Summary Payment Application records that are inflight and Draft status

  When SOV restrictions are allowed

  - SOV sheet will be locked for the inflight payment records (accepted or nonaccepted state); therefore, the updated description will be displayed in the inflight payment record.
  - Draft payment records will show the updated description as well as other SOV merge updates.

  When SOV restrictions are not allowed

- Both inflight (accepted and nonaccepted) and draft payment records will show the latest description for both the Summary and Cost breakdown SOV line items, in the SOV Sheet.

- New Summary Payment Application records

  When a new Summary Payment Application record is created, the new SOV line items that have been added to the payment grid will show the latest descriptions for both the Summary and Cost breakdown SOV line items, in the SOV Sheet.

- Records created through CSV, Integration, Auto-creation, and BP Templates

  All the payments created using CSV import, CreateBPRecord, CreateBPRecord with attachments using REST V1/V2 services will show the SOV line items with the latest updated description, when the description is set to auto-populate in to the line items.

  All the payments updated using UpdateBPRecord, UpdateBPRecord with attachments using REST V1/V2 services will show the line items with updated SOV descriptions.

  All the invoices created through auto-creation and BP Templates will have the latest descriptions for the SOV line items selected.

- Audit Log

  The Audit log (in the menu toolbar of the SPA SOV sheet) will display the updated description or breakdown for both the Summary and Cost breakdown SOV line items, in the SOV Sheet. The Audit log will also display the old and new values.

Managing SOV Structure, Templates, and Sheets

The following topics apply to all SOV sheets. This section explains the following:

- Editing SOV sheet
- Editing SOV columns
- Deleting SOV sheet
- Searching for SOV sheet
- Managing SOV sheet data
- Exporting SOV data
- Viewing and editing SOV sheet properties

Editing SOV sheet

1) Open the SOV sheet from the **Schedule of Values** log (**Cost Manager** > **User** mode > **Schedule of Values**). The SOV sheet displays a structure with fields that are populated by the values in the commit BP.
2) Open the Project/Shell, switch to **User** mode, and click **Cost Manager** > **Schedule of Values** in the left Navigator.
3) In the Navigator, click one of these options: **General Spends**, **Payment Applications**, or **Summary Payment Applications** to open the Schedule of Values log.

   Note: If SOV sheets related to your options are present, a structure exists and you can click Update Structure.

4) Click to select a record from the Schedule of Values log and click **Properties** from the toolbar to open the Properties window for the SOV sheet record that you want to edit.

5) Click the **Options** tab and proceed to edit the fields.

> **Note**: You can enter a custom label for the **Ref**, **Breakdown**, and **Description** fields. These are the labels that will appear as column names on the SOV sheet. You cannot modify CBS Code and CBS Item. These labels can be modified only on the cost sheet.

6) Click Close to close the Properties window.
7) Click **Apply** and then click **OK**.

Editing SOV columns

1) Open the SOV sheet from the **Schedule of Values** log (**Cost Manager** > **User** mode > **Schedule of Values**). The SOV sheet displays a structure with fields that are populated by the values in the commit BP.
2) Open the Project/Shell, switch to **User** mode, and click **Cost Manager** > **Schedule of Values** in the left Navigator.
3) In the Navigator, click one of these options: **General Spends**, **Payment Applications**, or **Summary Payment Applications** to open the Schedule of Values log.
4) Click to select a record from the Schedule of Values log and click **Update Structure** from the toolbar to open the SOV Structure window for the SOV sheet record that you want to edit.

> **Note**: If SOV sheets related to your options are present, a structure exists and you can click Update Structure.

5) Click **Columns** and click to select a column from the Columns Log window.
6) Click **Open** to open the Column Properties window and proceed to edit the fields.

Notes:

- Some fields may not be editable. It may be necessary to delete the column and create a new one.
- Although it is possible to change the entry method for a column (for example, from line item content to direct entry into a cell) use caution when doing so if you have already entered values in the column cells. For example, if you change from line item entry to direct cell entry, the amount value shown in the cell will display correctly. Since this field is an editable field, if you edit this field, the direct entry amount and detailed line item information will be lost.

To move a column, from the Columns log, select a column to move, and then click **Move Up (Left)** or **Move Down (Right)**. The order that the columns appear in the log window is the order (from left to right) that they appear on the sheet.

To delete SOV columns:

1) Select a column from the Columns log and click **Open** to open the Column Properties window.
2) Click **Delete**. The column will be deleted.

Note: If the column is being used in a formula in another column, you must remove the column from the formula before you can delete it. If the column contains a cell with line item data, you must first remove each line item before it can be deleted.

Deleting SOV sheet

Select the sheet from the log window and click **Delete**. If you delete an automatically created SOV sheet, you will have to recreate it manually.

Note: You cannot delete an SOV for Payment Applications.

Searching for SOV sheet

You can search for SOV sheets by the SOV Base Record or SOV Description.

1) In the Schedule of Values log window, click **Find**.
2) In the Search by drop-down list, select **SOV Base Record** or **SOV Description**.
3) In the Search for field, enter the search criteria. Click the **Search** button. The log will display the records meeting the search criteria.

Managing SOV sheet data

SOV data is rolled up from Cost-type BPs that have been set up for SOV sheets. As a result, the SOV sheets cannot be edited.

Exporting SOV data

You can export SOV data to a local file system in a CSV format.

1) Select an SOV Base Record and open.
2) In the Schedule of Values window, click **File** > **Export** (or click Export from the toolbar).
3) Open the file and review it before saving.
4) Click **Save** and specify the location in which to save the CSV file.

Viewing and editing SOV sheet properties

To open the SOV Properties window, from the SOV log, select an SOV sheet and click the **Properties** button. The Properties window opens. Click the tabs to view properties information.

To edit SOV sheet properties:

1) Click the **Update Structure** button on the toolbar.
2) Click **File > Properties**.
3) Click the **Options** tab to modify information.

   You can enter a custom label for the Ref, Breakdown, and Description fields. These are the labels that will appear as column names on the SOV sheet.

> **Note**: You cannot modify the CBS Code and CBS Item labels here. These labels can only be modified in the cost sheet.

Adding or Deleting CBS Breakdowns on an SOV Sheet

CBS breakdowns can be added to an SOV sheet. This enables each contract to have its own set of CBS breakdowns. These breakdowns can be added directly on the SOV sheet, or they can be imported from a CSV file. Breakdowns can be added to general spends or payment application SOVs.

> **Note**: You cannot add a breakdown to an SOV if there is a pending spends record against the row, or a pending change commit with a negative line item (which may potentially reduce the Schedule Value after routing).

To add a breakdown to an SOV line

1) Open the SOV sheet.
2) Click the **Rows** button. The Rows window opens.
3) Select an SOV line by clicking the checkbox. If you select an SOV line, the breakdown will be added to that line. If you select an existing breakdown, the new breakdown will be inserted directly below the existing breakdown.
4) Click the **Add Detail** button. The Details window opens.
5) Enter the **Breakdown**.
   - This will appear on the SOV sheet in the **Breakdown** column.
   - You can add an optional **Description**.
6) Click **OK**. The breakdown is added to the sheet.
7) Close the Rows window.

8) You may need to click the plus (+) by the checkbox on the Rows window and on the SOV sheet to expand rows and display the breakdowns.

To delete a breakdown row

1) Open the SOV sheet.
2) Click the **Rows** button. The Rows window opens.
3) Select one or more breakdown rows to delete.
4) Click the **Delete Detail** button. Click **Yes** to confirm.

Adding Breakdowns to SOV sheet by Importing

If you have multiple breakdowns to enter, you can do it in bulk through CSV file import. You can add as many breakdowns as you need to multiple CBS codes.

You can also optionally enter breakdown scheduled value amounts. In order to do this, there must be a column to the SOV sheet using the data source Scheduled Value. The amount you enter on the CSV file will appear in the Scheduled Value column.

> **Note**: By default, the Scheduled Value column will validate that the sum of all breakdowns added to an SOV line will not exceed the scheduled value for summary line. That is, if the scheduled value for a line is $1000 from the base commit record, and you add breakdowns, the amounts that you enter for the breakdown amounts for that line cannot add up to more than $1000. (It can, however, add up to less than $1000.)

To add breakdowns by importing a CSV sheet

1) Open the SOV sheet.
2) Click the **Rows** button. The Rows window opens.
3) Click the **Export** button and choose **Breakdowns**.
4) Save the CSV file. This provides the structure for the import file.
5) Add the breakdown rows to the CSV file.
   a. Open the CSV file.
   b. Insert a line under the CBS code to which you are adding the breakdown.
   c. Add the breakdown name in the **Breakdown** column. You can enter an amount in the **Scheduled Value** column. Do not add any additional information in the new row.
   d. Add additional breakdown rows as needed.
   e. Save the file.
6) On the SOV sheet, click the **Import** button.
7) Browse to the CSV file and click **OK**. The breakdowns and amounts will be added to the sheet. Any breakdowns in the CSV file that exist on the sheet will be updated with the **Scheduled Value** amount on the CSV file.

If any errors occur, download and open the error file, and correct the CSV file before reimporting. Validations include:

- The sum of breakdown amounts cannot add up to more than the scheduled value amount of the summary CBS code line
- They cannot exceed Commits Remaining Balance, if used
- They cannot cause Commits Remaining Balance to fall below zero.

Funding Sheet

Funding lets you track where project or shell funding comes from and how it is being spent. This feature is accessed by way of the **Funding** sub-node under the **Cost Manager** module or node.

A funding sheet tracks Company funding through allocation to, and consumption at, the project level.

Use the funding sheet to specify the appropriation and assignment of funds from each source. You can automate fund appropriation and assignment when used with Cost business processes.

Company funding sheets

The company funding sheet tracks all sources of funding across all projects or shells and programs. You create only one sheet per company. Funding sources that are made available at project or shell sheet level are rolled up to the company sheet, which maintains the overall fund information. After it has been created, the company funding sheet can be edited, but not deleted. The company funding sheet must be created before creating individual project or shell funding sheets.

Project or shell funding sheets

The project or shell funding sheet tracks how funding is being allocated and consumed at the project or shell level. Project or shell fund sheets work in conjunction with the company funding sheet. Allocating funding sources at project or shell level can be done manually or through a business process. A funding template and company funding sheet must be complete before you can create a project or shell funding sheet.

Funding sheet and commitment funding sheets

You can optionally set up commitment level funding, which allows you to allocate specific project/shell funds to individual base commit records. This works in conjunction with the SOV sheet to track base and change commit lines and balances.

Company and project/shell funding

- **Design and import a fund attribute form in uDesigner.** This will be used as the Fund Details window when adding new funds to the company funding sheet, or viewing fund properties. A fund picker, used to add funds to business processes or the project/shell funding sheet, can also be designed. This is an optional step. If you do not create a fund attribute form, a default fund code form and fund picker will be used.
- **Import and set up fund business processes.** You can use business processes for fund allocations, fund assignment (consumption), and fund credits.
- **Create and set up the Company Funding Sheet.** The company funding sheet tracks the funds that can be used to fund project or shell expenses. The following procedures assume that the rows (funds) and columns of the funding sheet have already been created.

- **Create and set up the Project/Shell Funding Template and Sheet.** The project or shell funding sheet tracks the funds that have been allocated from company funds for a particular project or shell. The project or shell funding sheet is based on the funding template, which is created first. The following procedures assume that the project/shell funding sheet has been created, rows and columns have been added.

  Note: The rows correspond to funds chosen from the company funding sheet. Funds can be added manually, or can be added via fund allocation business processes, discussed later in this section.

- **Define funding assignment rules.** Funding assignment rules are set up in the project/shell funding sheet and/or template. These determine which business processes are used for fund appropriations and assignments and how to consume funds (ratio or fund order) if you will be using automatic fund assignment from business processes. The following procedures assume these options have been set up.
- **Create funding rules in the rules engine.** Optionally, funding rules can be created in the rules engine that can help you manage your funds and fund balances, for example, to prevent fund balances from becoming less than zero.

Commitment level funding

Optionally, funding at the base commit (contract) level can be set up.

Commitment funding works in conjunction with the **Schedule of Values** (SOV) sheet. SOV line items have an impact on the commitment funding sheet and its data through fund assignment.

Before you begin. Be sure that the project/shell funding has been set up, with funds allocated and available on the project/shell funding sheet. Data sources are available for project/shell funding sheets (and company funding sheets) to track funding that is assigned for specific base commits. Also, be sure the data source **Scheduled Value** has been added as a column to the SOV structure for the project or shell. Commitment funding uses the SOV to track base commit and change commit amounts, and uses the **Scheduled Value** column to track remaining balances.

- Import and set up business processes for commitment funding. In addition to business processes that are used for project/shell funding, you can design business processes for use with commitment funding. In uDesigner, commitment funding is enabled on the base commit; automatic generation of an SOV must also be enabled. Then, the ability to view and/or assign funds is enabled per step on the base commit and the corresponding change commit. Be sure the linked spends business process has been enabled to consume funding.
- Create and set up Commitment Funding Template. This template is used to create a commitment funding structures in the project or shell, which in turn is used to create the individual commitment funding sheets for each base commit record. These procedures assume a template has been created and set up with columns.

- Define funding assignment rules. This is done in the Assignment tab of the Properties window. Assignment rules can be defined in the commitment funding template, structure or sheets. (This procedure assumes assignment rules have been defined in the template, and will be copied to the structure and individual sheets.)
- Create Commitment Funding Sheet Structure. Structures are created at the project level in user mode from a commitment funding template. When commitment funding sheets are created from base commit records, this default structure is used. Details about creating commitment funding structures from an existing template are found later in this section.
- Create individual commitment funding sheets. This is done automatically the first time you click the Funding button on a base commit business process form (this button becomes available on specific steps as designed). After creation, the commitment funding sheet is available for viewing or modification by clicking the Funding button on the base commit or associated change commits, or from the Commitment Funding log itself. Details about creating commitment funding sheets is found later in this section.
- Configure permissions. In addition to module level permissions that are needed to create and modify templates, structures and sheets, record level permission must be granted to individual commitment funding sheets. By default, the owner of the base commit will have permissions to the sheet. Additional users must be granted view or edit permissions. This is discussed later in this section.

Company Funding Sheet, Project or Shell Funding Sheets, and Commitment Funding Sheets

The first step to setting up funding is to create and set up a company funding sheet, where individual funding sources are set up.

For example, a corporation's funding sources may include different types of corporate accounts. For municipal or educational facilities, funds may come from bond measures, grants, donations or other sources. All of these funding sources will be listed and tracked on the company funding sheet. As funds are consumed via business processes or manually in individual project or shells, this data is rolled up to the company funding sheet.

Project or shell funding sheets track how your company's funding is being spent on each project or shell. It tracks individual transactions, which are rolled up to the company funding sheet. All project or shell funding sheets must be created based on a funding template.

If you are using commitment funding, you will create a commitment funding template, which is used to create the commitment funding structure within a project or shell. As base commits (that are designed for commitment funding in uDesigner) are routed and approved, a commitment funding sheet is created, based on this structure, for each base commit record.

Working with the Company Funding Sheet

The following procedures described managing funds on the company funding sheet.

Company Funding Sheet Log

To access the Company Funding Sheet log, go to your **Company Workspace** (**User** mode) > **Cost Manager** node > **Funding** sub-node.

When you double-click on the funding sheet, the **Company Funding Sheet** window opens.

Alternatively, you can use the *gear menu* (⚙) to open the funding sheet. The **Company Funding Sheet** window displays the fund codes and other details about the fund sheet and contains the following toolbar options:

Add Rows

Enables you to access the Fund Attributes window and add a new row to the fund sheet after entering the fund details.

Add Columns

Enables you to access the New Column window and add a new column to the fund sheet after entering the column details. After you select the data source, the remaining data will auto-populate; however, you can change the values of the fields, if there is a need. This window also lets you select the position of the newly added column, in the funding sheet.

View

Edit View

Enables you to add or move columns from the fund sheet.

Refresh

Print

- **Export To CSV**
- **Export To Excel**

Find on Page

Menu Options

- **Columns** (**Unhide** > <COLUMN NAME>)
- **Import**
- **Export**
  - **Summary Fund Sheet**
  - **Fund Details**
- **Fund Status**

  Enables you to open the **Fund Status** window and either change the status for the fund codes or delete unwanted fund codes. Use the Find on Page option to find a particular fund code.
- **Properties**

  Enables you to open the **Properties** window and determine the fund sheet properties, including the two display modes, **Flat** or **Tree**.
- **Audit Log**

In the **Company Funding Sheet** window, you can customize the columns, except the first two columns (**Fund Code** and **Fund Name**).

Note: You can use the **Lock after this Column** option, explained below, to add to the stationary columns; however the two first columns shall

remain on the sheet by default.

Click on a fund code to split the screen and access the properties of that fund code, within the following tabs:

- **Fund Attributes** tab
- **Audit Log** tab

You can use these tabs to update the details of the fund code.

The details of your changes will be recorded in the **Audit Log** tab. You can print or export (by way of the Print option on the **Audit Log** window) the audit log data.

The fund sheet window (**Company Funding Sheet** log) has multiple columns. As stated before, the first two columns are stationary, and the other columns can be customized. You can hover over a column header to see additional information about the field. For example, if you hover over the **Approved Appropriations** column heading, you may see the Data Source and Data Format information for the "Approved Appropriations." If you click on a column header, the following options enable you to manipulate the selected column:

- **Hide**
- **Delete**
- **Lock after this Column**
- **Insert**

Enables you to insert a new column.

- **Unhide**
- **Properties**

Enables you to open the **Columns Properties** window and access all the properties of the selected column. Use the navigation icons (right or left bracket or arrows) to move to and access the next or previous column properties.

You can select a cell, for a fund code, and see the different line items for that fund code, in the properties screen, within the Line Items tab. In this tab you can create a new line item (using the plus icon), copy a line item, or delete a line item (using the *gear menu* (⚙) options). When you select a line item and select copy, a copy of the selected line item will be inserted at the last row and allowing you to proceed to change the values of each cell within the added row. Use the **Find on Page** option to search for a particular line item in the **Line Items** tab.

When you select a cell, for a fund code, you can click the **Cell Details** tab to see the cell details such as values for the **Fund Code**, **Fund Name**, and so forth.

You can use the **Attachments** tab to include attachments (using the **Browse** option or the **Document Manager** option), the **Notes** tab to include notes, and the **Audit Log** tab to access the details of the changes made to the line item.

Use the maximize or docking icons to adjust the location of the tabs on your screen.

The following topics provide additional information about the **Company Funding Sheet** log.

About company funding sheet columns

The columns on the company funding sheet are used to track project and shell level funding and keep track of fund balances.

A common way to enter the starting value of a fund is by adding a Company Funding column to the company funding sheet. This is generally a manual entry column (either direct entry or line item entry). The original value of each fund (one fund per row) is entered into this column.

Additional columns commonly track fund assignments (consumption) made against each fund in projects or shells. These can be in the form of business process transactions or manual funding assignments. Each project or shell level business process or manual entry column can be rolled up to the company funding sheet separately, or project/shell fund assignments can be totaled in the project/shell sheet, and rolled up to the company sheet. A good practice is to have a fund balance formula column that tracks the difference between the original fund value minus all funding assignments, which provides a running balance for each fund. A rule can be created in the Rules Engine to make sure that this fund balance never becomes less than zero (or other specified value).

To view column details

In the funding sheet, click a column header link to view the column details. This will display the data source and, for formula columns, display the formula used.

About company funding sheet rows

Each row in the company funding sheet corresponds to one fund. Depending on how the company funding sheet is set up, the starting value of each fund may need to be manually entered. This is commonly done in a column using the Company Funding data source.

If you are working with a large number of funds, there are ways to help you find the fund that you are looking for. You can search for individual fund codes using the Find feature. You can also create and apply filters, which can be used to temporarily limit the number of funds displayed on the sheet. For more information, see the following topics: ***Searching for Fund Codes*** (on page 326), ***Creating and Applying Filters*** (on page 328).

To view fund details

In the funding sheet, click the fund code link (in the **Fund Code** column) to open the Fund Details.

- If a **Fund Attribute** form has been designed, this window shows the fields on the form.
- If a **Fund Attribute** form is not being used, the default window opens, showing basic information such as the fund code, fund name and description.

Add currency amounts to company funds

After the company funding sheet has been set up, the funds must be "funded" -- enter the funding amounts that will be used to fund your projects and shells. Commonly, the Company Funding data source is used as a manual entry column to enter the starting amount of each fund, or add additional funds to it. This column can be direct entry or line item entry.

This procedure assumes the funds have already been added to the sheet. It also assumes that a column has been added to the sheet for manual fund entry. Commonly, this uses the **Company Funding** data source. You can click a column heading to verify the data source used.

To add a value to a company fund

1) Open the company funding sheet.
2) Locate the column that is used for adding value to company funds on the sheet, commonly, the **Company Funding** column.
3) Do one of the following:
   - If the column is direct entry, click inside the cell and enter the amount. If the cell already has a value, you can modify it.
   - If the column is line item entry, click the link in the cell. The Cell Detail window opens in which you can can take these actions.
     - Click **Add Line Item** to add a new line item.
     - Select a line item and click **Copy Line Item** to add a line item by copying another.
     - Double-click an existing line item to modify it.
     - Select a line item and click **Remove Line Item** to remove it.
4) Enter the line item information in the Line Item window and click **OK**.

The amount in the **Company Funding** column can be used as the starting amount of a fund. Other columns on the company funding sheet can be used to roll up transaction and manual funding amounts from project/shell funding sheets, and formula columns can be added to keep track of the fund balance.

Activate or deactivate company funds

You can active or deactivate company funds, which controls their availability for project or shell funding. If you set a fund to "Inactive" at company level, then that fund will no longer be available for project- or shell-level funding sheets; however, if a fund is already listed on a project or shell funding sheet, inactivating the fund at the company level will not affect the fund.

To set the company fund status

1) Open the company funding sheet
2) Click the **Fund Status** button on the toolbar. The Fund Status window opens.
3) Select a fund in the table, then click **Activate** or **Deactivate**.
4) Click **Close** to exit the window.

Import or export Company funding sheet information

You can export a summary of the funding sheet, which creates a CSV file that contains the rows, columns and data on the funding sheet. You can also export a CSV file containing fund details, which includes all fund codes on the sheet and the data captured for them from the Fund Details window. This is available in company, project and shell funding sheets.

You can also import fund details to a company funding sheet. This allows you to add fund codes to a funding sheet directly from a CSV file, rather than add them manually.

For details, see ***Importing and Exporting Project/Shell Funding Sheet Information*** (on page 329)

Working with Project or Shell Funding Sheets

The Project/Shell Funding Sheet tracks how funding is being allocated and consumed at the project or shell level. Project or shell funding sheets work in conjunction with the company funding sheet. Fund allocation, assignment and credits can be done manually, or through a business processes.

> **Note**: Since funding originates at the company level in the company funding sheet, funding is always done in base currency, even if the project currency is different.

Open a project or shell funding sheet

The project or shell funding sheet is accessed from the **Cost Manager** > **Funding** > **Funding Sheet** log.

> **Note**: There is only one funding sheet per project or shell.

To open a project or shell funding sheet

1) Open the project or shell and click **Cost Manager** > **Funding** > **Funding Sheet** in the left Navigator. The **Funding Sheet** log opens.
2) Click the *gear menu* (⚙) and select **Open**, or double-click, on the project or shell funding sheet to open the funding sheet window.

The **Funding Sheet** window has the following, typical, page headers:

- Funding Sheet
- Currency
- Unassigned (Project Level)
- Commitment Level
- CBS Level

The **Funding Sheet** window has the following toolbar options:

> **Note**: For projects that do not have funding sheet, you can use the **Create** toolbar option (in **Funding Sheet** window) to create a funding sheet. The **Create** option will not be displayed for the users with View permission. To create a funding sheet, click **Create** to open the **Select Template** window and select a template.

Funding Sheet Window Toolbar Option	*Description*

Manage Rows (icon with three horizontal lines)	Opens the **Manage Rows** window which enables you to manage the displayed rows based on the available company fund codes.
Add Column (icon with three horizontal lines)	Opens the **New Column** window that enables you to enter data about the new column.
View	▸ Default ▸ Create New View ▸ Manage Views
Edit View	Opens the **Edit View** window which enables you to manage the displayed view based on the following tabs: ▸ Columns ▸ Filters ▸ Group By ▸ Sort By
Fund Assignment Order	Opens the Fund Assignment Order window which enables you to manage the order for: ▸ Fund Code ▸ Fund Name ▸ Status ▸ Reorder: Bring the pointer to the cell to activate the move-pointer, click and hold, and move the row to a desired location.
Refresh	Enables you to refresh the contents of the **Funding Sheet** window.
Print	▸ Print ▸ Export To CSV ▸ Export To Excel
Find on Page	Enables you to find a particular record on the page.

Menu Options	▸ Export
	  ▸ Summary Fund Sheet
	  ▸ Fund Details
	▸ Row Coloring
	  ▸ Multi-Color
	  ▸ Single Color
	▸ Properties
	▸ Audit Log

Create and Edit Transactions

You can manually enter transaction line item.

> **Note**: Including attachments is not permitted in line items. Cloud customers who have migrated to the 20.6 version of Unifier will not be able to see the previous attachments or add new attachments post migration.

About project/shell funding sheet columns

The columns on the project/shell funding sheet are used to track the funding on that project or shell, and to keep track of the fund balances that have been appropriated for its use.

Commonly, the Project Funding column is used to enter the allocation amount of each fund for that project/shell.

Additional columns commonly track fund assignments (consumption) made against each fund. These can be in the form of business process transactions or manual funding assignments, with one column for each business process, and manual entry columns for project level funding and CBS level funding.

The Records Funded at Project Level (or CBS Level) column(s) can be used to track the totals of business process transactions involving fund assignment. This is used for records already reaching terminal status. The Transient Records Funded at Project Level (or CBS Level) column(s) works similarly, but is used for records that are currently in process, and have already been funded before reaching terminal status. These columns can also include any credited funding that may occur due to invoice credits or other negative amounts.

Commitment level funding can be tracked on the project/shell funding sheet using the columns Commitment Funding (tracks funds that are allocated across base commit and change commit business process records enabled for commitment funding), Records Funded at Commitment Level (sum of all spends records that are funded at the commitment level), and Transient Records Funded at Commitment Level (sum of all in-process records that are funded at the commitment level).

A good practice is to add a fund balance formula column that tracks the difference between the original fund value minus all funding assignments, which provides a running balance for each fund.

To view column details

In the funding sheet, click a column header link to view the column details. This will include the data source and, for formula columns, display the formula used.

About project/shell funding sheet rows

Each row in the project or shell funding sheet corresponds to a fund that has been allocated for use on this project or shell. Each fund originates on the company funding sheet.

Fund allocation can be done manually, by adding rows to the project/shell funding sheet. A fund picker is used to select which funds from the company funding sheet to add.

Funds can also be allocated to a project by using a fund allocation business process that is designed to choose the funds and funding allocation amounts for the project/shell.

For manually allocated funds, the starting amount of each fund can be entered manually. Commonly, the Project Funding column is used to enter the starting value of each fund when funds can be used for the project regardless of CBS code, or the CBS Funding column is used when funding is specified per CBS code. These value can roll up to the company funding sheet column of the same data source.

If you are working with a large number of funds, there are ways to help you find the fund that you are looking for. You can search for individual fund codes using the Find feature. You can also create and apply filters, which can be used to temporarily limit the number of funds displayed on the sheet. For more information, see the following topics: ***Searching for Fund Codes*** (on page 326), ***Creating and Applying Filters*** (on page 328).

To view fund details

In the funding sheet, click the fund code link (in the Fund Code column). The Fund Details opens. If a Fund Attribute form has been designed, this window will include the fields added to the form in the design. If a Fund Attribute form is not being used, the default window opens, listing basic information such as the fund code, fund name and description.

View Project/Shell funding sheet properties

The Properties window defines general setup information and assignment details for the funding sheet.

To view project or shell funding sheet properties

1) In the project or shell Funding log, select the funding sheet and click the **Properties** button. The Properties window opens.
   - The General tab defines the Title, Description and Display Mode for the sheet. If you have edit permissions, you can edit these, including switching back and forth between the display mode options as needed.
   - The Assignment tab is used to define the funding assignment options:

- **Project and CBS Level**: Specifies the sources of fund allocation for the project or shell, either manual entry or via fund appropriation business processes.
- **Assignment Levels and Rules**: For each funding business process that has been set up for the project or shell, this specifies how funds are assigned, either manually, Auto Order, or Auto Ratio:

For more information, see ***About Project/Shell funding assignment options*** (on page 316).

2) Click **OK** or **Cancel** to close the window.

About Project/Shell funding assignment options

Funding assignment options for the project or shell are defined on the Assignment tab of the Properties window. (Open the funding sheet, and choose **File > Properties**.) This includes defining how fund allocation can be done, specifying whether manual assignment is allowed, defining the business processes that can be used to assign funds to project or shells or to specific CBS codes, and defining assignment levels.

Project Level and CBS Level: Specifies how funds can be added for this project or shell. This can be Manual (appropriate funds manually from the company funding sheet), and/or through funding appropriation business processes.

You can define funding appropriations at the project level (not associated with specific CBS codes), and at the CBS level (funding is specified per CBS code). You can "mix and match" for each project, with some business processes using project level funding, and others CBS level. Manual fund appropriations can be done at both levels.

Assignment Levels and Rules: Specifies how assignment is done for each funding business process that has been set up for the project or shell: Manual, Auto Order, or Auto Ratio. It also specifies whether funds are assigned at the Project Level (funding is consumed based on the total of the spends business process, providing greater flexibility for fund assignment), or CBS Level (funding is consumed per line item of a spends business process, which provides greater control over how funds are spent on each item.)

- **Manual**: Funds can be manually assigned. As spends business processes (e.g., invoices or payment applications) are routed and reach specified statuses, the amounts to be funded are collected under the Unassigned total on the funding sheet. A **Funding** button becomes available on the business process form. Clicking the button opens the Funding window, in which funds can be assigned.
- **Auto Order**: Funds are assigned automatically when a spends business process reaches a specified status. Funds are assigned based on the fund order, which is defined on the funding sheet by clicking the **Fund Assignment Order** button. When funds are consumed on one fund, then the next funding source is used for funding. After all funds are consumed, remaining spends are collected under Unassigned.
- **Auto Ratio**: Funds are assigned automatically when a spends business process reaches a specified status. Funds are assigned based on the fund ratio, which is automatically calculated based on current fund levels. After all funds are consumed, remaining spends are collected under Unassigned.

View funding sheet cell details

The values displayed in a cell on the funding sheet may reflect information from multiple line items, business process transactions, or results of a calculation from other cells. The following procedures discuss how to view the details about an entry in a funding sheet cell.

To open the Cell Details window

In the Funding Sheet window, click the link in the line item cell to view information. The Cell Detail window opens.

To view manual line item entry details

In the Cell Detail window, double-click a listed line item. The Line Item window opens.

To view business process transaction details

1) In the Cell Detail window, double-click a listed line item. A view-only copy of the business process transaction opens.
2) Double-click a line item. The Line Item window opens.

To view formula cell details

In the Cell Detail window, if line items from manual-entry columns or business process transaction columns are included in the calculation, they will be listed in the lower portion of the window, with the calculated value for each line item.

1) Click a listed line item. If the line item is a BP transaction, the business process form opens. If the line item is a manual entry, the Line Item window opens.
2) To view the formula used for the column, click the **Formula** link.

View Audit Logs

Audit logs are available within the Fund Detail and Cell Detail windows of the project or shell funding sheet. The Audit log captures all of the events that took place, including what action occurred, who took the action, and the value that was created or modified.

To view the project or shell funding audit log

Open the project or shell funding sheet and do one of the following:

- From the View menu, click **Audit Log**.
- Click a listed fund to open the Fund Detail window, and then click the **Audit Log** button.
- Click a cell link (line item or project or shell allocation entry) to open the Cell Detail window. From the View menu, click **Audit Log**.

To view commitment funding audit logs

Open the commitment funding sheet and do one of the following:

- From the View menu, click **Audit Log**.
- Click a listed fund to open the Fund Detail window, and then click the **Audit Log** button.
- Click a cell link (line item or project or shell allocation entry) to open the Cell Detail window. From the View menu, click **Audit Log**.

To view an audit log of company funding

Open the company funding sheet and do one of the following:

- From the Funding Sheet View menu, click **Audit Log**.
- Click on a listed fund to open the Fund Detail window, then click the **Audit Log** button.
- Open the Cell Detail window. From the View menu, click **Audit Log**.

The Audit log captures all of the events that took place, including what action occurred, who took the action, and the value that was created or modified.

Allocating Funds to a Project or Shell

This section discusses fund allocation. Allocation refers to reserving a certain amount of a company fund to a particular project or shell.

Funds can be allocated to a project or shell either by manually adding rows to the project/shell funding sheet and entering allocation amounts, or through business processes transactions, which automatically add the rows and allocation amounts.

To review information about Schedule of Values (SOV) Sheets and Business Processes, see the *Unifier Business Processes User Guide*.

Fund allocation can be done at the project/shell level (funds are available to any expense in the project or shell), or at the CBS level (funding is allocated per CBS code).

Manually enter project/shell fund allocation amounts

After the project/shell funding sheet has been set up, the funds must be "funded" -- enter the funding amounts that will be used to fund your projects and shells. The following procedures discuss manually allocating funds and entering amounts to the funds that will be used in the project or shell. (Fund allocation using business processes is discussed in a later section.)

Commonly, the Manual Funding By Project data source is used as a manual entry column to enter the starting amount of each fund, or add additional funds to it. This column can be direct entry or line item entry, and is used for project level fund allocation. The Manual Project by CBS data source can be added to the project/fund cost sheet, and values added there. The same column data source can be added to the project/shell funding sheet to display the values added to the cost sheet column. This is used for CBS level fund allocation.

The following procedures assume that the appropriate funds (rows) and columns have already been added to the funding sheet. You can click a column heading to verify the data source used. For details about adding funds (rows) or columns to the company funding sheet.

To enter project level fund allocation values (on the funding sheet)

1) Open the project or shell funding sheet.
2) Locate the column that is used for adding value to funds on the sheet, commonly, the **Manual Funding by Project** column.
3) Do one of the following:

- If the column is direct entry, click inside the cell and enter the amount. If the cell already has a value, you can modify it.
- If the column is line item entry, click the link in the cell. The Cell Detail window opens. You can:
  - Click **Add Line Item** to add a new line item.
  - Select a line item and click **Copy Line Item** to add a line item by copying another.
  - Double-click an existing line item to modify it.
  - Select a line item and click **Remove Line Item** to remove it.

  Enter the line item information in the Line Item window and click **OK**.

This amount can be used as the starting project level amount of a fund. Other columns on the funding sheet can be used to track transactions, and formula columns can be added to keep track of the fund balance.

To enter CBS level fund allocation values (on the cost sheet)

1) Open the project or shell cost sheet.
2) Locate the column that is used for adding value to funds by CBS code, commonly, the **Manual Funding by CBS** column.
3) Click the link in the cell. The Cell Detail window opens. You can:
   - Click **Add Line Item** to add a new line item.
   - Select a line item and click **Copy Line Item** to add a line item by copying another.
   - Double-click an existing line item to modify it.
   - Select a line item and click **Remove Line Item** to remove it.
4) Complete the Line Item window.
5) Select a fund from the fund picker by clicking the **Select** button for the Funding Source. The fund picker lists the funds that are active at the company level. To search for a specific fund, click **Find**.
6) Click **OK**. The new line item will be added to the Cell Detail window. If the **Manual Funding by CBS** column has also been added to the project/shell funding sheet, the value will display there.

To add funding sheet data through a formula

Formula columns calculate results based on data entered in other columns. You cannot enter data directly into a formula column. You may click the funding sheet column header to view the data source for the cells in the column. If the column is a formula column, it will be displayed, and you can view which other columns are used in the calculation.

Allocate funds through business processes

Funds can be allocated to a project or shell using a fund allocation business process, which was defined in uDesigner. Following is a summary of the business process types and design options that may be used:

- **Project level**:

- Cost type, subtype line items with fund code, classification generic.
- Workflow or non-workflow

- **CBS level**:
  - Cost type, subtype line items with CBS and fund code, classification generic.
  - Workflow or non-workflow

Commonly, columns are added to the funding sheet to capture funding allocation business process transactions. The Project Funding column might be used (as a formula) to capture the sum of all allocations and manual allocation for each fund.

To allocate funds and enter amounts through a business process

1) Create the business process record.
2) Add line items as necessary.
   - Select a fund from the fund picker by clicking the **Select** button for the Funding Source. The fund picker lists the funds that are active at the company level. To search for a specific fund, click **Find**.
   - The Line Item window may also include a CBS picker, for CBS level allocations.
3) Route the business process record as usual.

Assigning and Crediting Project/Shell Funds

This section discusses assigning (consuming) funds on project and shell funding sheets. When funds are "assigned," it means they are consumed from the allocated amount for that project or shell. Funds can also be credited back to the source when necessary.

Fund assignments are based on spends type business processes within the project or shell (e.g., invoices or payment applications), which enables accurate funding and tracking of project expenses. Funds are assigned based on the amount of a spends record, and can never exceed that amount. The behavior of funding business processes depends both on the design options chosen and the Assignment Levels chosen on the project/shell funding sheet properties.

Funding assignments are based on business processes transactions, and commonly, columns are added to the funding sheet to track spends business processes eligible for funding. Formula columns may also be added to track the totals of these records, which may include Records Funded at Project Level (and/or CBS Level), for completed records; and Transient Records Funded at Project Level (or CBS Level), to track funding on records that are funded while in process. Values can also roll up to the company funding sheet if the same data source columns are added.

View Unassigned Amounts

When spends business processes are set up to be funded manually, the amount of the record initially is captured in one of the Unassigned fields on the funding sheet. This value displays until the entire amount of the record has been fully funded. For Project level funding, the amount displays in the Unassigned (Project Level) field; for CBS level funding, the amount shows up in the Unassigned (CBS Level) field.

If commitment level funding is being done, you may also see an amount under Unassigned (Commitment Level). These funds are managed on the commitment funding sheet.

It is possible that an Unassigned amount can be negative, as the result of a credit invoice that has not yet been credited back to the funding source.

> **Note**: These can also be rolled up to the cost sheet using the Unfunded Record data source.

To view unassigned amounts

1) Open the project or shell funding sheet.

   If business process transactions have occurred that have not yet been funded, the total of the record(s) will display in one of the Unassigned fields in the upper portion of the sheet.
2) Click the link next to Unassigned (Project Level) or Unassigned (CBS Level). The Cell Detail window opens. The window lists transaction records that have not yet been fully funded.

Manual and Automatic Fund Assignment

Funding assignments can be done automatically or manually. This is set in the funding assignment levels in the funding sheet properties.

Manual Fund Assignment

For manual assignments, and depending on the design of the business process, the following may occur:

- You may be able to view or perform funding assignments or credits at any step in the workflow (or for a non-workflow business process, any status). When the business process is in process, it is referred to as a "Transient Record." This allows the record to be funded, edited and reviewed before the record is finalized and closed.
- When funding is enabled (or can be viewed), a Funding button appears on the business process form. Click the button to open the Funding Window.
- It is possible that the business process can be designed to disallow funding assignments or credits at the end step (or terminal status if non-workflow). This option prevents further editing of funding assignments or credits after the record has gone through a review process.

Good practice tips

Review the invoice line items and be sure they are accurate before doing funding. A good practice for design is to disallow line item from being edited after fund assignment steps. This will prevent the invoice line items from being edited after funding has already been assigned.

Manual Fund Assignment at Funding Sheet Level

To assign funds manually, you must access the **Funding Sheet** log, and then use the **Fund Code** to assign the funds.

1) To access the **Funding Sheet** log, go to your shell (**User** mode) > **Cost Manager** node > **Funding Sheet** sub-node.
2) Under the **Fund Code**, click to select an item.

3) On the top of the screen, click **Unassigned (Project Level)** link to open the **Manual Fund Assignment** page. The funds that are pulled out of the record are displayed on this page. The unassigned fund amount and all funds balances that have been assigned are also displayed on top of the page, in tiles, under the page title. For example, Fund 3 is the fund code and the fund balance is displayed.

   When there is any funding available for a fund, the fund will have an information icon (exclamation mark ! symbol) next to it. For any fund that does not have any funding, the information icon (exclamation mark ! symbol) does not appear. Hover over the information icon (exclamation mark ! symbol) to see more details about each fund (such as **Total**, **Assigned Amount** (at fund sheet level or commitment funding level), and **Remaining Amount**)

   On the toolbar, by using the expand or collapse option, you can activate or deactivate the display of both **Amount** and **Percentage** for the funds. You can enter either the **Amount** or the **Percentage** values. For example, you can click to select a record with remaining value that has been unassigned (**Remaining Unassigned**) and then click the cell under the corresponding **Percentage** column and enter the desired percentage value, or do the same for the **Amount**, for a particular fund. Depending on the value that you enter, the system recalculates the **Remaining Unassigned** value.

   Records with partial assignments will have an icon displayed under the **Split** column.

   - If a record is modified, then the information icon (exclamation mark ! symbol), under the **Split** column, turns blue. When you hover over the icon, the title of the report, total, assigned amount, and remaining amount will display.
   - If you assign one hundred percent for fund value (consumption), the information icon (exclamation mark ! symbol), under the **Split** column, turns green.
   - If there is negative amount unassigned, the information icon (exclamation mark ! symbol), under the **Split** column, turns red.
   - If a record does not have any assignments, then there will be no icons under the **Split** column.
   - If you do not see an icon displayed under the **Split** column, then the **Remaining Unassigned** value will be the total and the assigned amount will be zero.

4) Click **Save** to save your changes. You can click **Cancel** to discard your changes and return back to the previous screen.

If you enter values greater than one hundred percent, the cell will display a red triangle (cell level error icon) and when you hover over, a tooltip message explains the error.

A funding sheet-level error message will be displayed to inform you that you cannot assign more than total fund amount to a fund.

Automatic Fund Assignment

For automatic assignments, the following generally occurs

- Automatic funding occurs when the record reaches the **End** step in the workflow business process, or when **Finish Editing** is clicked in the non-workflow business process.
- The funds are assigned based either on the fund assignment order, or by the ratio of the amounts of each fund, as determined in the assignment options in the Properties.

It is possible to adjust funding after automatic fund assignments.

About Crediting Funds

Sometimes it is necessary to credit back funds that have already been assigned. The same general procedures for assigning funds can be used for crediting funds as well. You may need to credit funds back to the credit source if:

- You receive an invoice credit from a vendor, and funds have already been assigned to the original invoice amount.
- A mistake was made in the original fund assignment, either by assigning too high a value, or assigning funds from the wrong fund.

You cannot credit more of a fund than has been consumed.

You can also credit previously assigned funds back to the fund source, either due to receiving a credit invoice or line item (e.g., a vendor credit), or to correct a previous assignment error.

About business processes enabled for funding

Business process behavior is dependent on the how the business process was designed, and the assignment options chosen in the project/shell funding sheet. In general, the design determines when funding assignments can be viewed or performed, and the assignment options determine whether the assignment is done manually or automatically, and at what levels.

Spends type business processes (e.g., invoices or payment applications) can be designed to consume funds. Following is a summary of the business process types and design options that can be used:

Project level:

- Cost type, subtype line items with fund code, classification generic, general spends or payment application.
- Workflow or non-workflow.
- Each action form can be enabled with the following options: "View fund assignment" and "Allow fund assignment." This option allows funding assignments to be viewed or performed at any step in the workflow (or any status if non-workflow). The "Allow fund assignment" option is applicable when the business process is set up for manual assignment in the funding assignment levels in the funding sheet properties.
- An option can be set for the business process that disallows manual fund assignment after the record reaches the end step (or terminal status for non-workflow). When this option is chosen, it takes precedence over the "Allow fund assignment" setting, even if an action form is used on the end step. This option does not affect automatic fund assignments. This option is found on the Edit Studio window, **Options** tab.

CBS level:

- Cost type, subtype line items with CBS and fund code, classification generic, general spends or payment application.
- Other options are the same as for project level.

Manually assign or credit funds (unassigned funds)

Normally, if a spends business process record has not been set up to automatically assign funds upon reaching a certain status, then that record total will show as Unassigned Funds in the project/shell funding sheet.

When the funding business process reaches a specified workflow step or status, a **Funding** button appears on the business process form. Clicking the Funding button opens the Funding window, allowing manual fund assignment.

Funds can be manually assigned at the project or shell level (project or shell funding sheet), CBS level (project or shell cost sheet), or business process level (spends business process record designed to consume funds).

If a credit invoice (negative line item or invoice amount) has been submitted, this can be used to credit previously consumed funds back to the source, or can be used to credit another fund. You cannot credit an amount that is more than has been consumed.

> **Note**: This section discusses assigning and crediting funds on the project/shell funding sheet. See also ***Assigning and Crediting Commitment Level Funds*** (on page 350).

To manually assign funds at the project or shell level from the funding sheet

1) Open the project or shell funding sheet.
2) In the upper portion of the window, click the link next to **Unassigned (project or shell Level)**. This link displays the amount of funds that are not currently assigned to a particular fund.

   The Cell Detail window opens. The Cell Detail window displays the list of spends business process records that have not yet been fully funded. A record can appear on this list if you do not have enough funds available during an auto-assignment process, or if you set Manual as the assignment rule for the business process under the funding sheet Assignment tab.
3) Select one or more records from the list and click the **Assign to Funds** button on toolbar. The Manual Fund Assignment window opens
4) Enter a percent (%) amount for each record against a funding source.
5) Click **OK**.

To manually assign funds at the CBS level from the cost sheet

1) Open the project or shell cost sheet.

2) In the upper portion of the window, note the amount shown in the **Unassigned at CBS Level** field. This is an amount that gets rolled up from the unfunded record data source in the project or shell cost sheet.
3) Click on a cell under the Unfunded Records column for a CBS code.
4) The Cell Detail window opens. The Cell Detail window displays the list of records that are not funded.
5) Select one or more records from the list and click the **Assign to Funds** button on the toolbar.
6) Enter a percent (%) amount for each record against a funding source.
7) Click **OK** to close the form.

> **Note**: Funds can be automatically consumed at the CBS level by defining the fund order for each CBS Code from the Fund Assignment Order window on the Project/Shell cost sheet, and setting the assignment level to CBS Auto Order.

To manually assign or credit funds from a business process record

1) Open the business process record that needs to be funded. If the record is at a specified workflow step and status that allows funding, a Funding button is available.
2) Click the **Funding** button on the toolbar. The Funding window opens.
3) Select a line item from the upper pane. The bottom pane will display a list of funds that are available for that line item.
4) Enter the amounts for fund assignment. This is subtracted from the fund balance. For credits, enter negative amounts; the amount entered is added back to the fund balance.
5) Click **OK**.

   If the business process is configured to use individual commit line items as SOV line items, the upper pane will not show a list of line items. You will see a total amount under the Unassigned Amount field.

Reassign project/shell funds from a business process record

In addition to assigning or crediting funds from the funding sheet, you can also adjust the funding allocations that were rolled up to the funding sheet directly from the business process record in which the transaction took place.

To reassign project or shell funds

1) Open the business process record in which you want to reassign funds.
2) Click the **Funding** button. The Cell Detail window opens.
3) Click **Select**. The fund picker opens.
4) Select the funding source from which to assign funds.

   Depending on the design of the BP, the Fund picker may display all funds being used by the company or only those funds currently allocated to the project or shell.
5) Click **OK**. The Assign to Fund window opens.
6) Enter the percentage of the transaction amount to assign to the new fund and click **OK**.

Searching for Fund Codes

If you are working with a large number of funds, there are ways to help you find the fund or funds that you are looking for. You can search for individual fund codes using the Find feature. You can also create and apply filters, which can be used to temporarily limit the number of funds displayed on the sheet.

You can use the Find button to help you find a particular fund on company, project or shell funding sheet, or a funding template. You can search by any column on the funding sheet, and is available if the display mode is Flat or Tree. Find is available on company, project and shell funding sheets and templates.

In addition, you can search for funds in a fund picker. The fund picker displays when you are adding funds to a project/shell funding sheet, or funds when adding line items to a business process record used for funding.

To search for a fund on a funding sheet

1) Open the project or shell funding sheet.
2) Click the **Find** button on the toolbar. The Find window opens.
3) Complete the Find window:
   - **Column**: Choose a column name. This drop-down contains the names of all columns that are displayed on the funding sheet, including Fund Code and Fund Name.
   - **Value**: Enter a value for which to search. You can enter a full or partial word, number or other value. (Do not enter a wildcard character for partial entries.) The format of your entry will depend on the type of value you are searching for. If you are searching for a fund code, you can include the code separator if one is used (for example, a dash).
   - **Search**: Choose **Up** or **Down**. For new searches, use Down. If a value is found, it will be selected on the sheet. If you want to continue to search, you can choose to search up or down from the current selection.
4) Click **Cancel** to close the Find window.

To search for a fund in a fund picker

1) Open the funding sheet or business process record.
2) Open the fund picker by doing one of the following:
   - On a project or shell funding sheet or template, add a row to the sheet by clicking **Rows**, then **Add Row**. In the Fund Details window, click the **Select** button next to the field for choosing a fund (e.g., Fund Code).
   - In the business process record, click the **Select** button next to the field for choosing a fund (e.g., Fund Code).

   The Fund Picker opens.
3) You can search for a specific fund in the fund picker:
   a. Click the **Find** button. The Find window opens. The window that opens will depend on the design.
      - If an attribute form is not defined, the default Find window will allow you to search by Fund Code or Fund Name.

- If an attribute form is defined, the Find window can also be designed, and you may have additional fields to search by.

b. Enter search criteria and click **Search**. This limits the number of funds that are displayed to those that match the search criteria.

4) Click **OK**. The fund appears as a row on the Funding Sheet. Funds are displayed in alphabetical order on funding sheet.

Viewing a Funding Sheet

You can use the View option to access created views, create new views, or update the existing views. The views that have been created, including Default, are listed in the upper segment of the drop-down list. The lower segment of the list includes the Create New View and Manage Views options.

Creating a view

1) Click **Create New View**.
2) Use the **Save** option to name your new view.
3) Use the following tabs for adding columns and filtering, grouping, and sorting information:
   - **Columns** tab
   - **Filters** tab
   - **Group By** tab
   - **Sort By** tab

   The **Available Columns** box displays all the columns that you might want to include. The **Selected Columns** box displays all the columns that you select. You can move columns in and out of the **Selected Columns** box.

   Use the following fields to set the position of the new view:
   - **Left Lock after Column:** Displays a list of all columns, except the last column from the selected columns list. By default, **None** is selected, which means that you have chosen no column to be locked, from the left side of the sheet.
   - **Right Lock after Column:** The default value is **None** , which means that you can select not to right-lock the column in the view. Other values in this field are based on the value that you have selected in the **Left Lock after Column**.

   The **Filters** tab lets you further control what information is displayed in the selected view. For more information, see ***Creating and Applying Filters***.

   The **Group By** and **Sort By** tabs let you identify which columns should be used for group and sorting and in what order.
4) When you are done, click **Save**.

Managing a view

To update a view, select the applicable view from the **View** list, click **Edit View** (the pencil icon), and then make and save the applicable changes.

Creating and Applying Filters

If you are working with a large number of funds, it may be useful to display a subset of the total number of funds when working with the funding sheet. For example, you may want to view only new funds for the current year.

You can temporarily limit the number of funds displayed on the sheet by applying a filter. This feature is available on company, project and shell funding sheets, and funding sheet templates.

Creating and managing filters on a project/shell funding sheet

If you have Create or Modify permissions, you can create and save any number of filters. Anyone with permission to view the funding sheet can view and apply saved filters.You can add multiple filters to a view, and you can use the same data element multiple times. When adding multiple filters, you can use operators to specify that the view must match all listed filters or that it can match one or more of the listed filters.

These procedures are applicable to company, project or shell funding sheets, and funding templates.

To create a new filter

1) From within the applicable view for the funding sheet, while you are in the **New View** or **Edit View** window, select the **Filters** tab.
2) Click the **Add Filter** button.
3) Do the following:
   a. Choose a **Data Element**: This drop-down lists all data elements that are on the fund attribute form. Any data elements in a hidden block are not available.
   b. Choose a **Condition**: This drop-down displays a list of conditions. This list is based on the type of data element selected.
   c. Choose a **Value**: Depending on the type of data element, choose a value that the query condition must meet.
      - Data Element: Lists the data elements on the fund attribute form.
      - Constant Value: You can enter a full or partial entry of the value to filter by. This is similar to entering search criteria. For example, if you want to display only funds with "2010" in the fund code, then choose the data element Fund Code, condition of equals, and 2010 as a constant value. For pulldown or other multiple-entry fields, a Select button appears, allowing you to select a value.
4) To add additional filters, click **Add Filter** again, and repeat the preceding steps.

   You can use the same data element multiple times.
5) If you are using multiple filters, click the applicable operator that should apply to the set:
   - **And**: To specify that the view must match all listed filters, select **And**.
   - **Or**: To specify that the view should match any of the listed filters, select **Or**.
6) When you are done, click **Save** or **Save As**, as applicable.

To modify or remove a filter

1) From within the applicable view for the funding sheet, click **Edit View** (the pencil icon), and select the **Filters** tab.

2) Make the applicable changes, such as changing the selected Data Element or Condition, updating the Value, or removing one or more of the filters from a set.
3) To save your changes, click **Save** or **Save As**.

Applying a filter to limit the fund code display

By using the **Default** view and applying a filter to the funding sheet, you can temporarily reduce the number of fund codes that are displayed on the sheet.

To apply a filter

1) From within the **Default** view for the funding sheet, click **Edit View** (the pencil icon), and select the **Filters** tab.
2) Click **Add Filter**.

   The **Data Elements** list selects **Fund Code** by default.
3) Select the applicable **Condition**, such as **equals**.
4) In the **Value**, enter the first fund code that you want to include in the view.
5) If you want to include multiple fund codes, click **Add Filter** again, repeat the preceding steps for each fund code that you want to include, and select the **Or** operator.
6) Click **Save As**, enter a name for the view, and click **Save**.

The funding sheet will display only those funds meeting the conditions of the filter selected. The top of the sheet will display the name of the view.

To display all funds, select **Default** from the **View** menu.

Importing and Exporting Project/Shell Funding Sheet Information

You can export a summary of a funding sheet, which creates a CSV file that contains the rows, columns and data on the funding sheet. You can also export a CSV file containing fund details, which includes all fund codes on the sheet and the data captured for them from the Fund Details window.

You can also import fund details to a company funding sheet. This allows you to add fund codes to a funding sheet directly from a CSV file, rather than add them manually.

This procedures are applicable to company, project and shell funding sheets.

Export funding sheet information

You can export a summary funding sheet, which is a CSV file containing the rows (funds), columns and data on the funding sheet. You can do this in a company, project or shell funding sheet. Summary funding sheet information cannot be re-imported.

To export a funding sheet summary

1) Open the company, project or shell funding sheet.
2) Click the **Export** button and then choose **Summary Fund Sheet.**
3) Read the confirmation message and then click **Yes** to continue.

   You may choose to open the file in a compatible program such as Microsoft Excel to review it before saving.

4) Click **Save** and specify the location in which to save the CSV file.

Import and export fund details

You can export fund detail information from a company, project, or shell funding sheet to a CSV file. This contains all of the information captured in the Fund Details form when the funds were added to the company funding sheet. When you export the fund details from the company funding sheet, the details of all funds are exported; exporting from a project or shell funding sheet gives the details of those funds added to that sheet.

When adding funds to a company funding sheet, you can use the export file as a template, add fund details to the CSV file, then re-import the file to add funds to the company funding sheet. You cannot use import to add funds to a project or shell funding sheet.

To export fund details from a funding sheet

1) Open the company, project, or shell funding sheet.
2) Click the **Export** button and then choose **Fund Details.**
3) Read the confirmation message and then click **Yes** to continue.

   You may choose to open the file in a compatible program such as Microsoft Excel to review it before saving.
4) Click **Save** and specify the location in which to save the CSV file.

To import fund details into a company funding sheet

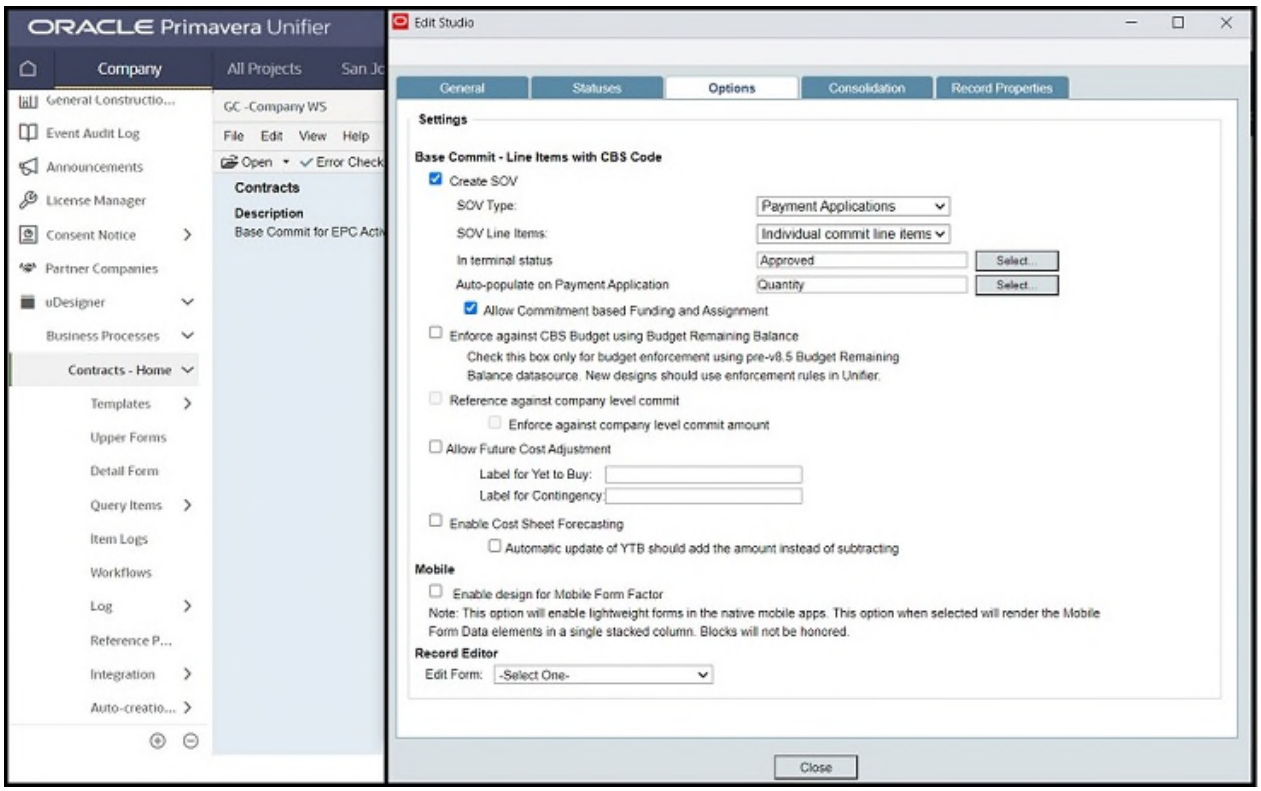
1) Open the company funding sheet.
2) Be sure you first export the fund details and save the CSV file.

   Note the instructions at the top of the file. Remove any existing funds that may be listed in the export file, so that only the column headings remain. The instructions at the top of the file can remain. Save the file.
3) Add the fund details for the funds that you want to import. Be sure to complete all required fields. Do not add fund codes that already exist on the funding sheet.
4) Click the **Import Fund Details** button**.**
5) Browse to the CSV file and click **Ok**. The funds you added to the import file will be added to the company funding sheet.

> **Note**: If any errors occur, download and open the error file, and correct the CSV file before reimporting. Common errors include trying to import fund codes that exist on the sheet, or not completing required fields.

Commitment Funding Sheet

Commitment Funding can be enabled for Base Commit and Change Commit, in uDesigner (selecting the **Allow Commitment based Funding and Assignment** option):



The Commitment Funding sheet enables you to allocate specific project or shell funds to individual Base Commit records (e.g., Purchase Orders) and Change Commit records (e.g., Change Orders). This works in conjunction with the Schedule of Values SOV sheet to track the Base Commit and the Change Commit line items and balances.

The following topics explain the details of the **Commitment Funding Sheet** sub-module or sub-node.

For information about language (internationalization) and CSV files refer to *Unifier General User Guide*.

Working with Commitment Funding Sheets

When using a project level or shell level Funding (described in the previous sections), the Fund Assignment procedure does not distinguish which Funds is consumes for invoices or payment applications that come in for different Base Commit BP records (i.e., Contracts or Purchase Orders business processes). There may be times when a Base Commit needs to be funded by a specific fund or funds. If you want to allocate and assign specific funds for each Contract, then you can use Commitment Funding.

Commitment Funding works in conjunction with project level or shell level Funding (the Funds allocated to a Commit must first be present in the project or shell Funding Sheet), and with the Schedule of Values (SOV) sheet that is created for the Base Commits (as the SOV keeps track of the line items and the amounts of the Base Commits and any Change Commits).

The terms "Base Commit" and "Contract" may be interchanged in the descriptions, but both refer to cost-type business processes of sub-type "Line items with CBS Code" and classification "base commit." Common examples are Contracts and Purchase Orders.

If you are enabling a Base Commit for Commitment Funding, its linked Actual (Spends) business process (General Spends invoice or Payment Application) will then consume Funds at the Commitment level, not the project level. If you want to do Commitment Funding with some Contracts, and project level Funding with other Contracts, you should use a different "set" of Base Commit, Change Commit and Actual (Spends) business processes (to use for each type of Funding that you want to do).

If you will be using Commitment level Funding, then a sheet structure must be created for the project or shell which consists of columns and assignment rules (in the Properties). The Commitment Funding sheets are created for each Base Commit record, using this default structure. the Funds (rows) are added to the Commitment Funding sheets, and the Fund amounts are allocated from available project or shell Funds to each sheet.

> **Note**: Although Commitment Funding sheets are based on the structure, you can still modify the columns and properties of individual sheets. You can also modify the Commitment Funding structure after the sheets have been created. Modifications to the structure will be reflected on the new sheets, but the modifications will not affect the existing sheets.

Commitment Funding Sheets (Source, Structure, Permission)

The Commitment Funding sheet is based on the individual Base Commit BP records (e.g., Purchase Orders) and Change Commit records (e.g., Change Orders).

The structure (rows and columns) of a Commitment Funding sheet is based on the structure (rows and columns) of the Commitment Funding sheet template.

The Commitment Funding sheets can be accessed from the **Commitment Funding Sheet** log, or from the Base Commit BP record with which the Commitment Funding sheet is associated.

Accessing the sheet from the Base Commit BP record depends on the business process design:

- For workflow business processes, the Funding is enabled per step.
- For non-workflow business processes, the Funding will be enabled when the business process form is editable.

The Funding sheet may also be available for viewing on View Forms, depending on the design.

The Funding sheet is available if a **Funding** option is present on the Base Commit record toolbar.

> **Note**: The Commitment Funding sheets have record-level permission. The creator of the Base Commit BP becomes the creator of the Commitment Funding sheet that was created from that Base Commit BP and must grant View or Edit permission to other users that may need to access it.

Commitment Funding Sheet Window Log

To access the **Commitment Funding Sheet** window log (**Commitment Funding Sheet** log):

1. Go to your project or shell (**User** mode).
2. Click the **Cost Manager** node to expand.
3. Click the **Commitment Funding Sheet** sub-node to open the **Commitment Funding Sheet** log.

The **Commitment Funding Sheet** log lists the Base Commit BP records (e.g., Contracts or Purchase orders business processes) and has the following toolbar options:

Update Structure	> **Note**: If your **Commitment Funding Sheet** log has no structure, then this option will change to **Create Structure**. This toolbar option opens the **Commitment Funding Structure** window. The **Commitment Funding Structure** log columns provides details about the commitment funding columns by listing their names, data sources, and data formats. Use the toolbar options to: ▸ Add a column to the **Commitment Funding Structure** log columns (**Add Column**, the plus icon) ▸ Open the **Commitment Funding Structure** properties (**CFS Structure Properties** icon) This option opens the **Properties** window which has the **General** tab and **Assignment** tab. In the **General** tab, you can enter the title, and in the **Assignment** tab you can set the assignment rules (**Commitment Level-Manual** or **Commitment Level-Auto Ratio**). The properties of a commitment funding sheet are copied from the structure it was created from (which in turn was copied from a template). You can use these properties, or modify them as necessary. ▸ Find an item on the log (**Find on Page**) Right-click on a row to insert, make a column visible or invisible (**Visible** checkbox), delete, or reorder the rows and ultimately the columns. You can double-click on a row to open the **Column Properties** window and see the details or properties of that column. Alternatively, you can use the *gear menu* options to do the same. The *gear menu* appears next to each row, when you hover over that row. Similar to the Project Funding Sheet,

	new columns are created by filling the column properties fields. The **Type** has three options: **Direct Entry**, **Line Item Content**, and **Formula**. Columns such as **Funding by Discrete Funds**, **Rows Funded by Discrete Funds** etc. are part of the **Type**: **Line Item Content**. The same **Properties** window is used for viewing the column properties, which can be opened by clicking **Properties** by right-clicking on a column heading. To close the **Commitment Funding Structure** window, from the top right corner, click the **X** icon.
Actions	To set permissions for the commitment funding sheet. Click **Permissions** to open the **Permissions** window to add, remove, or find users or groups, and to modify or set permissions. ▸ Modify Permission: This will allow user to modify record level permissions ▸ Edit: This will allow user to modify data on the sheet ▸ View: This will allow user to view the sheet
Refresh	To update the information displayed on the screen.
Print	This option enables you to print the information displayed on the screen (**Print**), export the list displayed to an external files (**Export to CSV** or **Export to Excel**).
Search	To open the search pane and use the following filters or fields to search for a particular record: ▸ **Base Record** ▸ **Description** ▸ **Date Created** ▸ **Creator**
Find on Page	This option enables you to open a row on top of the rows within the log and enter values in each column to start a search for a specific item in the log.

When you click on a row (base record), or a fund attribute, the screen splits and the right-hand pane displays the properties or fund attributes details of the record within the following tabs:

- **Properties** tab
  Shows the record name and description.
- **Assignment** tab
  Shows the **Spends Process** and allows you to select the **Assignment Rules** (**Commitment Level-Manual** or **Commitment Level-Auto Ratio**).
- **Permissions** tab
  Shows the users or groups and their permissions details.
- **Audit Log** tab

Shows a lists the actions that have been taken on a record. The following are captured in the Audit Log window:

Date, Event, Action, Field, Old Value, New Value, User Name, Proxy User, and Attachment. You can print the list in the **Audit Log** tab.

In the **Commitment Funding Sheet** log, each row (base record) has a *gear menu* (⚙) option that enables you to:

- **Open**

  To open the commitment funding sheet window, for the base record BP (**Commitment Funding Sheet <BP Base Record Name>** window). See Opening Commitment Funding Sheet for a Base Record BP for details.
- **Permissions**

  To open the **Permissions** window and to add or remove users or groups and to add, modify, or change permissions.
- **Open Base Record**

  To open the BP base record window (**<Base Record Name BP>** window). See Opening a Base Record from the Commitment Funding Sheet Log for details.

With the exception of manual entry columns, all of the values are editable in the commitment funding sheet.

Opening Commitment Funding Sheet for a Base Record BP

In the **Commitment Funding Sheet** log, double-click on a row (base record) to open the commitment funding sheet for that base record BP (**Commitment Funding Sheet (<Base Record Name BP>)** window) window. Alternatively, you can click on, or hover over, a record to activate the *gear menu* and click **Open** to open the **Commitment Funding Sheet (<Base Record Name BP>)** window.

The **Commitment Funding Sheet (<Base Record Name BP>)** window shows the commitment funding sheet for the base record BP that you have selected to open. The window shows the currency information and the Unassigned (Commitment Level). If you click on the amount link, on top, the **Manual Fund Assignment** window opens which displays the details of the fund assignment such as the unassigned amount and name, title, the assigned amount, remaining unassigned, description, and totals.

The **Commitment Funding Sheet (<Base Record Name BP>)** window has the following columns:

- **Fund Code**
- **Fund Name**

Depending on your setup, the sheet columns will also include other funds. For example:

- **Funding By Discrete Fund**
- **Records Funded By Discrete Fund**
- **Fund Balance By Discrete Fund**

Except for the first two columns, you can right-click on the column heading of any other columns and hide, delete, lock, insert column, or open the properties of that column.

Use the **Commitment Funding Sheet (<Base Record Name BP>)** window toolbar options to:

- Manage rows
- Add columns
- Change the sheet view
- Create a new view for the sheet
- Manage the existing sheet views
- Edit the views
- Open the **Fund Assignment** window that lists all of the CBS codes for the base record (you can search for CBS codes or Cost codes or change assignments for a fund code). You can update the fund assignment for any of the CBS codes. By default, the **All Funds** option is selected for all of the CBS codes. You can select more than one CBS code and select a fund from the **Bulk Assign** drop-down field. You must select at least one line to access the contents of the drop-down field. Once the fund is selected, all of the records will reflect the selected fund in their **Assignment** column.
- The **Fund Assignment** window can be accessed from the SOV sheet (Cost Manager > SOV > General Spends / Payment Applications > Open an SOV Based Record).
- Refresh the items on the sheet to get the most up-to-date values.
- Print the items on the sheet.
- Find an item on the sheet.
- Use the **Menu Options** and set columns, export **CFS Sheet Summary** or **Fund Details**, color rows, open column properties, and open the **Audit Log**.

The lower part of the sheet, depending on the **Fund Code** that you have selected, will show the **Fund Attributes** which shows a read-only display of:

- **Fund Code**
- **Fund Description**
- **Fund Category**
- **Fund Name**
- **Fund Long Description**

If you click on a cell, or value, under a data source (a column other than the first two columns), then the lower part of the sheet displays the following tabs:

- **Transactions** tab
- **Cell Details** tab
- **Audit Log** tab

The commitment funding sheet displays an error icon in case of errors. You can click on the error icon to open the list of errors.

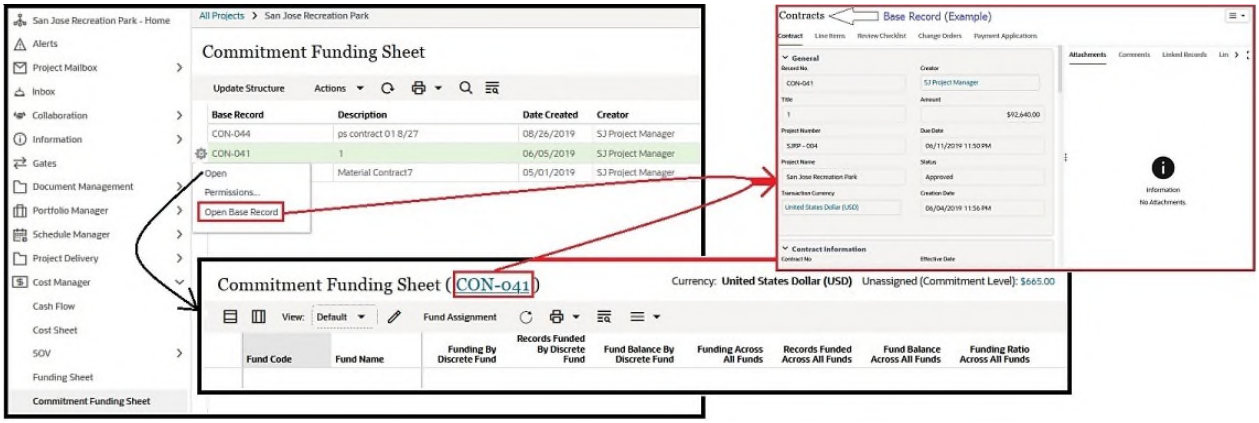
The following explains how to open a base record BP.

Opening a Base Record Business Process from Commitment Funding Sheet Log

You can open a base record BP by one of the following methods:

a. Opening the commitment funding sheet and then clicking the BP link **(<Base Record Name BP>)** in title.

b. Clicking on, or hovering over, a row (base record) to activate the *gear menu* and clicking **Open Base Record**.



The following explains the elements of a base record BP.

Title and Menu Options

The top area displays the name of the base record BP (title), and on the right corner, it has a **Menu Options** (three horizontal lines with a down arrow) that enables you to access or conduct the following:

- **Funding**

  Opens the **Commitment Funding Sheet (<Base Record Name BP>)** window.
- **Email as Attachment**

  Opens an email message window that has a PDF version of the Base Record attached, and the From and Subject fields auto-populated.
- **Print**

  Enables you to print the Base Record using one of the following formats: **HTML**, **PDF**, or **Custom** (using a Custom Print Template).
- **Review**

  Enables you to review the Base Record by way of a file viewer or AutoVue.
- **Help**

  Enables you to access the Base Record help (PDF version) or the **User Productivity Kit**.
- **Close**

  To close the Base Record window and go back to the **Commitment Funding Sheet (<Base Record Name BP>)** window.

Tabs and Properties Tabs

The body of the window is divided into two panes, the left hand and the right hand. The left hand pane has the following tabs and each pane corresponds to a tab on the right hand pane, as explained in the following table:

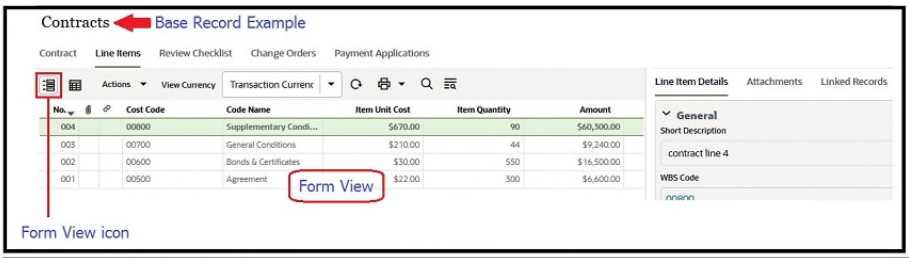
Left-hand pane	Right-hand pane
<Base Commit Record Name BP> tab	**Attachments** tab

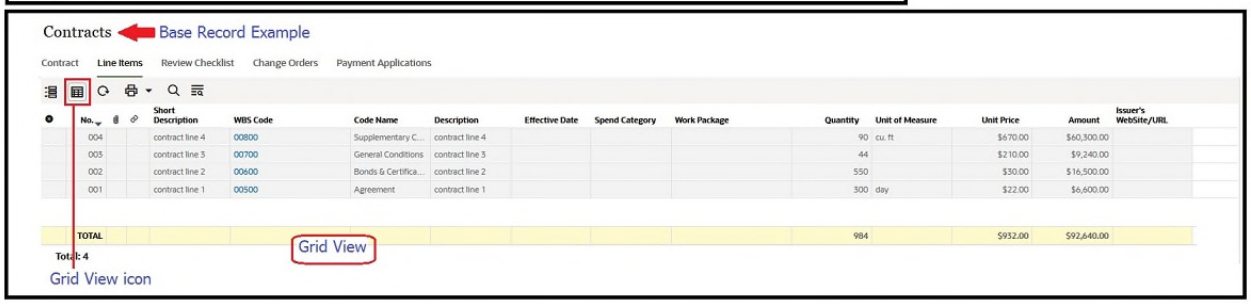
Left-hand pane	Right-hand pane

Information about the Base Record. For example, if the Base Record is **Contracts**, the **Contacts** tab will have the following blocks providing details:
▸ General
▸ Contract Information
▸ Contract Summary
▸ Change Orders
▸ Vendor Information
	Lists any files that are attached to this Base Record.
	Comments tab
	To post or read existing comments, in text format. It also enables you to upload files by accessing either a location on your computer (**Browse**), or by accessing the **Document Manager** and selecting a file from the **Project Documents**.
	If you select the **Browse** option, you have the option to include reference files and:
	▸ **Upload from My Computer**
	▸ **Auto-resolve from Documents as Dynamic Links**
	▸ **Auto-resolve form Documents as Static Links**
	▸ **Revise automatically if file with same name exists**
	Linked Records tab
	To access any records that are linked to this Base Record.
	Linked Mail tab
	To access any emails that are linked to this Base Record.
	Workflow Progress tab
	This tab enables you to:
	▸ See the Base Record Title, Record Number, Current Step, and BP Setup Used.
	▸ See or print the Workflow Progress - Graphic.
	▸ Filter by Visited Steps or All Steps.
	▸ Review details for all of the steps taken such as the:
	  ▸ Step Name
	  ▸ Assignee
	  ▸ Company
	  ▸ Status
	  ▸ Action
	  ▸ Completion Date
	Audit Log tab

Left-hand pane	Right-hand pane
	To see a record of all of the actions that have been taken on the Base Record. The following are captured in the **Audit Log** window: ▸ Date ▸ Event ▸ Action ▸ Field ▸ Old Value ▸ New Value ▸ User Name ▸ Proxy User ▸ Attachment **Reference Records** tab Lists all of the records that have been referenced in this Base Record. You can click on the records listed to see the details. From the top right-hand, click the **View Graphic** option to open and see the **Reference Records - Graphic** which shows the relation between the record and its references.

Left-hand pane	Right-hand pane
Line Items tab ▸ Form View (Default view and read-only. See the image below for example.) ▸ Grid View (See the image below for example. You can click on a WBS Code cell which has the code as a link and open the WBS Code window.) ▸ View Currency drop-down (Your options are: **Transaction Currency**, **Project Currency**, or **<currency>**) ▸ Refresh ▸ Print ▸ Search ▸ Find on Page	**Line Item Details** tab ▸ Attachments tab ▸ Linked Records





Left-hand pane	Right-hand pane
Review Checklist tab ▸ Form View (Default view and read-only.) ▸ Grid View ▸ Refresh ▸ Print ▸ Search ▸ Find on Page	None

Left-hand pane	Right-hand pane
<Change Commit Record Name BP> tab **Create** To open the Create New <Change Commit record name> (for example, Change Orders) window and add: ▸ The title of the new <Change Commit record name>. ▸ Information for the <Change Commit record name> such as Contract Picker, Spec Section, Current Contract Completion Date, and so forth. ▸ Scope ▸ Cost Center ▸ Acquisition Year ▸ Attachments	None

Left-hand pane	Right-hand pane
▸ Comments ▸ Link to other records ▸ Link to emails And from the **Menu Options**: ▸ Click **SOV** to open the **Schedule of Values** window of the Base record to access the **Cost Codes** general information, breakdown, attachments, and notes, or to access a Scheduled Value amount to see the CBS Line items, details, attachments, and notes. ▸ Click **Export Line Item Template** to export it through a **CSV** or **Microsoft Excel** file. ▸ Click **Print** to the contents of the window in **HTML**, **PDF**, or a **Custom** format. ▸ Click **Reload** to receive updated information about the Change Commit record Contract Summary. ▸ Click **Review** to access any documents that are available for review. ▸ Click **Help** to access the Change Commit record help PDF or the User Productivity Kit. ▸ Click **Close** to close the <Change Commit record name> window. Next to the **Menu Options**, you can select to **Save** your changes to revisit your work later, or to **Send** your changes to the next step if your changes are completed. **Refresh** **Print** **Search** **Find on Page**	

Left-hand pane	Right-hand pane
Payment Applications tab **Create** To open the **Create New Payment**	None

Left-hand pane	Right-hand pane
Applications window and: In the **Payment Applications** tab add: ▸ The title of the new Payment Applications. ▸ Contract information ▸ Payment Application information ▸ Attachments ▸ Comments ▸ Link to other records ▸ Link to emails In the **Line Items** tab, for each **WBS Code** and in case the information is missing, you can enter values in the Short Description, Description, Work Package, Material Price, and other cells that are not grayed. You can right-click on any column heading and sort the cells, remove columns, or add columns. From the top right corner, click **Save** to save your changes, or click **Error Check** to see which required cells you have missed to enter a value in, or click **Cancel** to discard your changes. And from the **Menu Options**: ▸ Click **SOV** to open the **Schedule of Values** window of the Base record to access the **Cost Codes** general information, breakdown, attachments, and notes, or to access a Scheduled Value amount to see the CBS Line items, details, attachments, and notes. ▸ Click **Export Line Item Template** to export it through a **CSV** or **Microsoft Excel** file. ▸ Click **Print** to the contents of the window in **HTML**, **PDF**, or a **Custom** format. ▸ Click **Reload** to receive updated information about the Payment Applications information such as Original Contract Amount, Net Changes by Change Orders, and so forth. ▸ Click **Review** to access any	

Left-hand pane	Right-hand pane
documents that are available for review. ▸ Click **Help** to access the Payment Applications help PDF or the User Productivity Kit. ▸ Click **Close** to close the window. Next to the **Menu Options**, you can select to **Save** your changes to revisit your work later, or to **Send** your changes to the next step if your changes are completed. **Refresh** **Print** **Search** **Find on Page**	

Creating, Viewing, and Editing a Commitment Funding Sheet Structure

Structures are created by copying a commitment funding template. The commitment funding structure defines:

- The column structure that will be used for the individual commitment funding sheets that are created from the base commit BP records.
- The assignment levels and rules to use for each sheet (in the **Properties** window).

> **Note**: The following procedures assume a commitment funding template has been created and available.

Structures can also be created in a project or shell template and then copied to projects or shells created from that template. Structures created ina project or shell template can also be "pushed" to an existing project or shell, using the Update Projects or Update Shells options.

If you modify the columns or properties of the commitment funding sheet structure, the existing sheets will not be affected, and only the new commitment funding sheets (created from the edited structure) will reflect your modifications. You can modify the columns and properties of individual commitment funding sheets without affecting the default structure.

To create a commitment funding sheet structure:

1. Go to your project or shell (**User** mode).
2. Click the **Cost Manager** node to expand.
3. Click the **Commitment Funding Sheet** sub-node to open the **Commitment Funding Sheet** log.
4. From the toolbar menu options, click **Create Structure** to open the window.

> **Note**: When a structure is created, the **Create Structure** option changes to **Update Structure** option.

5. Proceed to select and open a commitment funding template form the list.
6. Follow the prompts to either use the commitment funding template structure as is, or make modifications as necessary and use the end result for the commitment funding sheet structure.

To view or edit a commitment funding sheet structure:

1. Go to your project or shell (**User** mode).
2. Click the **Cost Manager** node to expand.
3. Click the **Commitment Funding Sheet** sub-node to open the **Commitment Funding Sheet** log.
4. From the toolbar menu options, click **Update Structure** to open the **Commitment Funding Structure** window.
5. Read the following information to view or edit the commitment funding sheet structure:

   The **Commitment Funding Structure** log columns provides details about the commitment funding columns by listing their names, data sources, and data formats.

   Use the toolbar options to:

   - Add a column to the **Commitment Funding Structure** log columns (**Add Column**, the plus icon)
   - Open the **Commitment Funding Structure** properties (**CFS Structure Properties** icon)
   - This option opens the **Properties** window which has the **General** tab and **Assignment** tab. In the **General** tab, you can enter the title, and in the **Assignment** tab you can set the assignment rules (**Commitment Level-Manual** or **Commitment Level-Auto Ratio**). The properties of a commitment funding sheet are copied from the structure it was created from (which in turn was copied from a template). You can use these properties, or modify them as necessary.
   - Find an item on the log (**Find on Page**)

   Right-click on a row to insert, make a column visible or invisible (**Visible** checkbox), delete, or reorder the rows and ultimately the columns.

   You can double-click on a row to open the **Column Properties** window and see the details or properties of that column. Alternatively, you can use the *gear menu* options to do the same. The *gear menu* appears next to each row, when you hover over that row. Similar to the Project Funding Sheet, new columns are created by filling the column properties fields. The Type has three options: Direct Entry, Line Item Content, and Formula. Columns such as Funding by Discrete Funds, Rows Funded by Discrete Funds etc. are part of Line Item Content Type. The same **Properties** window is used for viewing the column properties, which can be opened by clicking **Properties** by right-clicking on a column heading.

   To close the **Commitment Funding Structure** window, from the top right corner, click the **X** icon.

Creating a Commitment Funding Sheet

The Commitment Funding Sheet allows you to allocate project or shell funds to a specific "commitment" (base commit) business process record (for example, a contract or a purchase order). Changes to the original contract through the use of associated change commits will also be reflected on the funding sheet. The commitment funding sheet is also used to track the consumption of those funds as spends business processes (invoices or payment applications) are created.

There is one commitment funding sheet for each base commit business process record. You create the sheet directly from the base commit record once it reaches a step at which funding has been enabled. (For workflow BPs, funding can be enabled per step; for non-workflow BPs, funding will be enabled when the form is editable. The funding sheet may also be available for viewing on view forms, depending on the design. The funding sheet is available if a Funding button is present on the base or change commit record toolbar.)

Be sure the following is in place before creating the commitment funding sheet:

- A commitment funding structure has been created. The sheet will use this default structure. Columns can be modified, removed or added to the sheet; this will not affect the default structure.
- The project or shell funding sheet has been created, and funds allocated to it from the company funding sheet.
- In order to use commitment level funding, a Schedule of Values (SOV) sheet must be created for the base commit. The commitment funding sheet uses the SOV to track base commit and change commit line items, amounts, and remaining balances. Be sure the SOV sheet has a column using the datasource Scheduled Value, as this is used by the commitment funding sheet.

If the fund assignment levels and rules have been defined in the structure, then these will be copied to the new sheet. These definitions can be added or edited in the sheet as needed.

The user who creates the sheet becomes the owner and automatically has full permissions to view and edit the sheet. If other users will need to view or edit the sheet, you will need to give them permission.

After the sheet is created, you then allocate funding for that record from the available project or shell funds. Fund allocation is done manually on the commitment funding sheet; allocation and consumption can be tracked on the project/shell funding sheet by adding the appropriate columns.

To create a commitment funding sheet:

1. Go to your project or shell (**User** mode).
2. Click the **Cost Manager** node to expand.
3. Click the **Commitment Funding Sheet** sub-node to open the **Commitment Funding Sheet** log.
4. Hover over the base commit business process record on which you want to perform commitment funding.

5. If commitment funding has been enabled on the base commit business process record, and on the base commit business process record is in current step, then when you open the base commit business process record (*gear menu* > **Open Base Record**) and click the **Menu Options** drop-down, the **Funding** option will be included in the list of options.

> **Note**: If the **Funding** option is not available, then contact your administrator to verify that commitment funding is available for the business process, that it is available on the current step, and that you have the proper permissions. In addition, it is possible that on some steps (and on **View Forms**), the Funding option will be present, but the option has been designed to open a view-only version of the sheet.

6. Click **Funding** to open the **Commitment Funding Sheet (<Base Record Name BP>)** window.
7. Click **Fund Assignment** to open the window and complete the commitment funding.

About Commitment Funding Columns

The columns on the commitment funding sheet are used to manage and track the funding allocation, assignment and fund balances for the commit record.

> **Note**: In these column definitions, the terms All Funds and Discrete Fund refer to the fund assignment options (from the Fund Assignment window, accessed from the SOV sheet or commitment funding sheet). These options determine how the SOV lines (and therefore, the commit lines) will be funded, either automatically or manually from the entire list of funds available to the commit, or by one specific fund.

The **Funding Across All Funds** column is used to enter (or calculate) the amount of each fund to allocate for this base commit record. The rows on the sheet are the funds that will be used to fund the commit. The value entered here will be the fund amount available for all commit lines that have "All Funds" as assignment. This can be a manual entry column, or a formula that uses another manual entry column as the basis of the formula.

Additional columns commonly track fund assignments (consumption) made against each fund. These can be in the form of business process transactions or manual funding assignments. System provided data sources that can be used for columns include the following:

- **Funding By Discrete Fund**: This column displays the sum total of all the line items of base and change commits that are funded by a specific (or "discrete") fund This value can be used to determine the fund balance during consumption.
- **Records Funded Across All Funds**: Reflects the total of funds consumed from records that are funded based on All Funds, whether funding is done manually or automatically.
- **Records Funded By Discrete Fund**: Displays the total of funds consumed from records that are funded based on a discrete fund, whether funding is done manually or automatically.
- **Fund Balance Across All Funds**: This column tracks the fund balance across all funds. The formula used is (Funding Across All Funds) - (Records Funded By All Funds).

- **Fund Balance By Discrete Fund**: This column tracks the fund balance by specific fund chosen in the Fund Assignment window. The formula used is (Funding By Discrete Fund) - (Records Funded By Discrete Fund).
- **Funding Ratio Across All Funds**: The value of this column is calculated automatically. It reflects the % ratio to use when performing fund assignment ratio during consumption. The formula is (Funding Across All Funds Per Fund) / Total of Fund Balance Across All Funds).

Assignment Levels and Rules

The assignment levels and rules are defined on the **Assignments** tab of the commitment funding sheet.

> **Note**: This step is mandatory in order to do commitment level funding.

The **Assignment** tab lists the spends business processes that are linked to base commits enabled for commitment level funding. For each listed business process, you define how fund assignment will be done when these spends records come in against the base commit:

- **Commitment Level - Manual**: Funds are manually assigned at runtime. As spends business processes are routed and reach specified status, the amounts to be funded are collected under the Unassigned total on the commitment funding sheet, similar to project/shell level manual funding. You can then select each line of the spends BP and assign funds at runtime. This can be done on transient records or in terminal status (depending on design). Consumed funds roll up to the commitment funding sheet and the project funding sheet.
- **Commitment Level - Auto Ratio**: Funds are assigned automatically when the spends business process reaches a specified status. Funds are assigned based on the fund ratio, which is calculated based on the current fund levels, and is managed and tracked on the commitment funding sheet. If all funds are consumed, any remaining spends amounts are collected under Unassigned.

You can define these assignment rules on the commitment funding template. When you create a commitment funding structure in a project or shell, these assignment rules will be copied to it, and when you create new sheets from the structure, they will be copied to the sheets. If you need to, you can modify these rules on individual structures and sheets.

Fund Assignment Details Per SOV Line Items

This is an optional step that allows you to provide details about fund assignment or consumption for each line on the Base Commit or any Change Commits. You access the **Fund Assignment** window by clicking **Fund Assignment** on the commitment funding sheet or the SOV sheet associated with the Base Commit.

- If you do not define any assignment options in this window, then All Funds is the default selection. This means that all funds that have been allocated to the base commit on the commitment funding sheet will be available for funding each line of the spends business process created against it (either manually or by auto ratio, as defined by the assignment rules). When this is chosen, funding information is captured on the commitment funding sheet in columns using data sources referencing "across all funds."

- There may be times when you need to specify that a specific fund must be used to fund a specific CBS code on the base commit or a change commit. You can select a specific fund (or "discrete fund") to fund selected SOV lines. When this is chosen, funding information is captured on the commitment funding sheet in columns using data sources referencing "by discrete fund."

Once the commitment funding sheet is created, you can add rows and allocate funds to it.

About Commitment Funding Sheet Rows

Each row in the commitment funding sheet corresponds to a fund that has been allocated for use on that commitment. Fund allocation can be done manually, by adding rows to the commitment funding sheet. The funds that are available for allocation are those on the project or shell funding sheet.

About Commitment Funding Assignment Options

Fund Assignment refers to how funds are to be consumed as spends type business processes (e.g., invoices and payment applications) come in against the base commit that is being funded.

Initial assignment rules are defined in the **Assignment** tab. Additional details can be defined in the **Fund Assignment** window. To access the fund assignment window, click the **Fund Assignment** option on the commitment funding sheet or SOV sheet for the base commit. The **Fund Assignment** window is not accessible until the SOV sheet has been created.

Allocating Funds for Commitment Funding

Similar to project or shell funding sheets, the rows of a commitment funding sheet correspond to the funds that you want to use to fund the associated base commit (plus any linked change commits). The funds that are available to add as rows are those that have been added to the project or shell funding sheet.

After adding a row, you allocate how much of that fund you want to make available to the base commit directly on the sheet. That is, you must add a column to the commitment funding sheet using the data source **Funding Across All Rows**. This is the column to use for fund allocation.

This column can be manual entry or formula. If it is manual entry, you can enter the fund allocation amount directly to the cell. If you use a formula, you must also include another manual entry column to use to enter an amount and include that in the formula. For example, you might want to use your own ratio of certain funds in the initial allocations. You can add a manual entry column, then use the formula calculation for the **Funding Across All Rows** column.

Managing Commitment Funding Sheet Rows (Funds)

The rows that you add to a commitment funding sheet are the project or shell funds that you are allocating to the associated base commit and any change commits.

You add rows (funds) to the project or shell commitment funding sheet, but not the template or structure. You can delete a row as long as no assignments have been made against the fund.

> **Note**: The **Add Rows** option is available only if all of the available project funds have not been added to Base record BP commitment funding.

You cannot delete a row or base record BP, once a fund has been assigned to that row or base record BP.

After you save a commitment funding sheet, you cannot edit the assigned funds.

If you need to assign a different fund to a row or base record BP, first delete the row or base record BP, then create a new row or base record BP and assign the fund.

To manage rows in the commitment funding sheet:

1. Go to your project or shell (**User** mode).
2. Click the **Cost Manager** node to expand.
3. Click the **Commitment Funding Sheet** sub-node to open the **Commitment Funding Sheet** log.
4. From the toolbar, click **Manage Rows** icon to open the **Manage Rows** window.

   The window is divided into two sections:

   The left section which lists the "**Available Project Fund Codes**" sorted in columns by:

   - Fund Code
   - Fund Name
   - Fund Description
   - Fund Category

   The right section which lists the "**Selected**" Fund Codes sorted according to the Available Project Fund Codes, shown above.

   The fund codes listed are those that are on the project or shell funding sheet. For each row, you will need to allocate how much of the fund to make available to the commit. You can do that now or wait until all the rows have been added.

Allocating Fund Amounts to a Commitment Funding Sheet Row

You allocate the project or shell funds to use for each fund directly on the commitment funding sheet per row. The commitment funding sheet must have a column that uses the data source **Funding Across All Rows**. This is the column to use for fund allocation.

The **Funding Across All Rows** column can be manual entry or formula.

- If it is manual entry, you can enter the fund allocation amount directly to the cell.
- If you use a formula, you must also include another manual entry column in the commitment funding sheet to use to enter an amount and include that in the formula. For example, you might want to use a ratio of certain funds in the initial allocations. You can add a manual entry column, then use the formula calculation for the **Funding Across All Rows** column.

To allocate fund amounts to a commitment funding sheet row:

1. Go to your project or shell (**User** mode).
2. Click the **Cost Manager** node to expand.
3. Click the **Commitment Funding Sheet** sub-node to open the **Commitment Funding Sheet** log.
4. For each row, double-click the cell of the column you are using for the manual entry portion of fund allocation (e.g., the **Funding Across All Rows** column). This makes the cell editable.
5. Enter the amount to use for fund allocation.
6. Click **Save** to save your changes.

   When you save the commitment funding sheet, Unifier runs a validation check to ensure that the allocation amounts do not exceed the fund balance of each fund on the project or shell funding sheet.

Assigning and Crediting Commitment Level Funds

Assigning (consuming) or crediting funds on a commitment funding sheet is similar to a project or shell funding sheet, with some exceptions. This section assumes that the concepts of assigning and crediting funds of project or shell funding sheets is already understood.

As with project or shell funding, fund consumption on commitment funding sheets is done using General Spends or Payment Application business processes that have been designed to consume funds.

When the General Spends BP is linked to a Base Commit BP that has been enabled to do commitment funding, then the funds are consumed from the commitment funding sheet, not the project or shell funding sheet.

As in project or shell funding, funds are assigned from the General Spends BP record based on the amount of that General Spends BP record.

The behavior of funding business processes depends both on the design options chosen and the **Assignment Levels** chosen on the commitment funding sheet properties.

Like project/shell funding, fund assignment can be done manually or automatically (by fund balance ratio). This is determined in the **Fund Assignment** rules set in the sheet Properties.

The **Commitment Funding Sheet (<Base Record Name BP>)** window shows the commitment funding sheet for the base record BP that you have selected to open. The window shows the currency information and the Unassigned (Commitment Level). If you click on the amount link, on top, the **Manual Fund Assignment** window opens which displays the details of the fund assignment such as the unassigned amount and name, title, the assigned amount, remaining unassigned, description, and totals.

When you click on the unassigned commitment level value, the Manual Funding window opens.

> **Note**: This Manual Funding window is similar to the Manual Funding window of a project or shell funding sheet. The only difference is that in the Manual Funding window of a commitment funding sheet you can assign funds only from the allowed fund codes (this is governed by Fund

Code selection in Fund Assignment window).

To prevent assigning wrong fund codes, the window displays the fund codes that are not allowed as read-only.

In this scenario, when you open the Manual Assignment window (from Transactions), the Manual Assignment window will include the selected rows, only.

About Business Processes Enabled for Commitment Funding

Commitment funding is enabled on the CBS-code-based Base Commit (Base Commit BP that is based on CBS Codes). The design of the Base Commit BP forms determine when the **Funding** option appears on the Base Commit BP record, or the Change Commit BP record. The **Funding** option allows you to create the commitment funding sheet for the BP record and also to access the funding sheet from the BP record.

> **Note**: The commitment funding sheets can also be accessed directly from the commitment funding sheet log.

As in project or shell funding, you use General Spends type BPs (e.g., Invoices or Payment Applications) to consume funds. If the General Spends type BP is linked to a Base Commit BP that is enabled for commitment funding, then the General Spends type BP record will consume funds from the commitment funding sheet rather than the project or shell funding sheet.

If you will be doing both the project or shell funding and the commitment funding, then use a different set of linked Base Commit / Change Commit / General Spends business processes for each funding.

Viewing Unassigned Amounts (Commitment Level)

When the General Spends BPs are set up to be funded manually, the amount of the General Spends BP, initially, is captured in the **Unassigned (Commitment Level)** field on the commitment funding sheet. This value displays until the entire amount of the record has been fully funded.

For a project or shell level funding, the amount displays in the Unassigned (Project Level) field; for CBS level funding, the amount shows up in the Unassigned (CBS Level) field.

It is possible that an unassigned amount can be negative, as the result of a credit invoice that has not yet been credited back to the funding source.

> **Note**: These unassigned amounts can also be rolled up to the Cost Sheet using the **Unfunded Record** data source.

To view unassigned commitment funding sheet amounts (commitment level):

1. Go to your project or shell (**User** mode).
2. Click the **Cost Manager** node to expand.
3. Click the **Commitment Funding Sheet** sub-node to open the **Commitment Funding Sheet** log.

4. Open the commitment funding sheet for the base record BP that you want to see the unassigned amount for: **Commitment Funding Sheet (<Base Record Name BP>)**. The window shows the currency information and the Unassigned (Commitment Level). If you click on the amount link, on top, the **Manual Fund Assignment** window opens which displays the details of the fund assignment such as the unassigned amount and name, title, the assigned amount, remaining unassigned, description, and totals (transaction records that have not yet been fully funded0.

   If business process transactions have occurred that have not yet been funded, the total of the records will display in the Unassigned field in the upper portion of the sheet.

Assigning or Crediting Unassigned Funds on the Commitment Funding Sheet

If there are unassigned funds, you can assign them manually from the General Spends BP record or from the commitment funding sheet.

When the General Spends BP record reaches a specified workflow step or status, the **Funding** options appears on the BP form. When you click the **Funding** option, the **Funding** window opens allowing you to do manual fund assignment.

If a credit invoice (negative line item or invoice amount) has been submitted, this can be used to credit previously consumed funds back to the source, or can be used to credit another fund. You cannot credit an amount that is more than has been consumed.

To manually assign funds from the commitment funding sheet:

1. Go to your project or shell (**User** mode).
2. Click the **Cost Manager** node to expand.

   Click the **Commitment Funding Sheet** sub-node to open the **Commitment Funding Sheet** log.
3. Open the commitment funding sheet.
4. From the top portion of the window, click the link next to Unassigned (Commitment Level). This link displays the amount of funds that are not currently assigned to a particular fund. The **Cell Detail** window opens. The **Cell Detail** window displays the list of spends business process records that have not yet been fully funded. A record can appear on this list if you do not have enough funds available during an auto-assignment process, or if you set Manual as the assignment rule for the business process under the funding sheet **Assignment** tab.
5. Enter a percent (%) amount for each record against a funding source.
6. Click **OK**.

To manually assign or credit funds from a General Spends BP record:

1. Open the General Spends BP record that needs to be funded. If the General Spends BP record is at a specified workflow step and status that allows funding, the **Funding** option appears.
2. From the toolbar, click **Funding** on the toolbar to open the **Funding** window.
3. Select a line item from the upper pane. The bottom pane will display a list of funds that are available for that line item.

4. Enter the amounts for fund assignment. This is subtracted from the fund balance. For credits, enter negative amounts; the amount entered is added back to the fund balance.
5. Click **OK**.

To manually assign or credit funds from a General Spends BP record:

1. Open the General Spends BP record that needs to be funded. If the General Spends BP record is at a specified workflow step and status that allows funding, the **Funding** option appears.
2. From the toolbar, click **Funding** on the toolbar to open the **Funding** window.
3. Select a line item from the upper pane. The bottom pane will display a list of funds that are available for that line item.
4. Enter the amounts for fund assignment. This is subtracted from the fund balance. For credits, enter negative amounts; the amount entered is added back to the fund balance.
5. Click **OK**.

Automatic fund assignments at the commitment level

Automatic fund assignment works similarly at the commitment level as it does in project or shell funding. The available automatic funding option is auto-ratio by fund balance (if All Funds is chosen in the **Fund Assignment** window), or a specific (discrete) fund can be used.

See ***Manual and Automatic Fund Assignment*** (on page 321), ***About Crediting Funds*** (on page 323), ***About Commitment Funding Assignment Options*** (on page 348), ***About Commitment Funding Columns*** (on page 346).

Accounts Sheet

The company accounts sheet is used to track company level accounts information, such as assets, resources, and facility maintenance. It is similar to a project or shell cost sheet, using account codes instead of CBS codes.

Working with Company Accounts Sheets

The company accounts sheet is used to track company level accounts information, such as assets, resources, and facility maintenance. It is similar to a project or shell cost sheet, using account codes instead of CBS codes.

Account codes are independent of CBS codes, but are similar in structure format. Company-level business processes can be designed in uDesigner to roll up to the accounts sheet (line items are associated with account codes).

Open the accounts sheet

To open the accounts sheet:

1) In User Mode, select **Company Workspace > Cost Manager > Accounts Sheet**. The Accounts Sheet log opens. If an accounts sheet has been created, it will be displayed in the log.
2) Select the sheet and click **Open** (example below.)

> **Note**: When you first open the sheet, the opening view will depend on the **Default View** option selected in the Properties window. Your accounts sheet administrator can set this default view. Accounts sheets can be resized and split/unsplit the same way as project or shell cost sheets (see ***Resize cost sheet window*** (on page 241) or ***Split or unsplit cost sheet window*** (on page 241)).

The accounts sheet works similarly to cost sheets. Like cost sheets, you can:

- Enter data into manual data-entry columns.
- View rolled up transaction details by clicking a cell with a hyperlink.
- View a column definition by clicking a column heading.
- Copy column data from one column to another (**Edit > Copy > Column Data**; the original values will be overwritten).
- Save and view snapshots (**File > Create Snapshot**; **View > Snapshot Log**).
- Import and export column details.
- Export accounts summary sheet.

Activate or deactivate account codes

You can control the status of account codes. If an account code is inactive, it will be displayed on the accounts sheet, but will not be available for selection in an Account Code picker, such as on company account business process transactions.

To activate or deactivate an accounts code

1) Open the accounts sheet.
2) Click the **Account Status** button. The Account Code Status window opens.
3) Select one or more account codes.
4) Click **Activate** or **Deactivate**.

View or edit accounts sheet properties

Accounts sheet properties can be viewed and edited. The ability to edit properties is dependent on your user permission settings. Contact your project or company administrator if you have questions regarding your user permission settings.

To view or edit accounts sheet properties

Select the accounts sheet from the log and click the **Properties** button, or open the accounts sheet and click **File > Properties**. The Properties window opens. The following properties are displayed and are editable by the cost administrator:

- **Title**: This is the title of the sheet, and displays in the log.
- **Description**: This optional field can be used to provide a description or other information about the accounts sheet.
- **Display Mode**: This determines whether the accounts codes are displayed in a flat list, or a hierarchical tree mode. This setting can be switched back and forth as needed.
- **Default View**: These are the settings that determine how the sheet appears when first opened by any user from the log.

Generic Cost Manager

A "Generic Cost Manager" captures non-CBS cost-related activities for a configurable shell. These include costs such as:

- Rent
- Lease payments
- Landscape care
- Building maintenance and repair
- Remodel of building interiors

With this manager, you can capture and view cost transaction information based on a timescale, such as quarterly or yearly. Each shell can have one Generic Cost Manager. The Generic Cost Manager uses specific generic cost business processes as data sources.

Most of the functionality for the Generic Cost Manager is the same as that for the standard Cost Manager. Rather than re-document all of the cost management sheet functionality that is common between the Generic Cost Manager and the standard Cost Manager, this section documents the differences between the managers, and explain that functionality in context of the task you will be performing.

> **Note**: The names of the Generic Cost Manager, the various shells and sub-shells, and the generic cost sheet you will work with are determined by the names defined in uDesigner. For documentation purposes, in these instructions, this manager is referred to as the Generic Cost Manager.

The Generic Cost Manager:

- Defines a code structure that can be used to capture cost-related activities for a configurable shell.
- Tracks and rolls up costs to upper management levels
- Enables interaction with cost data
  - Operating budgets (monthly, quarterly, yearly)
  - Projects with life cycles that span over extended time
  - Costs covering the entire life cycle of the product/operation
  - Transactions based on timescale
  - Transactions in varying currencies

The following procedures discuss how to access and work with generic cost sheets. The generic cost sheet is created from a template.

Data Sources for Generic Cost Sheets

The Generic Cost Manager uses information in cost sheets that is manually entered, calculated, or comes from Generic Cost BPs. The difference between the Generic Cost Manager and the standard Cost Manager is that the data used in the Generic Cost Manager comes from shells and sub-shells, not from projects.

The Generic Cost Manager uses specific Cost BPs as a data source. These BPs have the type cost and the classification Line Items with Multiple Codes.

Opening Generic Cost Sheet

To open a generic cost sheet:

1) Go to your shell, User mode, and from the left Navigator click **Configurable Manager** node to expand.
2) Click **Generic Cost Manager** sub-node to open the **Generic Cost Manager** log. The log lists all of the generic cost sheets.
3) Click to select a generic cost sheet and click the *gear menu* (⚙) to open.
4) Click **Open** to open the generic cost sheet (**Generic Cost Manager** overlay window) log.

You work with a generic cost sheet in the same way as a standard cost sheet, seen in standard projects and CBS shells. The difference is that the data in the generic cost sheet comes from generic shells and sub-shells. The first two columns are displayed by default. The view is fixed, and there is no split screen capability.

Viewing Data for Shells and Sub-shells in Generic Cost Sheet

The generic cost sheet displays transactional data by period and shell level. In the context of working with the generic cost sheet, you can filter the cost data you are viewing by shells or sub-shells. The generic cost sheet is accessed from the **Shell > Configurable Managers > Generic Cost Manager > Generic Cost Sheet** log. You can use the shell or sub-shell filter in combination with the timescale selector documented in the next section to create various views in your spreadsheet based on shell or sub-shell and time period.

See ***Working with Configurable Manager Sheets (Standard View)*** (on page 47) for additional details.

In the **View By** selection list, choose one of the following:

- **Current Shell only:** Data from the current shell you have selected. Manual column data is editable in the Current Shell only view.
- **Current Shell and Sub-shells only:** Data from both the current shell and its sub-shells.
- **Sub-shells only:** Data from the sub-shells of the current shell.

In Generic Cost Sheet views, data is rolled up from the current shell and sub-shells. When data is rolled up from sub-shells, the generic cost sheet under a shell can roll up data from other shells that are created as sub-shells and their sub-shells. The Current Shell and sub-shells only and **Sub-shells only** views support this rollup. For example:

- North Region (shell)
  - Property A (sub-shell)
    - Building 101 (sub-shell)
    - Building 102 (sub-shell)
  - Property B
    - Building 201

- Building 202

In this example, the North Region Generic Cost Sheet will have data from Property A, Property B, Building 101, Building 102, Building 201, and Building 202. Property A has data from Building 101 and Building 102. Property B has data from Building 201 and Building 202.

Also, data from a sub-shell to its parent shell can only roll up if the codes match. For example,

- North Region (Shell)
  - Property A (1000-1001: $500)
    - Building 101 (1000-1001: $500)
    - Building 102 (1000-1002:$200)

In this example, Building 101 will roll up to Property A as the codes match (1000-1001). Building 102 will not roll up because the codes are different (1000-1002). Parent and child shell cost codes must match for roll up to occur. Timescale and column definition must also match across the shells and sub-shells.

Also, all sub-shells that will roll up must have the same currency as the parent shell. If all of the sub-shells and the current parent shell have the same currency, the data displays in that currency. If at least on sub-shell has a different currency, the data displays in the Base Currency. A confirmation message alerts you to this currency display.

While rolling up, only parent shell generic cost sheet codes should be considered. This is applicable under all views.

Change the Timescale on a Generic Cost Sheet

With the Generic Cost Manager, you can capture and view cost transaction information based on a timescale, such as monthly, quarterly, or yearly. For example, you might be working with time-based transactions such as lease payments. In the context of working with the generic cost sheet, you can change the timescale on the cost data with which you are working. The generic cost sheet is accessed from the [*shell name*] > **Configurable Modules > Generic Cost Manager > Generic Cost Sheet log.** You can use the shell or sub-shell filter described in ***Viewing Data for Shells and Sub-shells in Generic Cost Sheet*** (on page 356) in combination with the timescale selector to create various views in your spreadsheet based on shell or sub-shell and time period.

To change the timescale on generic cost sheet data by shell or sub-shell

1) Open the shell and click **Configurable Managers > Generic Cost Manager > Generic Cost Sheet** in the left Navigator. The Generic Cost Sheet log opens.
2) Open the cost sheet you want to work with by double-clicking the cost sheet name, or by selecting the cost sheet name in the log, clicking the *Gear menu*, and clicking **Open**.
3) Click on the **Display Period** button. The Display Period window opens.
4) Select a date range (**Monthly**, **Quarterly**, or **Yearly**) and the time period to go with the range. The data for the timescale you select is displayed in the cost sheet. The default view is Monthly, and shows the current month. Data is always stored in months. Changing the timescale units updates the totals based on the period and the calendar year.

   Monthly view data is editable in the manual columns only, and in the Current Shell view only. Quarterly and Yearly views are read-only.

Modify Shell and Base Exchange Rates for Manual Data Entry

Data entered manually (directly) on a generic cost sheet should have a rate associated with it. This is because any transaction that occurs under a shell will be calculated and stamped with two currency rates: the shell currency and Base Currency. The rate in this case will be the conversion rate between the shell currency and Base Currency (the Base Currency is the company currency).

When you modify the exchange rate the new rate takes effect for the currency month, and applies until you change it again. You can revert it to the rate stored in the shell properties. The modified exchange rate applies only to data you enter manually on the sheet. It does not affect data that is entered through business processes, which uses the exchange rate from shell properties.

To view exchange rate history

1) Open the shell and click **Configurable Managers > Generic Cost Manager > Generic Cost Sheet** in the left Navigator.
2) From the **Menu Options** (☰), choose **Exchange Rate History**.

To view the data in either the shell or Base Currency

1) Open the shell and click **Configurable Managers > Generic Cost Manager > Generic Cost Sheet** in the left Navigator.
2) Select the **Switch to Project Currency** icon () to switch between Base Currency and Project Currency.

Export Generic Cost Sheet data

You can export the structure of a generic cost manager.

Print options

In the **Generic Cost Manager** log, click the sheet, click the *gear menu*, and select **Open** to open the **Generic Cost Manager** window . From the toolbar options, click **Print** and select one of the following:

a. **Print**
b. **Export To CSV**
c. **Export To Excel**

Export options

In the **Generic Cost Manager** log, click the sheet, click the *gear menu* (⚙), and select **Open** to open the **Generic Cost Manager** window that displays all of the columns. Click the **Menu Options** ☰ , click **Export**, and select one of the following options:

a. **Summary Sheet**
b. **Cost Codes**
c. **Column Data**

Proceed with following the prompts.

> **Note**: If you open the CSV file, you will see that it contains notes regarding modifying the columns and data in the exported file for reimporting into a cost sheet. Follow the notes embedded in the CSV file for modifying columns and data in the exported file.

Import Generic Cost Sheet data

You can import the structure of a generic cost manager.

In the **Generic Cost Manager** log, click the sheet, click the *gear menu* (⚙), and select **Open** to open the Generic Cost Manager window. From the Menu Options, click **Import** and select **Cost Codes.** Browse for the CSV file to import, select it, and click **Open**.

You can also select **Column Data**, from the Import options, to open the Import Column Details window and select a column to import.

> **Note:** The **Import** option is only available when the **View By** menu is set to **Current Shell Only**.

Working with Generic Cost Business Processes

The Generic Cost Manager can use generic Cost BPs as data sources. These BPs are created in uDesigner. These generic Cost BPs work only with the Generic Cost Manager, and also only in the context of a shell. The possible Generic cost BP types are:

- **Generic**: Reference against company-level commit; enforce against company-level commit amount.
- **Transfer**: Transfer value from one code to another.
- **Base Commit**: Creates an entry in the Commitment Summary. Works in conjunction with change commit and general spends generic Cost BPs. Reference against company-level commit; enforce against company-level commit amount. Click the **Commitment Summary** button to access the Commitment Summary.
- **Change Commit**: Works in conjunction with base commit and general spends generic Cost BPs. Updates the Commitment Summary. Reference against company-level commit; enforce against company-level commit amount. Click the **Commitment Summary** button to access the Commitment Summary.
- **General Spends**: Works in conjunction with base commit and change commit generic Cost BPs. Updates the Commitment Summary. Click the **Commitment Summary** button to access the Commitment Summary.
- **Lease**: Works in a shell to manage lease payments and payment history.

View and edit the Commitment Summary

When a base commit record goes to Terminal status, it creates an entry in the Commitment Summary for the shell. When change commit and general spends records go to Terminal status, they update the associated base commit record in the Commitment Summary. If you have the appropriate permissions, you can view and edit the Commitment Summary.

To view and edit a Commitment Summary for a shell

1) Open the shell and click **Cost Manager > Commitment Summary** in the left Navigator.
2) In the Commitment Summary log, select the Commitment Summary and click **Open**.
3) Click **Create Structure** to add columns to the sheet.
4) To view or edit the sheet properties, choose **Edit > Properties**. In the General tab, enter a unique name and an optional description. In the Options tab, enter the following column names: **Ref**, **Cost Code**, **Code Name**, **Breakdown**, and **Description**.

   Depending on the design in uDesigner, some columns may not display in the Commitment Summary sheet.
5) Click **OK**.

Drill down from the Commitment Summary to related BPs

You can view BP information for the various entries in the Commitment Summary.

To drill down from the Commitment Summary to related BPs

1) Open the shell and click **Cost Manager** > **Commitment Summary** in the left Navigator.
2) In the Commitment Summary log, click the BP reference in the Commitment Summary. The Cell Detail window opens.
3) Click the **Close Window** button when you are done viewing the BP information.

Cost Manager (Standard)

The standard Cost Manager and the Generic Cost Manager work much the same way, but with different areas in the system. This table lists the areas and the indicates which cost manager works with each area.

The cost data from Project (Standard) and Shell (CBS) can both roll up to the Company level. The cost data from Shell (Generic) does not roll up to Company Level. See the Working with a Generic Cost Manager section for more information about Generic Cost Manager.

Cost Manager	Company	Program	Project (Standard)	Shell (CBS)	Shell (Generic)
Cost Manager (for CBS codes)	**X**	**X**	**X**	**X**	
Generic Cost Manager					**X**

The Generic Cost Business Process works with the Generic Cost Manager, in the context of a Shell, only. See the ***Working with Generic Cost Business Processes*** (on page 359) section for more information about Generic Cost Manager.

There is one accounts sheet per company. There is no template for an accounts sheet. After creation, you add columns and rows. The columns can be formulas, they can roll up data from company cost (accounts) business processes, or they can roll up asset data, project or shell cost data, or resource data. Adding rows to the accounts sheet creates the account codes that are used. You need to activate the account codes after adding the rows.

Optional steps:

To roll up transactions to the accounts sheet, you must create and set up company-level cost business processes (also known as an account type business process). These BPs use account codes rather than the CBS codes used in project or shell level cost BPs. These are discussed in the Business Process sections. Other options assume that you have configured and set up an Assets Sheet (for rolling up asset data).

Rules and Rule Exceptions

The system employs a rules engine to help control costs as they roll up to the Cost Sheet. Your administrator creates rules to work with the rules engine. For example, your administrator might create a rule that enforces a budget limit on contracts so that invoices do not exceed the contract amounts.

When a cost exceeds a rule, it triggers a "rule exception," and the system displays a message window warning you of the exception. The window shows the level of the rule, an identifier, the rule that was exceeded, the current value of the field, and the value that triggered the rule exception.

Rule exceptions can be triggered by:

- Adding or copying a line item on the Cost Sheet
- Copying data from one column to another on the Cost Sheet
- Entering data directly into a cell on the Cost Sheet
- An email action that sends cost data to the sheet
- An integration transaction that sends cost data to the sheet
- I-Step and S-Step business process auto-creation
- A business process record that rolls up cost data to the sheet

Some users can override a rule violation. These users are specified when the administrator creates the rule. These users can choose to override the exception, or accept it.

If you override the rule exception, the system sends your user information and any comments you include to the audit log. If notification was specified when the rule was created, those users who were designated will be notified by email of the override.

If you accept the rule exception (click **Cancel**), you will stay on the current step.

> **Note**: The system does not display the rule exception warning if the cost data comes from an email action, an integration transaction. If you have override control, the system will assume that you want to override the rule and sends information to the audit log.

When your Administrator creates a rule template:

- If the checkbox **Include positive pendings in calculation** is selected, the system adds the positive pending values when calculating the **Limit Expression**.
- If the checkbox **Include positive pendings in calculation** is selected, the system adds the negative pending values when calculating the **Data Expression**.

> **Note**: Your Administrator can check both options or either one, when creating a rule template.

The rule is implemented during runtime (as a cost type BP is routed in its workflow or is **Finish Edited**) and according to your choices.

Cost Rules Impacting Cost Manager

The following cost rules affect how you can work with the **Cost Manager** sub-modules:

- **Budget**
  - The Budget must be greater than 0.
  - This rule validates that a budget line item cannot be reduced below $0.
- **Revised Budget**
  - The Revised Budget must be greater than or equal to Approved Commitments.
  - This rule validates revised budget (approved budgets, budget transfers and budget changes) versus approved commitments (approved contracts, change orders, purchase orders and po amendments).
- **Invoice**
  - An Invoice must be less than or equal to Approved Purchase Orders and PO Amendments.
  - This rule validates invoices (approved invoices) versus approved purchase orders (approved purchase orders and po amendments).
- **Payment Application**
  - A Payment Application must be less than Approved Contracts and Change Orders.
  - This rule validates approved payment applications vs approved commitments (approved contracts, change orders).

The following actions can trigger the cost rules:

- When you attempt to send a Business Process record to the next step, whose status activates the rule. For example, the rule may activate when a Business Process record reaches to the Pending or Approved status.
- When you have entered the data into a Cost Sheet manually.
- Web Services calls create records.
- Records are auto-created from other records.

P6, Cost Manager, and Cash Flow

You can copy the Cash Flow curve properties that exist in a Shell template to the Cash Flow curves that exist in instances if:

- The Shell template push is done
- The Shell template is used to create new instances

The system uses the P6 data source that was used in the Cash Flow template as the reference for attaining the Summary Sheet data information.

User mode > **Schedule Manager** > **P6 Summary Sheets**

For example, if the Type in your P6 Summary Sheets is Current Schedule, then in the Cash flow by CBS - Baseline window the Current Schedule was selected for the Use data from P6 Source field. That is to say, if you select data from P6 Source, along with the source and data type, then the Cash Flow template has the P6 data source as Current Schedule for your Shell template and a new Shell is created in Unifier. The system pushes the Shell template to the new Shell and the Cash Flow curves are generated.

When the P6 and Unifier are synced, the Shell has been integrated with P6 (i.e., the Type or P6 data source of the Summary Sheet is Current Schedule) and the Cash Flow data is calculated correctly. If the distribution option selected in the Cash Flow template is a valid option for Cost loaded Cash Flow curve, then the data in Cash Flow curve is calculated correctly.

If the properties in the Cash Flow curves are incorrect, then the curves display in red, in the Properties window. You must change the Distribution, or Schedule, option if the Cash Flow curve is opened based on the Schedule type.

If the Schedule type of the Shell is Cost- or Resource-based, then in:

- The Distribution section the "Use data from P6 Source” option is enabled.
- The Schedule section the "Use dates from P6 Source” option is disabled.

If the Schedule type of the Shell is Duration-based, then in:

- The Distribution section the "Use data from P6 Source” option is disabled.
- The Schedule section the "Use dates from P6 Source” option is enabled.

See the following sections for additional information about P6 Data source:

- Baseline Curve
- Forecast Curve
- Actuals (Spends) Curve

Document Manager

The Document Manager provides a robust platform for maintaining a wide variety of files and documents, for example, drawings, spreadsheets, image files, specifications, and various Microsoft Office files. Files can be stored directly in the project or shell Documents node or organized into folders. You can also create shortcuts to commonly used files and folders. The system ensures that all members of your team are always working on the most current versions, and dramatically increases efficiencies by providing ready access to all documents from anywhere at any time.

The Document Manager is available at the project or shell level for project- or shell-specific documents, and at the company level for company-specific or cross-project or shell documents. At the project/shell or company level, the Document Manager is integrated with business processes and the user-defined reports module. Files uploaded into the Document Manager are stored on the Unifier file server.

The Document Manager is integrated with business processes. This means that you can initiate a business process directly from the Document Manager and automatically attach files and folders to it. In addition, if designed to do so, any business process can automatically publish records, along with their comments and attachments, to the Document Manager. In effect, this produces a detailed audit trail of the business process. Depending on how your administrator set up the business process, it can be automatically published to the Document Manager at a specific step in a workflow, or whenever an email notification is sent regarding the status of the business process, or both.

At both the project or shell level and the company level, the Document Manager consists of two nodes:

- **Project or shell/Company Documents**: This is the root node where published documents (that is, documents that are ready to be used by team members) are stored and managed. (The node is labeled project or shell Documents at the project or shell level, and Company Documents at the company level.) You will typically work out of this node when working with your company or project or shell documents. All uploads, downloads, revisions, markups, etc., are performed within this node. Access to specific folders, documents, and shortcuts is independently controlled by permissions.
- **Unpublished Documents**: This is the temporary, automatic repository for files that have been uploaded from local machines and attached to business processes, but have not yet been published in project or shell documents or company documents. Typically, access to this node is limited by permissions, and a designated document administrator will publish documents from this node into the project or shell or Company Documents nodes for use by team members.

> **Note**: By default, files attached to business processes are placed in the **Unpublished Documents** folder in the Document Manager. A Publish Path data element can be designed in business processes to specify the automatic publishing of documents to a specified path and override the default.

For information about language (internationalization) and CSV files, refer to the *Unifier General Administration Guide*.

In This Section

Before You Begin Working with Document Manager

Ensure that you have the following defined in your user preferences.

- **File Viewer option**: This option affects how files are opened and viewed within the system.
- **Additional software applications**: Use of the AutoVue viewer markup tool requires a license and Java installed. For translation-related information about Oracle Map, AutoVue Server, and Flex replacement (O charts). Refer to *Unifier General User Guide* for more information about internationalization.
- **Permission settings**: Like other modules within the system, access and use of the Document Manager is fully permission based, including for specific files and folders. Contact your project or shell or company administrator regarding general permission access to the Document Manager.

Note: For security, the Company Administrators can specify the list and size of files that can be uploaded to the Company Properties page, by users and per company policy. Contact your Company Administrator for more information.

Downloading AutoVue Client Certificate

Before you can use AutoVue, you must download the AutoVue Client certificate and place it in the browser certificate exception list. Follow these instructions for each user accessing Unifier AutoVue.

For more information refer to the "Setup for Java Web Start AutoVue Client in HTTPS Environments" page of the ***Oracle Support*** (***https://www.oracle.com/support/contact.html?ssSourceSiteId=splash***) Knowledge tab.

Downloading on Windows

To download the localhost certificate:

1) In Unifier, select **Help** > **Download Plugins**.
2) From the **Download** page, select the download for the localhost certificate.
3) Double-click to open the **localhost.cer** file you just downloaded.
4) Click **Install Certificate...** to start the Certificate Import Wizard.
5) Select the store location (**Current User** or **Local Machine**) and click **Next**.
6) Select the option **Place all certificates in the following store** and click **Browse**.
7) Select the **Trusted Root Certification Authorities** store and click **OK**.
8) Click **Next** and click **Finish**. A dialog box opens warning you about the risk of installing this certificate.
9) Click **Yes** to accept installing this certificate.
10) After the install certificate has imported, click **OK**.

After installing the localhost certificate, you can use AutoVue client in Chrome. For Mozilla Firefox, perform these additional steps:

1) Open a new tab and type: **about:config**.
2) In the **Search** box, type **security.enterprise_roots.enabled**.
3) Double click **security.enterprise_roots.enabled** to set the flag to **True**.

For more information on installing the certificate in Mozilla Firefox (and if your Firefox version is lower than version 49), refer to the mozilla wiki page (https://wiki.mozilla.org): Installing Certificates Into Firefox.

Downloading on Mac OS

To download the localhost certificate:

1) In Unifier, select **Help** > **Download Plugins**.
2) Double-click the downloaded **localhost.cer** file to add it to Keychain Access.
3) From the **Keychain Access** window, open the localhost certificate.
4) Expand the **Trust** node and set the value of the **Secure Dockets Layer (SSL)** field to **Always Trust**.
5) Close the Keychain Access window.

Launching AutoVue Web Start Client

Windows

- Using Mozilla Firefox

  The AutoVue JNLP file is automatically downloaded and a confirmation message is displayed. Select the **Open with** radio button and click **OK**.

  To open AutoVue files automatically and bypass the confirmation message, select the **Do this automatically for files like this from now on** checkbox.

- Using Chrome

  The AutoVue JNLP file is flagged as a dangerous file extension. Each time you open an AutoVue file, you must select the **Keep** option and open the downloaded file from the **Downloads** folder.

Mac OS

Modify Security Settings

1) Click the **Apple** menu and launch **System Preferences**.
2) Select **Security & Privacy**.
3) Click the **General** tab.
4) For the **Allow apps downloaded from** option, select **Anywhere**.

   This option is available for Mac OS X El Capitan. For other Mac operating systems, refer to the pertinent installation guides.
5) Click **Allow From Anywhere** to confirm your selection.

Launching AutoVue Files

- Using Chrome

  When an AutoVue file is opened a confirmation message is displayed. Select **Open** to open the file in AutoVue.

- Using Safari

  Open **Preferences** and select the **Privacy** tab and check the **Always Allow** option under **Cookies and website data**. The AutoVue JNLP files are permanently saved on the disk, you can launch the file from the **Downloads** folder.

About Ownership and Permissions

Like other modules, access to the Document Manager features is based on permissions set at the module level in Administration mode. Each Document Manager node—project or shell Documents, Company Documents, and Unpublished Documents—have separate permissions. The **Unpublished Documents** node is controlled by module-level permissions in Administration Mode only.

In the project or shell and Company Documents nodes, access to specific folders, documents, and shortcuts is also independently controlled by permissions that can be set within the Document Manager.

> **Note**: Folder and document permissions are set at the folder level and can be changed independently or inherited by subfolders and documents. Unlike module-level permissions, permissions set at the folder level can differ from project or shell to project or shell.

The creator of a folder, document or shortcut is, by default, its owner, and has full access (privileges to view, manage, grant permissions, delete, transfer ownership, etc.). The owner must grant other users or groups permission to view and manage these documents, folders, or shortcuts. Otherwise, other users will not have access to them. (Exception: some administrators will have access permissions and will be able to view all items in the document manager.)

For this reason, it is also important to verify the permission settings for all files and folders that you upload, create, revise, check in, copy, or modify to make sure that it is accessible by the people who need them. For example, if one user creates folders, and then another user attempts to move documents among those folders, the move will not be permitted by the system unless that user attempting that move has specific permissions granted (in this case, Copy and Delete to achieve the document move).

For more information about permission settings, see ***View, Add, or Modify Folder Permissions*** (on page 402), ***View, Add, or Modify Document Permissions*** (on page 411), and ***Modify Shortcut Permissions***.

> **Note**: Document Manager email notifications as set in User Preferences are only sent if the user has at least view permission in the **Document Manager** node on the item triggering the email, and if the item owner enables email notification. If you make changes in the Document Manager root folder, to get email notifications regarding events in the root folder, you must have at least view permission because the root folder has no owner.

Automatic Publishing of BP Records to the Document Manager

A business process can be designed to automatically publish its records, along with their comments and attachments, to the Document Manager in a folder the administrator specifies when the business process is set up. In effect, this produces a detailed audit trail of the record information through the business process (for both workflow and non-workflow processes). You can open these records and their information from the Document Manager.

Depending on how the administrator sets up the business process, the record information can be automatically published to the Document Manager when the business process reaches a specific step in a workflow, or whenever an email notification is sent regarding the status of the business process, or both. According to its setup, the business process will publish the record to a designated folder in the Document Manager. If you, as owner of the record, do not have permission for this folder, the system will send the record and its contents to the **Unpublished Documents** node in the manager. If the record exists in the folder, the system will publish the record as a revision. If the folder's path in the business process record is invalid for any reason, the record will be sent to the **Unpublished Documents** node.

On the Creation Step of the Workflow-type business process, the system evaluates, or replaces, the "record_no" in the data element "uuu_dm_publish_path" or in the data element "uuu_dm_record_info_path," when the "record_no" is used directly as part of formula, as shown in the example below. This condition (evaluation or replacement) does not apply to the "Advanced Formula" type data element.

Example:

Suppose 'uuu_dm_publish_path' and 'title' are defined as formula.

=> uuu_dm_publish_path = firstName + record_no + title

=> title = subject + record_no

uuu_dm_publish_path would be evaluated as 'firstName + record_no + subject' ('record_no' in data element 'title' is ignored)

Enabling Document Manager-Generated Email Notification

As with other modules, there are events in Document Manager that can trigger email notifications to other team members. There are three conditions that must be met in order for a user to receive Document Manager emails:

- **Folder Properties, Options tab**:The owner or a user with modify properties permissions on a folder can select the **Send email notification to subscribed users** checkbox on the Options tab.

  This option enables notifications to be generated in the first place for items in the folder. That is, select the checkbox to notify users whenever the folder properties are modified. If the checkbox is not selected, no emails will be generated for the folder (or subfolders either, unless the box is selected for subfolders).

  Selecting or deselecting this checkbox will automatically apply to all subfolders automatically. This option will not override a user's email subscription selection in User Preferences.
- **Permission setting in Document Manager**: A user has to be explicitly assigned at least view permissions (at the folder or document level in the Document Manager) to the specific folder, document, or shortcut target in order to subscribe to email notifications.

  For example, even if users have full access permission at the module level, they will not get email notifications unless they are on the permission list for the folder, document, or shortcut for which the e-mail notification would normally be generated.
- **Email Subscription Preference**: The user must subscribe to the Document Manager email notifications in User Preferences.

  The events that can trigger email notifications are document upload, transfer ownership, move, delete, document revise, and folder rename.

Working with Project or Shell and Company Documents

The project or shell Documents node (in the project- or shell-level Document Manager) and the Company Documents node (in the company-level Document Manager) are the root nodes in which published documents (that is, documents that are ready to be used by team members) are stored and managed. You will typically work out of these nodes when working with your company or project or shell documents. All uploads, downloads, revisions, markups, etc., are performed here.

Permission-based access: Similar to a shared network storage drive, access to specific folders, files, and shortcuts is independently controlled by permissions. The user who creates a folder or shortcut, or uploads a file, is, by default, its owner, and has full access (privileges to view, upload, delete, download, etc.). The owner (could be the project or shell or company administrator) can set these permissions to allow or disallow access by other team members. For this reason, it is important to verify the permission settings for all files or folders of which you are the owner to make sure that they are accessible by the people who need them.

Editing and version control: The project or shell Documents and Company Documents nodes have check-in and check-out, document lock, and revision history capabilities enabling full version control.

Use with business processes: The Document Manager is integrated with business processes. You can initiate a BP from directly within the Document Manager and automatically attach selected files and folders.

Reporting: In addition, document and folder properties are associated with data elements, and are therefore fully reportable through user-defined reports.

> **Note**: The Document Manager does not support multibyte or Unicode characters in file names.

Accessing Project or Shell Documents and Company Documents

To access project or shell documents

1) Open a project or shell and click **Document Manager** in the left Navigator.
2) Click **Documents**.

To access company documents

1) Go to the Company Workspace tab and click **Document Manager** in the left Navigator.
2) Click **Company Documents**.

Navigating Document Manager

The following explains the options that are available in both the company level and the project/shell level **Document Manager** grouping node.

Navigating to Company Documents in Document Manager

Go to your Company Workspace, switch to **User** mode, and from the left Navigator click the **Document Manager** grouping node to expand it. The following functional nodes appear under the **Document Manager** grouping node, in your Company Workspace (**User** mode):

- **Company Documents**
- **Unpublished Documents**

Navigating to Project/Shell Documents in Document Manager

Go to your project/shell, switch to **User** mode, and from the left Navigator click the **Document Manager** grouping node to expand it. The following functional nodes appear under the **Document Manager** grouping node, in your project/shell (**User** mode):

- **Documents**
- **Unpublished Documents**

> **Note**: Navigation in the **Document Manager** grouping node works the same way at the company level and the project/shell level, when in **User** mode, as explained below.

The documents log (for both the Company Workspace, or the project/shells) displays the contents (subfolders, documents, empty documents, shortcuts) of the folder selected. Click the plus sign (+) next to the folder name to expand it and reveal subfolders, or click the minus sign (-) to collapse the structure. You can hover over a folder to view the number of subfolders and documents under it.

> **Note**: If you are using a custom user mode navigator, you must add the **Recycle Bin** to the navigator.

Navigating to Company Documents in Document Manager

The following functional nodes appear under the **Document Manager** grouping node, in your Company Workspace (**User** mode):

- **Company Documents**
- **Unpublished Documents**

Company Documents

When you click the **Company Documents** functional node, the **Company Documents** log or window opens. This window is divided into two panes:

- The **Company Documents** (left pane)
- The properties (right pane)

The **Company Documents** (left pane) displays:

- Categorized list of available company documents and folders
- Navigational element, as in locator links (or breadcrumbs)
- Toolbar

  See below for details.
- Columns

  See below for details.

The properties (right pane) displays the following tabs:

- **Properties** tab
- **Audit Log** tab
- **Permissions** tab
- **Options** tab

The following explains the company documents (left pane) toolbar options:

Create

This option enables you to create any of the following:

- **Folder**

  When you click this option, the **Create Folder** window opens. This window has the following tabs:
  - **Properties** tab

    In this tab you can provide a name and a description for the folder that you have created. The **Properties** tab also enables you to click on the owner's name (the read-only **Owner** field) and view the owner's user profile.

    Use the **Save** option to save your input in the **Properties** tab.

    Use the **Save & Create New** option to save your input in the **Properties** tab and create the new folder, which will be added to the categorized list of available company documents and folders (in the **Company Documents** window).

    Click **Cancel** to discard your changes and close the **Create Folder** window.
  - **Options** tab

    In this tab you can set the folder upload conditions, folder download conditions, and notification preference.

    Use the **Save** option to save your input in the **Options** tab.

    Use the **Save & Create New** option to save your input in the **Options** tab and create the new folder, which will be added to the categorized list of available company documents and folders (in the **Company Documents** window).

    Click **Cancel** to discard your changes and close the **Create Folder** window.
- **Empty Document**

  When you click this option, the **Create Document** window opens. This window has the following tabs:
  - **Properties** tab

In this tab you can provide a name, a description for the requester, and a general description for the document that you have created. In addition, in the **Properties** tab you can enter or select information that is related to the empty document that you are creating. That is to state, you can select an action discipline (for example, Architecture, Construction, Design, Planning, etc.), enter the cost center number, title or tenure, city, and select the acquisition year.

Use the **Save** option to save your input in the **Properties** tab.

Click **Cancel** to discard your changes and close the **Create Folder** window.

- **Options** tab

  In this tab you can set the document revision option (**Revisions must have same file name**)

  Use the **Save** option to save your input in the **Options** tab.

  Click **Cancel** to discard your changes and close the **Create Document** window.

- **Business Process**

  When you click this option, the **New Record** (BP record) window opens which enables you to create a new BP record. In the **New Record** window, you must select a BP from the **Select Business Process** drop-down field. If the BP record that you select is a workflow BP, the system activates the **Select Workflow** drop-down field, and you must select a type of workflow for the BP record.

  When finished, click **Create** to create the new record.

  Click **Cancel** to discard your changes and close the **New Record** window.

Actions

The **Actions** option has the following suboptions:

- **Add to Favorites**

  Use this option to add a selected file or folder to your favorite list.

- **Move**

  Use this option to move the selected file or folder into another folder.

- **Copy**

  Use this option to create a copy of the selected file or folder.

- **Delete**

  Use this option delete the selected file or folder.

- **Transfer Ownership**

  Use this option to change the owner assigned to the document or folder.

- **Edit**

  The **Edit** option enables you to perform the following operations on the file or folder:

  - **Revise**

    When you click this option, the **Upload** window opens which contains a list of files or folders that are available for edit, and provides the following details related to the files or folders that are listed, under the following columns:

    - **File Name**
    - **Revise File Name**

- **File Size**
- **Document Title**
- **Revision No**
- **Issue Date**

If you do not see the file or folder that you want to edit in this window, you can search for that file or folder by clicking on the **Browse** icon (the three horizontal dots) and conduct a search.

- **Check In**

  Use this option to check in a file or folder. You can only select a checked-out item.

- **Check Out**

  Use this option to check out a file or folder. If you select more than one item, the system creates a zip folder which contains all the selected items.

- **Cancel Check Out**

  Use this option if you changed your mind about checking out an item. This option enables you to avoid checking the checked out item and prevents unnecessary versioning.

- **Lock**

  Use this option if you want to lock a document. This option is for documents, only.

- **Unlock**

  Use this option if you want to unlock the item that was locked.

- **Export**

  The **Export** option allows you to export the **Structure and Properties** of a selected item through a Microsoft Excel Comma Separated Values (CSV) file.

- **Import**

  The **Import** option allows you to import either the **Structure and Properties** , or the **Folder Structure Template** of a selected item through a Microsoft Excel Comma Separated Values (CSV) file.

- **Permissions**

  When you click this option, the **Permissions** window opens which enables you to:

  - Select one of the following options:
    - **Inherit from parent folder Company Documents** option, or

    When you select the items that you want to assign permissions to, and you select the **Inherit from parent folder Company Documents** option, you cannot edit the selected items.

    - **Assign new permissions**

    When you select the items that you want to assign permissions to, and you select the **Assign new permissions** option, you can start from blank permission window, or you can copy the existing permissions of the parent folder, and use it as a template.

  - **Add**

    Add, by way of copying, parent folder permissions to the manual permissions available.

    In case of conflicts, the parent folder permissions will override.

  - Select from the **User and Group Picker**
  - **View** users, groups, or both

- **Find on page**

- **Index Report**

  Applicable to folders, only. The Index Report option enables you to generate a report of the files that are in the folder that you have selected, in following formats:

  - **HTML Format**
  - **PDF Format**
  - **CSV Format**

Flat View

This option will display all documents in the standard structure of all other logs. Clicking on a folder will open another log that displays all the files inside the folder. You can navigate back out of the folder using the breadcrumb trail at the top of the log.

Tile View

This option will display all documents as tiles with a preview of the file. Files and folders are grouped together in two separate collapsible sections.

Tree View

This option will display all documents in the standard structure of all other logs, but you will be able to expand and collapse folders to display all files contained inside the folder. Use the plus and minus icons next to each folder to expand or collapse the folder.

Download

Use this option to save a copy of selected files to your computer.

Upload

Use this option to add new documents to the Document Manager from your computer.

View

Use this option to filter records based on specific criteria. The view options are:

- **All**
- **Owned by me**
- **Checked out by me**
- **Locked**
- **Uploaded in last 7 days**
- **Uploaded in last 30 days**

You can add and manage your own views with the **Create New View** and **Manage Views** options.

Edit View

Use this option to make changes to the selected view. Use the arrow buttons to move columns between the **Available Columns** list and the **Selected Columns** list. All columns in the Selected Columns list will be visible.

Refresh

Use this option to refresh the log and view any newly uploaded documents.

Favorites

Use this option to view a list of documents with favorite status. You can use the **Find on Page** option to filter for specific documents, or use the **Delete** option to remove a document from your favorites list.

Initiate Bluebeam Studio Session

Use this option to start a Bluebeam Studio Session on a selected PDF file.

Search

Use this option to search for specific items by entering key words in the search box. Use the drop-down menu to select which column should contain the key word.

Find on Page

Use this option to search for specific items by entering key words at the top of each column. The entered key words will be highlighted within all folders and files that contain the entered value, and no other files will be visible.

Expand All/Collapse All

This will open or close all folders, displaying all the files contained in each folder. This option is available only when the **Tree View** option is selected.

The company documents log columns are as follows:

- **Name**
- **Comments**
- **Lock**
- **References**
- **Linked Records**
- **Size**
- **Creation Date**
- **Owner**
- **Title**
- **Rev.No.**
- **Issue Date**
- **Pub No.**
- **%Complete**
- **Location**
- **Discipline**
- **Document Status**
- **Document URL**

The following explains the properties (right pane) elements:

Properties tab

Use this tab to edit the properties of selected files or folders. You can only edit files and folders for which you are the owner.

Linked Records tab

Once you begin the process of creating a line item, you can link the line item to a business process record in the Linked Records tab. This tab is available after you save the record, only. Use this tab to see the following information:

- **Record Number**
- **Name**
- **Title**
- **Status**
- **Upload Date**

Audit Log tab

Use this tab to view all changes to the selected document. You can use the **Print** option to print the Audit Log, or use the **Find on Page** option to find a specific entry by filtering column information.

Permissions tab

Use this tab to view what permissions are available for selected users or groups.

Options tab

Use this tab to configure the options available for the file or folder. Under **Document Revisions** block, select the **Revisions must have same file name** option if you would like revised documents to keep the same file name.

Unpublished Documents

For details, see ***Unpublished Documents*** (on page 442).

Navigating to Project/Shell Documents in Document Manager

The following functional nodes appear under the **Document Manager** grouping node, in your project/shell:

- **Documents**
- **Unpublished Documents**

Documents

When you click the **Documents** functional node the **Documents** log or window opens. This window is divided into two panes:

- The **Documents** (left pane)
- The properties (right pane)

The **Documents** (left pane) displays:

- Categorized list of available project/shell documents and folders
- Navigational element, as in locator links (or breadcrumbs)
- Toolbar

  See below for details.

- Columns

  See below for details.

The properties (right pane) displays the following tabs:

- **Properties** tab
- **Audit Log** tab
- **Permissions** tab
- **Options** tab

The following explains the project/shell documents (left pane) toolbar options:

Create

This option enables you to create any of the following:

- **Folder**

  When you click this option, the **Create Folder** window opens. This window has the following tabs:

  - **Properties** tab

    In this tab you can provide a name and a description for the folder that you have created. The **Properties** tab also enables you to click on the owner's name (the read-only **Owner** field) and view the owner's user profile.

    Use the **Save** option to save your input in the **Properties** tab.

    Use the **Save & Create New** option to save your input in the **Properties** tab and create the new folder, which will be added to the categorized list of available project/shell documents and folders (in the **Documents** window).

    Click **Cancel** to discard your changes and close the **Create Folder** window.

  - **Options** tab

    In this tab you can set the folder upload conditions, folder download conditions, and notification preference.

    Use the **Save** option to save your input in the **Options** tab.

    Use the **Save & Create New** option to save your input in the **Options** tab and create the new folder, which will be added to the categorized list of available project/shell documents and folders (in the **Documents** window).

    Click **Cancel** to discard your changes and close the **Create Folder** window.

- **Empty Document**

  When you click this option, the **Create Document** window opens. This window has the following tabs:

  - **Properties** tab

    In this tab you can provide a name, a description for the requester, and a general description for the document that you have created. In addition, in the **Properties** tab you can enter or select information that is related to the empty document that you are creating. That is to state, you can select an action discipline (for example, Architecture, Construction, Design, Planning, etc.), enter the cost center number, title or tenure, city, and select the acquisition year.

    Use the **Save** option to save your input in the **Properties** tab.

Click **Cancel** to discard your changes and close the **Create Folder** window.

- **Options** tab

  In this tab you can set the document revision option (**Revisions must have same file name**)

  Use the **Save** option to save your input in the **Options** tab.

  Click **Cancel** to discard your changes and close the **Create Document** window.

- **Business Process**

  When you click this option, the **New Record** (BP record) window opens which enables you to create a new BP record. In the **New Record** window, you must select a BP from the **Select Business Process** drop-down field. If the BP record that you select is a workflow BP, the system activates the **Select Workflow** drop-down field, and you must select a type of workflow for the BP record.

  When finished, click **Create** to create the new record.

  Click **Cancel** to discard your changes and close the **New Record** window.

Actions

The **Actions** option has the following suboptions:

- **Add to Favorites**

  Use this option to add a selected file or folder to your favorite list.

- **Move**

  Use this option to move the selected file or folder into another folder.

- **Copy**

  Use this option to create a copy of the selected file or folder.

- **Delete**

  Use this option delete the selected file or folder.

- **Transfer Ownership**

  Use this option to change the owner assigned to the document or folder.

- **Edit**

  The **Edit** option enables you to perform the following operations on the file or folder:

  - **Revise**

    When you click this option, the **Upload** window opens which contains a list of files or folders that are available for edit, and provides the following details related to the files or folders that are listed, under the following columns:

    - **File Name**
    - **Revise File Name**
    - **File Size**
    - **Document Title**
    - **Revision No**
    - **Issue Date**

    If you do not see the file or folder that you want to edit in this window, you can search for that file or folder by clicking on the **Browse** icon (the three horizontal dots) and conduct a search.

- **Check In**

  Use this option to check in a file or folder. You can only select a checked-out item.
- **Check Out**

  Use this option to check out a file or folder. If you select more than one item, the system creates a zip folder which contains all the selected items.
- **Cancel Check Out**

  Use this option if you changed your mind about checking out an item. This option enables you to avoid checking the checked out item and prevents unnecessary versioning.
- **Lock**

  Use this option if you want to lock a document. This option is for documents, only.
- **Unlock**

  Use this option if you want to unlock the item that was locked.

- **Export**

  The **Export** option allows you to export the **Structure and Properties** of a selected item through a Microsoft Excel Comma Separated Values (CSV) file.
- **Import**

  The **Import** option allows you to import either the **Structure and Properties** , or the **Folder Structure Template** of a selected item through a Microsoft Excel Comma Separated Values (CSV) file.
- **Permissions**

  When you click this option, the **Permissions** window opens which enables you to:
  - Select one of the following options:
    - **Inherit from parent folder Projects Documents** option, or

    When you select the items that you want to assign permissions to, and you select the **Inherit from parent folder Project Documents** option, you cannot edit the selected items.
    - **Assign new permissions**

    When you select the items that you want to assign permissions to, and you select the **Assign new permissions** option, you can start from blank permission window, or you can copy the existing permissions of the parent folder, and use it as a template.
  - **Inherited Permissions**

    Click **View** and select users, groups, or both
  - **Find on page**
- **Index Report**

  Applicable to folders, only. The Index Report option enables you to generate a report of the files that are in the folder that you have selected, in following formats:
    - **HTML Format**
    - **PDF Format**
    - **CSV Format**

Flat View

This option will display all documents in the standard structure of all other logs. Clicking on a folder will open another log that displays all the files inside the folder. You can navigate back out of the folder using the breadcrumb trail at the top of the log.

Tile View

This option will display all documents as tiles with a preview of the file. Files and folders are grouped together in two separate collapsible sections.

Tree View

This option will display all documents in the standard structure of all other logs, but you will be able to expand and collapse folders to display all files contained inside the folder. Use the plus and minus icons next to each folder to expand or collapse the folder.

Download

Use this option to save a copy of selected files to your computer.

Upload

Use this option to add new documents to the Document Manager from your computer.

View

Use this option to filter records based on specific criteria. The view options are:

- **All**
- **Owned by me**
- **Checked out by me**
- **Locked**
- **Uploaded in last 7 days**
- **Uploaded in last 30 days**

You can add and manage your own views with the **Create New View** and **Manage Views** options.

Edit View

Use this option to make changes to the selected view. Use the arrow buttons to move columns between the **Available Columns** list and the **Selected Columns** list. All columns in the Selected Columns list will be visible.

Refresh

Use this option to refresh the log and view any newly uploaded documents.

Favorites

Use this option to view a list of documents with favorite status. You can use the **Find on Page** option to filter for specific documents, or use the **Delete** option to remove a document from your favorites list.

Initiate Bluebeam Studio Session

Use this option to start a Bluebeam Studio Session on a selected PDF file.

Search

Use this option to search for specific items by entering key words in the search box. Use the drop-down menu to select which column should contain the key word.

Find on Page

Use this option to search for specific items by entering key words at the top of each column. The entered key words will be highlighted within all folders and files that contain the entered value, and no other files will be visible.

Expand All/Collapse All

This will open or close all folders, displaying all the files contained in each folder. This option is available only when the **Tree View** option is selected.

The project/shell **Documents** log columns are as follows:

- **Name**
- **Comments**
- **Lock**
- **References**
- **Linked Records**
- **Size**
- **Creation Date**
- **Owner**
- **Title**
- **Rev.No.**
- **Issue Date**
- **Pub No.**
- **%Complete**
- **Location**
- **Discipline**
- **Document Status**
- **Document URL**

The following explains the properties (right pane) elements:

Properties tab

Use this tab to edit the properties of selected files or folders. You can only edit files and folders for which you are the owner.

Audit Log tab

Use this tab to view all changes to the selected document. You can use the **Print** option to print the Audit Log, or use the **Find on Page** option to find a specific entry by filtering column information.

Permissions tab

Use this tab to view what permissions are available for selected users or groups.

Options tab

Use this tab to configure the following options available for the selected file or folder:

- **Folder Upload**
- **Folder Download**

Unpublished Documents

For details, see the ***Unpublished Documents*** (on page 442) topic in this guide.

Display Folders by Project or Shell Phase

The following is applicable to the project/shell **Document Manager**, only.

A project/shell document folder can be associated with one or more project/shell phases. This will make the document folder accessible only during specific phases of a project/shell, and helps insure that important phase-specific documents are visible at the appropriate times, during the life cycle of the project/shell.

Example

If a folder, or subfolder, is associated with the construction phase of a project/shell, then the folder, or subfolder, will appear in the project/shell documents folder view (project/shell **Documents** log) for that project/shell when the project/shell is in that phase, only.

If a phase has not been designated on a folder, or subfolder, then the folder, or subfolder, will display for all project/shell phases.

The folder phase is designated in the **Phase** selection box in the folder **Properties** window. The project/shell phase is maintained in the project/shell **Properties** window, by a project or shell administrator.

You have the option to either view folders for the current project/shell phase, or you can choose to view all folders regardless of project/shell phase.

To display folders by current phase:

1) Access the project/shell **Document Manager** grouping node, and click the **Documents** functional node.
2) On the toolbar, click the **View** drop-down menu and select **Current Phase**.

   The folders and subfolders that have been associated with the current phase of your project/shell, as well as the folders and subfolders that have no specific phase designation, will be displayed.

   The folders and subfolders that have been associated with a different project/shell phase will not display.

   To display folders for all project/shell phases,click the **View** drop-down menu and select **All**. This will display all folders, regardless of project/shell phase.

Working with Document Manager in Company and Project or Shell

Navigating to **Document Manager** at the company:

1) Go to your company (**Company Workspace**) and switch to the user mode.
2) Click the **Document Manager** module to expand.

Navigating to **Document Manager** at the project or shell levels:

1) Go to your project or shell and switch to the user mode.
2) Click the **Document Manager** module to expand.

In general, the following nodes appear under the **Document Manager** module at the company, shell, or project levels:

- **Documents** (or **Company Documents**)
- **Recycle Bin**
- **Unpublished Documents**

The project or shell **Documents** log and **Company Documents** log display attributes about the documents and folders listed in them.

Project or Shell Documents

1. While in the User mode, go to your project or shell.
2. From the left Navigator, click the **Document Manager** node to expand.
3. Click the **Documents** sub-node to open the **Documents** log.

Company Documents

1. While in the User mode, go to your **Company Workspace** tab.
2. From the left Navigator, click the **Document Manager** node to expand.
3. Click the **Company Documents** sub-node to open the **Company Documents** log.

The log can be designed in uDesigner if the folder and document properties have been designed.

Notes:

- The log used in your **Document Manager** may vary.
- You may need to use the horizontal scroll bar to view all of the columns.

The following shows the default display of the project or shell **Documents** log and **Company Documents** log.

Documents log or Company Documents log

The **Documents** log or the **Company Documents** log is divided into two left and right panes. The following explains each pane.

The **Documents** log or the **Company Documents** log left pane has the following toolbars:

Toolbar	Description
Create	Enables you to create: ▸ **Folder** ▸ **Empty Document** ▸ **Business Process records** **Note**: The options above are available if you select **All** for the **View** toolbar option.
Actions	Enables you to conduct the following actions on multiple files or folders: **Add to Favorites** **Move** **Copy** **Delete** --- **Send for E-Signature** **Recall E-sign Request** --- **Transfer Ownership** **Edit** ▸ **Revise** ▸ **Check In** ▸ **Check Out** ▸ **Cancel Check Out** ▸ **Lock** ▸ **Unlock** --- **Export** ▸ **Structure and Properties** --- **Import** ▸ **Folder Structure Template** ▸ **Structure and Properties** --- **Permissions** --- **Index Report** ▸ **HTML Format** ▸ **PDF Format** ▸ **CSV Format**

Toolbar	Description
Flat View	Enables you to see a flat list (default view) of all files and folders, located in the root (Project Documents) folder. To browse a folder, in this view, double-click the folder name. This opens the contents of that folder in the log. When you click a file or folder, the relevant tabs open on the right-hand pane which enable you to define the file or folder properties, permissions, etc.
Tile View	To change the views between list, tile and tree views.
Three View	To change the view of folders and documents. You can open any number of folders, in the hierarchy, and view their contents in the same view.
Download	To download documents or folders onto your local or network drive.
Upload	To upload files from your local system into project or shell or company level Document Manager.
View	To customize the **Documents** log to display files based your filter criteria. For details, see ***Working with DM Log Views***. ▸ **All** ▸ **Owned by me** ▸ **Checked out by me** ▸ **Locked** ▸ **Uploaded in last 7 days** ▸ **Uploaded in lat 30 days** ▸ **Create New View** ▸ **Manage Views**
Edit View	To change the log view (columns, filters, sort, etc.)
Refresh	To refresh the items on the log.

Toolbar	Description
Favorites ★	To view the favorites list.
Initiate Bluebeam Studio Session	To initiate a Bluebeam Studio Session. For details about Bluebeam, refer to the *Unifier Bluebeam User Guide*.
Search	To open the search window and search for a specific document. For more information, see ***Searching Content***.
Find on Page	To find a item on the page or log. For more information, see ***Finding on Page***.

Next to each item on the log (next to a folder, subfolder, document, shortcut, or empty document), there is a *gear menu* (⚙), explained below:

Note: The following menu options change for empty documents.

Open	To open a file in File Viewer.
Open in Autovue	To open the file in AutoVue.
Download	To download a file.
Add to Favorites	To add the item to the list of favorites.
Create	To create a file based on a business process.

Actions	Enables you to perform the following on a file: ▸ **Revise** ▸ **Check Out** ▸ **Check In** ▸ **Cancel Check out** ▸ **Lock** ▸ **Unlock**
Transfer Ownership	To transfer the ownership of the file.
Move	To open the **Move** window and move the file to the destination folder.
Copy	To open the **Copy** window and copy the file to the destination folder and include comments.
Delete	To delete the row or item.

The *gear menu* (⚙) for each folder are:

Create	To create a folder.
Upload	To upload folder.
Download	To download folder.
Add to Favorites	To add the folder to the favorites list.
Move	To open the **Move** window and move the folder.
Copy	To open the **Copy** window and copy the file to the destination folder and include comments.

Delete	To delete the row or item.

The *gear menu* (⚙) for each PDF are:

Self-sign	To sign the PDF.
Send for E-Signature	To send for E-signature.
Initiate Bluebeam Studio Session	To initiate a Bluebeam Studio Session. For details about Bluebeam, refer to the *Unifier Bluebeam User Guide*.

The **Documents** or **Company Documents** left pane has the following columns:

Name	The name of the document or folder.
Comments	Comments associated with a file.
Lock	Indicates whether the file is locked or not.
Bluebeam Session Status	Indicates the status of the document in the Bluebeam studio session.
References	Any references included in the file.
Linked Records (BP)	Any linked records included in the file.
Title	The file title.

Creation Date	Creation date.
Issue Date	Date that the file was issued.
Owner	The owner of the file.
Revision No.	If the file has been revised, the revision number appears here.
Pub No.	Publication number.
% Complete	The status of a file.
Size	File sized.
Upload By	The name of the user who has uploaded the file.
Upload Date	The date that the file was uploaded.
Location	The location of the file.

The **Documents** or **Company Documents** right pane has the following tabs:

Properties	Displays detailed information about a selected item on the log (left pane).
Linked Records	This tab applies to Documents, only. Displays the information about records that are linked to the file.

Audit Log	Displays the actions that have been taken on an item, with details. You can print the audits or search for a particular audit.
Permissions	Displays the name of the users or groups that are permitted to work on the selected item, and the permission type.
Options	Displays the type of options available for each item selected.

Recycle Bin

Lists all files that have been deleted along with details about each deleted file. You can use the following toolbar options to restore deleted files, search among deleted files, or permanently delete the deleted files:

- **Restore**
- **Restore All**
- **Delete**
- **Empty Recycle Bin**
- **Find on Page**

Unpublished Documents

Lists all unpublished documents and provides details on each one. You have the option to publish or download documents on the **Unpublished Documents** log.

The *gear menu* (⚙) for each file enables you to conduct the following operations on a selected file.

- **Open**
- **Open in AutoVue**
- **Publish**
- **Download**

The **Unpublished Documents** node log is divided into two panes. The left pane provides a list of unpublished documents and the right pane provides details on each document in the following tabs:

- **Properties**
- **Linked Record**

Working with DM Log Views

Use the **View** drop-down list to customize the Document Manager log to display files based your filter criteria. You can use the following pre-defined views or create your own view:

- **All**
- **Owned by me**

- **Checked out by me**
- **Locked**
- **Uploaded in last 7 days**
- **Uploaded in lat 30 days**
- **Create New View**
- **Manage Views**

If the option **DM View** is available, it lets you see the views defined in Log views, in Document configuration, at runtime. In such scenario, you can only see the active views at runtime, and you can see all active views pertaining to the **Documents** log, if you have permission to access to the DM log.

You cannot modify the view names "All" and "Current Phase" of the **View** option.

To create a new view:

1) Go to your **Documents** log.
2) Click the **View** drop-down list and select **Create New View** to open the **New View** page.
3) On the **New View** page, enter a name for your new view under the field **Save View As**.
4) In the **Columns** tab, select columns that you want to display.
5) Select the columns that you want to remain static on the page from: **Lock after selected Column** drop-down list.

   In addition to arranging the columns, you can go to the **Filters**, **Group By**, and **Sort By** tabs to customize the new view by applying more refined selections.
6) Click **Save** to create your new view.

Your new view appears in **View** drop-down list.

> **Note**: Avoid defining a view with no columns selected.

To manage your views:

1) Go to your **Documents** log.
2) Click the **View** drop-down list and select **Manage Views** to open the **Manage Views** window.

   Use the **Manage Views** to create, delete, or hide views within any log. In addition, you can reorder views by dragging and dropping them in the **Manage Views** window.
3) When finished, click **Apply**.

Your arrangement appears in the View drop-down list.

To edit or delete an existing view:

1) Go to your **Documents** log.
2) Click the **Edit View** (✎) icon .

> **Note**: If you modify the view and do not save the changes, the system keeps the existing name and adds the word "Modify" to the existing name.

3) You can edit the view of the following elements on your log:
   - Columns
   - Filters
   - Group By
   - Sort By
4) Click **Apply** when you have finished editing.

Using the DM Log Tile View

The Tile view allows you to view files and folders as thumbnails. All folders and files are grouped separately, you can expand and collapse each group. The Tile view only show the immediate children of the folder.

When a file is selected, the right hand pane displays all the information tabs. The *gear menu* (⚙) allows you to take action on an individual file or folder. The folder and file names are hyperlinks, you can click the hyperlink to open a folder or file.

To use the tile view, from the Document Manager log, select **Tile View**. To switch to list view, select **List View**.

Searching Content

When a search is initiated by typing text in the search box, the system displays suggested areas to search in. Some of these suggested areas are system-defined (such as: Content or Linked Records) and others can be defined by the user in the Document Manager attribute form Log, in uDesigner. The user can configure to search on any attribute of a document including text, drop-down, numeric, or date type attributes.

> **Note**: The default elements and fields (log layout, view, search, etc.) that are defined in the Standard Log, in uDesigner, determine the Standard user interface elements and fields of all logs.

After selecting the areas you want to search in, the system displays a filtered list based on your search criteria. In addition, you can also use the quick filters to further refine your search criteria.

From within the search result screen, you can choose to open, download, create a business process record, or go to the folder by selecting the options under the *gear menu* (⚙). The following menu and toolbar options are displayed on the Search pages.

Menu and Toolbar Options	Description
Create	Lets you create a business process. Select a business process and workflow, and click **Create**.
Download	To download a file.
Tile View **List View**	To view the search results in Tile view or List view.
Find on Page	Lets you find a file on the page.
	Select one of the following options: **Open**, **Open In AutoVue**, **Download**, **Create > Business Process**, or **Go to Folder**.

To search the document log:

1) Click the **Search** icon.
2) Enter one or more keywords.
3) Select the areas you want to search in, for example Content, Linked Records, etc.
4) Click **Search**. The search results are displayed.
5) From the quick filters displayed on the left pane, select filters to further narrow your search.
6) To change the area you want to search in, or to include multiple search areas, click **Change**.
7) Click the **Add** icon to add additional search areas. Use the **Trash** icon to remove search areas.
8) Select if you want the search results to display only if it matches all or any of the search criteria by selecting the **Match All** or **Match Any** buttons.
9) Click **Search**. The search results are displayed.

> **Note**: The search bar is not case-sensitive. Accented characters and wild card searches are not supported.

Finding on Page

The **Find on Page** option lets you find items on the displayed page.

1) Click the **Find on Page** icon. The system inserts a new row that enables you to enter your search parameters.
2) Enter your search parameters.

The system displays a list of files, folders, subfolders, or shortcuts that match the criteria you entered.

If you decide to cancel the find for one of cell, then you must remove the parameters that you have entered. If you decide to cancel the find for an entire row, then you must click **Find on Page**.

Sorting Columns

You can sort columns in the ***Document Manager (DM) Log*** and the Search Results page. The **View** menu, is prefixed with the word *Modified* if the sort is applied to the columns.

To sort columns, click the up and down arrows next to the column name.

Creating and Managing Folders

If you have proper permissions, you can create any number of folders and subfolders to organize documents and shortcuts. Folders can be created in various ways:

- Manually create a folder.
- Upload folders from your local machine.
- Import folders from a CSV file.
- Create folders in a project or shell template (Administration Mode). When a new project or shell is created from the template, the folder structure will be copied.
- Import a folder structure from a folder structure template.

> **Note**: You must have permission to create or modify folders to perform the following procedures.

View Folder Contents

To view folder contents:

In the folders view, click a folder to select it. The contents of the folder appear in the project or shell or Company Documents log. If a folder has a plus sign (+), click it to reveal subfolders.

About Locked Folder Structures

The document administrator (the project or shell or company administrator or other designated user with full administrative permissions) has the ability to lock the first-level folder structure. First level refers to folders and documents directly under the root folder. It does not refer to the sub-folders within the first-level folders.

Locking the first level folder structure prevents other users from adding, modifying, or deleting folders and documents on the first level, or changing the document or folder properties. Users can modify permissions on first-level folders and documents.

This ability allows the administrator to establish and maintain a consistent main folder structure within and across project or shells.

Locked Folder Structure

To check if the first-level folder structure is locked:

1) Open the Document Manager.
2) Click **Documents** or **Company Documents** in the left Navigator.
3) Select the first level folder in the Document Manager log.
4) From the right pane, select the **Options** tab. If the **Lock first level folder structure below Project Documents or shell Documents** checkbox is selected, the first-level folder structure is locked.

Create a Folder

When you create a folder, you become its owner by default and have full read, write, and edit privileges. In order for other users to access the folder and its contents, you must grant permission. It is recommended that you understand the permissions settings before creating folders.

You can also easily create multiple folders under the same parent folder and with similar properties.

You cannot use special characters / \ : * ? " < > | when naming a folder.

> **Note:** It is possible for the first-level folders to be locked by a document administrator, which prevents folders directly under the project or shell or Company Documents node from being changed or added. This prevents the main folder structure from being altered. Subfolders can be added to existing folders.

Create a Folder in Project/Shell/Company Documents Node

To create a new folder in the project or shell or Company Documents node:

1) Select the folder in which you want to create the new folder, or the project or shell or Company Documents root node.
2) Select **Create > Folder**. The **Create Folder** window opens. The Create Folder window opens. The Create Folder window is identical to the Folder Properties window, which can be viewed for existing folders.
3) In the **Properties** tab, enter values in the editable fields. The other fields are system-defined or optional.
4) Click **Options** tab and select the desired options.
5) Click **Save**. The new folder is created, and the **Create Folde**r window closes.

   If you want to create another folder, click **Save & Create New**.

To cancel creating a new folder, click **Cancel**.

Create Multiple Folders in the Same Parent Folder

To create multiple folders in the same parent folder:

1) In the Create Folder window, click the **Create Multiple** button. This allows you to create multiple folders with similar properties.
2) Add the information in the **General** and **Options** tabs for the first folder.

3) When the General and Options tabs are complete for the first folder, click the **Create** button. The first folder will be created and the Create Folder window will remain open.
4) Give a new name to the second folder and verify the other information in the General and Options tabs. (By default, the same as the first folder, but can be modified.)
5) Click **Create** to create the second folder.
6) Continue to create folders as needed.
7) Close the Create Folder window when you are done creating folders.

Folder Properties Window

To open the **Folder Properties** window:

1) Go to your project (**User** mode).
2) Click **Document Manager** > **Documents**.
3) Click on a folder to select.

When you select a folder, the right-hand pane displays the following tabs:

- **Properties**
- **Audit Log**
- **Permissions**
- **Options**

If a data element in the right-hand pane contains a tooltip (a description of the field), then a question mark (?) symbol appears next to that field. When you hover over the question mark, the tooltip appears.

Folder Properties Window (Properties Tab)

The **Properties** tab has several fields that are categorized under the following blocks:

- **General**
- **Other**

General

In this field	Do this
Name	This always appears at the top and is mandatory. For the project or shell Documents or Company Documents root folder, this is not editable.
Location	The folder location within the project or shell Documents node. "/" indicates the project or shell Documents root folder.
Owner	The name of the folder creator or current owner. Click to view the user profile.
Creation Date	The date that the folder was created.
% Complete	This is a calculated field derived from the

In this field	Do this
	overall percent complete of all documents within the folder. The % Complete for documents is maintained manually in the Document Properties window.
Description	You can enter an optional description for the folder.

Other

Categories (applicable to project-level Document Manager only)	Project administrators can group folders into customized categories. You cannot use Find to search for Category designations, but you can include them in a report (user-defined reports). This field is not present at the company level.
Phases (applicable to project or shell level Document Manager only)	In the project or shell level Document Manager, a folder can be associated with one or more project or shell phases, making it accessible only during those phases of the project or shell. This helps insure that important, phase-specific documents are visible at the appropriate times during the life cycle of the project or shell. Click the **Select** button and select one or more phases. The Phase setting controls the visibility of folders. For example, if the project or shell administrator sets the project or shell phase to conceptual design, then only those folders tagged with the phase conceptual design, as well as those without a phase tag, will be visible during that phase. If you do not specify a phase, the folder will display during all project or shell phases.

Folder Properties Window (Permissions Tab)

The **Permissions** tab has several fields that are categorized under the following blocks:

- **Inherit permissions from the parent folder**

  This option is not available for folders or files that do not have a parent folder (i.e., are located at the root).

  This option has the following are the two blocks:

  - **User Name or Group Name**

A selection section on the left. You can enter in the field (picker). Alternatively, you can click at an option to open a user or group picker, select one or more users or groups, and add your selections. When you select users or groups, an expanded list of selected users or groups appears.

If there are both users and groups, the first group is displayed as selected by default. The permissions are in the right section.

If there are no groups, but users only, the first user is displayed as selected by default. The permissions are in the right section.

You can delete any of the existing or saved permission (trash can icon).

The usernames shows the user's profile picture next to the username. Also, the user Title (from user's Unifier profile) is displayed below the username.

- **Document Permissions**

  A definition section on the right. This section displays a list of all folder or file permissions. If the option "Inherit permissions from the parent folder" is selected, this section will become read-only. You can edit the contents of this section only when the option "Inherit permissions from the parent folder" does not exist (for root level files or folders), or if the option "Inherit permissions from the parent folder" is selected.

  When you select multiple files (from the Document Manager > Documents log), the right pane displays the following tabs:

  Revisions tab: The Revisions tab is not available if more than one file has been selected in the DM. This tab is displayed only if the document has revisions.

  Permissions tab

  Options tab: Revisions must have same file name

  Audit Log tab: Print, Export To CSV, and Export to Excel.

- **Selected Users/Groups**
- **Folder Permissions**
- **Document Permissions**
- **Apply these permissions to documents and sub-folders**

Folder Properties Window (Audit LogTab)

The **Audit Log** tab has a tabular log that displays the following information:

- **Date**
- **Event**
- **Action**
- **Field Name**
- **Old Value**
- **New Value**
- **User Name**
- **Proxy User**

Folder Properties Window (Options Tab)

The **Options** tab has several fields that are categorized under the following blocks:

- **Folder Upload**

- **Upload files only**: Default selection; when a folder is selected for upload, only the files within it are uploaded, not the folder itself.
- **Upload folders and files**: Allows uploading of both files and folders.
- **Apply these options to all sub-folders**

- **Document Upload**
  - **Do not include references**: Applies to drawing reference files. If this option is selected, reference files will not be uploaded automatically with their base files.
  - **Include references**: Reference files will be uploaded automatically with their base files based on the option selected:

    Upload References from My Computer: Searches for reference files on the local machine based on the path defined in the base file header.

    Auto-resolve from project or shell Documents as Dynamic Links: Searches for reference files already present in project or shell documents and links dynamically. If the reference file is revised, the newer version is used.

    Auto-resolve from project or shell Documents as Static Links: Searches for reference files already present in project or shell Documents and links statically. If the reference file is revised, the newer version is ignored.
  - **Apply these options to all sub-folders**
- **Folder Download**
  - **Download files only**: Default selection; when a folder is selected for download, only the files within it are downloaded, not the folder itself.
  - **Download folders and files**: Allows downloading of both files and folders.
  - **Apply these options to all sub-folders**
- **Document Download**
  - **Do not include references**: Do not download drawing reference files automatically with base files.
  - **Include references**: Reference files will be downloaded automatically with their base files based on the option selected:

    Download references to same folder as Base file

    Download references to Logical Path specified in Base file: As defined in the base file header information
- **Apply these options to all sub-folders**

  For categories and phases (**Properties** tab). If you select this option for the current folder, then all new and existing subfolders and documents within the folder will be modified when the window is saved.

  This is unchecked by default. If this option is selected, the upload or download options will apply to all new and existing subfolders (and documents if specified) when the options are saved.
- **Send email notification to subscribed users**

  Select this box if you want the owner to receive an email notification whenever the folder properties are modified. If you select or deselect this box on a folder, the checkbox will update on all subfolders automatically. This option will not override users' email subscription selections in user preferences.

Users also have to have at least view permissions on the specific folder or document to get the notification.

Lock folder structure for the first level below project or shell Documents: This option appears only for the root project or shell Documents folder. It disallows the addition, modification, or deletion of any first-level folder: folders that are directly under the project or shell Documents node. Subfolders can still be added to the first-level folders. The administrator can unlock the structure to make changes to first-level folders if necessary.

View or Modify Folder Properties

You can view or modify (with proper permissions) the folder properties of existing folders. When you create or upload a folder, you become its owner, and have full access to the folder and its contents.

To view folder properties:

1) From the project or shell or Company Document log, select any folder or subfolder, or the project or shell or Company Documents root folder.
2) From the right-pane, select the **Properties** tab. The folder properties are displayed in the right-pane.

To modify folder properties:

1) From the project or shell or Company Document log, select any folder or subfolder, or the project or shell or Company Documents root folder.
2) From the right-pane, select the **Properties** tab.
3) Make your changes and select **OK**.

View or Modify Folder Options

To view folder options:

1) From the project or shell or Company Document log, select any folder or subfolder, or the project or shell or Company Documents root folder.
2) From the right-pane, select the **Options** tab. The folder options are displayed in the right-pane.

To modify folder options:

1) From the project or shell or Company Document log, select any folder or subfolder, or the project or shell or Company Documents root folder.
2) From the right pane, select the **Options** tab.
3) Make your changes and select **Save**.

View, Add, or Modify Folder Permissions

When you create or upload a folder, you become its owner and have full access to the folder and its contents.

Setting permissions at the folder level allows you to grant other users access not only to the selected folder, but also (optionally) its contents as well, such as subfolders, shortcuts, and documents. You also have the option of setting individual permission settings to specific shortcuts and documents within the folder, as discussed in the documents and shortcuts sections.

Notes:

- You many want to add yourself to the permissions list. Though not necessary as long as you remain the owner, if you decide later to transfer ownership of the folder, you will no longer have owner permissions. However, you will retain the permissions, if any, that you specify in the permission window.
- The project or shell Documents root folder is selectable for modifying permissions.

To view the folder permissions:

1) Go to your project or shell (User mode) and click the **Document Manager** node to expand it.
2) Click the **Documents** sub-node to open the **Documents** log (for **Project Documents**).
3) Click an item (folder) from the log to select.
4) On the right-hand pane, click the **Permissions** tab to view the folder permissions.

To add or modify the folder permissions:

1) Go to your project or shell (User mode) and click the **Document Manager** node to expand it.
2) Click the **Documents** sub-node to open the **Documents** log (for **Project Documents**).
3) Click an item (folder) from the log to select. You can select more than one item.
4) From the toolbar, click the **Actions** drop-down list and select **Permissions** to open the **Permissions** overlay page. Alternatively, if you are working with one item (folder) only, then you can click the *gear menu* (⚙), next to the item, and click **Permissions**.
5) On the **Permissions** overlay page, you can add or modify the folder permissions by using the following options:
   - **Inherit form parent folder <parent folder name>**

     If the **Inherit permissions from the parent folder** checkbox at the top of the window is selected, then the folder-level permissions will apply automatically and cannot be modified.
   - **Assign new permissions**
   - **Apply these permissions to documents and sub-folders**

     You can select this option to apply the selected permissions to all of the documents and folder contained within the selected items (folders). This selection erases the existing permissions assigned to the selected items (folders).
6) Click **Save** when done, or click **Cancel** to close the **Permissions** overlay page without any changes.

   When you are working with more than one item (folder), there is an additional option: **Save and Close**.

When you are working with permission of one item (folder) only, there are additional options: **Previous** and **Next**. These additional options enable you to finish your work and navigate to permissions of the previous or the next item.

7) Do any of the following:
   - To add a new user, click **Add** and add users or groups to grant permission. Select the user from the list and grant or remove individual permissions (see below).
   - To remove a user's permissions, select the user from the list and click **Remove**.
   - To modify a user's permissions, select the user from the list and grant or remove individual permissions.

Add or Modify Multiple Folder Permissions

To add permissions to multiple folders:

> **Note**: This option does not enable you to use the existing permissions for the selected folders. For example, if a user 'A' already has permission to one of the selected folders, and if the same user is selected again from the user group picker, then the user A's existing permissions will get overwritten with the new permissions.

1) Go to your project or shell (User mode) and click the **Document Manager** node to expand it.
2) Click the **Documents** sub-node to open the **Documents** log (for **Project Documents**).
3) Select multiple folders.
4) From the toolbar, click the **Actions** drop-down list and select **Permissions** to open the **Permissions** overlay page.
5) On the **Permissions** overlay page, you can assign permissions to users or groups.

By default, permissions will be inherited from the common parent folder of all the chosen files. The inherited permissions will all be read-only. You have option to assign new permissions instead of choosing to inherit from parent folder.

The permissions of folder owners can never be removed. If you select multiple folders, add the folder owners from the users- or group-picker, and click **Remove**, the system removes the folder owners from the current permission window. The system does not remove permissions for the folder owner.

If you switch between the **Inherit form parent folder <parent folder name>** and **Assign new permissions** options, all the inherited permissions are removed and the **Permissions** page toolbar and grid is updated as if you are proceeding to create new permissions from scratch.

If you have already inserted one or more rows in the grid (manually or by copying from parent), and you decide to switch between the **Assign new permissions** and **Inherit form parent folder <parent folder name>** options, the system displays a message stating that the manually added permissions will be erased and replaced with the inherited permissions. You will have the option to proceed or cancel.

Copy a Folder

You can copy a folder from one location to another. When you copy a folder, you become the owner with ownership permissions of the copied folder and its contents. The owner of the original folder and other users with permissions to the original folder retain their permissions on the original and the copied folder. You can copy more than one folder at a time.

> **Note**: If a folder contains attachments, then you can copy the folder with the attachments.

To copy a folder

1) Select a folder in the project or shell Documents log.
2) Select ⚙ **> Edit > Copy**.
3) Select the target location from the folders shown.
4) Select the **Include Comments** check box if you want to copy any comments or markups that may be on documents within the copied folder.
5) Click **Copy**. The folder and all contents (subfolders, documents, shortcuts) are copied to the target location.

> **Note**: To copy multiple folders, select the folders and click **Actions > Edit > Copy**.

Move a Folder

If you are the owner of the folder (or otherwise have proper permissions), you can move a folder to a new location. When you move a folder from one location to another, all subfolders, documents, and any comments or markups on the documents are moved to the new location. Original ownership and user permissions are maintained. To move a folder, you must have the following permissions: *Create Sub-Folder* permission in the destination folder and *Move* permission in the source folder. If a folder with the same name exists in the destination folder, you can choose to either cancel the move or keep both the folders. When you select the option to keep both, the folder you are moving will be appended with a number to distinguish it from the folder that exists. If you are moving multiple folders at the same time, you can select the **Apply for all conflicts** checkbox to apply the same action for subsequent conflicts.

To move a folder

1) Select a folder in the project or shell Documents log.
2) Select ⚙ **> Edit > Move**.
3) Select the target location from the folders shown.
4) Click **Move**. The folder and its contents are moved to the target location.

> **Note**: To move multiple folders, select the folders and click **Actions > Edit > Move**.

Rename a Folder

To rename a folder:

1) Select the folder in the project or shell Documents log.
2) Select ⚙ **> Edit > Properties**.
3) Enter the new folder name and click **OK**.

Delete a Folder

When you delete a folder, it is moved to the Recycle Bin. Items in the Recycle Bin can be restored back to their original location or permanently deleted. See ***The Recycle Bin*** (on page 439). You can delete more than one folder at a time.

> **Note**: Documents attached to business processes cannot be deleted. Therefore, in order to delete a folder that contains a document that cannot be deleted, you must first move that document to a different location.

To delete a folder:

1) Select a folder in the project or shell Documents log.
2) Select ⚙ **> Edit > Delete**.
3) Click **Yes** to confirm. The folder is moved to the Recycle Bin.

> **Note**: To delete multiple folders, select the folders and click **Actions > Edit > Delete**.

Creating and Managing Documents

A document refers to a file that is uploaded into the system and stored in the Document Manager. A document in the Document Manager can be thought of as a container of the file that was uploaded.

View and Open Documents

Documents can be stored in folders or directly in the root project or shell documents or company documents node. The project or shell documents log displays the contents of the selected folder, including subfolders, documents, and shortcuts.

Documents can be opened in two ways from within the system:

- **Native:** Documents are opened in their native software applications; for example, Microsoft Word documents are opened in Microsoft Word. This option requires that users have the native software application installed on their machine to view the document.
- **Unifier Viewer:** Documents are displayed in the either the default Unifier Viewer or AutoVue viewer, which can display virtually any type of file. Documents are opened in a read-only view that supports adding graphical markups and text comments.

The **Viewer Options** is set in the **Preferences** window, **More** tab.

To view a document:

1) From the **Documents** log view, select a document.
2) Click ⚙ **> Open in AutoVue**, to open the document in AutoVue, or select ⚙ **> Open** to open a document in the default Unifier Viewer.

   You will see the option to open in AutoVue only if your Unifier server is configured to use AutoVue.

   You can also click the link in the **Document URL** column to view or download the document.

Create an Empty Document

Empty documents are used as placeholders for documents that have yet to be uploaded into Document Manager. For example, a project or shell manager might create an empty document in a folder and then send an action item to a team member to upload the file into it.

You can also import empty documents. For more information, see ***Import and Export Folders, Properties, and Empty Documents***.

Empty documents can be populated with files by revising them (replacing the empty document with the completed document. For more information, see ***Revising Documents*** (on page 415).

To create an empty document:

1) From the **Documents** log, click **Create** > **Empty Document**. The **Create Document** window opens.
2) In the **Properties** tab, enter the document name.
3) Complete the other fields as necessary.
4) Click the **Options** tab, and select **Revisions must have same file name**, if necessary.
5) Click **Save**. The empty document is created.

> **Note**: To upload a file into the empty document, see ***Uploading Files***.

Document Properties Window

To open the **Documents Properties** window:

1) Go to your project (**User** mode).
2) Click **Document Manager** > **Documents**.
3) Click on a document to select.

When you select a document , the right-hand pane displays the following tabs:

- **Properties**
- **Linked Records**
- **Audit Log**
- **Permissions**
- **Options**

If a data element in the right-hand pane contains a tooltip (a description of the field), then a question mark (?) symbol appears next to that field. When you hover over the question mark, the tooltip appears.

Document Properties Window (Properties Tab)

The **Properties** tab has several fields that are categorized under the following blocks:

- **General**
- **Other**

General

In this field	Do this
Name	This always appears at the top and is mandatory. For the project or shell Documents or Company Documents root folder, this is not editable.
Location	The folder location within the project or shell Documents node. "/" indicates the project or shell Documents root folder.
Document URL	The URL for the selected document.
Owner	The name of the folder creator or current owner. Click to view the user profile.
Creation Date	The date that the folder was created.
% Complete	This is a calculated field derived from the overall percent complete of all documents within the folder. The % Complete for documents is maintained manually in the Document Properties window.
Description	You can enter an optional description for the folder.

Other

Categories (applicable to project-level Document Manager only)	Project administrators can group folders into customized categories. You cannot use Find to search for Category designations, but you can include them in a report (user-defined reports). This field is not present at the company level.

Phases (applicable to project or shell level Document Manager only)	In the project or shell level Document Manager, a folder can be associated with one or more project or shell phases, making it accessible only during those phases of the project or shell. This helps insure that important, phase-specific documents are visible at the appropriate times during the life cycle of the project or shell. Click the **Select** button and select one or more phases. The Phase setting controls the visibility of folders. For example, if the project or shell administrator sets the project or shell phase to conceptual design, then only those folders tagged with the phase conceptual design, as well as those without a phase tag, will be visible during that phase. If you do not specify a phase, the folder will display during all project or shell phases.

Document Properties Window (Linked Records Tab)

Click the **Expand** icon (⛶) to expand the **Linked Records** tab.

The **Linked Records** tab has a tabular log that displays the following information:

- **Record Number**
- **Name**
- **Title**
- **Status**
- **Upload Date**

The right-hand pane of the **Linked Records** tab displays the **Record Details** tab. The **Record Details** tab has several fields that are categorized under the following blocks:

- **General**
- **Details**
- **Calculation**

Document Properties Window (Audit Log)

The **Audit Log** tab has a tabular log that displays the following information:

- **Date**
- **Event**
- **Action**
- **Field Name**

- **Old Value**
- **New Value**
- **User Name**
- **Proxy User**

Document Properties Window (Permissions Log)

The **Permissions** tab has several fields that are categorized under the following blocks:

- **Inherit permissions from the parent folder**
- **Selected Users/Groups**
- **Document Permissions**

Document Properties Window (Options Log)

The **Options** tab allows you to select the following option:

- **Revisions must have same file name**

Document Properties Window (E-Sign Log)

The **e-Sign Log** tab has a tabular log that displays the following information:

- **Signer**
- **Sign Status**
- **Initiated Date**
- **Completion Date**

View or Modify Document Properties

You can view or modify (with proper permissions) the **Document Properties** of uploaded files and empty documents. You can also import properties values. For more information, see ***Import and Export Folders, Properties, and Empty Documents***.

To view document properties

1) Select the document in the project or shell **Documents** log.
2) From the right-pane, select the **Properties** tab. The folder properties are displayed in the right-pane.

To view document options

1) Select the document in the project or shell Documents log.
2) From the right-pane, select the **Options** tab. The folder options are displayed in the right-pane.

To modify document properties

1) Select the document in the project or shell Documents log.
2) From the right pane, select the **Properties** tab.
3) Make your changes and select **OK**.

To modify document options

1) Select the document in the project or shell Documents log.
2) From the right pane, select the **Options** tab.
3) Make your changes and select **Save**.

> **Note**: The Administrator can specify values on the Document Attribute form (for Document Properties) that enable auto-sequencing (auto-numbering of documents). You can use document auto-numbering on documents across the Company level or the project/shell level. For example, the Administrator can specify that a Document Name field uses auto-sequencing in order to give each document a unique number as it is created. The auto-numbering occurs when you click **Apply** or **OK** in the Document Properties window. Later, you can view the auto-numbering of the document by clicking the Properties button to view the Document Properties.

View, Add, or Modify Document Permissions

When you upload a document, or publish a document from the **Unpublished Documents** sub-node, you become its owner and have full access to it. You can grant other users access to it.

If you have granted folder-level permission to other users and allowed the permission to apply to the contents of the folder, those permissions will apply to the documents that you add to it automatically. They will appear as selected in the document permissions window. However, you can modify these permissions per document if needed.

To view the document permissions:

1) Go to your project or shell (User mode) and click the **Document Manager** node to expand it.
2) Click the **Documents** sub-node to open the **Documents** log (for **Project Documents**).
3) Click an item (document) from the log to select.
4) On the right-hand pane, click the **Permissions** tab to view the document permissions.

To add or modify the document permissions:

1) Go to your project or shell (User mode) and click the **Document Manager** node to expand it.
2) Click the **Documents** sub-node to open the **Documents** log (for **Project Documents**).
3) Click an item (document) from the log to select. You can select more than one item.
4) From the toolbar, click the **Actions** drop-down list and select **Permissions** to open the **Permissions** overlay page. Alternatively, if you are working with one item (document) only, then you can click the *gear menu* (⚙), next to the item, and click **Permissions**.
5) On the **Permissions** overlay page, you can add or modify the document permissions by using the following options:
   - **Inherit form parent folder <parent folder name>**

     If the **Inherit permissions from the parent folder** checkbox at the top of the window is selected, the folder-level permissions will apply automatically and cannot be modified.

- **Assign new permissions**

6) Click **Save** when done, or click **Cancel** to close the **Permissions** overlay page without any changes.

   When you are working with more than one item (document), there is an additional option: **Save and Close**.

   When you are working with permission of one item (document) only, there are additional options: **Previous** and **Next**. These additional options enable you to finish your work and navigate to permissions of the previous or the next item.

To modify the folder permissions, deselect **Inherit permissions from the parent folder**.

Do any of the following:

- To add a new user, click **Add** and add users or groups to grant permission. Select the user from the list and grant or remove individual permission.
- To remove a user's permissions, select the user from the list and click **Remove**.
- To modify a user's permissions, select the user from the list and grant or remove individual permissions.

Add or Modify Multiple Documents Permissions

To add permissions to multiple documents:

> **Note**: This option does not enable you to use the existing permissions for the selected documents. For example, if a user 'A' already has permission to one of the selected documents, and if the same user is selected again from the user group picker, then the user A's existing permissions will get overwritten with the new permissions.

1) Go to your project or shell (User mode) and click the **Document Manager** node to expand it.
2) Click the **Documents** sub-node to open the **Documents** log (for **Project Documents**).
3) Select multiple documents.
4) From the toolbar, click the **Actions** drop-down list and select **Permissions** to open the **Permissions** overlay page.
5) On the **Permissions** overlay page, you can assign permissions to users or groups.

By default, permissions will be inherited from the common parent folder of all the chosen files. The inherited permissions will all be read-only. You have option to assign new permissions instead of choosing to inherit from parent folder.

The permissions of file owners can never be removed. If you select multiple files, add the file owners from the users- or group-picker, and click **Remove**, the system removes the file owners from the current permission window. The system does not remove permissions for the file owner.

If you switch between the **Inherit form parent folder <parent folder name>** and **Assign new permissions** options, all the inherited permissions are removed and the **Permissions** page toolbar and grid is updated as if you are proceeding to create new permissions from scratch.

If you have already inserted one or more rows in the grid (manually or by copying from parent), and you decide to switch between the **Assign new permissions** and **Inherit form parent folder <parent folder name>** options, the system displays a message stating that the manually added permissions will be erased and replaced with the inherited permissions. You will have the option to proceed or cancel.

Transferring Ownership

You can transfer ownership of a document, or multiple documents in a folder. The new owner will have all privileges of the original owner.

To transfer ownership

1) Select a folder, document, or multiple documents.
2) From the **Actions** menu, select **Transfer Ownership**.
3) Type the name of the user you would like to transfer the ownership to. As you type, the list of users are refined to show you the closest match.
4) Select a user from the list.
5) Click **Transfer**.
6) Click **Ok**.

Copy a Document

A document can be copied from one location to another, with the option to include any comments or markups associated with it. You can select and copy multiple documents or folders at once. If you copy a document owned by another user, you become the owner of the copy, and the original owner maintains original permissions on the original and copied versions.

> **Note**: You must select a destination folder that is different from the source folder. You cannot copy a document into the same location you are copying it from.

To copy a document

1) Select the document in the project or shell Documents log.
2) Select ⚙ **> Edit > Copy**.
3) Select the destination folder into which you want to place the document copy.
4) To copy with comments or markups attached to the document, select the **Include Comments/Markups** checkbox.
5) Click **Copy**.

> **Note**: To copy multiple document, select the documents and click **Actions > Edit > Copy**.

Move a Document

When a file is moved, comments or markups associated with the document are moved with it automatically. To move a document, you must have the following permissions: *Add Document* folder permission in the destination folder and *Move* document permission in the source folder. If a file with the same name exists in the destination folder, you can choose to either cancel the move, revise the file in the destination folder, or keep both the files. When you select the option to revise, the file in the destination folder is revised and an entry is made in the Revisions tab. When you select the option to keep both files, the file you are moving will be appended with a number to distinguish it from the file that exists. If you are moving multiple files at the same time, you can select the **Apply for all conflicts** checkbox to apply the same action for subsequent conflicts.

To move a document

1) Select the document in the project or shell Documents log.
2) Select ⚙ **> Edit > Move**.
3) Select the target folder into which you want to move the document.
4) Click **Move**.

> **Note**: To move multiple document, select the documents and click **Actions > Edit > Move**.

Rename a Document

You can rename a document, if your administrator has enabled the document name field as an editable and required field. When you rename a document, the change is reflected everywhere the document is referenced or linked. The name is also updated in formulas that use file name in its calculations. Each time a file is renamed, it is tracked and can be viewed from the Audit Log tab.

If you rename a file with a name that exists in the same folder, an alert message is displayed. You can rename the file or choose to keep the same file name. If you choose to keep the same file name, it is appended with an integer. For example: Architecture Diagram.png will be renamed as Architecture Diagram(1).png.

> **Note**: You cannot change the extension of a file, you can only rename the file.

To rename a document

1) Select the document in the project or shell Documents log.
2) Select ⚙ **> Edit > Properties**.
3) Enter a new file name and click **OK**.

Delete a Document

When you delete a document, it is moved to the Recycle Bin. Items in the Recycle Bin can be restored to their original location or permanently deleted. You can select and delete more than one document at once.

A document that is attached to a business process record is linked to it and cannot be deleted from the Document Manager. The document will show a linked records icon next to the document in the BP column of the document log. However, if the latest version of the document is not linked to a business process, the icon will not display in the log. You can select the document and click **View > Revisions** to check if an older revision has linked records. In addition, a document may also contain links to business processes that are still in draft, and which will not display as a link to the document until the BP record is sent.

Caution: Use caution when deleting drawing base or reference files. Deleting a linked reference file will cause the file to be marked as missing on the corresponding base drawing file.

Note: If you need to remove a document that cannot be deleted, move it from its original location into another folder with limited user access.

To delete a document

1) Select the document in the project or shell Documents log.
2) Select ⚙ **> Edit > Delete**.
3) Click **Yes** to confirm. The document is moved to the Recycle Bin.

Note: To delete multiple documents, select the documents and click **Actions > Edit > Delete**.

Revising Documents

To revise a document, you replace the current version with a new one that you upload from your local machine. The new file does not necessarily have to have the same file name as the original. This is also how you populate an empty document in the system with the completed document from your local machine.

The newest version of a document is available in the project or shell Documents log. Earlier versions can still be accessible in the View Revisions window. When a document is revised, the file itself is never changed. It remains untouched. Each version is maintained separately.

The procedures for uploading revisions are the same as for uploading files.

Note: You can help control revisions by locking documents or checking them out prior to revising. If you have locked the file, you must unlock it before proceeding. If you have checked it out, you can revise it by

checking it in, or cancel the check out before proceeding.

To revise a document using the revise function

1) Do one of the following:
   - If you are revising a file with a new version with the same file name, proceed to the next step.
   - If the revised file has a different name, select the document in the documents log, click the **Properties** button and select the **Options** tab. Be sure the **Revisions must have the same file name** checkbox is not selected.
2) Select the document in the documents log.
3) From the **Edit** menu, click **Revise**. The Revise File window opens.
4) Click **Upload** to upload the revised file into the Document Manager.

The publication number (Pub. No.) of the file increases by one for each revision uploaded. For example, the first time you upload a document, the publication number is 1. If you revise it, the publication number becomes 2, and so on.

To revise a document automatically upon uploading

1) Follow the procedure for uploading documents.
2) In the Upload window select the **Revise automatically if file with same name exists** option.
3) If you are uploading a file that has the same file name as a document that exists in the Document Manager target folder, that document will automatically be revised to the newly uploaded version.

To learn more about comparing two versions of a document and file attachments, see the *Unifier Business Processes User Guide*.

Viewing Previous Revisions

You can view earlier versions of a revised document, including any comments or markups or linked BPs on previous versions.

To view earlier versions of a document

1) Open the project or shell, and click **Document Manager** > **Documents** in the left Navigator.
2) Select a document in the log.
3) From the right-pane, select the **Revisions** tab. The current and any previous versions of the document are displayed on the right-pane.
4) Select a file version, and perform one the following actions:
   - **Open** to view the file in the default viewer.
   - **Open In AutoVue** to open the file using AutoVue.
   - **Download** to download the selected version.
   - **Restore this Revision** to make the selected file the current version of the file.
   - **Comments** to view any comments added to the selected version.

- **View References** to view any associated drawing reference files.
- **View Linked Records** to view the list of business process records to which the selected version may be linked.

Restoring to a Previous Revision

You can revert to a previous version of the file, if you have the **Revise Document and Resolve References** permission. When you restore a file, all comments and references associated with it are also restored. It also gets tracked in the Audit log.

If the option **Revisions must have same file name** is checked, you cannot restore to a revision with a different name.

> **Note**: The following HTML special characters **/ \ : * ? " < > |** cannot be used in the file name.

The selected version becomes the current version.

1) Open the project or shell and click **Document Manager > Documents** in the left Navigator.
2) Select a document in the log.
3) From the right-pane, select the **Revisions** tab. The Revisions tab is displayed only if the file has revisions. The Revisions tab displays all previous versions of the document.
4) Select the version you want to revert to and select ⚙ **> Restore this Revision**. The selected file now becomes the current file. This change is tracked and can be viewed from the **Audit** tab. The **Restore this Revision** option is displayed only if you have the **Revise Document and Resolve References** permission.

Check-in and Check-Out Documents

The Document Manager's check-in and check-out capability helps you have greater control over document revisions. If you need to revise a file, you have the option of checking it out, which locks it and prevents others from modifying it. It is available to other users as view only. You can make changes to the document as necessary, then check in the new revision.

The procedure for checking out a document is similar to downloading a document. The procedure for checking in a document is similar to the procedure for revising a document.

When a document is checked out, the check-out icon appears next to the document name in the Document Manager log.

To check out a document

1) Select the document in the project or shell Documents log.
2) Select ⚙ **> Actions > Check out**.
3) Download a copy of the file to your local system.

Notes:

- If you cancel the download procedure, the document will still be checked out to you.
- To check out multiple documents, select multiple documents and select **Actions > Edit > Check Out**.

The **Check Out** icon appears next to the document in the log. You can upload a new revision and check the document back in, or you can cancel the check out without revising the document.

To check in a new revision of a checked out document

1) Select the document in the project or shell Documents log. Checked-out documents have an icon in the lock column.
2) Select ⚙ **> Actions > Check in**.
3) Click **Upload** to upload and check in the revised file into the Document Manager.
   The publication number (Pub. No.) of the file increases by one for each revision uploaded.

Note: To check in multiple documents, select multiple documents and select **Actions > Edit > Check In**.

To restore a checked out document without checking in a new revision

1) Select the checked out document in the project or shell Documents log.
2) Select ⚙ **> Actions > Cancel check out**.
   The document will no longer be checked out.

Note: To restore multiple checked out documents, select multiple documents and select **Actions > Edit > Cancel Check Out**.

To ascertain which user has a document checked out

1) Select the checked out document in the project or shell Documents log.
2) From the right-pane, select the **Audit Log** tab. The Audit Log report displays the complete history of the document, including who last checked out or revised it.

Lock and Unlock Documents

If you are the owner of a document, you have the option of locking the document to prevent it from being revised or modified. After a document is locked, only the document owner (or an administrator with proper permissions) can unlock it.

When a document is locked, users can:

- View the document, revision log, and audit log.
- Download or copy the document.
- Create a shortcut to the document.
- Modify document permissions.
- Move a document, or move the folder containing the document.

When a document is locked, users cannot:

- Delete, revise, edit properties, transfer ownership, or add comments or markups.

To lock or unlock a document

1) Select the document in the project or shell Documents log.
2) Select ⚙ > **Actions** > **Lock** or **Unlock**.

Notes:

- Only the document owner or an administrator with full access can lock or unlock a document.
- To lock or unlock multiple documents, select **Actions** > **Edit** > **Lock** or **Unlock**.
- Only the document owner or an administrator with full access can lock or unlock a document.

Adding and Viewing Graphic Markups and Comments

You can add text comments or graphical markups to a document in project or shell Documents. You can even add a file attachment directly to the comment, for example, supporting documentation.

Comments and markups can be added to the latest version of a document only. You can view but not add or modify comments or markups made to previous versions.

Text comments are like notes that accompany the document but do not become part of it.

Markups can be thought of as an invisible layer, like a sheet of acetate that can be laid over the document. If multiple users create markups, each markup is on a separate sheet and can be viewed together, one at a time, or not at all. Markups are always associated with a text comment.

Text comments and graphic markups can be copied between business process records and the Document Manager, including:

- Comments added to documents in the Document Manager
- General comments added to business process records
- Comments added to file attachments on non-Document-type BP records
- Comments added to file attachments (line item content) of Document-type BP records
- Markups on file attachments that have been added to comments

Opening a Document to View Comments

To open a document using the default Unifier Viewer

1) Select a document.

2) Select ⚙ > **Open** to open a document in the default Unifier Viewer. The document along with the associated comments are displayed in one window.

To open a document using AutoVue

1) Select a document.
2) Select ⚙ > **Open** in AutoVue to open a document in AutoVue. This option displays only if your Unifier server is configured to use AutoVue.

Adding Markups, Comments, and File Attachments

> **Note**: All comments are displayed in both viewers regardless of which viewer the comments were added in. Markups are visible only in the viewer they were made in.

Using the default Unifier Viewer

1) Select a document.
2) Select ⚙ **> Open** to open a document in the default Unifier Viewer.
3) Click the **Comments** icon.
4) Click the **Annotation** icon to display the annotation toolbar.
5) Use the annotation toolbar to markup your document.
6) Enter your comments and click **Post**.
7) To add attachments to your comments, click the **Attachment** icon.

Using Autovue Viewer

This option displays only if your Unifier server is configured to use AutoVue.

1) Select a document.
2) Select ⚙ **> Open in AutoVue** to open a document in AutoVue.
3) Ensure you have selected the latest revisions of the document.
4) Click the **Markup** icon in the **Comments and Revision** window.
5) Use the markup toolbar displayed in the **Document** window to markup up your document.
6) Enter your comments in the **Comments and Revisions** window and click **Post**.
7) To add attachments to your comments, click the **Attachment** icon.

Viewing and Adding New Markups in AutoVue

In addition to adding markups to a DM document, you can add and view old markups simultaneously. With this functionality, multiple members can add various markups across shared files throughout the life cycle of a design document.

When you select **Open in AutoVue** in the *gear menu* (⚙) of the document, a **View All Markups** option is available in the **File Viewer** of the **Comments and Revisions** window. If you select **View All Markups**, the document is displayed in View-Only mode.

You can also choose the markups that are displayed by selecting the checkbox next to each markup. After selecting **OK**, all the chosen markups are displayed.

Resolving Missing Reference Files (Reference Manager)

Base files store the reference file paths in the header. During the auto-resolve process, Primavera Unifier reads the path in the header and then looks for the reference files based on this path. If the reference file path cannot be read, or if the reference files cannot be found in the path specified by the header, the references are flagged as missing.

> **Note**: Nested reference files are not supported. For example, a base file references a reference file, which in turn references another reference file (that is, the first reference file is a base file for the second). Primavera Unifier does not try to resolve missing nested reference files.

You can resolve missing reference files during or after uploading into Primavera Unifier. You can resolve missing references within the Document Manager in several ways: manually upload a missing file from your computer; link to a reference file that is already in project or shell or company documents; or let Primavera Unifier attempt to auto-resolve it by searching for the missing reference.

> **Note**: The auto-resolve process will search for the missing attachment in the Primavera Unifier folder path as defined in the base file header and in the same folder as the base file.

View Missing and Attached Reference Files (Standard View)

To view missing and attached reference files (Standard View)

1) In the document log, select a drawing file that has reference files. The drawing file will have a checkmark or an X in the Ref column of the log if there are associated references.
2) From the right-pane, select the **References** tab. The following information is displayed:
   - **Missing:** Reference files could not be found. They can be auto-resolved or resolved manually.
   - **Private:** Reference files are bundled with the drawing file, not linked.
   - **Static link:** Links to a particular version of an existing reference file within the Document Manager. Static links can only be created to the latest document version. If the reference file is then revised, the link will point to the original version. Once linked, files cannot be revised with a different file name.

- **Dynamic link:** Links to an existing reference file within the Document Manager. If the file is revised, the link is refreshed and points to the newer version. Once linked, files cannot be revised with a different file name.

Manually Resolve Reference Files

To resolve a missing reference file by uploading from your computer

1) In the Reference Manager tab, select the missing reference file.
2) Click the **Add from My Computer** button. The File Upload window opens.
3) Browse to the file and click **OK**.window

To resolve a missing reference file by linking to an existing file

1) In the Reference Manager tab, select the missing reference file.
2) Click **Link To Document**. The Link to Document window opens.
3) Browse to the reference file to link to.
4) Select one of the following options:
   - **Static link:** Links to a particular version of an existing reference file within the Document Manager. Static links can only be created to the latest document version. If the reference file is then revised, the link will point to the original version. Once linked, files cannot be revised with a different file name.
   - **Dynamic link:** Links to an existing reference file within the Document Manager. If the file is revised, the link is refreshed and points to the newer version. Once linked, files cannot be revised with a different file name.
   - **Local copy of the Primavera Unifier document:** Makes a copy of the existing reference file into the current folder and is not linked directly to the original version.
5) Click **OK** to save and close the Link to Document window.

Auto-Resolve Missing Reference Files

To auto-resolve missing reference files:

1) In the Reference Manager tab, select the missing reference file.
2) Click the **Auto-resolve Missing References** button.
3) Select **Static Link** or **Dynamic Link**.
   - **Static link:** Links to a particular version of an existing reference file within the Document Manager. Static links can only be created to the latest document version. If the reference file is then revised, the link will point to the original version. Once linked, files cannot be revised with a different file name.
   - **Dynamic link:** Links to an existing reference file within the Document Manager. If the file is revised, the link is refreshed and points to the newer version. Once linked, files cannot be revised with a different file name.
4) Click **OK**. Unifier will search for the missing reference file based on information in the header of the base file. If the missing file is found, it is listed in the Auto-resolve window.

Copy or Move Reference Files (Classic View)

If you need to copy or move reference files, it is recommended that you do so through the Reference Manager in order to maintain proper links between drawing and reference files.

To copy a reference file (Classic View)

1) In the document log, select a drawing file that has reference files. The drawing file will have a checkmark or an X in the Ref column of the log if there are associated references.
2) Click the **View** menu and choose **References**. The Reference Manager window opens.
3) Select the reference to copy and click the **Copy** button. The Copy Reference window opens.
4) Browse to the target folder within project or shell Documents.
5) Click **OK**. A reference will be copied to the target folder.

To move a reference file (Classic View)

1) In the Reference Manager window, select the reference to move and click the **Move** button. The Move Reference window opens.
2) Browse to the target folder.
3) Choose one of the options in the lower portion of the window. The reference file will maintain a link to the drawing file based on the option you choose:
   - **Create reference as dynamic link:** If the reference is revised, the link is refreshed and points to the newer version.
   - **Create reference as static link:** If the reference is revised, the link points to the original version.
4) Click **OK**. The reference file is moved to the target folder.

Send for E-Signature

To send a document to another Unifier user or to an External User for electronic signature:

1) Go to your project (**User** mode).
2) Click **Document Manager** node to expand it.
3) Click **Documents**.
4) Select a document, click **Actions** drop-down menu, and click **Send for e-signature** to open the **Send for E-Signature** window.

   You can select more than one document.
5) Select either an Internal or External User.

   The **Internal user** field enables you to either enter a user name or select from the **User Picker** window.

   The **External user** field enables you to either enter a user name.
6) Enter the subject. The **Subject** field is mandatory. The attached document appears under the Subject field. Click the drop-down menu to see your options.
7) Enter a message (fewer than 4000 characters) in the field (Optional).
8) Click **Send**.

Alternatively, you can click to select the document, click the *gear menu* (⚙), and use **Sign** or **Send for e-Signature**.

The *gear menu* (⚙) enables you to conduct the following operations on a document:

- **Open**

- **Open in AutoVue**
- **Download**
- **Add to Favorites**
- **Create**
  - **Business Process**
- **Actions**
  - **Revise**
  - **Check Out**
  - **Check In**
  - **Cancel**
  - **Lock**
  - **Unlock**
- **Transfer Ownership**
- **Properties**
- **Move**
- **Copy**
- **Delete**

E-sign Log tab

If you configure and activate the entity that provides electronic signature technology (DocuSign or Adobe Acrobat Sign [Adobe Sign]) credentials in the **Company Properties** > **E-Signatures** tab and a document has been self-signed, or a document has been sent to an Internal or External User, when the recipient selects the document in the Document Manager log, in addition to the existing tabs on the right-hand side, the log displays the **E-sign Log** tab. The **E-sign Log** tab contains:

- The message that was sent when the sender clicked **Send** in the **Send for E-Signature** window.
- A list of all users who received the document for signature.
- A list of all users who self-signed the document.
- Print option.
- Download option.
- The columns for Signer, Sign Status, Initiated Date, and Completion Date.

E-Signature Status column

If you configure and activate the entity that provides electronic signature technology (DocuSign or Adobe Acrobat Sign [Adobe Sign]) credentials in the **Company Properties** > **E-Signatures** tab, the system displays the **E-Signature Status** column in the Document Manager log (**View** > **All**). When creating a new view, you can include the **E-Signature Status** column in any order you select for the log. The following values are displayed in the **E-Signature Status** column:

- **In-Progress**

When at least one signer or assignee has to bring the signing task to a **Terminal** status (**Completed**, **Declined**, or **Reassigned**).

- **Completed**

  When the status is marked **Completed** or **Reassigned**.

- **Declined**

  When the status is marked **Declined** by at least one signer or assignee.

  If there is more than one signer, the **Declined** status overrides the status for other signers.

> **Note**: These values are represented by yellow, green, and red icons.

In the **E-Signature Status** column, the values are sorted by **Completed**, **In-Progress**, and **Declined** statuses.

You can use the following file types if you select **DocuSign**:

Document	.doc, .docm, .docx, .dot, .dotm, .dotx, .htm, .html, .msg, .pdf, .rtf, .txt, .wpd, .xps
Image	.bmp, .gif, .jpg, .jpeg, .png, .tif, .tiff .dwg: If DocuSign does not support this type of file, the system converts it to a .pdf prior to sending it for e-sign.
Presentation	.pot, .potx, .pps, .ppt, .pptm, .pptx
Spreadsheet	.csv, .xls, .xlsm, .xlsx

You can use the following file types if you select **Adobe Sign**:

Document	.doc, .docx, .txt, .rtf, .odt
Image	.jpg, .png, .gif, .tif .dwg: If Adobe Acrobat Sign does not support this type of file, the system converts it to a .pdf prior to sending it for e-sign.
Presentation	.ppt, .pptx
Spreadsheet	.xls, .xlsx

About Actions options

If a document is already sent for E-Signature, and the signing process is not yet complete (the E-Signature status has not yet reached a terminal state), you cannot check-out, lock, or revise that document. If you try to check-out, lock, or revise the document, the system displays: This action cannot be performed on documents whose E-Signature process is not yet complete.

About email containing an E-Signature task

When you (a Unifier user) receive an E-Signature email notification to sign a document, click the **Login** option in the email, enter your sign-in credentials. The system opens the document in DocuSign or Adobe Acrobat Sign and you can sign.

> **Note**: To receive E-signature task notification emails, ensure that you have selected to receive emails with E-Signature task in your **Preferences**.

Exceptions:

- If the **E-signature** node is not deployed from the user mode navigator for the project or shell in which the task resides, then, when you sign in, the system takes you to the home tab of the **E-Signature Tasks** node, and the E-Sign task can be accessed from this log.
- If the **E-signature** node is not deployed for the **Home** tab as well, then, when you sign in, the system takes you to the project or shell landing page and displays the message: You do not have permission to view E-Signature tasks. Contact your Company Administrator.

The above conditions apply only if the status of E-Signature Task that is sent to you is "In Progress." If the status is not "In Progress," then the task window does not appear. Instead, you will be navigated to the E-Signature node in the respective project, shell, or home tab (or to the shell landing page, if the node is not deployed. In this case, you will be presented with the message: You do not have permission to view E-Signature tasks. Contact your Company Administrator.).

Document Manager (DM) and E-Signature

When the E-signature process for a document is incomplete (E-Signature Status = In Progress), the E-Signature request sender or the document owner can right click at the document or click the *gear menu* (⚙) and select **Recall E-Sign Request**.

> **Note**: This option is not available when the E-Sign process is already complete or when a document has not been sent for E-Sign. Alternatively, you can click the Actions option (toolbar) and select Recall E-Sign Request.

If you select multiple documents in the ***Document Manager (DM) Log*** and select **Recall E-Sign Request**, then:

- If all of the selected documents are such that their E-Signature Status = In Progress, then for each document:
  - The E-Signature request sent out to each signee who has not yet completed the E-Signature request (E-Signature Status = In Progress) is recalled, and the E-Signature Status = Recalled.
  - The E-Signature status column in the DM log is set to Recalled.

> **Note**: There might be signees who have completed the E-Sign request. Irrespective, the E-Signature Status for the file in DM is set = Recalled.

- The E-Signature Status in the E-Signatures node for each signee who has not yet completed the E-Sign task is set = Recalled, in the E-sign log as well as in the E-Signatures log.
- When you proceed to open a task that has been recalled, the system displays the alert: This E-signature task has been recalled and cannot be acted upon.
- If an E-Sign request is recalled for an External User, that user will not be able to act upon the E-Sign request by clicking at relevant links in the E-Sign email from Adobe Acrobat Sign or DocuSign.

- If any document in the user's selection has a completed E-Signature request, or it has not been sent for E-Signature at all, no change will take place, and the system ignores the recall request.

The Recall E-Sign Request option is available only to the:

- E-Signature request sender
- Document Owner

Other users will not be able to view or take action even if all other conditions are met.

When you select a file in DM Tile View and click the *gear menu* (⚙), the following options are available depending on the E-Signature Status of the selected document:

- Self-sign
- Send for E-Signature
- Recall E-Sign Request

Additionally, similar to the Flat View, the E-Signature related actions are available when you select one or more files in Tile View and click Actions.

Document Manager (DM) Filters

You can filter files (Document Manager > Documents > Edit View > Filters) in the DM log based on the E-Signature status. If all of the E-Signature features are enabled for the Company, Shell, and Project home landing pages, then the Edit View > Filters tab within the Document Manager log displays the E-Signature status as a field on the basis of which user can filter the records. You can filter on basis of multiple E-Signature statuses, and you can see the operators "equals" and "does not equal." The options are available at the end of all other fields, if configured, in uDesigner.

Document Manager (DM) Log

If your company, shell, or project is configured for E-Signatures (E-Signatures functionality is enabled), then:

- The "Search" window within the DM log displays the "E-Signature Status" as an option enabling you to search for files with particular E-Signature statuses within the DM. The search parameters are available at the very end of the list of all other parameters within the "Search" window, and you can conduct a search on the basis of E-Signature Status.
- Your search results log displays the "E-Signature Status" enabling you to filter the DM files based on the E-Signature status that you are searching for.
- The **View** > **All** option enables you to view all files and run the find option on the "E-Signature Status."

If your company, shell, or project is configured to display a value for the E-Signature type (Adobe Acrobat Sign [Adobe Sign] or DocuSign), then:

- When you export, or import, the structure and properties of a file in the DM, the csv will contain an additional column: "E-Signature Status," before the "Categories" column. The value of the status cannot be modified because the value is system-populated based on the file status through the E-Signature process.
- An export file is populated with the E-Signature status value, but an import file will always ignore the values contained in the "E-Signature Status" column.

> **Note**: If you enter values in this column during import, the system will ignore your input and run the import for remaining columns that allow modification.

If there are pending e-signature tasks for an existing E-signature type and you change the E-Signature type at shell or project level, the system will display an alert message allowing you to recall those pending e-signature tasks and change the E-Signature type. If you do not recall the pending tasks, then the E-Signature type at shell or project level will not change.

If you change the E-Signature type of a shell or project from "Default" to another value that matches the "Default" set at the company level, and there are pending E-Signature tasks for the "Default" E-Signature type, the system displays a message that the newly chosen E-Signature Type value is the same as the company Default and allows you to decide whether you still want to change the E-Signature type, or not. The same behavior applies when you change the E-signature type to "Default," and the "Default' value is the same as the current E-Signature type value.

Linked Documents

If a DM file is attached to a BP record, the system lets you sign or send it for E-Signature from within the DM.

If a linked file is sent out for E-signature, the BP record will remain linked to the original file. The E-signature status, E-Signature log, and so on, from DM does not reflect back into the BP record. When the E-Signature process from DM is completed, the BP continues to show as linked to the original file; however, the DM displays the signed and revised file.

> **Note**: If you link a DM file to a BP record and send the DM file for E-Signature from the DM as well as the BP record, the result will be similar to as if you attached a checked-out file from DM to a BP record. In this case, the system revises the file on the BP record (the E-Signature request [DM or BP record] that is completed first revises the

file in the DM first).

Creating and Managing Shortcuts

You may create convenient shortcuts to frequently used documents or folders.

Document and folder permissions always take precedence. That is, you must have the proper permissions to view, open, or modify the document or folder to which the shortcut is pointing.

Use Shortcuts

Shortcuts are a convenient way to quickly navigate to important or frequently used documents and folders. They can be used to quickly access and view a document or folder. Shortcuts cannot be downloaded.

> **Note**: If a folder or document is moved, any shortcuts that have been created for it will point to the new location. However, if you rename or delete a document or folder, any associated shortcuts will not be automatically modified. Users who try to use a shortcut to a document or folder that has been renamed or deleted will see an error message.

To use a shortcut

Do one of the following:

- Select the shortcut in the project or shell Documents log and click **Open**.
- Double-click the shortcut.

If the shortcut is to a folder, the folder opens in the folders view, displaying the contents. If the shortcut is to a document, the document opens.

Create a Shortcut

You may create a shortcut to a document or a folder. Clicking a shortcut to a folder displays the folder contents. Clicking a shortcut to a document opens the document for viewing.

> **Note**: For ease of use, create shortcuts to commonly used documents and folders and store them in a central folder.

To create a shortcut

1) Select the folder in which you want the shortcut to reside.
2) Select ⚙ **> Create Shortcut**. The New Shortcut window opens.
   In the **Name** field, enter a name for this shortcut. You can rename the shortcut.
3) In the **Source** field, click the **Browse** button. The Select Files window opens.
4) Select to the document or folder for which you want to create the shortcut. You can select the **Find on Page** icon to help you find a particular document or folder.
5) Click **Select**. The shortcut is created in the selected folder.

View or Modify Shortcut Properties

The Shortcut Properties window consists of the name of the shortcut as it appears in the project or shell Documents log and the path of the document or folder to which it points. It is not customizable in uDesigner.

In this field	Do this
Name	The name of the shortcut, as displayed in the log.
Source	The path of the file or folder to which the shortcut points. You can click the **Browse** button to change the source.

To view shortcut properties

1) In the project or shell Documents log, select the shortcut.
2) From the right-pane, select the **Properties** tab. The folder properties are displayed in the right-pane.

To modify shortcut properties

1) In the project or shell Documents log, select the shortcut.
2) Select ⚙ **> Edit > Properties**.
3) Make your changes and select **OK**.

Modify Shortcut Permissions

When you create a shortcut, you become its owner and have full access to it. You can grant other users access to it. A shortcut will have limited permission settings related to the document or folder to which it points.

If you have granted folder-level permission to other users and allowed the permission to apply to the contents of the folder, those permissions will apply to the documents that you add to it automatically; however, you can modify these permissions per document if needed.

To view the shortcut permissions:

1) Go to your project or shell (User mode) and click the **Document Manager** node to expand it.
2) Click the **Documents** sub-node to open the **Documents** log (for **Project Documents**).
3) Click an item (shortcut) from the log to select.
4) On the right-hand pane, click the **Permissions** tab to view the folder permissions.

To add or modify the shortcut permissions:

1) Go to your project or shell (User mode) and click the **Document Manager** node to expand it.
2) Click the **Documents** sub-node to open the **Documents** log (for **Project Documents**).

3) Click an item (shortcut) from the log to select.
4) From the toolbar, click the **Actions** drop-down list and select **Permissions** to open the **Permissions** overlay page. Alternatively, you can click the *gear menu* (⚙), next to an item and click **Permissions**.
5) On the **Permissions** overlay page, you can add or modify the shortcut permissions by using the following options:
   - **Inherit form parent folder <project name>**
     If the **Inherit permissions from the parent folder** checkbox at the top of the window is selected, the folder-level permissions will apply automatically and cannot be modified.
   - **Assign new permissions**
   - **Inherit Permissions** (**View** drop-down list)
   - **Apply these permissions to documents and sub-folders**

6. Click **Save** when done, or click **Cancel** to close the **Permissions** overlay page without any changes.

Copy a Shortcut

To copy a shortcut

1) Select the shortcut in the project or shell Documents log.
2) Select ⚙ **> Edit > Copy**.
3) Select the destination folder into which you want to copy the shortcut.
4) To copy with comments or markups attached to the document, select the **Include Comments/Markups** checkbox.
5) Click **Copy**.

Move a Shortcut

To move a shortcut

1) Select the shortcut in the project or shell Documents log.
2) Select ⚙ **> Edit > Move**.
3) Select the target folder into which you want to move the shortcut.
4) Click **Move**.

Rename a Shortcut

To rename a shortcut

1) Select the shortcut in the project or shell Documents log.
2) Select ⚙ **> Edit > Properties**.
3) Enter the new name and click **OK**.

Delete a Shortcut

When you delete a shortcut, it is moved to the Recycle Bin. Items in the Recycle Bin can be restored back to their original location or permanently deleted. Deleting a shortcut does not delete the folder or document to which it points.

To delete a shortcut

1) Select the shortcut in the project or shell Documents log.
2) Select ⚙ **> Edit > Delete**.
3) Click **Yes** to confirm. The document is moved to the Recycle Bin.

> **Note**: To delete multiple shortcuts, select the shortcuts and click **Actions > Edit > Delete**.

Change the Shortcut Source

You can change the file or folder to which the shortcut points by choosing a different source in the Shortcut Properties window.

To change a shortcut source

1) In the project or shell Documents log, select the shortcut.
2) Select ⚙ **> Edit Properties**.
3) If you want to rename the shortcut automatically with the name of the new source document or folder, delete the name in the **Name** field.
4) In the **Source** field, click the **Browse** button and browse to the new source document or folder.
5) Make your changes and select **OK**.

Favorites

Creating your Favorites List

Select and tag your frequently used files and folders within DM log, as favorites. This list is user specific and allows you to view, access, and delete frequently visited items in Document Manager.

To add files or folders to your favorites list:

1) From the DM log, select a file or folder.
2) Select ⚙ **> Add to Favorites**.

Managing your Favorites List

To view your Favorites list, from the Document Manager log, select ★ **Favorites**. A pop-up window displays all your files and folders that you have marked as favorite.

Task	Action
Sort the order of your files and folders.	From the Favorites pop-up window, drop and drag files or folders to change the order.
Find files or folder	From the Favorites pop-up window, click the **Find on Page** icon and start typing the name of your file or folder.
Remove files or folders from your Favorites list.	From the Favorites pop-up window, select a file or folder and click ⚙ **> Delete**, or click the **Delete** icon.
View the path of your file or folder	From the Favorites pop-up window, hover over a file or folder to view its location.
View the folder and file in the DM log	From the Favorites pop-up window, select a file or folder and click ⚙ **> Go to Folder**.

Opening your Favorite File or Folder

To open your favorite file or folder:

1) From the Document Manager log, select **Favorites**. A pop-up window displays all your files and folders that you have marked as favorite.
2) To open a file:

   From the Favorites pop-up window, select a file and click ⚙ **> Open** to open the file using the default Unifier Viewer. To open the file in AutoVue, select a file and click ⚙ **> Open in AutoVue**.
3) To open a folder:

   From the Favorites pop-up window, select a folder and click ⚙ **> Open** to open the folder in the Document Manager log.

Uploading Files

You can upload files or folder from your local system into the **Document Manager**.

> **Note**: You can navigate to different parts of the application through any browser, while the upload is in progress (in the background).

Asynchronous upload of files or folders allows you to upload files while simultaneously using the application. The login session is kept active if there are pending uploads; uploads are canceled if you sign out of the application.

You can view the status of your upload by clicking the **Upload Status** icon on the top banner (next to the **Announcements** icon). The color of this icon changes from blue (in progress) to green (successful) or red (failed) to indicate the status of the uploads. The Upload Status window displays a list of all files or folders that were uploaded within the last 15 days. From this window, you can see the name of the uploaded file or folder, size of the file, the reason for the failed upload, and the number of files in the uploaded folder. You can click on the file name or folder name to open or save the file. From the Upload Status window, you can also cancel pending and in progress uploads, and clear the upload history.

The file size for the uploads must be more than 0 bytes and less than the size limit that has been specified in the configurator (~2.5 GB).

If the file size for the uploads is not specified in the configurator, the actual file size for the uploads depends on the following:

- The network bandwidth, session time-out setting, and other pertinent parameters.
- Browser restrictions.

Additional information

- Drawing files are always uploaded synchronously, regardless of the browser you are using. When selecting multiple files all the files will be uploaded synchronously, if the upload contains one or more drawing files (.dwg).
- You can drag and drop folders onto the **Upload** window only if you are using Chrome or Edge.
- You can view the parent folder of the uploaded file in the **Update Status** window.
- You can navigate to the uploaded folder from the **Update Status** window.
- When using Chrome or Mozilla Firefox browser, in an asynchronous upload, only the drawing files (.dwg) are considered as reference files.

Using the Upload Status Window

From the top banner, select the **Upload Status** icon to view the Upload Status window. From this window, you can do the following:

- View a count of pending uploads.
- View the status of uploads. Failed uploads are in red; you can click the Info icon to view the reason for the failed upload.
- Cancel a pending or in-progress upload. Hover around the file or folder name and click the **X** icon. To cancel all pending and in-progress uploads, click **Cancel All**.
- Open or save the uploaded file or folder. Click the file or folder name.
- Open the parent folder of the uploaded file. Click the folder icon next the uploaded file.
- Clear the upload history. Click the Clear button. The history is saved for 15 days.

Uploading Files and Folders

1) Navigate to the project or shell or company **Document Manager** grouping node, and click **Documents** functional node to open the **Documents** log or window.
2) In the **Documents** log or window, click to select the destination (target) folder into which you want to upload the files.
3) Click the **Upload** icon ( ) to open the **Upload** dialog box.

   In this dialog box, you can select the **Revise automatically if file with same name exists** option, if necessary. The other two options (**Upload files only** and **Upload folders and files**) are selected by default and based on the folder options (**Options** tab).
4) Proceed to drag and drop the files, or folders, to the **Drag and Drop** field. Alternatively, you can click the plus icon, or anywhere in the **Drag and Drop** field, and select the file or folder to upload by way of Windows browser.
5) Click **Upload**.

   After a few seconds, the system will display a confirmation message. The file upload time depends on your server and network bandwidth.

   If you want to delete an item in the **Upload** dialog box, click to highlight the item, click the three horizontal dots icon, and click **Delete**.

> **Note**: If you have uploaded drawing and reference files marked as missing, see ***Resolving Missing Reference Files (Reference Manager)*** (on page 421).

Manage Uploading Drawing and Reference Files

The following drawing file types are supported: **DWG** and **DGN**.

The following lists the ways to manage uploading drawing files with associated reference files:

- The base file can be dynamically linked to the reference files, meaning that the base file always links to the latest version of each reference file. If a reference file is revised, the revised version will be linked to the base file.
- The base file can be statically linked to the reference files (i.e., the base file always points to a particular version of the reference file) regardless of whether it is the latest version, or not.

Downloading Documents and Folders

You can download copies of documents from the Document Manager to your local or network drive.

When you download files, the name of the downloaded files must be unique. If you select a number of documents or files in the Document Manager > Unpublished Documents folder and click to download them, and you notice that not all of your selected documents have been downloaded, then that is because duplicated names existed in the Unpublished Documents folder.

The file size for the *downloading* must be more than 0 byte. The actual file size for the *downloading* depends on the following:

- The network bandwidth, session time-out setting, and other pertinent parameters.
- Browser restrictions.

By default, the latest version of a document will be downloaded.

Shortcuts cannot be downloaded.

If the download window (Java console plug-in) is still open on your machine, you may not be able to delete, move, or modify the downloaded file as it will appear to be in use. If this is the case, close the plug-in window.

To download a document:

1) Select the document to be downloaded. You can choose only one document at a time. Shortcuts, folders, and empty documents cannot be downloaded.
2) Click the **Download** button.
3) If the document is a drawing file with reference files, the Reference window opens, listing all drawing and reference files. Click the **Download** button next to one of the files to download. The File Download window opens.
4) Click the **Save** button. The Save As window opens.
5) Browse to the location where you want to download the file and click **Save**.
6) If you are downloading drawing and reference files, repeat for each file.

To download a file or folder:

Select one or more documents or folders in the documents log. Shortcuts and empty documents cannot be downloaded.

1) From the **File** menu, click **Download**, or click the **Download** button. The Download Files and Folders window opens.
2) Browse to the location where you want to download the files.

Importing and Exporting in Document Manager

The following topics describe how to import and export using the Document Manager.

Import Folder Structure Template

If a folder structure template has been created in the Administration mode Standards & Libraries, you can import it into your project or shell document manager to quickly create a pre-designed structure of folders and subfolders. You can import the folder structure template into the root project or shell Documents or Company Documents node or into any subfolder.

To import a folder structure template

1) In the project or shell or Company Documents node, navigate to the target folder (or the project or shell Documents root node) into which you want to import the new folder structure.
2) Click the **Actions** menu and choose **Import > Folder Structure Template**. The Select Folder Template window opens.
3) Select a template from the drop-down list.
4) You can preview the template structure by clicking the **Preview** button.
5) When you are ready to import, click **Import**. The folders and subfolders defined in the template are created within the target folder you selected.

Import and Export Folders, Properties, and Empty Documents

You can import a folder structure and folder metadata (properties) from a CSV or Excel file. This procedure also allows the import of empty documents into the structure.

> **Note**: The term "file" in this topic applies to both comma-separated values (.csv) and Microsoft Excel files.

Before importing a file into **Document Manager**, you must follow these steps:

Step 1: Export structure and properties to a file

Your options are:

- **Structure and Properties (CSV)**
- **Structure and Properties (Excel)**

Exporting the existing structure and properties creates the file structure (rows and columns).

The file template will contain a list of documents and folders with their full paths and all attributes displayed on the **General** tab of folder and document properties (either by default or by design).

Documents and folder rows are identified by the first column (type).

The location of the folder or document is identified in the second column.

The order in which the columns appear is the same as they appear in the folder and document properties forms.

Step 2: Modify the file

While ensuring that you do not change the structure, proceed to add new folder, folders, document properties, or empty documents to the file.

You can modify the columns that are modifiable in a project or shell documents, only.

The read-only fields cannot be modified by importing.

Folder and document names are case sensitive.

> **Note**: As of the date of publication, there is a known issue with Microsoft Excel CSV files with 15 or more rows. See the procedure below for details.

Step 3: Import the modified file

Your options are:

- **Structure and Properties (CSV)**
- **Structure and Properties (Excel)**

The imported file can include new folders and documents (empty documents), as well as modified or additional properties that have been applied to existing folders and documents.

You can upload files into empty documents later by using the **Revise** option.

Export structure and properties to a file

To export structure and properties to a file:

1. Select specific folders or documents to export.
2. Click **Actions > Export > Structure and Properties**. Click **Yes** to confirm.
3. Save the file to your local system.

Modify the file

To modify the import file:

1. Open the file, in a compatible software application.
2. If needed, add new folders or documents in rows (will be added as empty documents) as needed. You can also add property information to existing folders and documents.
3. Save the file.

> **Note**: As of the date of publication, there is a known issue in the way that Microsoft Excel handles CSV files with 15 or more rows. In CSV files, columns are separated with commas. However, when the CSV template is opened with Excel, if one or more columns toward the end are empty, Excel will drop the additional commas from the 15th row onward, resulting in an error when you try to import the file. You can work around this in one of two ways:
>
> - Add your data to the CSV file in Excel and save the file. Then reopen the file in a text editor such as Notepad, find the rows that have the missing commas, and add the additional commas to these rows.
> - Use the text editor instead of Excel to modify column values in the

CSV file.

Import the modified file

To import the modified file into the **Document Manager**:

1. In project or shell **Documents**, select the folder into which to import the structure or properties.
2. Click the **Actions** menu and choose **Import** > **Structure and Properties**. The **File Upload** window opens.
3. Browse for the file, click to select, and click **OK**.
4. Click **Yes** to confirm.
5. On the **File Download** window, click **Save**, browse to a destination folder, and click **Save**.

You can import document manager attributes with comma-separated values (.csv) and Excel files.

You can also export the current structure and properties after making the selection in the **Document Manager**. The export file (the file name is suffixed with "Project Documents") has the following worksheets or tabs:

- **Instructions** tab

  Contains important instructions, tips, and additional information. Ensure that you read the contents.
- **Project Documents** tab

Use the **Project Documents** worksheet to update document structure and properties.

You can make changes to the file exported in the last step and import it using the option available under actions.

The Recycle Bin

When you delete documents, folders, or shortcuts from project or shell Documents, they are stored temporarily in the Recycle Bin. These items can be restored back to their original location. Items in the Recycle Bin remain there until you permanently delete them.

Note: If you are using a custom user mode navigator, you must add the Recycle Bin to the navigator.

Restore deleted items

Deleted documents, folders, and shortcuts that are still in the Recycle Bin can be restored back to their original locations.

Note: If you restore a folder whose parent folder has been deleted, the folder structure will be recreated. However, the other contents of the parent folder will not automatically be restored.

To restore deleted items in the Recycle Bin

1) Select the **Recycle Bin** node from left pane.
   - To restore a single item, select it and click the **Restore** button.
   - To restore all items in the Recycle Bin, click the **Restore All** button.
2) Click **Yes** to confirm.

Delete items from the Recycle Bin

After documents, folders, or shortcuts are deleted from the Recycle Bin, they cannot be retrieved.

To permanently delete items from the Recycle Bin

1) Select the **Recycle Bin** node in left pane and do one of the following:
   - Select the item and click the **Delete** button.
   - Click the **Empty Recycle Bin** button to permanently delete all items in the Recycle Bin.
2) Click **Yes** to confirm.

Index Reports

The index report utilizes the Oracle Primavera Unifier user-defined report engine. It lists content (documents, subfolders, shortcuts) within a selected folder, properties, and phase (contents may be associated with more than one phase). The index report can be generated in HTML, PDF, or CSV format.

To view an index report

1) Select a folder in folders view of the project or shell Documents or Company Documents node.
2) From the **Actions** menu, click **Index Report** and choose the format to display:
   - **HTML:** Displays the report in a browser window.
   - **PDF:** Creates a PDF file of the report.
   - **CSV:** Creates a CSV file of the report.

View Document Manager Audit log

To view the Audit log

1) Select a folder or document in the project or shell Documents or Company Documents log (or a folder in the folders view).
2) From the right-pane, select the **Audit Log** tab.
3) To view additional information about an Event, select the Event, and view the information in the **Audit Details** tab located to the right of the **Audit Log** tab.

To view the **Audit Details** tab, you might need to resize the Audit Log tab and the use screen split (icon with three vertical dots) to make adjustments.

The information displayed in **Audit Details** includes the mode of entry or change to a record and line items in the record, whether the change was processed through REST, SOAP, CSV, or reverse auto-population. This tab contains the following toolbar options:

- **Print (Export To CSV and Export to Excel)**
- **Find on Page**

Project or Shell Documents or Company Documents Attached to a Business Process

A document that is attached to a business process record maintains a link with that record. You can view the business process records to which any document is linked (permissions to view BPs apply). Because of this link, documents that are attached to BP records cannot be deleted.

Launch a Business Process from the Document Manager

A business process record can be launched directly from documents (**Documents** sub-node) within the **Document Manager** node.

For information about creating a BP record in **Document Manager**, see the *Unifier Business Process User Guide*.

View Linked Business Process Records

If a document in project or shell Documents or Company Documents has been attached to one or more business process records, an icon will appear in the BP column next to the document in the log. You can view the records to which the document is attached as long as you have view permissions for that BP.

To view business process records to which a document is linked

1) In the project or shell Documents or Company Documents log, select a document.
   Documents with the paper clip icon ( ) in the BP column are linked to BP records.
2) From the right-pane, select **Linked Records**.
3) To open the BP record form, click the hyperlink for the **Record Number**. You must have permission to view the specific BP in order to open the record.

View and print the business process audit log

To view a business process Audit log

From the right-pane, select the **Audit Log** tab. The Audit Log tab lists each event associated with the business process and workflow. The date and time stamp of each event reflects users' current time zone as set in their User Preferences.

To view business process Audit Details

To view additional information about an Event, select the Event, and view the information in the **Audit Details** tab located to the right of the **Audit Log** tab. (To view the **Audit Details** tab, you might need to resize the Audit Log tab and the use screen split (icon with three vertical dots) to make adjustments.) The details also include the user's current time zone for reference.

To print a business process Audit log

1) On the **Audit Log** tab, click the **Print** button, and select **Print**.
2) In the **Print** dialog box, click **Print**.

   A PDF file is created.

Unpublished Documents

When a user uploads a file from a local machine and attaches it to a business process, the document is automatically stored in the **Unpublished Documents** log as soon as the business process is sent. The link to the business process is also listed in the **Unpublished Documents** log. The **Unpublished Documents** log or window is an automatic repository for files that have been attached to business processes and which have not yet been published in the company or project/shell (**Company Documents** and **Documents** functional nodes).

You can access the unpublished documents for the company or project/shell in the respective **Unpublished Documents** functional node.

- To access the **Unpublished Documents** log in your Company Workspace: Go to your Company Workspace, switch to **User** mode, and from the left Navigator click the **Document Manager** grouping node to expand it. The **Unpublished Documents** functional nodes appear under the **Document Manager** grouping node, in your Company Workspace (**User** mode).
- To access the **Unpublished Documents** log in your project/shell: Go to your project/shell, switch to **User** mode, and from the left Navigator click the **Document Manager** grouping node to expand it.

Within your company or project/shell, when you click the **Unpublished Documents** functional node, the **Unpublished Documents** log or window opens which displays a list of unpublished document. The following topic provides the details of the **Unpublished Documents** log or window.

Unpublished Documents and Link to BPs

The link to the BP allows the BP record to be reviewed, allowing the administrator to review where the document originated from. This provides a means to control the documents that are accessible in the company or project/shell **Document Manager**.

Example

A subcontractor submits a Request for Information (RFI) BP with attached documents requesting input from the architect. These attached documents can be traced back to the original BP through the link, and the documents become available in the unpublished area of the Document Manager. The administrator can then review the documents and make the decision to publish them into the project or shell or Company Documents node and where to store them, or not to publish them at all.

Note the following:

- This process applies only to business processes that support form attachments.
- Text-type BPs, such as action items or RFIs, are excluded. This is because text-type BPs, by design, can have file attachments only in comments, not to the form itself.
- Files cannot be directly uploaded to or deleted from the **Unpublished Documents** folder.
- Permissions for unpublished documents are at the node-level only. You can either see all the documents or you cannot see any. There are no document-level permissions. Folder-level permissions are not applicable, as there are no folders in **Unpublished Documents**.
- Drawing files are handled with the base file listed and the associated reference files bundled with it, similar to a zip file.

Unpublished Documents Log

The documents in the **Unpublished Documents** log has the following toolbars:

- **Publish** ( )

  To publish a document.

  When you click **Publish**, the **Publish -Select Destination Folder** window opens. The function of Publish is similar to the Move option in Document Manager (DM). In the **Publish -Select Destination Folder** window you can:

  - Select the document phase (**All Phases** or **Current Phase**) from the drop-down list field on top to load pertinent folders from Document Manager into the space below.
  - Use the **Find on Page** link to open a row under the **Name** block and search for a particular folder from the Document Manager.
  - Use the scroll-bar to parse through all folders from the selected phase so you can browse and select a destination folder for the document publication.
  - Include comments by selecting the **Include Comments** option.
  - Ensure that if a file with same name exists in the Document Manager, then it gets revised by the selected file in Unpublished Documents by selecting the **Revise automatically if file with same name exists** option.
  - Discard your changes by clicking **Cancel**.
  - Publish the selected file to the chosen folder in the **Documents** sub-node under **Document Manager** node, by clicking **Publish**. This option is available only after you have selected a destination folder from the available list. When you click **Publish**, the **Publish Status** window opens. This window displays a grid with the following columns:

- No
- File Name
- Title
- Status
- Message

If you select more than one file and click Publish, the **Publish -Select Destination Folder** window opens and the names of all of the selected files will be listed at top of the window.

- **Download** (⬇)

  To download documents or folders onto your local or network drive. If you select more than one file to download, the system creates a zip file for all of the selected files and opens the download window.

- **Switch to Tile View** (▦)

  To view documents and folders as tiles. When this option is selected, the icon changes to **Switch to List View** (☰).

- **Search** (🔍)

  To search for unpublished documents in the log. For more information, see ***Searching Content***.

- **Find on Page** (🔍)

  To find files on the displayed page. For more information, see ***Finding on Page***.

The documents in the **Unpublished Documents** log has the following columns:

- File Name
- Record Number
- Comments
- Ref
- Size
- Title
- Rev. No.
- Publication Date
- Issue Date

For each record, the **Unpublished Documents** log screen displays the following tabs in the right-hand screen:

- Properties

  Under General, this tab displays the following read-only information about the selected file:

  - File Name

    To change the file name, access **Properties** from the *gear menu* (⚙).
  - Title
  - Size
  - Issue Date
  - Revision No.

- Publication No.
- Publication Date

- Linked Record

  To see records linked from the same, or different, business process log. The Linked Record tab displays the Record Number, Name, Title, Status, and Upload Date of the linked records
- References

  This tab appears only if the selected file has associated references.

You can use the **Expand** icon (⛶) to expand the right-hand screen.

Each record has a *gear menu* (⚙) that enables you to perform the following actions:

- **Open**

  To open the selected document in viewer.
- **Open in AutoVue**

  To open the selected document in AutoVue viewer.
- **Properties**

  To review the document properties and change the file name.
- **Publish**
- **Download**

Publishing of Documents Automatically

By default, files attached to business processes are placed in the Unpublished Documents folder in the Document Manager. A Publish Path data element can be designed in business processes in uDesigner to specify the automatic publishing of documents to a specified path and override the default. For Document-type business processes With Folder Structure, the designer can specify that a configured folder path be appended to the folder structure. This appended path is based on the path configured in the **uuu_dm_publish_path** data element on the business process form, and the selection of the Append Line Items Folder Structure to AutoPublish Path option, which is documented in the *Unifier uDesigner User Guide*.

The automatic document publication folder path is built based on the values of data elements specified in the path defined in the data element **uuu_dm_publish_path** (Publish Path) in uDesigner. To help you understand why automatic publishing does or does not occur and the results of automatic publication, these are the rules for the automatic publication of documents:

- The data element **uuu_dm_ publish _path** is used in business process design to specify the folder path into which the file should be published in the Document Manager. This applies to Company, project, or shell business processes. A formula is configured to define the value of the path to use when automatically publishing documents.

On the Creation Step of the Workflow-type business process, the system evaluates, or replaces, the "record_no" in the data element "uuu_dm_publish_path" or in the data element "uuu_dm_record_info_path," when the "record_no" is used directly as part of formula, as shown in the example below. This condition (evaluation or replacement) does not apply to the "Advanced Formula" type data element.

Example:

Suppose 'uuu_dm_publish_path' and 'title' are defined as formula.

=> uuu_dm_publish_path = firstName + record_no + title

=> title = subject + record_no

uuu_dm_publish_path would be evaluated as 'firstName + record_no + subject' ('record_no' in data element 'title' is ignored)

- To use the automatic publishing feature, you must know (from your Administrator) which data elements comprise the publish path that will populate the Publish Path field. The values in this field are used to create and populate the folders in the Document Manager with the business process attachment.
- If you do not have permissions granted to upload documents to the Document Manager, the file is placed in the Unpublished Documents folder.
- If there is no folder defined or the path is invalid, the file will be placed in the Unpublished Documents folder.
- If the folder specified in the defined path does not exist in the Document Manager as defined by the data element **uuu_dm_publish_path** (Publish Path), it should be created automatically and inherit rights from the parent folder, (if you have permission to create folders), otherwise the file will be placed in the Unpublished Documents folder.
- If the file exists in target file, the file shall be published as a revision.
- The owner of the automatically published document is the owner of the business process that published it.
- The folders created and used for automatic publication are based on the values of the data elements specified in the **uuu_dm_publish_path** data element (Publish Path). For example, if the publication path contains the data elements State and City, and the values for those data elements are Iowa and Rapid City, the folder structure will be Documents/Iowa/Rapid City.
- The publication path displays in the Publish Path data element on the business process form. If the path is shown as /, the documents will publish to the Documents folder. Usually, when the / to shows in the Publish Path field, this indicates that you have no values in the fields for the data elements configured as the publication path. Be sure that you have values in the fields that are part of the publication path.
- If a business process has a publication path configured on the upper form, and another on a line item, and the path on the line item is invalid, the attachment will be published to the path designated on the upper form. If the paths on the line item and the upper form are both invalid, the attachment is published to the Unpublished Documents folder. The exception is that in a non-workflow business process, if the publication path configured on the line item is invalid, the attached document is not published in any folder.
- When a document is published from a business process (BP) record, the system compares the data elements (DEs) in the BP record with the DEs in the Document Attribute Form and where the DEs match, the system copies the values from one DE to the other DE.

- If the attachment is on the Upper Form, then the system matches the DEs on the Upper Form with the DEs on the Document Attribute Form and updates the values.
- If the attachment is on the Detail form, then the system compares the DEs on the Detail and the Upper Form. If a DE exists on both the Upper Form and the Detail form, then the system matches the value of the DE that is on the Detail form, only. This enables you to override the "default" value that exists on the Upper Form.
- The system lets you selectively restrict attachments from getting published, as explained below:
  - For Document-type BPs: Open the **Document Review** window and deselect the **Publish** checkbox for the attachments that you do not want published.
  - For non-Document-type BPs: Open the **Document Review** window, or the respective attachment log (record or Line Item) and deselect the **Publish** checkbox for the attachments that you do not want published.
- On a Document-type BP, when a value is added to **uuu_revision_no** or **uuu_title or uuu_issue_date**, it will get respectively copied over to **uuu_file_revision_no** or **uuu_file_title** or **uuu_file_issue_date** when the document is published to **Document Manager**.
- After a document that has been attached to a business process is published, it will not get published again even if you have the uuu_dm_publish_path defined in consecutive forms in your workflow.
- If you are attaching a document to your business process by selecting the document from Document Manager, the document will not get published again from your business process because it is already published in Document Manager.

Opening Unpublished Documents

To open and view an unpublished document, select a document in the **Unpublished Documents** log, click the *gear menu* (⚙) and click **Open** to open a window that shows the unpublished document and any comments that are related to that unpublished document.

Opening Linked BP Record

To open the BP record to which an unpublished document is linked:

1) Select the document in the **Unpublished Documents** log.
2) From the properties pane (right-hand), click the **Linked Record** tab.
3) Click the record number of the BP record you wish to view to open a new window which contains the following details:
   - BP details, on the left-hand pane.
   - Properties of the BP, on the right-hand pane.

     The properties are detailed in the following tabs:
     - **Attachments** tab
     - **Comments** tab
     - **Linked Records** tab
     - **Workflow Progress** tab

- **Audit Log** tab
- **Reference Records** tab

Viewing Unpublished Document Properties

To view the properties of an unpublished document, select a document in the **Unpublished Documents** log and the **Properties** tab will display on the right.

Viewing Unpublished Document Comments

You can view any comments that are added to a document, from the BP. To view comments or markups on an unpublished document:

1) Select a document in the Unpublished Documents log and, right-hand, click the **Linked Record** tab.
2) Click the record number of the associated BP record, a new BP window will open.
3) On the right-hand, under the **Attachments** tab, click the *gear menu* (⚙) and select **Review** or double click document and a new Attachments window will open. Comments may be viewed on the right-hand log.

Downloading Unpublished Document

To download an unpublished document, select a document in the **Unpublished Documents** log and click **Download**, from the toolbar.

Deleting Unpublished Document

If a document is linked to a BP, the document cannot be deleted directly from the **Unpublished Documents** (or from the **Company Documents** and **Documents** log windows).

A document is stored in the **Unpublished Documents** log or window automatically and as soon as a document is directly uploaded from the local machine, or network, and attached to a business process.

A document can be deleted from the **Unpublished Documents** log or window:

- If the uploaded document is deleted from the BP during the workflow, or
- If the document is deleted when the BP is in **Draft** mode, in case of a non-workflow BP.

You cannot delete a document:

- If the BP has already completed the workflow, or
- If the document has already been moved by an administrator to the Published Documents folder.

> **Note**: You can create a special folder in project or shell Documents for documents that you want to publish and limit access to those documents, but the documents remain traceable.

Renaming Unpublished Document

You can rename an unpublished document, if your administrator has enabled the document name field as an editable and required field. When you rename an unpublished document, the change is reflected everywhere the unpublished document is referenced or linked to. The name is also updated in formulas that use file name in its calculations.

> **Note**: You cannot change the extension of a file, you can only rename the file.

To rename an unpublished document:

1) From the **Unpublished Document** log, select an unpublished document.
2) On the right-hand pane, in the **Properties** tab, edit the **File Name** field with a new file name and select **Save.**

Searching for and Sorting Unpublished Document

To search for an unpublished document:

1) Click **Search** in the **Unpublished Documents** log toolbar to open the **Search** window bar, and from the right-hand field select a category that you want to search for. For example, select **File Name**. These categories that are listed correspond to the column headings in the **Unpublished Document** log (**File Name**, **Content**, **File Type**, **Record Number**, **Rev. No.**, **Title**, **Publication Date**, and **Issue Date**).
2) In the left-hand field, enter a value that corresponds to the category that you had selected, in the right-hand field. For example, if you selected **File Name** in the right-hand field, enter the name of the file in the left-hand field.
3) Click **Search** in the **Search** window. A new **Search** window will open which has two panes.

   The right pane lists the items that correspond to your search, in columns. The **Search** window tool bar options are:

   - **Publish**
   - **Download**
   - **Switch to Tile View** / **Switch to List View**
   - **Find on Page**

   The left pane of the **Search** window enables you to sort or filter unpublished documents. In the left pane, you can select options to sort or filter unpublished documents based on results from your search.

   The default options are as follows:

   - **Group By** - Publication Date
   - **Format** - Drawing Files, PDF, Word, Excel, Powerpoint, Images, Text, Others
   - **Publication Date** - Last 7 days, Last 15 days, Last 30 days
   - **Bluebeam Session Status** - Active, Finalized, Archived, Deleted in Bluebeam
4) Follow the prompts to complete your search. You can click **Change** to open the **Search** window bar and change your search parameters.

> **Note**: This search option can be customized through uDesigner. If a designer has imported Document Manager attribute forms, the search criteria can also be customized. This means that the fields on which you can search may differ from the above list.

Publishing Unpublished Documents to Company or Project/Shell

Publishing a document (from the **Unpublished Documents** log) to the **Company Documents** log, or the project/shell **Documents** log, will make the document to the team members, with the full functionality made available in that log or functional node.

> **Note**: Only the administrator (administrator or other user with full access to the **Document Manager**) can publish documents from the **Unpublished Documents** functional node (company or project/shell) to the **Company Documents** log, or the project/shell **Documents** log.

To publish an unpublished document to the **Company Documents** log, or the project/shell **Documents** log, select the document in the **Unpublished Documents** log, click the *gear menu* (⚙) and click **Publish**.

To publish multiple documents, select one or more documents and click **Publish** in the toolbar. A new **Publish** window will open. If you select documents with the same name to publish, the **Duplicate Files** window opens to allow you to remove or delete the duplicate files.

1) Select a destination folder to publish the document or documents to.
   I. You may select **Include Comments** if you want to include any attached comments with the document.
   2. **Revise automatically if the file already exists** is selected by default. Deselect if you do not want to automatically revise existing documents. If you deselect this, the new version of the document will not be copied into the Document Manager and are skipped.
2) Click **Publish** to finalize. The Publish Status window will open, and displays the status of the documents as they are published. The window will display the following:
   - **No.**
   - **File Name**
   - **Title**
   - **Status**
   - **Message**
3) Click **OK** to close this window.

> **Note**: The user who publishes the document becomes the owner. In the **Company Documents** log, or the project/shell **Documents** log, select the document, and click the **Permissions** tab on the right-hand log to

grant the proper permissions to the team members who need it. You may want to click **Properties** tab to review properties and update if necessary.

Portfolio Manager

The Portfolio Manager is where the budget forecast planners in your company can gather cost and schedule information on projects (both planned and in execution) and perform analyses on "what if" scenarios. These scenarios are used to propose an optimal mix of projects for a portfolio, based on available budget targets and the strategic goals of the company.

As a planner, you can create a portfolio for a specific "planning horizon" (for example, from 2014 through 2020), and then create multiple scenarios in that portfolio. Each scenario can use forecast numbers and actuals, as well as schedule dates, for both planned and active projects in a specific shell type across a hierarchy in the company.

You create these scenarios on sheets, one for each scenario. The scenario sheets can pull in the following data from any shell type in a hierarchy:

- Project information from the shell attribute form or single-record business process
- Project start and end dates from the shell attribute form or single-record business process
- Cash flow data (both forecasted and actual) from each project's Cost Manager

With this data, you can forecast costs over a specific time period (called a "period structure"). You can then manipulate scenarios by:

- Including or excluding projects
- Pushing start dates for planned projects into the future
- Modifying project end dates to change the project's duration
- Proposing different cash flow distribution numbers by manually editing the cash flow columns
- Negotiating proposed budgets with project managers

After these scenario analyses have been completed, the best (or several best) scenario(s) can be sent to the executive decision makers for approval.

After a scenario has been approved, the system:

- Marks the approved scenario "shared" so that project managers can see the approved dates and numbers. The scenario is set to read-only mode and can no longer be modified or deleted.
- Updates each projects' original budget numbers with the proposed numbers on the approved scenario.
- Updates each projects' monthly or yearly cash flow numbers with the proposed numbers on the approved scenario.
- Updates the project start date (if it was changed) for any planned projects that will begin during the portfolio's planning period.
- Locks the budget and cash flow numbers to prevent any further changes.

In This Section

View and Open Portfolios

Portfolios are grouped by their portfolio type. Scenarios are grouped under each portfolio.

To view portfolios

1) In User Mode, open the shell where the Portfolio Manager resides.
2) In the Navigator, click **Portfolio Manager**. The system expands the navigator to show the portfolio types currently loaded into the system.
3) In the Navigator, click the portfolio type that contains the portfolio you want to view. The system displays the portfolios for this type in the right pane.

   The portfolio type log window contains the following *toolbar* options:

   - **Create**

     To create a new portfolio manager sheet, or to create a new portfolio manager sheet for the next planning period.

     When you select an existing portfolio and click **Create** > **Portfolio**, or click **Create** > **Plan for next period**, the **Add Portfolio** window opens which has two blocks; the general block and the options block. For each block, enter the values in the fields and click **Save**.
   - **Delete**

     To delete a selected portfolio in the portfolio type log window.
   - **Refresh**

     To refresh the list of portfolios in the portfolio type log window.
   - **Print**

     To print the list of portfolios in the portfolio type log window or export to CSV or Excel.
   - **Search**

     To open the **Search** block and search for a particular portfolio in the portfolio type log window. Use the following toolbars (the icons on the right-hand corner) to dock the **Search** block, clear values in the search fields, apply the search criteria, or close the **Search** block:
     - **Dock Right**
     - **Clear**
     - **Apply**
     - **Close**
   - **Find on Page**

     To open a row in the list of portfolios in the portfolio type log window and find items according to the column headings. See the portfolio type log window contains the following columns, below. To close the row, click the **Find on Page** option again.

- **View Help menu**

  To access the portfolio type help (not available), or the portfolio type training (User Productivity Kit).

The portfolio type log window contains the following *columns*:

- **Attachments**
- **Portfolio Name**
- **Planning Period**
- **Creation Date**
- **Creator**

The portfolio type log window contains the **Properties** pane (the right-pane) that appears when you click to select a portfolio. The **Properties** pane, similar to the **Properties** window (accessed by the **Properties** toolbar option available in an opened portfolio), enables you to access the following information:

- **Portfolio Name**
- **Planning Period**
- **Creation Date**
- **Creator**
- **Planner Comments**
- **Decimal Places**

To open a portfolio

1) In User Mode, open the shell where the Portfolio Manager resides.
2) In the Navigator, click **Portfolio Manager**. The system expands the navigator to show the portfolio types currently loaded.
3) In the Navigator, click the portfolio type that contains the portfolio you want to open. The system displays the portfolios for this type in the right pane.
4) In the portfolio type log window, click to select a portfolio and either double-click to open it, or click on the *gear menu* (⚙) and click **Open** to open the portfolio details page or pop-up to either:
   - The scenario that has been marked for sharing
   - The most recently updated scenario

Within either of the scenarios, you are presented with two tabs (for example, a **Budget Planning** tab and a **Dashboard** tab).

In this window, you can click the plus option (the plus symbol + next to the scenario) to open the **Add Scenario** window, add the title for your new scenario, add projects, and when finished, click **Save** to add your new scenario. At the same level as the tabs, you have the option to:

- Approve a scenario (or tab)
- Share or unshare a scenario (or tab)

- Duplicate the information of a scenario (or tab)

In the default tab of the scenario that has been marked for sharing, or the most recently updated scenario, you can use the *toolbar* options to:

- Select projects
- Switch from the grid log view (default) to the Gantt chart log view
- Change the view of the log by selecting with columns to be presented on the log
- Edit the view of the log
- Print the log items or export the items to a CSV or Excel file
- Refresh the list log items to get the latest, or the most up-to-date
- Access the Properties pane of the portfolio
- Collapse or expand all columns groups (You can group monthly reports into yearly groups)
- Find items on the log

In each row, you can:

- Click the *gear menu* and remove, or unlink, a project from the scenario.
- Click on a project number cell to open the project.
- See the following amounts, for each project, after the split at the bottom of the log:
  - **Total**
  - **Target**
  - **Difference**
  - **Current Project Data**
- The number of projects appear at the very end of the screen.

Additional information

When a cell value in the Project Portfolio Manager (PPM) Sheet is updated for a current project data, the system places a **Warning** symbol (a triangle with an exclamation mark in the middle) in the cell to indicate that the cell value differs from the current project data.

When you conduct a **Find on Page** in the log view (grid), if the value of an item in your filter has no match, then the bottom part of the grid (after the split at the bottom of the log) will remain as it was, and it will not change from what it was prior to conducting the **Find on Page**. The bottom part of the grid will change only when the value of an item in your filter has a match.

When exporting your grid to a file, the column groups are exported, too.

Read-only cells in a grid cannot be deleted. Note that the read-only cells are highlighted grey.

Create or Modify a Portfolio

You can create a portfolio "from scratch," or you can create one using a portfolio that has been approved for the current planning period.

To create a portfolio, you must have Create or Full Access permission.

To create a portfolio

1) In User mode, open the shell where the Portfolio Manager resides.

Note: Portfolios can only be created at the project level, not at the company level.

2) In the Navigator, click **Portfolio Manager**. The system expands the Navigator to show the portfolio types currently loaded into the system.
3) In the Navigator, click the portfolio type that contains the portfolio you want to view. The system displays the portfolios for this type in the right pane.
4) In the portfolio type log window, click **Create** to create a new portfolio manager sheet, or to create a new portfolio manager sheet for the next planning period.

   When you select an existing portfolio and click **Create** > **Portfolio**, or click **Create** > **Plan for next period**, the **Add Portfolio** window opens which has two blocks: the general block and the options block. For each block, enter the values in the fields and click **Save**.

After you create a new portfolio, the system displays the portfolio name in the right pane and automatically creates an initial scenario sheet called Scenario 1. On this sheet, the system displays the projects that:

- Are included in the scenario, if the projects are configured to be automatically added
- Can be included on the scenario, if the project are configured to be manually added.

The project records for the scenario sheet are extracted from the database using a query that your Administrator created when the portfolio was configured. Whenever you open a portfolio, the system re-runs the query and adds or removes projects from the scenario depending on whether or not the project matches the query criteria. For example, a project that was previously on the sheet may be dropped from the sheet if it no longer meets the query criteria. Another project may be added to the sheet because it now meets the query criteria.

In this field:	Do this:
Portfolio Name	Enter a name for the portfolio you are creating.
Planning Period	Select the year for which you want to analyze the data in this scenario.
Creation Date	This field shows the current date.
Creator	This field shows the name of the person creating the portfolio.

In the Options block:	Do this:
Use Decimal Places	To specify the number of decimal places that the column data should display, select this option.
Use 1000 Separator (,)	If you want the data to be formatted with a separator (for example, 1,000, not 1000), select this check box.

In the Options block:	Do this:
Negative Number Format	Specify how negative values will be displayed on the sheet: with a negative sign, or in parentheses.
Use Currency Decimal Precision	To use the number of decimals used within areas such as Base Currency, Project Currency, and Transaction Currency, select this option.

Create a portfolio from an approved or shared portfolio

Rather than create a completely new portfolio for your next planning period, you can save time and effort by "copying" a portfolio that has already been shared or approved for the current planning period.

To create a new portfolio from an approved one

1) Open the Portfolio Manager log and select the portfolio you want to copy for the new planning period.
2) From the **File** menu, choose **Plan** for next period. The Portfolio Properties window opens.

   The General tab of the Properties window will show the name of the portfolio you selected as the new portfolio's name. In addition, the Planning Period field will display that portfolio's next planning period by default.
3) In the **Name** field, change the portfolio name.
4) If necessary, you can change the planning period by clicking the drop-down list beside the Planning Period field.

> **Note**: The combination of the portfolio name and the planning period must be unique.

5) If necessary, you can change the numeric format on the **Options** tab.
6) Click **OK**.

   The system displays the portfolio name in the right pane and automatically creates an initial scenario sheet called Scenario 1. This scenario sheet will contain all the projects that were present in the portfolio you copied. These projects will show the data that was current for each project at the time the portfolio was copied, based on the matching monthly and yearly cash flow columns. For the new scenarios, the system will calculate the new totals and then calculate the variances to show the differences.

> **Note:** If the original portfolio contained monthly numbers, and the new portfolio contains only a year column, the monthly numbers will be consolidated for the year. Conversely, if a year column is being copied into a portfolio with monthly columns, the number will be divided into monthly columns.

Sort a Portfolio Log

You can sort the portfolio log by portfolio name into ascending or descending alphanumeric order. To do so, click the triangle icon on the right side of the Portfolio Name column.

Find, Sort, and Delete a Portfolio

Find a Portfolio

For information on searching for a portfolio, see the *Unifier General User Guide*.

Sort a Portfolio

You can sort the portfolio log by portfolio name into ascending or descending alphanumeric order. To do so, click the triangle icon on the right side of the Portfolio Name column.

Delete a Portfolio

1) Open the Portfolio Manager log.
2) Select the portfolio(s) you want to delete.
3) On the toolbar, click the **Delete** button.

About Scenario Sheets

As the budget forecast planner, you can create scenarios to plan an optimal portfolio of projects for the company, based on available budget targets and strategic goals.

Portfolio management entails collaboration and negotiation between you, as the budget forecaster, and the project managers in your company. At their respective project levels, project managers maintain project information and create cash flow budgets and projections in the Cost Manager.

In the Portfolio Manager, on the scenario sheets you create, the system collects the budget and projection numbers from the projects' Cost Managers, as well as project start and end dates from the project information.

During a scenario analysis, you can:

a) Apply regional budget targets
b) Group the projects in the scenario according to project characteristics
c) Sort and filter the rows of project data and analyze the summary totals
d) Accept the project managers' budget numbers or propose new numbers
e) Accept the schedule dates, or remove or postpone planned projects
f) Create additional scenarios to reflect other possible forecasts

> **Note**: The numbers you propose in a scenario will NOT affect a project's live data. Your proposed numbers are stored only in the Portfolio Manager and will not affect live project data until a scenario has been approved by your company management.

During this analysis, you will likely be in touch with project managers to negotiate these numbers and dates until you reach agreement.

Project managers will not see the changes you make on the scenario sheet. Instead, the project managers must create a "shared" type of portfolio budget curve. This curve shows your proposed numbers for the project. The project manager can include this curve on the cost worksheet, along with the forecast budget, or any other budget curve, in order to see the difference between the project's numbers and your proposed budget numbers.

In order for them to see the curve, you must share the scenario (see ***Share a Scenario (Standard View)*** (on page 470)).

For information about the portfolio budget curve, refer to the Unifier User Help for instructions on how to create cash flow curves.

After you have completed a budget forecast analysis using these scenarios, you can send the best (or several best) scenario(s) to the executive decision makers for approval by "sharing" the scenario.

Gantt View

Gantt view shows you how capital is used over time. It allows you to quickly adjust schedules to achieve a better combination of projects within schedule and target. You can access a Gantt view of any scenario in which one or more projects is selected for budget planning. Click **Gantt** in the tool bar to display a Gantt distribution of proposed total over time on the grid. You can open the dialogue of select projects and add projects to the Gantt view.

Make schedule adjustments by moving Gantt bars and adjusting the project schedule. You can view the target and difference rows simultaneously. You can also change start and end dates, and the Gantt view will update accordingly. Click **Save** or **Cancel** after making changes.

> **Note**: In the case of a standard planning period and if you have chosen some years as monthly, all Proposal Distribution columns will be displayed in months.

Portfolio Dashboard

The portfolio dashboard allows you to gather insights by looking at visual representations of Risk vs. Benefit, Investment vs. Return on Investment (ROI), and so forth. The dashboard displays all project data that has been selected in Budget Planning of the current scenario. Click **Dashboard** at the top of the scenario sheet to view the portfolio dashboard. A bubble chart displays alongside six fields with drop-down menus: Chart Type, X-Axis, Y-Axis, Bubble Size, Shape, and Color. Use the drop-down menus to select values for each field. A bubble color legend is displayed below the chart.

Click **Reset** to change all drop-down values to select.

Click **Apply** to configure the chart based on your selections.

Click **Update** to apply your configuration to the chart. The chart configuration saves upon clicking Update.

> **Note**: The system will not display the bubble chart legends when the number of projects exceed 100 (one hundred) items. This is the limitation of the technology framework.

Open a Scenario Sheet

On the Portfolio Manager log, double-click the portfolio that contains the sheet you want to open.

The system displays one of these scenario sheets:

- The scenario sheet marked "shared"
- The scenario sheet that was last updated, if there is no shared scenario

You can resize the column that is available in the left of the split. The fields, in the left side of the split, will be editable along with the fields in the right side of the split.

In the Project Portfolio Manager (PPM) scenario sheet, regardless of their position (left or right splits), the following are considered special columns, and read-only:

- Project Name
- Project Number
- Project State

These fields are read-only because the option “Enable Column Editing” (in the Column Properties window) is not selected.

For the “Start Date” column, if the Project State is in execution, then the column will not be editable in the scenario sheet, whether placed in right or left side of the split.

For the “Start Date” column, if the Project state is not in execution, since the field is editable in the right side of the split, if the column is moved to left it can be edited in that scenario sheet.

The read-only columns will have a background color.

For a selected cell, the corresponding row, and column header, will be highlighted in color, with border.

Monthly Breakdown of Actuals Values in Scenario Sheet

For the projects that are in-progress, where Forecast Curve is used (not the Baseline Curve), if the Administration has selected to display the monthly breakdown of Actuals (Display monthly breakdown of Actuals option in the portfolio Configuration window), then:

- Within the Portfolio Manager for the current year, all months prior to the current month will display the corresponding value from the Actuals curve, and the fields will be read-only.
- The current month will display the value from the Forecast, or the value from Actuals curve. After the Actuals value is displayed, the cell becomes read-only.

Similarly, the **Pre-Actuals** (in the Project Portfolio Manager) will contain the total, from the Actuals curve, for all previous years if the Actuals source is defined.

Example

For project City4, the user has defined Actuals source (in the Configuration window of the portfolio) for period 2017.

For period between 1/1/16 to 12/1/17, the total Actuals amount is $7200.

The Actuals total for period 1/1/16 to 12/16 is $5806.45.

When the user opens the Project Portfolio Manager for period 2017, the "Pre-Actuals" column will show the total amount from Actuals for previous year (1/1/16 to 12/1/16), and the Cash flow Curve displays a steady incline.

Considering it is May 2017:

When the Actuals source is defined (in project City4) for the columns from Jan 2017 to April 2017, then when the selected tab in the Portfolio Manager is not shared or is not approved, the screen displays the corresponding value (read-only) that is coming from the Actuals curve in the Cashflow.

For the month of May 2017, the corresponding values displayed for City4 will be editable, or read-only, based on the Period Close Settings fields, defined in the Cash flow properties ("Enable auto snapshot on").

For the current year and current month, in the Portfolio Manager, the same logic applies as for the Forecast Curve in the Cashflow.

Within the Portfolio Manager for the current year, for the current month, the logic will follow the same logic as for the forecast curve in the Cash flow (Cash flow by Forecast - CBS).

If the "Enable auto snapshot on" option is checked, then:

- If the current date is before the date defined then the value shown in Portfolio Manager (for the current month) will show the value from the Forecast Curve.
- If "Replace current period forecast with Actual on cut off date" (in the Forecast options) is checked, then the value shown in the Portfolio Manager (for the current month) will be the value from the Forecast curve.
- If the "Allow edit of current period forecast until replacement by Actuals" is checked, then the value shown in the Portfolio Manager (for the current month) will be editable; otherwise, it will be read-only.
- If "Replace current period forecast with Actual on cut off date" (in the Forecast options) is not checked, then the value shown in the Portfolio Manager (for the current month) will be the value from the Actuals curve.
- If the current date is on, or after, the date defined, then the value shown in the Portfolio Manager (for the current month) will show value from the Actuals curve and will be read-only.

If the "Enable auto snapshot on" option is not checked, then the value shown in the Portfolio Manager (for the current month) will be from the Actuals curve and will be read-only.

When the user shares the scenario in the Portfolio Manager, then only the "ALL values of Forecast" will be shared.

If the Project Portfolio Manager (PPM) is unlinked, then for those scenarios the Actuals will be read-only for the previous months.

For approved scenarios, the monthly Actuals are displayed as read-only only when the PPM is linked.

Unless the Cash flow is refreshed (even after the checkbox is checked), the Actuals will not be displayed.

Additional information

Approved/shared date will reflect actuals spread data only if the project is unlinked.

For the existing PPM Sheet, for prior years (e.g.,2014), the actual data is not displayed for yearly columns (e.g., 2015 or 2016).

As the cash flow is refreshed, the current month forecast data will become non-editable in PPM even if the project is not linked.

As the cash flow is refreshed, the current month and the previous month baseline data will become non-editable in PPM even if the project is not linked.

Multiple Forecast Curve

If there are multiple forecast curves defined within a project, with different option setting, this system displays a warning message (through a red triangle) in the current month cell when you hover over. In this case:

- For the future months, the scenario sheet shows cumulative values on forecast.For the prior months, the scenario sheet shows cumulative values for actuals.
- For current month, the scenario sheet shows the cumulative actuals values which are linked to forecast as read-only, always.

For support for monthly actuals, in case of consistent settings in multiple forecast curves, the behavior for the current, prior, and future months will be determined according to the existing functionality.

Project Portfolio Manager (PPM)

Whether linked, or unlinked, in the scenario sheet, the approved and shared data actuals spread are displayed in the Cashflow.

For the current month forecast data, whether the PPM is linked or unlinked, the system retains the forecast settings in the Cashflow.

Yearly PPM

In an existing PPM scenario sheet, for prior years actuals, data is seen as read-only for yearly columns if the checkbox to show monthly actuals is checked in the PPM configuration.

The current and future years will be determined according to the existing functionality.

View a Scenario Sheet's Properties

To view a scenario sheet's properties, click the **Menu Options** button (icon with three horizontal lines) in the toolbar and select **Properties**. The Properties will show you the following information:

- Portfolio name
- Planning period for the portfolio analysis

- Date the portfolio was created
- Any other fields of information that were added to the Portfolio Manager form

Unlink or Link Projects

When you create a scenario, the system populates the sheet with all the projects that have met the criteria for inclusion on the sheet. (These criteria were created in a query by your administrator when the Portfolio Manager was configured.) This is a dynamic process that occurs whenever you open a scenario sheet. The projects that appear on the sheet will fluctuate, depending on whether they still meet the criteria for inclusion. For example, a project that was previously on the sheet may be dropped from the sheet if it no longer meets the query criteria. Another project may be added to the sheet because it now meets the query criteria.

According to the configuration your administrator created for the Portfolio Manager, all the projects on the scenario sheet will be automatically either linked or unlinked when you first open the scenario sheet.

- If they are linked, the data on the scenario sheet is linked to the project data and is updated every time you open the sheet. Any new project that is added to the sheet will also be linked.
- If they are unlinked, the data on the scenario sheet is not linked to the project data, and will not be updated by changes in the project data. Any new project that is added to the sheet will also be unlinked.

You can link and unlink one or multiple projects.

To link a project on the scenario sheet to current project data

1) Select the project row(s) you want to link.
2) Click the *gear menu* (⚙), next to one of the selected rows, and select **Link**, or click the cell in the **Linked** column of that row. The system will display a warning that any numbers you changed on the sheet will be lost if the project is linked. When the project is linked, you will see a link icon in the **Linked** column beside the project(s) name(s).
3) Click the **Save** icon.

To unlink a project from the scenario sheet

1) Select the project row(s) you want to unlink.
2) Click the *gear menu* (⚙), next to one of the selected rows, and select **Unlink**, or click the cell in the **Linked** column of that row. When the project is unlinked, the system will delete the link icon in the **Linked** column beside the project(s) name(s).
3) Click the **Save** icon.

   You can also unlink a project by editing any cell in the row. After you start editing, the system will automatically unlink the project from the project data.

Edit Numbers on a Sheet

A primary function of scenario sheets is to make it easy for you to modify numbers and see the resulting budget analysis quickly. You can edit the following numbers on the scenario sheet:

- Cash flow projections
- Targets for cash flows and numeric columns
- Start and end dates for planned projects

When you edit any of these numbers, the system dynamically updates totals and calculates the differences between target numbers and those totals; however, it does NOT change a project's live data. Your proposed numbers are stored only in the Portfolio Manager and will not affect live project data until a scenario has been approved by your company management.

> **Note**: When you edit numbers in any project row, the system automatically unlinks that project row from the project data.

To edit numbers on the sheet

1) Double-click the cell containing the number you want to change. The cell becomes editable.

> **Note**: If any yearly projections have been broken down into months, you must make your edits in the month cells, not the yearly total.

2) Enter the change.
3) Press the **Enter** key on your keyboard, or press the Tab key to move to the next editable cell in the row.

   The system updates the values in the Total and Difference rows for this column, and flags the cell to indicate that there is a discrepancy between the number you entered and the project data.

> **Note:** To leave a cell without saving your changes, press the ESC key on your keyboard. The system restores the original numbers to the cell.

Click the **Save All** button.

You cannot edit:

- Project name
- Number
- Status
- Location

Drill Down to Project Data

During the planning cycle, you might need quick access to project data in order to view project characteristics, schedule activities, cost data, cash flow data, and other information. In addition, you might need to update some of this data as you are working on a scenario. For this purpose, the project names on a scenario sheet are hyperlinked to the project. If you have permissions, you can open the project's landing page from the scenario sheet and view or edit data directly in the project.

To drill down to project data

On the scenario sheet, click the hyperlinked project name. The system opens the project landing page in a new window. From this page, you can navigate to project data and view or edit it directly.

The scenario sheet remains open in a separate window so that you can easily work on both the project data and the scenario sheet at the same time.

Change Start Dates

You can change the start dates of planned projects, but not those in execution. When you change a start date, the system shifts the end date to preserve the project duration, and also shifts the cash flow numbers (excluding pre-actuals) left or right to preserve the cash flow distribution.

To change a start date

1) Double-click the date in the **Start Date** column. The system displays a calendar.
2) Choose the new date from the calendar.

   The system shifts the end date and the cash flow numbers to reflect the change.

How the System Distributes Cash Flow

The system stores all cash flow amounts by month in the database. The logic that the system uses to distribute cash flow dollars is rendered in monthly allocations and presented as follows:

- If you move the start date backwards by (for example) three months, the system will move all the cash flow amounts (excluding the pre-actuals column) left by three months and display a zero dollar amount in the last three month columns for that year. Amounts from the following fiscal year will not move left.
- If you move a start date forward by three months, the system will move all the cash flow amounts (excluding the pre-actuals column) right by three months and display a zero dollar amount in the first three month columns. The cash flow amounts will continue to move forward in time, replacing the values of the next three months with the values of the past three months. If the cash flows through multiple years, the total for the next year will increase by the three months' amount, and the monthly cash flow for the last three months of the previous year will replace the new year's first three months. The rest of the new year's monthly values will move forward three columns.

Change Cash Flow Amounts

You can change the cash flow amounts of any project on the sheet, planned or in execution. When you change a number in the cash flow amounts, the system unlinks the project from the live project data.

To change a cash flow amount

1) Double-click the cell that contains the amount you want to change.
2) Enter your change, and press **Enter**.

The project's **Total** amount and the year's total amount increases or decreases by the amount you entered. The system calculates the difference, indicates the edited column amounts in italics, and changes the color of the text in the cell.

Create and Manage Views on a Scenario Sheet

To make viewing information easier on either the scenario sheet or the project candidate list, you can create views that show relevant cash flow columns.

Create New View

1) In the View drop-down menu, select **Create New View**. The New View window opens.
2) In the Save View As field, enter a name for the view.
3) Complete the **Columns** tab to determine which columns will be visible in this view.
   a. In the **Columns** tab, choose columns from the Available Columns list, and click the **Move** arrow to add columns to the Selected Columns list, or select the **Move All** double arrow to move all available columns to the Selected Columns list.
   b. You can remove columns from the Selected Columns list by selecting columns and clicking the **Remove** arrow or clicking the **Remove All** double arrow.
4) Complete the **Filters** tab. See ***Filter the Scenario Sheet (Standard View)*** (on page 467).
5) Complete the **Group By** tab. See ***Group the Data on a Scenario Sheet (Standard View)*** (on page 468).
6) Complete the **Sort By** tab. See ***Sort the Data on a Scenario Sheet (Standard View)*** (on page 469).
7) When finished, click **Save**.

> **Note**: Avoid defining a view with no columns selected.

Manage Views

1) Click the View drop-down menu and select **Manage Views**. The Manage Views window opens.
   - In the Manage Views window, you can check the box in the Visible column to Show View or uncheck it to Hide View.
   - You can click the trash-can icon to Delete View.
   - You can click and drag views to reorder the way they will appear in the View drop-down menu.
2) When finished, click **Save**.

Filter the Scenario Sheet

When creating a new view, you can make viewing project information easier by using filters on both the scenario sheet and the project candidate list to narrow the focus of information to particular specifics, such as a date range, or a budget amount. For example, you might want to see only those projects in a specific date range, or only those projects with budgets greater than a specific amount, or projects of a specific type.

How you filter information depends on the column you choose to use as a filter. For example, you can use a text column, such as Project Name, or you can use a date column, such as Start Date. You can also use the AND and OR operators to apply multiple filters.

To filter information

1) In the View drop-down menu, select **Create New View**.
2) In the **New View** window, select the **Filters** tab.
3) Click the **Add Filter** button.
4) Choose a **Data Element**: This drop-down lists all data elements that are on the attribute form. Any data elements in a hidden block are not available.
5) Choose a **Condition**: This drop-down displays a list of conditions. This list is based on the type of data element selected.
6) Choose a **Value**: Depending on the type of data element, choose a value that the query condition must meet.
7) To add additional filters, click **Add Filter** again, and repeat the preceding steps.

   You can use the same data element multiple times.
8) If you are using multiple filters, click the applicable operator that should apply:
   - **And:** If you want to specify that the view must match all listed filters, select **And**.
   - **Or:** If you want to specify that the view should match any of the listed filters, select **Or**.
9) When you are done, click **Save**.

Group the Data on a Scenario Sheet

When creating a new view, you can group the data on the sheet by column. Grouping data can make it easier to identify projects with similar characteristics, such as estimated cost or start date. You can group by any column except the **Pre-Actuals** and year columns. When you group data, the system displays a sub-total amount by group.

To group the data

1) In the View drop-down menu, select **Create New View**. The New View window opens.
2) Navigate to the **Group By** tab.
3) Select the column by which you want to group the data from the drop-down menu.
4) Next, select **Ascending** or **Descending** from the **Order** drop-down menu to determine the order in which the data will be displayed.
5) Add more groups by clicking on the gear menu and then clicking **Add Below**.
   - When you create multiple groups, you can use the gear menu to **Add Above** or **Add Below**.
   - When you create multiple groups, you can use the gear menu to **Move Up** or **Move Down**, to determine the order in which your groups will appear on the scenario sheet.
   - You can use the gear menu to **Delete** groups that you have created.
6) When finished, click the **Save** icon. Whenever you open this view, it will display the data in this grouping.

Sort the Data on a Scenario Sheet

To make data easier to locate alphanumerically on either the scenario sheet or the project candidate list, you can sort the information by column in ascending or descending order.

To sort the sheet by column:

Hover over the column heading. A set of arrows will appear. Click the arrows to sort the data.

- Click the arrow once to sort Ascending.
- Click the arrow second time to sort Descending.

To sort the sheet by column when creating a view:

1) In the View drop-down menu, select **Create New View**. The New View window opens.
2) Navigate to the **Sort By** tab.
3) Select the column in which you want to sort the data from the drop-down menu.
4) Next, select **Ascending** or **Descending** from the Order drop-down menu to determine the order in which the data will be displayed.
5) Sort more columns by clicking on the *gear menu* (⚙) and then clicking **Add Below**.
   - When you sort multiple columns, you can use the gear menu to **Add Above** or **Add Below**.
   - You can use the *gear menu* (⚙) to **Delete** sortings that you have created.
6) When finished, click the **Save** icon. Whenever you open this view, it will display the data in the way you have sorted it.

Create a New Scenario

When you create a portfolio, the system automatically creates one initial scenario sheet. You can create additional scenario sheets.

To create a new scenario sheet

1) Click the plus sign at the top of the scenario sheet window.

   The system adds a "new scenario" tab to the top of the window.
2) Enter a name for the new scenario, and press **Enter**.

   You can include up to 30 characters in the name. Letters, numbers, hyphens, spaces, underscores, and special characters are allowed.

The project records that will be included on the scenario sheet are extracted from the database using a query that your Administrator created when the portfolio was configured. Whenever you create or open a scenario sheet, the system re-runs the query and adds or removes projects from the scenario depending on whether the project matches the query criteria. For example, a project that was previously on the sheet might be dropped from the sheet if it no longer meets the query criteria. Another project may be added to the sheet because it now meets the query criteria.

Edit the Name of a Scenario Sheet

To edit the name of a scenario sheet

1) At the top of the scenario sheet window, double-click the tab showing the name that you want to edit. The tab name becomes editable.
2) Change the name as necessary. You can include up to 30 characters in the name. Letters, numbers, hyphens, spaces, underscores, and special characters are allowed.

Duplicate a Scenario

To duplicate a scenario

1) At the top of the scenario sheet window, select the tab containing the scenario you want to duplicate.
2) In the top-right corner of the window, click **Duplicate**.

   The system duplicates the scenario into a new tab, which you can rename. All the projects in the original scenario will be duplicated to the new scenario, including their linked or unlinked state, and current column widths, targets, sorting, and so on. For the new scenario, the system will calculate the new totals and then calculate the variance to show the difference.

Share a Scenario

Sharing a scenario makes the budget numbers you propose available to project managers for viewing. Project managers will not see the changes you make on the scenario sheet itself. Instead, the project managers will use a read-only portfolio budget curve in their Cost Manager Cash Flow node to view both their original budget curve and a parallel scenario curve that shows the differences between their initial forecast projections and your proposed numbers.

For project managers to see the portfolio budge curve, you must share the scenario. For information about the portfolio budget curve, refer to the *Unifier User Help* for instructions on how to create cash flow curves.

You must have "full access" permission to share a scenario. You can share only one scenario at a time.

To share a scenario

1) At the top of the scenario sheet window, select the tab containing the scenario you want to share.
2) Click **Share** in the top, right-hand corner of the window.
3) Click **Save**.

   The system visually marks the scenario tab with a "shared" icon and makes the scenario numbers visible on the portfolio budget cash flow curve for the project manager to see.

To stop sharing a scenario

1) At the top of the scenario sheet window, select the tab containing the scenario you want to stop sharing.

2) Click **UnShare** in the top, right-hand corner of the window.
3) Click **Save**.

Remove a Scenario

To remove a scenario

1) At the top of the scenario sheet window, click the x on the tab containing the scenario you want to delete, or
2) Right click the tab containing the scenario you want to delete, and select **Remove**.
3) Click **Save**.

Approve a Scenario

After management has approved a scenario for the portfolio, you can mark the scenario as "approved." You must have "full access" permission to approve a scenario.

After you approve a scenario, the system:

- Marks the approved scenario "shared" so that project managers can see the approved dates and numbers. The scenario is set to read-only mode and can no longer be modified or deleted.
- Updates each projects' original budget numbers with the proposed numbers on the approved scenario.
- Updates each projects' monthly or yearly cash flow numbers with the proposed numbers on the approved scenario.
- Updates the project start date (if it was changed) for any planned projects that will begin during the portfolio's planning period.
- Updates the project/shell data with any project/shell information that was changed on the scenario sheet, and sends you an email notification of the updates
- Locks the budget and cash flow numbers to prevent any further changes.

To approve a scenario

1) At the top of the scenario sheet window, select the tab containing the scenario you want to approve.
2) Click **Approve** in the top, right-hand corner of the window.
3) Click **Save**.

   When you approve a scenario, the system automatically shares the scenario and visually marks the scenario tab with an **Approved and Shared** icon to indicate to project managers that this is the approved scenario.

To "un-approve" a scenario

1) At the top of the scenario sheet window, select the tab containing the scenario you want to un-approve.
2) Click **UnApprove** in the top, right-hand corner of the window.
3) Click **Save**.

The Portfolio Manager deletes the approval icon from the tab, but does not delete the shared icon. If you want to stop sharing the scenario as well, you must click **Unshare** in the top, right-hand corner of the window.

> **Note**: If you "un-approve" a scenario, the system does *not* reset dates to their original values. Date fields will retain the approved values.

Export the Scenarios

To use scenario data for additional purposes, you can export your scenario sheets to CSV files or Excel sheets.

To export scenarios

Click the **Print** button at the top of the window. Then select **Export to CSV** or **Export to Excel**. The Portfolio Manager will export all of your scenario sheets.

You will see a prompt at the bottom of the window, asking you to open or save the files.

When you open the file, it displays the data from each scenario sheet, arrayed in tabs and columns identical to the Portfolio Manager scenarios. The sheet will include any formulas that were created in the Portfolio Manager for calculating values. The sheet also retains the frozen columns, as well as the scrolling ability so that you can scroll through the cash flow columns.

Financial Period in Portfolio Manager

If you select the financial period type of the period structure in the configuration of Portfolio Manager, the system summons all of the sub-periods, based on the selected planning period (drop-down list), starting from the year.

When you select Financial period in the time scale of Cash Flow curve, the system populates the financial period (present in the Shell options) in the financial period field of that Cash Flow curve.

The financial period present in the Shell options of parent Shell will not be used to filter projects in Portfolio Manager.

> **Note**: When a financial period from the Shell is being used in a portfolio, you will not be able to change it in the future unless you delete all of the scenarios associated with it.

The system displays all of the periods (and their names) in Portfolio Manager as individual columns.

The scenario sheets brings in the following data from any Shell type in a hierarchy:

- Project information from the Shell Attribute Form
- Project information from a single-record business process
- Project start and end dates from the Shell Attribute Form
- Project start and end dates from a single-record business process
- Cash Flow data (both forecasted and actual) from each project Cost Manager
- Column names in the Portfolio manager will be the period name from financial period.

- Forecast & Actuals data will be populated only when user chooses the Forecast option in Cashflow “Begin calculations at the end of the curve.”
- Forecast data will be populated if “Display financial period breakdown of Actuals” checkbox is unchecked.
- Actuals data will be populated if “Display financial period breakdown of Actuals” checkbox is checked.
- Baseline data will be populated if user has not used the option in Forecast “Begin calculations at the end of the curve.”

After these scenario analyses have been completed, you can send the best (or several best) scenarios to the executive decision makers for approval. After a scenario has been approved, the system:

- Marks the approved scenario "shared" so that project managers can see the approved dates and numbers. In this case, the scenario is set to read-only mode and can no longer be modified or deleted.
- Updates each project's original budget numbers with the proposed numbers on the approved scenario.
- Updates each project's monthly or yearly cash flow numbers with the proposed numbers on the approved scenario.
- Updates the project start date (if it was changed) for any planned projects that will begin during the portfolio's planning period.
- Locks the budget and cash flow numbers to prevent any further changes.

> **Note**: The pre-actuals will be the consolidated amount for actuals before the start of Financial Period.

Planning Manager

The Planning Manager provides sponsoring companies the ability to create, organize, manage, and update all company or project/shell planning initiatives from conception to completion. It supports the ability to define unlimited number of planning categories, such as capital project planning, IT planning, resource planning, etc., providing a flexible method for managing and organizing any type of planning initiative.

The Planning Manager provides the flexibility of defining unique planning item property forms and planning sheets. Each planning sheet can be configured with any number of columns to capture and manage data for all planned items.

In addition, the planning sheet can be configured to compare planned data with actual rolled up data from projects/shells, related to each planned initiative.

The Planning Sheet is central to Planning Manager functions. Each planning item "type" (such as a capital plan or a campus remodel) can have one or more planning sheets that contain information about the plans of this type being considered by your company or project. It is from these sheets that you can access, create, update, and import or export company plans. Business processes designed for planning items can roll up information onto the planning sheets. In addition, Project/Shell Creation types of business processes can be designed to create new projects or shells for planning items when they reach a certain status or condition. If the Project/Shell Creation BP includes a Planning Item Picker, you can link new projects/shells with a planning item. At runtime, this BP will automatically create a link to the planning item when the project/shell is created, and data will begin to roll up to the Planning Sheet from the business processes in this project/shell.

The **Planning Items** node is where you create new plans and proposals, import plans from outside applications, export a plan template, and link a plan to a running project or shell in Unifier.

The **Planning Sheets** node is where you create and manage planning sheets. A planning sheet can contain data for one or multiple plans and proposals. From the planning sheet, users can automatically update individual plans with data added to the planning sheet and refresh the data on the sheet, such as changes to dates or cost numbers.

In This Section

About the Planning Manager

The Planning Manager is where you can plan for new projects/shells and proposals and create forecasts for those projects/shells that are already running in Unifier. You cannot administer planned projects/shells the way you administer real projects/shells; however, you can manage the planning phases for these projects/shells as business processes using the same functions used by other business processes. Planned projects/shells can include cost sheets, resource sheets, funding sheets, and other typical business processes; but certain data, such as dates and monies, can be viewed as future forecasts.

You can have a Planning Manager at both the company and project/shell levels.

The Planning Sheet is central to Planning Manager functions. This sheet contains information about all the plans (planning items) being considered by your company. It is from this sheet that you access, create, update, and import or export the company's plans. From the planning sheet, you can automatically update plans with changes made on the planning sheet. Reciprocally, you can refresh the planning sheet with changes made to individual plans. In addition, planning sheets can be configured to compare planned data with actual rolled-up data from projects/shells related to each planning item.

Using a Project/Shell Creation type of business process, you can create new projects or shells for planning items when they reach a certain status or condition. If the Project/Shell Creation business process includes a Planning Item Picker, you can link new projects/shells with planning items. Instead of linking a planning item to a project in the Planning Manager, this business process will automatically create the link when the project/shell is created, and data will begin to roll up to the Planning Sheet from the business processes in this project/shell.

Using the snapshot feature, you can take a "picture" of the planning sheet at any point in time. This is a way of "drilling down" into the planning process to expose specific plans or planning phases for particular attention.

The **Planning Items** node is where you create new plans and proposals, import plans from outside software applications, export a plan template, and link a plan to a running project or shell in Unifier.

The **Planning Sheets** node is where you create and manage planning sheets. A planning sheet can contain data for one or multiple plans and proposals. From the planning sheet, you can automatically update individual plans with data added to the planning sheet and refresh the data on the sheet, such as changes to dates or cost numbers.

Access Planning Items and Planning Sheets

The Planning Manager groups planning initiatives by planning type; for example, Capital Planning or IT Planning. Each planning type will have a node available for planning items in that type, and also for planning sheets to manage the planning initiatives.

Planning items and sheets are grouped by their planning type.

To view planning items and planning sheets

1) In User Mode, navigate to:
   - (For a Planning Manager at the company level) Go to the **Company Workspace** tab and click **Planning Manager** in the left Navigator.
   - (For a Planning Manager at the project/shell level) Open the shell or sub-shell where the Planning Manager resides. In the Navigator, click **Planning Manager**.

   Unifier expands the navigator to show the planning types and their corresponding items and sheets.
2) To view:
   - Planning items, choose a **<planning type> - Items**
   - Planning sheets, choose a **<planning type> - Sheets**

   Unifier displays the items or sheets in the right pane.

   > **Note**: If an advanced log has been designed for the Planning Manager, the log will display a tree structure with a middle column that narrows the navigation to help you locate and select the correct item or sheet.

3) To open the item or sheet, double-click the name of it in the right pane.

Access Planning Items from Master Log - Business Processes node

The **Master Log - Business Processes** node can list all planning items at the project/shell level in separate nodes for each type.

> **Note**: The name of the **Master Log - Business Processes** node can be customized.

If you are an active member of the project, shell, or sub-shell, and you have permissions, you can access project/shell planning item records from the **Master Log - Business Processes** node. The **Master Log - Business Processes** node is in the **Home** workspace. The **Master Log - Business Processes** node allows you to access all or a subset of records of the same type, in a single log that spans multiple shells/projects. Also, you can create and use saved searches under the **Master Log - Business Processes** node.

> **Note**: If you do not have permissions to view any of the business process types listed under the **Master Log - Business Processes** node, then you will not see the **Master Log - Business Processes** node in the **Home** workspace.

Records are listed under the **Master Log - Business Processes** node by planning item type. The **Master Log - Business Processes** node can be renamed by your Administrator, and access to the node depends on permissions.

Depending on permissions, you can perform these actions on records listed in a Master Log:

- Create a new record
- Edit an existing record
- Perform bulk edits on records

You can also save searches of records in the Master Logs as needed.

To access Master Logs

1) Go to the **Home** workspace and click **Master Log - Business Processes** node (or **Master Logs - Planning Items** node) in the left Navigator.
2) Click the name of the planning item you want to access.

Planning Manager Item Log (Attributes)

The **Planning Item** log displays the log and the preview pane (**Company Workspace** > **User** mode > **Planning Manager**).

> **Note**: The functions of the options presented below have been explained in the preceding sections. This section explains new functions and procedural differences.

The log contains the following toolbar options:

- **Create**

  When you click **Create** to create a new record, the **Create New Planning - Item** window opens. The three horizontal bars icon enables you to update a record and access the following:

  - **Delete**
  - **Print**

        - **HTML**
        - **PDF**
        - **Custom**
    - **Terminate Record**
    - **Transfer Ownership**
    - **Help**
        - **[Planning Item] Help**
        - **User Productivity Kit**
    - **Close**

  During the creation step, the record has the following tabs:

    - **Comments**

      Enables you to add comments to the Planning attribute, only in the edit mode.
    - **Linked Records**

      Enables you to link records to the Planning attribute. The functional flow is the same as a non-workflow business process.

      Note: When you are updating a record, the following additional tabs are displayed: **Audit Log** and **Reference Records**.

- **Actions**
- **View**
- **Edit View**
- **Refresh**
- **Print**
    - **Print**
    - **Export To CSV**
    - **Export To Excel**
- **Search**
- **Find on page**
- **Help**
    - **[Planning Item] Help**
    - **User Productivity Kit**

The **Actions** option enables you to:

- **Import**
- **Export CSV Template**
- **Edit Permissions**
- **Bulk Edit**
- **Print**
- **Transfer Ownership**
- **Terminate Record**
- **Bulk Delete**

- **View Import Audit Log**

For each record, the *gear menu* (⚙) are as follows and each option enables you to conduct the action on one particular record.

- **Open**
- **Edit Permissions**
- **Print - HTML**
- **Print - PDF**
- **Print - Custom**
- **Transfer Ownership**
- **Terminate Record**
- **Delete**

The log preview pane has the following tabs:

- **Record Details**
- **Attachments**
- **Permission**

> **Note**: If an attribute form is present, then you can hover over the question mark (?) symbol to see more information in the form of a tooltip.

Planning Manager Sheet Log

Similar to the Cost Sheet log, the Planning Manager Sheet log (for Company level, Shell level, and Project level sheets) contains the following elements:

- Log header
- Toolbar
- Grid with columns and rows
- Right-hand pane with tabs corresponding to each row of the sheet log

Toolbar

Option	Description
Create	As designed in uDesigner, the Create window enables you to enter values in fields that are categorized in different blocks. To modify the Data Sort options, open the Planning Sheet > **Edit View** > **Sort By.**
Actions	Contains the following options: • **Permissions** • **Delete** • **Refresh**
Refresh	To refresh the items on the log, after updating.
Print	To print the log.

Search	Similar to the **Search** option in the Business Processes log, this option enables you to search among log items. The **Search** window contains all of the elements from the Planning sheet detail form log **Find** section, from uDesigner. If the **Find** option is not defined in uDesigner, then there will be two fields in this window: <label of DE uuu_name> and <label of DE uuu_last_update_date>. You can run a search on these two sheet attributes. If the elements are defined in the log (the **Find** option is defined in uDesigner), then all the defined elements appear in the window in the same order as defined in uDesigner.
Find on Page	To find an item on the log.
<Planning name> Help	To access corresponding help.

Columns

All columns are displayed according to the log design in uDesigner. In addition, there is one system defined column (Updates Planning Items) which shows up as the first column in the Planning Sheet log. This column is used to capture which planning sheet updates the Planning Items.

Rows

If the newly created sheet is the one that updates the planning items, then the first column (Updates Planning Items) displays a checkmark icon.

At a given time, only one planning sheet in the log can updated Planning Items. So, if you modify the properties of a sheet to change the value of "Update Planning Items," the checkmark icon (in the first column) will appear or disappear based on your changes.

When you open the log (clicking the Planning Sheets node in the Navigator), and there are no records in the log, the right-hand pane does not have any contents.

When you open the log (clicking the Planning Sheets node in the Navigator), and there are records, then:

- If no sheet is set to update the planning items: The topmost row in the log is selected by default and the right-hand pane displays the selected sheet properties.
- If one of the sheets in the log is set to update the planning items: The sheet is selected by default and the right-hand pane displays the sheet properties.

The tabs in the right-hand pane are:

- **Properties**

  This tab is selected by default and displays all attributes of the planning sheet as defined in uDesigner. The tab also contains the option to choose whether a sheet updates the planning items, or not.
- **Permissions**

If you do not have Modify permission or Full Access permission (for planning sheets), then you will not be able to view the Permissions tab. Also, if you do not have the Modify Properties permission (for Planning Sheet), then you will not be able to modify the planning sheets properties.

- **Audit Log**

  Similar to the other audit logs in Unifier, it displays the actions taken by the users. You can also view additional information about each Event in the **Audit Details** section located below the **Audit Log** tab.

The *gear menu* (⚙) for each planning sheet:

- **Open**: To open the planning sheet.
- **Permissions**: To edit the permissions to the sheet.
- **Copy**: Use Create Planning Sheet overlay form. All properties of the source sheet are shown as copied into this overlay form.
- **Delete**: To delete a sheet.

You can select multiple sheets and right click to delete.

The *gear menu* (⚙) is not available when you select multiple sheets.

Create a Planning Item

To create a planning item

1) Navigate to:
   - (For a Planning Manager at the company level) Go to the **Company Workspace** tab, switch to **User** mode, and click **Planning Manager** in the left Navigator.
   - (For a Planning Manager at the project/shell level) Open the project or shell where the Planning Manager resides, switch to **User** mode, and click **Planning Manager** in the left Navigator.

   Unifier expands the navigator to show the planning types and their corresponding items and sheets.
2) Click the **[planning item] - Items** node. The [planning item] log opens.
3) Click **Create**. The planning item form opens.
4) Complete the form fields. The form fields will vary depending on the design of the form for this planning type.

   > **Note**: If the planning item form has a Project or Shell Picker, then you can use it to link the planning item directly to a project/shell. Business processes in the project or shell with fields that match those on the planning item form will roll up values to the Planning Sheet.

5) Save the form (click **Save** to save or **Submit** to prevent further editing).

Bulk Edit Planning Items from the Planning Manager Log

To edit planning items in bulk

1) Navigate to the **Planning Items** log.
2) Select the desired planning item.
3) From the log, ctrl+click to select the items that you want to edit.
4) Click **Actions** and click **Bulk Edit** to open the **Bulk Edit** window.

   The window is divided into two panes. Use the left-hand pane to edit the details of each record.

   Unifier automatically selects the Update checkbox when you type into or modify a field. You can deselect it if you do not want to modify the field at this time.

   Use the right-hand pane (Action Status) to preview the status of each record.
5) When finished, click **Close**.

For more information on editing these records in bulk refer to the *Unifier Business Processes User Guide*.

Delete Planning Items

You can delete planning items if they are in a non-terminal status. You can delete planning items in two ways:

- From the planning item record itself
- From the Planning Manager Log using Bulk Delete mode

> **Note**: When you delete a record in Unifier, it is not actually deleted. It is only hidden from view on the log; the record remains in the system. Consequently, you cannot create another record with the same name. If there is a business process that auto-creates a planning item record, the name of that planning item will need to be changed; otherwise, you will never see it on the log.

To delete a planning item from a record

Open the record and click the Delete button on the toolbar.

To delete planning items from the Planning Manager log

1) Open the planning items log.
2) Highlight the item or items you want to delete.
3) From the *gear menu*, click **Delete**.

> **Note**: You cannot delete planning items from a master log.

Create a Planning Sheet

You can create planning sheets for each planning type. These are based on templates created in Administration Mode.

To create a planning sheet

1) Navigate to:
   - (For a Planning Manager at the company level) Go to the **Company Workspace** tab and click **Planning Manager** in the left Navigator.
   - (For a Planning Manager at the project/shell level) Open the shell or sub-shell where the Planning Manager resides and click **Planning Manager** in the left Navigator.

   The Navigator expands to show the planning types and their corresponding items and sheets.
2) Under the planning type for which you want to create a sheet, click the **[planning item] - Sheet node**. The planning sheets log opens.
3) Click **Create**. The Properties window opens.
4) In the **General** block, name the planning sheet and enter an optional description.
5) In the **Options** block, you can select:
   - **Update Planning Items:** Select this checkbox if you want planning sheet users to be able to manually edit planned item data. This helps prevent conflicting data from multiple planning items. This box can be checked on only one sheet per planning type. When you select this box, the sheet is moved to the top of the log and displayed in bold font, thereby acting as a master planning sheet.
6) Click **OK**. The planning sheet opens. The columns are those defined in the default structure. You can add additional columns as needed. Rows correspond to planning items. See ***Add and Manage Planning Sheet Rows*** (on page 485).

Copy a Planning Sheet

The user will be allowed to create a new planning sheet under a planning type by copying another planning sheet. When a planning sheet is created by copying another planning sheet, all column definitions, manually entered data with each row should be replicated (copied over) including column definitions.

To create a planning sheet by copying another planning sheet

1) Select a planning sheet from the Planning Sheet log window.
2) Click the **Copy** button in the *gear menu*. The Properties window opens.
3) Enter a name for the new sheet. You can change other information as necessary.
4) Click **Save**.

Open the Planning Sheet

To open a planning sheet:

From the log window, double-click a sheet or select a sheet and click the **Open** button in the *gear menu*.

Columns displayed initially are based on the planning sheet default structure defined in Administration Mode (Configuration node).

Add and Manage Planning Sheet Rows

You can add planning items of the same type to create rows on the planning sheet. By default, there are two rows at the bottom of the sheet, one for total and one for average, which add a summary row for the column data.

To add a row (planning item) to a planning sheet

1) Open the planning sheet.
2) Click the **Add Rows** button. The Add Rows window opens, displaying the planning items created for the planning type.
3) Select one or more items and click **Select**. The rows are added to the sheet.

To delete a row from the planning sheet

1) Open the planning sheet.
2) On the planning sheet, select one or more rows to delete.
3) Click the **Remove Rows** button.
4) Click **Yes** to confirm. The rows will be removed from the sheet.

Add and Manage Planning Sheet Columns

To add a column to a planning sheet

1) Open the planning sheet.
2) Click the **Add Columns** button. The Add Columns window opens.
3) Enter a **Datasource, a Query Data Type, Formula,** and **Column Position After**. Edit the Data Format and Additional Options as necessary.
4) Click **Save & Add New.** The column is added to the sheet.

To manage a column in a planning sheet

1) Open the planning sheet.
2) On the planning sheet, right click on the column header for the column you wish to edit. The following options are revealed:
   - **Hide**: Hides the column from view. This can be undone through **Menu Options** > **Columns** > **Unhide** > **[Column name]**.
   - **Copy**: Copies the current column. The properties of this copied column can be edited when the **Column Properties** window opens.
   - **Delete**: Deletes the column. Click **Yes** in the conformation window that appears.
   - **Lock after this Column**: Creates a lock in the sheet that cannot be moved or resized. This can be undone through **Edit View** > **Lock after Column** > **None**.
   - **Insert**: Opens the **New Column** window to insert a new column.

- **Properties**: Opens the **Column Properties** window to view and edit the column properties.

Filter Planning Sheet Content

Some managers can accumulate a substantial amount of data. To make viewing this data easier, you can create views that filter (restrict) the content of the sheet.

You can use the **View** option to access created views, create new views, or update the existing views. The views that have been created, including **Default**, are listed in the upper segment of the drop-down list. The lower segment of the list includes the **Create New View** and **Manage Views** options.

To create a view

1) Click **Create New View**.
2) Use the **Save** option to name your new view.
3) Use the following tabs for adding columns and filtering, grouping, and sorting information:
   - **Columns** tab
   - **Filters** tab
   - **Group By** tab
   - **Sort By** tab
4) Use the **Columns** tab to select the columns that you want displayed in the view.

   The **Available Columns** box displays all the columns that you might want to include. The **Selected Columns** box displays all the columns that you select. You can move columns in and out of the **Selected Columns** box.

   Use the following fields to set the position of the new view:
   - **Left Lock after Column:** Displays a list of all columns, except the last column from the selected columns list. By default, **None** is selected, which means that you have chosen no column to be locked, from the left side of the sheet.
   - **Right Lock after Column:** The default value is **None**, which means that you can select not to right-lock the column in the view. Other values in this field are based on the value that you have selected in the **Left Lock after Column**.
5) Use the **Filters** tab to control what information is displayed in the selected view.

   You can add multiple filters to a view, and you can use the same data element multiple times. When adding multiple filters, you can use operators to specify that the view must match all listed filters or that it can match one or more of the listed filters.

   a. Click the **Add Filter** button.
   b. Choose a **Data Element**: This drop-down lists all data elements that are on the attribute form. Any data elements in a hidden block are not available.
   c. Choose a **Condition**: This drop-down displays a list of conditions. This list is based on the type of data element selected.
   d. Choose a **Value**: Depending on the type of data element, choose a value that the query condition must meet.
6) To add additional filters, click **Add Filter** again, and repeat the preceding steps.

You can use the same data element multiple times.

7) If you are using multiple filters, click the applicable operator that should apply:
   - **And:** If you want to specify that the view must match all listed filters, select **And**.
   - **Or:** If you want to specify that the view should match any of the listed filters, select **Or**.
8) Use the **Group By** and **Sort By** tabs to identify which columns should be used for group and sorting and in what order.
9) When you are done, click **Save**.

To manage a view

To update a view, select the applicable view from the **View** list, click **Edit View** (the pencil icon), and then make and save the applicable changes.

To modify or remove a filter

1) From within the applicable view, click **Edit View** (the pencil icon), and select the **Filters** tab.
2) Make the applicable changes, such as changing the selected **Data Element** or **Condition**, updating the **Value**, or removing one or more of the filters from a set.
3) To save your changes, click **Save** or **Save As**.

Copy Column Data

To copy column data from a planning sheet:

1) Open the planning sheet.
2) Click the Menu Options drop-down.
3) Hover over **Columns** and select **Copy Column Data**. This will open the Copy Column Data window.
4) Select the column to copy from, the percentage of each row value to copy, and which column to paste the information to.
5) If you would like the value to be copied to all rows for this column, under Rows, select **All.** If you would like the value to be copied to only select rows, select **Partial** and select which Planning Items to copy the column data to.

Modify Planning Items from a Planning Sheet

You can update planning item information from a planning sheet. The **Update planning items** option must be selected in the planning sheet properties (Options tab).

While defining columns on a planning sheet, data elements from the planning item can be selected. Some of these data elements can be edited from the planning sheet. Changes made to these elements are reflected on planning items automatically.

Data elements that are editable and not required on the planning item form will be editable from the planning sheet. The following are conditions under which a data element is not editable from the sheet:

- BP picker data elements
- Project picker

- Shell picker
- Data elements that are required on the form
- Data elements that are of SYS Logical Datasource (formulas)
- Data elements that are SYS Datasource

You cannot change the planning name. This can only be changed from the planning item window.

Grant Planning Sheet Permission

In addition to module-level permission, access to each planning item and planning sheet can be controlled based on user side permissions. The creator of a planning sheet is the owner of the sheet. By default, the owner has full sheet permissions. The owner can grant permission to other users or groups as needed.

To grant permissions to a planning sheet

1) In the planning sheet log, select the planning sheet.
2) Click the **Actions** menu and select **Permissions**. The Permissions window opens.
3) Add the users or groups you wish to grant permission, set the permission level, and click **Save**. The permission settings are:
   - **Modify Permission:** Can view, edit, and modify permissions of a planning sheet.
   - **Modify Properties:** Can edit planning sheet properties.
   - **Edit:** Can view, add, edit, or import data on a planning sheet. The user cannot change the column structure.
   - **View:** Can view the planning sheet in view-only mode.

To grant permissions to a planning item

1) Open the Planning Item log that contains the item you want to grant permissions to.
2) Select the planning item.
3) Click the **Actions** menu and select **Permissions**. The Permissions window opens.
4) Add the users or groups to whom you want to grant permissions and set the permissions you want to grant.
   - **Modify Permission:** Users can view, edit, and modify permissions of the planning item. With this permission, you automatically give the user edit and view permissions.
   - **Edit Data**: Users can edit the planning item information.
   - **View**: Users can view the planning item but cannot make changes.
5) Click **Save** to apply the permissions.

Understanding Reverse Auto-population

Certain data elements support reverse auto-population. These are specified in uDesigner. Reverse auto-population means that some values can be updated when other values are modified in a business process record that has reached a specified status.

Depending on the setup in uDesigner, auto-population can occur in these instances:

- Changes to data elements in a BP upper form can result in changes to the upper form of another BP.
- Changes to the detail form in a BP can result in changes to the upper form and detail form of another BP.
- Changes to the upper form or detail form of a BP can result in changes in the Asset, Resource, or Planning Manager forms.

View the Import Audit Log

1) Navigate to:
   - (For a Planning Manager at the company level) Go to the **Company Workspace** tab, switch to **User** mode, and click **Planning Manager** in the left Navigator.
   - (For a Planning Manager at the project/shell level) Open the project or shell where the Planning Manager resides, switch to **User** mode, and click **Planning Manager** in the left Navigator.

   Unifier expands the navigator to show the planning types and their corresponding items and sheets.
2) Click the **[planning item] - Items** node.
3) In the [planning item] log, select the applicable item.
4) In the **Actions** menu, click **View Import Audit Log**.

   The Import Audit Log for the planning item opens. You can view information pertaining to the import process that created the planning item, such as the name of the CSV or Microsoft Excel file that was imported, the date that the item was created and completed, the name of the user who performed the import, and so on.

Print a Planning Manager Form

You can print a copy of a Planning item. You can choose PDF, HTML or Custom print formats and select one of the following options:

- Save a copy of the form as a PDF file and print the file
- Print an HTML view
- Print from a Word file if a custom print layout has been created for the form

The Custom Print formats include the BI Publisher custom print templates designed in the **Custom Templates** node. If custom print layouts have been created for the Planning Manager, the form will print according to the layout that you select. See the following Custom Format Print Options for details. See the following ***Printing Options - Custom Format*** for details.

To preview and print a Planning Manager item:

1) Open the planning item that you want to print.
2) From the *Gear menu*, choose either **Print - HTML**, **Print - PDF**, or **Print - Custom**.
   - **HTML** to view the form in the browser which can then be printed.
   - **PDF** to open the form in Adobe Reader, which can be saved or emailed as a PDF file, or printed process, you are asked to save the changes to the form.

- **Custom** to select the BI Publisher, Microsoft Word, and PDF custom print templates from the same place as the current custom prints. See the following ***Printing Options - Custom Format*** for details.

The Print Options window opens. This window displays the record information that can be printed.

3) Select the checkboxes for the information that you want to print.
4) To select all the checkboxes, click the **Show All** checkbox. To deselect all, uncheck the **Show All** checkbox. If you deselect all checkboxes, only the header and footer will print.
5) Click **Print**. The preview form opens in an HTML or PDF (Adobe Acrobat or Reader) window, from which you can print.

Depending on your browser, the file will be downloaded automatically, or you will be prompted to download the file manually.

Print Options for Planning Manager Form

Following is a summary of the print options.

Print option	What it prints
Detail Form	This prints the information entered on the form.
General Comments	The general comment text and create details are printed.
Record Attachments	File attachments to the record are listed alphabetically by file name, and also include the file title, issue date, revision number, and file size.
Record Attachments > Comments	Prints comments associated with file attachments to the record. "Record Attachments" must also be selected to select this option.

To print a Planning Manager item with a custom print layout:

1) Open the planning item that you want to print. Be sure it is in a view mode.
2) From the **Menu Options** (☰), hover over **Print**, then choose **Custom** to select the BI Publisher, Microsoft Word, or PDF custom print templates from the same place as the current custom prints (Custom Format Print selection window).
3) Select a **Template** and **Format**, then click **Print**. The File Download window opens.
4) Choose to **Open** or **Save** the file, which is a Microsoft Word DOC file.
5) Open the file in Microsoft Word and print. (This feature works with Microsoft Word 2003 and 2007.)

> **Note**: By design, the CSV import of Planning items with attachments will not include the attachments.

Printing Options - Custom Format

The Custom Format Print window has two sections:

- Select a custom print template
- Select a template and format to print

Both sections facilitate custom print template and format selections.

Select a custom print template

Lists all the custom print templates, including the custom print templates created in the **Custom Templates** node and the custom print templates. For example, the list may include BI Publisher custom print templates, Word, and PDF custom print templates.

If there are multiple custom print templates, all the published templates are listed in this section.

The "Select a template and format to print" is populated by the selection made in the "Select a custom print template" section.

Select a template and format to print

- If you select a BI Publisher custom print, then you can select the desired template and format from the drop-down lists.
- Template drop-down displays all the available templates for the selected format.
- Format drop-down displays the available formats for the selected template.
- If the custom print template was created using PDF or Word, then the "Select a template and format to print" is disabled.

Default template and format

- If a BI Publisher print template is selected, then the default values in the drop-down lists are set based on the default in the custom print template.
- When a BI Publisher print template is selected in the "Select a custom print template" section, the template and format are populated based on the default value selected at the time of designing the print template.

Resource Manager

The Resource Manager is where you can set up and manage a company's or shell's personnel resources. Resources can include those of a partner company. The Resource Manager has limited functionality in generic shells.

- You cannot allocate resources in a generic shell. This means you cannot view the **Allocation** and **Utilization** sheets.
- The Resource Booking business process is not available; however, you can book resources directly onto the **Resource Summary** sheet in a generic shell.

The Resource Manager manages the planning, deploying, and tracking company or project/shell resources. It supports the creation and management of resources and roles, with the ability to define and leverage multiple role rates, skills, proficiency levels, resource capacities, and more.

Resources can be associated with Unifier users, which enables the ability for resources to log in and view individual calendars and respond to assignments. Resources can be associated with one or multiple roles with different role rates. This allows for accurate resource cost tracking and management at the project level.

The Resource Manager supports timesheet business processes for capturing and tracking actual resource costs associated with activities and assignments at the project, shell, and the company level. The manager also supports hard and soft Resource Booking business processes using a calendar that shows what project/shells a resource has been booked for, as well as the times during which the resource is unavailable.

An interactive Resource dashboard provides the ability to track and report on all resource allocations, booking, utilization, and more.

In the Resource Manager, your administrator can classify job functions into roles that can then be allocated to projects. These roles will be used to define billable rates, which are used in budgeting, and can also be used in planning for resource demands across projects. Roles are associated with personnel resources—the people who can perform these roles in a project. The Resource Manager is where personnel are assigned to roles and projects.

In the Resource Manager, a company's or shell's personnel can serve multiple roles, depending on their skills or interests. For example, a construction role and a plumbing role might be served by one person who has both carpentry and plumbing skills. The Resource Manager automatically creates the following Resource sheets you need to manage resources, bookings, and certain budgeting functions:

Sheet	Description
Allocations Summary	Master allocation sheet that shows role allocations at the company and project/shell level in both hourly and currency views. Read-only.
Resource Allocation	Allows manual entry of role allocations against projects/shells from company level so users can balance resources across projects/shells. The Resource Allocation Sheet rolls up to the Allocations Summary Sheet at both the project/shell and company level.
Booking	Shows hard resource bookings across projects/shells in both hourly

Summary	and currency views. Can add or edit hard-booked resources directly on the Booking Summary Sheet, or though the Resource Booking business process. If the Resource Booking business process has been designed to include resource capacity, the Booking Summary can also show each resource's availability for booking hours.
Actuals Summary	Shows resource actuals from timesheet data for the company in both hourly and currency views. Read-only. Populated by the Time Sheet business process.
Utilization Summary	Shows current total utilization of resources as a percentage of the total at the company level. Read-only. **Note**: Resources that are hard-booked in the Schedule Manager will roll up to this sheet.
Bookings vs. Actuals	At both company and project/shell level, shows hard resource bookings across projects/shells in both hourly and currency views, similar to the Booking Summary Sheet. Also shows columns per resource for booked hours, actual hours, and the variance (booked, minus actual hours). Read-only.
Availability	At the company level, shows current availability of each resource across projects/shells. The resource availability equals the resource's total capacity, minus the total bookings for the resource across the projects/shells, and minus the non-project times specified for the resource.

In This Section

Using the Resource Manager

The Resource Manager is available at the company and project level, and allows you to:

- View and configure resource charts
- View resources, roles, and various resource sheets
- Allocate roles to projects
- Have resources enter their own time sheets

At the company level, the Resource Manager has four nodes:

- **Resource Dashboard:** Allows you to configure displaying Resource Manager information across projects.
- **Roles:** Displays the company-level roles entered in Administration Mode.
- **Resources:** Displays the company-level resources that are hard-booked across projects.
- **Resource Sheets:** Lists the available company-level (cross-project) resource sheets.

At the Project level, the Resource Manager has three nodes:

- **Resource Dashboard:** Allows you to configure displaying Resource Manager information across projects.
- **Resources:** Displays resources that are hard-booked for the project.
- **Resource Sheets:** Lists the available project-level resource sheets.

View roles

Roles are defined and maintained in Administration Mode at the company level. At the company level, you can view role details, which includes resources and rates.

To view role details

1) In User Mode, select **Company Workspace tab> Resource Manager > Roles**. The Roles log opens.
2) Select a role and click **Open**. The Role Properties window opens. The window has three tabs:
   - **General:** Displays the role name, description, and status, and may display other fields; the fields on this tab correspond to the role attribute form.
   - **Rates:** Displays standard and overtime rates defined for the role.
   - **Resources:** Displays resources that have been associated with the role.

View resources

Resources are defined and maintained in Administration Mode at the company level. You can view resources that are hard-booked for a project or across multiple projects.

To view resource details

1) In User Mode, do one of the following:
   - To view resources across projects, select **Company Workspace tab> Resource Manager > Resources**.
   - To view resources for a project, select **Projects tab > project > Resource Manager > Resources**.

   The Resources log opens.
2) Select a resource and click **Open**. The Resource Properties window opens. The window has five tabs:
      - **Resource Code:** Automatically generated, manually entered, based on the configuration.
      - **Resource Name:** This is the name of the resource.
      - **Description:** Description of the resource.

- **Resource Capacity (Hrs):** Default value is 8. This defines the number of hours a person can work in a day.
- **Sunday (Hrs.).....Saturday (Hrs.)**: Depending on the design of the Resource Attribute form, these fields may or may not appear on the General tab. If they do, they will show the number of hours the resource can work on each of these days. Unifier will use these values to calculate the resource's Capacity per week.

- **General:** This tab may vary greatly with the design of the resource attribute form you imported. Fields may include:
- **Roles:** Displays any roles that have been associated with the resource.
- **Skills:** Displays any skills associated with the resource.
- **Calendar:** The calendar displays bookings, vacation days, etc. for the resource.
- **Projects:** Displays the projects in which the resource is booked and booking specifics.

Edit your own resource properties

At the company level, you can edit your own resource properties and calendar. From your user sign in, Unifier identifies you and automatically gives you permissions to modify your properties and calendar. However, you must have View permission to the Resource Log.

To edit your resource properties

1) Click the **Company Workspace** tab and go to **Resource Manager > Resources** in the Navigator.
2) On the Resources Log, double-click your name. The Resource Properties window opens.
3) Edit your information under each tab as necessary.

General Tab

This tab may vary according to the design of the resource attribute form. Fields may include:

Resource Code: Automatically generated, manually entered, based on the configuration.

Resource Name: Edit your name, if necessary.

Description: Edit your description.

Resource Status: Edit your status. The default is active.

Capacity per week (Hrs): Edit the number of hours you can work in a day. Default value is 8.

Sunday (Hrs.).....Saturday (Hrs.): These fields may or may not appear. If they do, you can edit the number of hours you can work on each of these days. Unifier will use these values to calculate your **Capacity per week**.

Roles Tab

To add a role to your profile:

a) Click **Add**.
b) Select a role from the Role picker and click **Open**.
Unifier adds the role to your profile.

To remove a role from your profile, select the role and click **Remove**.

Skills Tab

To add a skill to your profile:

a) Click **Add**.
b) Select the skill from the drop-down list.
c) Specify your proficiency in this skill.
d) Specify your interest in this skill.

To remove a skill from your profile, select the skill and click **Remove**.

Calendar Tab

You can view and manage booking dates as well as unavailable dates (non-project time, such as vacation days). The calendar shows both your soft and hard bookings.

To edit your booking calendar:

1) You can click the **Month** tab or **Week** tab to change the calendar view. A maximum of five projects/shells can be shown for any day in the month view. If you are booked for more than five project/shells in a day, you can view them all in the week view.
2) To view all projects/shells for any given day, select a day and click the **Booking Details** button.

   The Resource Booking Details window opens. The window displays the project/shell bookings for you on the selected date. For each project/shell, it shows project/shell number, project/shell name, booking status, dates when the booking starts and ends, total hours booked during this period on the project/shell, and total hours booked on the current date on the project/shell. The dates and hours shown include non-project time.
3) To make yourself unavailable for booking on a certain date, select the date and check the **Unavailable** checkbox. You can click the drop-down list and select an option.

Projects/Shells Tab

The Projects/Shells tab is read-only. You cannot edit the information on this tab.

Working with Resource Sheets

The company-level and project-level resource manager sheets are created automatically when the Resource Manager is activated in Administration Mode. The available resource sheets are listed below.

- **Allocations Summary Sheet:** This is the master allocation sheet, which shows role allocations entered at the company and project level. This is a read-only sheet.
- **Resource Allocation Sheet:** The company-level resource allocation sheet allows role allocations against projects from the company level. The project-level resource allocation sheet allows role allocations for the project.

- **Booking Summary Sheet:** The booking summary sheet shows resource bookings for a project or across projects in the company. This sheet can be populated by the Resource Booking business process, or by resources directly added to the sheet.
- **Actuals Summary Sheet:** The actuals summary sheet is a read-only sheet that shows resource actuals (time sheet data) for a project or across projects in the company. This sheet is populated by the Timesheet business process.
- **Utilization Summary Sheet:** The utilization summary sheet is a read-only sheet that shows total utilization of resources for a project or across projects.

View Resource Manager sheets

Resource Manager sheets are available in the Company Workspace, and in projects and shells.

To view company-level sheets

1) In User Mode, select **Company Workspace tab> Resource Manager > Resource Sheets**. The Resource Sheets log opens.
2) Select a sheet from the log and click **Open**.

To view project-level sheets

1) In User Mode, select **Projects tab > project > Resource Manager > Resource Sheets**. The Resource Sheets log opens.
2) Select a sheet from the log and click **Open**.

See the descriptions below for details about each of the sheets. In general, the sheets work similarly to each other at the company and project level. In general, you can:

- View data by hours or by cost (not available on all sheets)
- Save or open the sheet as a PDF file, allowing you to save and print the sheet
- Create and view snapshots (not available on the resource allocation sheets)

The structure of each resource sheet is similar:

- The left pane of the sheet displays default columns, which depend on the sheet. For example, resource name, role name, etc.
- The right pane displays the time line columns. Depending upon the display (day, week, month), the time line will show a column for each period with the actual allocation in hours (hours view) or in currency (cost view).
- To change the timescale, click the **Display** field at the top of the sheet and choose one of the following:
  - **Day:** The column header will show the actual date of the allocation.
  - **Week:** The column header will show the actual date of the start of the week (Monday) from the company calendar.
  - **Month:** The column header will show the actual date of the start of the month from the company calendar.
- In the upper right corner of each sheet is a time line slider:
  - **Start of the time line:** The earliest date that can be displayed on the time line will be the minimum of the default start date specified in the Resource Manager configuration and the earliest transaction date.

- **End of the time line:** The latest date displayed on the time line will be the maximum of the default date specified in the Resource Manager configuration and the latest transaction date.
- To quickly scroll through the date columns, you can click the slider in the top right corner of the sheet and slide it to the time period you wish to view.
- **Default view:** By default, when the sheet is opened, the time line will always center on the current period (day, week, month). Scroll left or right to see other periods.

> **Note**: If the sheet is currently being edited, you will not be able to change the Display By field or the time line slider. To change the sheet display, first save any edits by clicking the Save button.

Allocations summary sheet

This is a read-only sheet that totals resource data by role. In company-level sheets, there are two possible sources of the information displayed on the sheet: the company-level resource allocation sheet and project/shell level resource allocation sheets. For project/shell allocation summary sheets, the source is the resource allocation sheet for that project or shell.

Allocations are shown for each role. At the company level, allocations are shown for each role against one or more projects. The combination of role and project is always unique. The **Role Name** column is sorted alphabetically. The role name is hyperlinked. Clicking on the role name will open the Role properties window in view-only mode.

You can view summary information by hours allocated for that role, or by cost (hours multiplied by hourly rate, as defined in the Role properties in Administration mode).

> **Note**: This sheet is not available in generic shells.

To view the allocations summary sheet

1) In the company-level or project/shell level Resource Sheets log, select **Allocations Summary** and click **Open**.

   The window opens in a split mode by default. You may need to use the scroll bars at the bottom of the window to view the columns you want to see on either side of the sheet.

   Each row corresponds to a role that has been allocated to a project or shell, either in the company level or project/shell level resource allocation sheet. On the left side of the sheet, you will see the role name, project/shell number and name (in company-level sheets), the date range in which the role is allocated, and the total number of hours, which is the sum of all the values entered for that row in the resource allocation sheet. On the right side of the sheet are the hours allocated to each role.

2) You can view this sheet by hours or by cost:
   - To view by hours, click the **View menu and choose Mode > Hours**. The sheet displays the hours allocated to each resource, as rolled up from the resource allocation sheets.
   - To view data by cost, click the **View** menu and choose **Mode > Currency Amount**. The sheet displays the cost charged against each resource: hours are rolled up from the resource allocation sheets, then multiplied by the hourly rate defined for the role in Administration mode.

- To display the most current costs, click the **Refresh Rates** button. Select the effective date when prompted. Rates will refresh from the selected date to all dates in the future for which values exist on the sheet. Costs for dates earlier than the selected date will not be refreshed. The date will default to the current date.

Column	Description
Role Name	Allocations are shown for each role against one or more projects. The combination of role and project is always unique. The Role Name column is sorted alphabetically. Clicking on the role name will open the Role properties window in view-only mode.
Project Number	The project number is shown hyperlinked. Clicking on the Project Number will open the corresponding project allocation summary sheet. This is shown in the company-level sheet only.
Project Name	The name of the project. This is in the company-level sheet only.
Date From	Displays the earliest date that has a non-zero allocation for the role.
Date To	Displays the latest date that has a non-zero allocation for the role.
Total Hours	Displays the sum of hours allocated to the role. This field is displayed only in hours view.
Total Cost	Displays the total amount allocated to the role. This field is displayed only in cost view.

Resource allocation sheet

In this sheet, you can allocate resources, based on roles, to a project or CBS-code based shell. The Resource Allocation sheet is available at the company level and also in projects and shells in which resource allocation is enabled.

> **Note**: The ability to allocate resources to a project/shell with this sheet is dependent upon how the Resource Manager has been set up in Administration Mode. During the setup of the Resource Manager in a project or CBS-based shell, the Administrator can choose to allow resource allocation from the company level sheet (the allocations are roll down to the specific project/shell Resource Allocation sheet, which is view-only); directly from the project/shell level sheet (this will show up in the project/shell and the company level Allocation Summary sheet); or the administrator can choose to disallow allocation for a particular project or shell (in this case, the Resource Allocation sheet and Allocation Summary sheet are not available for that project/shell).

Allocations at the company level:

- Roll up to the company allocations summary sheet.
- Roll down to the individual projects/shells, in their resource allocation sheet and allocation summary sheet.

Allocations at the project/shell level:

- Roll up to the project/shell allocations summary sheet.
- Roll up to the company allocations summary sheet and resource allocation sheet.

The resource allocation sheet can be viewed by hours only.

> **Note**: This is not available in generic shells.

To view the resource allocation sheet

In the company-level or project-level Resource Sheets log, select **Resource Allocations Sheet** and click **Open**.

Company-level resource allocation sheet

Column	Description
Role Name	Allocations are shown for each role against one or more projects. The combination of role and project is always unique. The Role Name column is sorted alphabetically. Clicking on the role name will open the Role properties window in view-only mode.
Project Number	The project number of the allocation. This is displayed in the company-level sheet only.
Project Name	The name of the project. This is displayed in the company-level sheet only.
Date From	Displays the earliest date that has a non-zero allocation for the role.
Date To	Displays the latest date that has a non-zero allocation for the role.
Total Hours	Displays the sum of hours allocated to the role, This field is displayed only in hours view.

To allocate a resource

1) Open the Resource Allocation sheet.
2) Click the **Add** button. The Resource Allocation window opens (see below.)
3) Complete the window:
   - **Role Name:** Click **Select**, choose a role, and click **OK**.
   - **Project:** Click **Select**, choose a project, and click **OK**.
   - **Date From:** Click the calendar and choose the start date for the allocation.
   - **Date To:** Click the calendar and choose the end date for the allocation.
   - **Allocated Hours:** This field will auto-populate based on the dates selected (number of workdays x capacity). This is an editable field. You can adjust the amount as needed.
4) Click **OK**.

To edit allocation information

1) Open the company level or project/shell level Resource Allocation sheet.

   As mentioned at the start of this topic, the ability to allocate resources to a project/shell with this sheet is dependent upon how the Resource Manager has been set up in Administration Mode. Depending on project/shell setup, allocations may be done for that project or shell in the company-level sheet, the project/shell-level sheet (or allocations may not be allowed for a particular project or shell).

   If you have questions regarding allocations, contact your Project/Shell Administrator.

2) If the sheet is editable, click in the cell to edit. The cell becomes editable. You may need to scroll to the cell, or use the Display By or timeline slider to navigate to the column to edit.
3) Make changes to the cell.

> **Note**: If the sheet is currently being edited, you will not be able to change the Display By field or the time line slider. To change the sheet display, first save any edits by clicking the Save button.

4) Click **Save** to save the sheet.

To delete an allocation

Select a row and click **Delete**.

Booking summary sheet

You can only see the **Booking Summary** sheet in active or on-hold projects or shells in which the **Resource Manager** is active. In the sheet you can view, add, or update hardbooked resources. In Unifier, resources are of two types: hardbooked or non-hardbooked.

- **Hardbooked** resources are labor resources that are firmly committed to a project and not available for other work.
- **Non-hardbooked** resources can include things like labor, equipment, or materials Non-hardbooked resource leverage roles and are added to a project through the **Resource Assignment** form in the schedule sheet activity attribute form. See ***Resources tab of the Activity properties*** (on page 535)

Resource booking rows can be added to the sheet using the **Resource Booking** business process, or you can manually add them directly to the sheet. You can also modify data manually on the sheet. Data is rolled up from the project/shell **Resource Booking Summary** sheet. You can also view rates for each resource booking.

> **Note**: Resource Booking business processes are not supported in generic shells. To compensate, however, you can manually add bookings to the **Booking Summary** sheet in shells.

To view the booking summary sheet

1) In the company-level or project/shell-level Resource Sheets log, select **Booking Summary Sheet** and click **Open**.
2) You can view this sheet by hours or cost:

- To view by hours, click the **View** menu and choose **Mode > Hours**. The sheet displays the hours charged against each resource, as rolled up from the resource allocation sheets.
- To view data by cost, click the **View** menu and choose **Mode > Currency Amount**. The sheet displays the cost charged against each resource, as rolled up from the resource allocation sheets.

3) You can group by role or resource:
   - To group by role, click the **View** menu and choose **Group By** > **Role**. This is the default.
   - To group by resource, click the **View** menu and choose **Group By** > **Resource.** This groups the information by resource only. The role column is not applicable.

Column	Description
Role Name	Allocations are shown for each role. The role is always unique. The Role Name column is sorted alphabetically. The role name is hyperlinked. Clicking on the role name will open the Role properties window in view-only mode.
Resource Name	Bookings are shown for each resource against a role allocation. Resources are sorted alphabetically within a role. The resource name is hyperlinked. Clicking on the resource name will open the Resource properties window in view-only mode.
Project Name	Displays the project name for the booking row. The project name is hyperlinked and will open the project-level booking sheet. This column is displayed in the company-level sheet only.
Non-Project Time	This column only appears on the company-level Booking Summary. Displays a resource's time that has been charged against non-project hours, such as PTO or vacation.
Date From	Earliest date that a non-zero booking exists for the resource.
Date To	Latest date that a non-zero booking exists for the resource.
Total Hours	Total hours (shown in the hours view only).
Total Cost	Total cost in base currency (shown in the cost view only).
Average Rate	Average resource rate per hour in company currency (shown in the cost view only).

To view cell details

1) Click on hyperlinked values (in View mode). With Modify permission, you can edit cell values (in Edit Mode). You can view information by hours or cost. You can also group information by roles or by resources. The cell details are read-only, see the table below.
2) Click **Close Window** when you are done viewing cell details.

Field	Description
Resource Code	The resource code assigned to the resource.

Resource Name	The resource name.
Role Name	The role name assigned to the resource.
Project Name	The name of the project associated with the resource.
Booked Week	The current time based on the timescale represented in the Booking Summary Sheet.
Total Booked Hrs.	The total hours booked through the Resource Booking business process transactions combined with manual booking transactions. All transactions are listed under Booking Transactions on the lower part of the Cell Details window.
Booking Transactions	The total hours booked through the Resource Booking business process.
Manual Booking Hrs.	The total hours booked through manual booking changes.
Average Rate (per Hour)	This can be the Role rate, or the rate specified when the booking was added.
Cost	The total of the rate multiplied by the hours.
Currency	The Company or project currency.
Booking Transactions	The various transactions that affect the booking hours. These transactions can occur through manual changes to the booking, or through the Resource Booking business process. Booking transactions that occur through the manual changes are specified as Manual Entry; transactions that occur through the Resource Booking business process are designated with the title of the business process.

To update a hard-booked resource to the Booking Summary Sheet

In Edit mode, and with Modify permission, you can manually update the values on the Booking Summary Sheet. You can update values for resource bookings that were added to the sheet through the Resource Booking business process, or values for resources that were added to the Booking Summary Sheet manually. Manually entered transactions costs are calculated based on the current day's rate.

> **Note**: The Resource Booking business process is used only to add bookings, not to modify existing bookings.

1) In the company-level or project-level Resource Sheets log, select **Booking Summary Sheet** and click **Open**.
2) Click **Edit** to enter Edit Mode.

> **Note**: If you are in these modes: Mode > Currency Amount, Group By > Role, or Group By > Resource, you must choose the Mode > Hours to be able to access Edit Mode.

3) Increase or decrease the booking hours on the sheet as needed. You can select a row and click **Clear** to clear any row of values, and then enter new values.

   All cells that contain hours values on the Booking Summary Sheet are editable. Hyperlinks to the Cell Details are not displayed in Edit Mode. You can edit hours in any display mode (Day, Week, Month). You can increase or decrease hours to any value greater than or equal to zero (0). Hours cannot exceed 24 hours for any day.

4) Click **Save**, or click **View** to return to View Mode without saving the changes. The cost or hours values are then displayed as hyperlinks. You can click these hyperlinks to view the Cell Details for the values.

   All values that you change directly in the Booking Summary Sheet are reflected in the Cell Details for the resource booking. Each change to the resource bookings is listed in the Booking Transactions list, whether the change was made through the Resource Booking business process, or was made directly on the Booking Summary Sheet.

> **Note**: Utilization Summary Sheet values are recalculated when the resource bookings are modified in the Booking Summary Sheet.

To manually add a hard-booked resource on the Booking Summary Sheet

You can add resource bookings using the Resource Booking business process, or by adding the resources directly into the Booking Summary sheet. Manually entered transactions costs are calculated based on the current day's rate.

> **Note**: The resource bookings that you add directly into the sheet have not been through the approval process inherent in the Resource Booking business process. Keep this in mind when you are using this method to add bookings to the sheet.

You must have Modify permission to be able add a resource booking to the Booking Summary Sheet.

1) In the company-level or project-level Resource Sheets log, select **Booking Summary Sheet** and click **Open**.
2) Click **Add** to enter Edit Mode. The Resource Booking window opens.Complete the form using the table below these directions as a reference.

> **Note**: If you are in these modes: Mode > Currency Amount, Group By > Role, or Group By > Resource, you must choose the Mode > Hours to be able to access Edit Mode.

3) Click **OK**.

A new row is created in the Booking Summary Sheet. Enter values in the new row as needed. If the booking type is non-project time, Unifier will create a new row and populate the Non-Project time column with the type of time, such as "PTO" or "vacation," or "administration." All values for the row will be zero, which you can change manually where necessary.

4) Click **Save**, or click **View** to return to View Mode without saving the changes. The hours values are then displayed as hyperlinks. You can click these hyperlinks to view the Cell Detail values.

Note: Utilization Summary Sheet values are recalculated when resource bookings are added to the Booking Summary Sheet.

In this field	Do this
Booking Type	Select **Project/Shell** if you are booking the resource against a project or shell. Select **Non-Project Time** if you are booking the resource against non-project work. ▸ If you select this option, you will not need to specify a role name or a project/shell against which to book this time. ▸ You can select **Non-Project Time** only on company-level Booking Summary sheets.
Role Name	Select a role.
Resource Name	Select a resource name.
Project/Shell	Select a project or shell against which to book this time. At the Company level, this list includes active projects that have Resource Manager configured.
Non-Project Time	If the Booking Type is Non-Project Time, select the type of non-project work you are booking this resource against.

Actuals summary sheet

This sheet lists the actual time (hours) entered by each resource using time sheet business processes, displaying resource hours for the project/shell or across projects/shells.

You can select the time sheet business process to use.

To view the actuals summary sheet

1) In the company-level or project-level Resource Sheets log, select **Actuals Summary Sheet** and click **Open**.
2) You can view this sheet by hours or cost:
   - To view by hours, click the **View** menu and choose **Mode > Hours**. The sheet displays the actual hours from time sheets.

- To view data by cost, click the **View** menu and choose **Mode > Currency Amount**. The sheet displays the cost charged against each resource from time sheets.

Column	Description
Resource Name	This sheet displays hour and cost information for each resource that has submitted time sheet business processes.

To define the time sheet to roll up to the actuals sheet

1) On the actuals summary sheet, click the **Properties** button.
2) In the Business Process field, click the drop-down list and choose the Timesheet business process to use to roll up.
3) Click **OK**.

Booking vs. Actuals summary sheet

At both the company level and project/shell level, you can use this sheet to see booking information versus actual time usage against a project or shell.

To view the Booking vs. Actuals summary sheet

1) In the company-level or project-level Resource Sheets log, select **Bookings vs. Actuals Summary Sheet** and click **Open**. Unifier displays a Properties window.
2) In the Properties window, specify the time sheet business process that should roll up values to the **Booking vs. Actuals Sheet**.
3) Click **OK**.

   Unifier uses the values on the time sheet business process you specified to calculate the data on the **Booking vs. Actuals** summary.

   The sheet shows all booked resources, along with their roles and the projects/shells they are booked in. It shows both the booked hours and the actual hours the resources worked on the project/shell. The sheet does not show non-project hours.

To see details

To see a resource's booking details, click the hyperlinked hours in the **Booked** column. Unifier opens a Cell Detail window showing the booking details for the resource. To see details on a resource's actual hours worked, click the hyperlinked hours in the **Actuals** column. Unifier opens a Cell Detail window showing the actuals for the resource.

Utilization summary sheet

This sheet displays utilization in hours for each resource, per role.

> **Note**: This sheet is not available in generic shells.

Project level

The sheet displays utilization of resources as a percentage at the project level and is shown for each resource-role combination.

Utilization% = (Total Assigned Hours / Hard-booked Hours) *100

- Rolling over the cell value shows a break up of hard-booked hours and assigned hours.
- Utilization over 100% (over-utilization) is displayed in red.

This sheet cannot be opened unless the Schedule Manager is loaded or a master schedule sheet is created.

To view the project-level utilization summary sheet

In the project-level Resource Sheets log, select **Utilization Summary Sheet** and click **Open**. You can view this sheet by hours only.

Company level

The information is displayed across projects.

To view the company-level utilization summary sheet

In the company-level Resource Sheets log, select **Utilization Summary Sheet** and click **Open**. You can view this sheet by hours only.

Column	Description
Resource Name	Displays resources by name.
Role	Displays the role, per resource.

Resource Availability sheet

The **Resource Availability Sheet** resides at the company level. This sheet shows the current availability of each resource across all projects/shells. A resource's availability equals the resource's total capacity (hours available), minus the total bookings across the projects/shells, and minus the non-project times specified. The sheet also shows over-bookings as negative numbers and zero hours where the resource is not available due to PTO, vacation, or administrative duties.

Unifier automatically adds the **Resource Name** column to the sheet; you cannot move this column. The application adds rows to the sheet whenever a Resource Booking business process is submitted. You can manually add columns directly to the sheet to show more information. You can also modify data manually on the sheet. You can use the **Display By** field to show the availability of resources within a day, a week, or a month.

The **Availability Sheet** can be found under the **Resource Manager** grouping node.

To view a resource's available hours and other information

Click the resource's name. Unifier opens a read-only copy of the resource's properties. These can include the resource's address and phone number. This window will also show the resource's capacity of work hours per week. Depending on the design of the **Resource Attribute** form, this window might also show a breakdown (as in the example below) of the resource's hourly working capacity by day.

To view booking details

You can drill down to an individual resource to see a read-only copy of the booking information. To do so, click on the value in any date column. Unifier displays the cell details.

The cell details show the following information:

Resource Code	The code assigned to the resource
Resource Name	The name of the resource.
Period Type	The period of availability being displayed. (This reflects what the Display By choice was.)
Period	The time the data on this window covers (day, week ending date, month ending date).
Capacity	The hours the resource is available during the period.
Booked Hours	The number of hours the resource is booked during this period.
Available Hours	The number of available hours the resource has left for booking during this period.
Transactions	The booking transactions that are reflected in the data in this window. Project/Shell No. shows the number of the project/shell for which the resource is booked. Record Number shows the number of the business process record (unless the entry was manual). Title shows the title of the business process. This column will show "Manual Entry" for any hours that were manually entered on the sheet. From Date shows the beginning date of the resource's period of availability. To Date shows the end date of the resource's period of availability. Total Hrs shows the total number of hours the resource is available during the period.

To add columns to the sheet

By default, the left column of the sheet displays the name of the resource and cannot be edited or moved. You can add additional columns to the left side of the sheet to customize it to your needs. To add columns:

1) On the sheet, click the **Columns** button. The Columns window opens, showing the columns currently displayed on the left side of the sheet.
2) Click the **New** button. The Column Properties window opens.
3) Use the information in the table below to complete the fields in this window.
4) Click **OK**. The Column Properties window closes.

   On the Columns window, you can adjust the order of the column(s) you added by using the Move Up (Left) and Move Down (Right) buttons.

In this field:	Do this:
Name	This field will show the name of the element you choose in the Datasource field (below).
Datasource	Select a Data Source from the drop-down list. The list displays the data elements from the Resource Attribute form.
Data Format	This controls how data is displayed on the sheet. Select: Show as percentage to display the data as a percentage. Decimal places if you want the data to include decimal amounts. Choose 0 to 8. Use 1000 Separator if you want to include a comma (,) separator in numbers. Negative Number Format if you want to show negative numbers in parentheses or with a minus sign.
Display Mode	Show or Hide to display or hide the column from user view.
Column Position After	Specify the column after which this new column should appear.

View resource sheets

The company and project/shell Resource Manager sheets are created automatically when the Resource Manager is activated in Administration Mode.

To view company-level sheets

1) In User Mode, select **Company Workspace tab> Resource Manager > Resource Sheets**. The Resource Sheets log opens.
2) Select a sheet from the log and click **Open**.

To view project/shell level sheets

1) In User Mode:
   - For a standard project, select the **Std. Projects tab > project > Resource Manager > Resource Sheets**. The Resource Sheets log opens.
   - For a shell, select the **<shell tab> Resource Manager > Resource Sheets**. The Resource Sheets log opens.

2) Select a sheet from the log and click **Open**.

See the descriptions below for details about each of the sheets. In general, the sheets work similarly to each other at the company and project/shell level. In general, you can:

- View data by hours or by cost (not available on all sheets)
- Save or open the sheet as a PDF file, allowing you to save and print the sheet
- Create and view snapshots (not available on the resource allocation sheets)

The structure of each resource sheet is similar:

- The left pane of the sheet displays default columns, which depend on the sheet. For example, resource name, role name, etc.
- The right pane displays the time line columns. Depending upon the display (day, week, month), the time line will show a column for each period with the actual allocation in hours (hours view) or in currency (cost view).
- To change the timescale, click the **Display by** field at the top of the sheet and choose one of the following:
  - **Day**: The column header will show the actual date of the allocation.
  - **Week**: The column header will show the actual date of the start of the week (Monday) from the company calendar.
  - **Month**: The column header will show the actual date of the start of the month from the company calendar.
- In the upper right corner of each sheet is a time line slider:
  - To quickly scroll through the date columns, you can click the slider in the top right corner of the sheet and slide it to the time period you wish to view.
  - **Start of the time line**: The earliest date that can be displayed on the time line will be the minimum of the default start date specified in the Resource Manager configuration and the earliest transaction date.
  - **End of the time line**: The latest date displayed on the time line will be the maximum of the default date specified in the Resource Manager configuration and the latest transaction date.
  - **Default view**: By default, when the sheet is opened, the time line will always center on the current period (day, week, month). Scroll left or right to see other periods.

Filter Data on a Resource Sheet

The resource sheets can contain large amounts of data. To make working on the sheets easier, you can create a filter to limit the amount of data they display. For example, you could filter the sheet to show only certain resource roles, such as carpenters or electricians. Once you have created a filter, Unifier includes it on a list of filters available to anyone who uses the sheet. To create a filter:

1) Open the resource sheet from the log and choose **View > Filters**. The **Set Up Filters** window opens, showing a list of filters that have already been created (if any).
2) Click the **Add** button. The Add Filter window opens.

Select the **Show result matching ANY condition** checkbox if you want the field to meet any one of the conditions in the filter; otherwise, the field must meet all conditions within the filter specifications.

3) In the **Filter Name** field, enter a name for this filter.
4) Click the **Add** button. The Query Condition window opens.

   Use this window to create a query that will extract the data you want to see on the sheet. For information about creating a query refer to *Unifier General User Guide*.
5) To filter the sheet, click **Apply Filter**.
6) To save the filter, click **OK**.

To apply a filter to the sheet

1) Open the sheet in the log.
2) Click the Filtered by drop-down list and select the filter you want to use.
3) Click **Apply Filter**.

   The sheet refreshes and shows the filtered records.

   If you want to re-display all the rows on the sheet, you can clear the filter by choosing **Clear Filters** from the View menu.

To edit a filter

1) Open the sheet.
2) From the View menu, choose **Filters**. The Setup Filters window opens, showing a list of the filters that have been created for the sheet.
3) Select the filter you want to edit and click **Edit**.

Print resource sheets

To print or create a PDF file of the sheet:

1) Open the sheet. Choose to view by hours or cost.
2) Click the **File** menu and choose **Print**.
3) At the prompt, choose to open the file or save as a PDF file.

If you open the file, the file will open in Acrobat Reader, from which you can print the file. If you choose to save the file, you can save to your local drive and print or distribute as needed.

Save and view resource sheet snapshots

You can save a snapshot of all of the view-only sheets, except the resource allocation sheet.

To save a snapshot of the sheet

1) Open the sheet, and choose to view by hours or cost, where applicable.
2) Click the **File** menu and choose **Create Snapshot**.
3) Enter a title and click **OK**.

To view a snapshot

1) From the sheet, click the **File** menu and choose **Open Snapshot**.

2) Select a snapshot from the log and click **Open**.

Viewing and Configuring Resource Dashboards

The dashboard is available in the company-level and project-level Resource Manager. It allows you to monitor resource planning and deployment.

Data is refreshed when the Resource Dashboard node is selected or changes are made.

You can configure the dashboard to display charts in two-column layout. Configuring the Resource Dashboard is similar to setting up the project or company summary, except that the available charts are system-based and not based on user-defined reports.

You can choose to display system-defined charts in resource management key performance areas.

Company Level	Project Level
Booking	Booking
Actuals	Actuals
Utilization	Utilization
Supply vs. Demand	

Supply vs. demand charts

These charts:

- Show allocations by role and compare them with resource daily capacity.
- Highlight issues with having too much demand that cannot be satisfied.
- Measure ability to satisfy resource demand and identify additional staffing needs.

These charts are used to display the existing demand (allocation) versus available capacity in the company. You can use these reports to verify that sufficient manpower is available in the company to satisfy this demand. The supply (or capacity) in this case is unconstrained and unnetted. This means that the capacity does not consider existing bookings (soft or hard).

Calculating values on the demand vs. supply charts:

Allocation % = Total Allocation / Total Capacity * 100

Allocation is obtained from the company allocation summary sheet for the specified range of dates. Total capacity will add capacity hours of all resources at the company level that can play the role (not limited to default roles) for the range of dates. Allocation cost is obtained from the company allocation summary sheet. The charts include active roles and active resources only. Capacity is based on the company calendar (working days only).

Actuals charts

These charts:

- Show actuals by role and corresponding bookings against the role. Non-project time can be included on the charts.

- Highlight issues with costs going over budget.

Calculations on actuals charts (company level):

- Data obtained from the company-level summary sheets based on the current configuration of the time sheet BP on the sheet.
- Booking used is hard-booking.
- Booking is obtained from company booking summary sheet.

Calculations on actuals charts (project level):

- Data obtained from the project-level summary sheet based on the current configuration of the time sheet BP on the sheet.
- Booking used is hard-booking.
- Booking is obtained from the project booking summary sheet.

Booking charts

These charts are used to plot resource booking (soft and hard) against demand (allocation) and capacity:

- Show allocations by role and corresponding bookings against the role.
- Highlight issues with underbooking or overbooking.
- Show hard- and soft-booking. Non-project time can also be shown.
- Successful satisfaction of resource demand via resource commitments (booking).

Calculations on the booking charts (company level):

- Booking obtained from company booking summary sheet for the specified range of dates.
- Allocation obtained from the company allocation summary sheet for the specified range of dates.
- Overbooking % = [(Total Booking - Capacity)/Capacity] * 100 (0% if negative).
- Total capacity will add capacity hours of all resources at the company level that can play the role (not limited to default roles).
- Booking cost is obtained from the company allocation summary sheet.
- Total Booking = Soft + Hard booking.

Calculations on the booking charts (project level):

- Booking obtained from the project booking summary sheet for the specified range of dates.
- Allocation obtained from the project allocation summary sheet for the specified range of dates.
- Booking cost is obtained from the project allocation summary sheet.
- Capacity, Overbooking and Unmatched Supply column to show only at company level.
- Total Booking = Soft + Hard booking.

Utilization charts

These charts:

- Show utilization of resources against budgeted project work.
- Resource Manager can see that all resources are adequately occupied with billable project work. Administrative work at the company level does not count.

Calculating values on the utilization charts (company level):

- Utilization % obtained from the company utilization summary sheet for the specified range of dates.
- Booking is obtained from the company booking summary sheet.
- Assigned hours is obtained by adding assigned hours on project schedule sheets across all projects.
- Utilization % = (Total Assigned Hours / Hard-booked Hours) * 100 (shows two decimal places).

Calculating values on the utilization charts (project level):

- Utilization % obtained from the project utilization summary sheet for the specified range of dates.
- Booking is obtained from the project booking summary sheet.
- Assigned hours is obtained by adding assigned hours from the project schedule sheets.

About Resource dashboards

The dashboard is available in the company-level and project/shell level Resource Manager. It allows you to monitor resource planning and deployment. Data is refreshed when the Resource Dashboard node is selected or changes are made.

You can configure the dashboard to display charts in two-column layout. Configuring the Resource Dashboard is similar to setting up the project/shell or company summary, except that the available charts are system-based and not based on user-defined reports. You can display system-defined charts in resource management key performance areas.

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- Data obtained from the project-level summary sheet based on the current configuration of the time sheet BP on the sheet.
- Booking used is hard-booking.
- Booking is obtained from the project booking summary sheet.

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- Allocation obtained from the company allocation summary sheet for the specified range of dates.
- Overbooking % = [(Total Booking - Capacity)/Capacity] * 100 (0% if negative).

- Total capacity will add capacity hours of all resources at the company level that can play the role (not limited to default roles).
- Booking cost is obtained from the company allocation summary sheet.
- Total Booking = Soft + Hard booking.

Calculations on the booking charts (project level):

- Booking obtained from the project booking summary sheet for the specified range of dates.
- Allocation obtained from the project allocation summary sheet for the specified range of dates.
- Booking cost is obtained from the project allocation summary sheet.
- Capacity, Overbooking and Unmatched Supply column to show only at company level.
- Total Booking = Soft + Hard booking.

Utilization charts

These charts:

- Show utilization of resources against budgeted project work.
- Resource Manager can see that all resources are adequately occupied with billable project work. Administrative work at the company level does not count.

Calculating values on the utilization charts (company level):

- Utilization % obtained from the company utilization summary sheet for the specified range of dates.
- Booking is obtained from the company booking summary sheet.
- Assigned hours is obtained by adding assigned hours on project schedule sheets across all projects.
- Utilization % = (Total Assigned Hours / Hard-booked Hours) * 100 (shows two decimal places).

Calculating values on the utilization charts (project level):

- Utilization % obtained from the project utilization summary sheet for the specified range of dates.
- Booking is obtained from the project booking summary sheet.
- Assigned hours is obtained by adding assigned hours from the project schedule sheets.

Configure the dashboard

You can configure the content layout by doing the following:

- Add one or more charts in each column.
- Set up filter conditions and title for each chart.
- Add the same chart multiple times to the same column and display the same report with different query parameters.

To configure the resource manager dashboard

1) From the Resource Dashboard log, click **Edit** and choose one of the following:
   - **Left Column**: The Left Column Blocks window opens.
   - **Right Column**: The Right Column Blocks window opens.

   These are set up the same way.
2) To add a chart, click **Add**. Complete the Add Summary Block window:
   - Report Name: Click **Select**. Choose a chart from the list and click **OK**. The report fields are auto-populated. You can edit the title if desired.
   - Specify filter conditions:
     - Roles and projects are multiselect fields (you can choose one or more from the list).
     - If fields are left empty, it means all.
     - Project field is disabled in the project-level dashboard and displays the current project.

To edit a chart on the blocks list

Select it from the list and click **Open**.

To delete a chart on the blocks list

Select it from the list and click **Delete**.

- Roles and projects are multiselect fields (you can choose one or more from the list).
- If fields are left empty, it means all.
- Project field is disabled in the project-level dashboard and displays the current project.
- Shows current project.

Print the dashboard

To print the dashboard:

1) Navigate to the company-level or project-level resource dashboard.
2) Click **File > Print Preview**. A print preview window of the dashboard opens in an HTML view.
3) Click the **Print** button.

About Resource Business Processes

Resource-type business processes can be designed in uDesigner and deployed in Unifier to work with the Resource Manager. There are two resource-type business processes that work with the Resource Manager:

- Resource Booking
- Timesheet

Resource Booking business process

This is used to book resources; that is, to fill project requirements with an available resource from the company. Resources can be booked within the duration of resource allocation.

Notes:

- The Resource Booking business process is used only to add bookings, not to modify existing bookings.
- The Resource Booking business process is not available in generic shells. However, you can book resources via manual entry on the Resource Booking Sheet.
- When a record reaches a defined terminal status, the resource is hard-booked.
- While the record is in a non-terminal status, the resource is considered soft-booked.
- Resource Manager configuration determines if overbooking is allowed.

To use a Resource Booking business process

Open a project or shell and launch the resource booking business process. In the upper form, pick a date range to book resources. The date range will constrain the detail form grid display. The line item list displays a summary of booking rows.

1. Click the **Add** button and choose **Detail Line Item**. The Find window opens.
2. Click **Select** to allocate the role, and then click the **Search** button. The business process pre-populates with rows from the project allocations summary sheet.
3. The resource is hard-booked when the terminal status Approved is reached in the workflow. The resource is soft-booked when the status is other than the terminal status, for example, Pending.

Timesheet business process

Use the Timesheet business process to submit your time sheets. Actual hours and costs can be rolled up to the actuals summary sheets of the Resource Manager. The business process can also be designed to roll up costs to the project/shell cost sheet (Resource Actuals column).

The Timesheet business process:

1. Specifies the time you spend on a project.
2. Calculates rates based on role properties
3. Rolls up actuals to the actuals summary sheet at the company level and project/shell level.

Multiple Timesheet business processes can exist for a company. For example, a company may design one Timesheet business process to capture and roll up time (hours) only. Another time sheet type BP can be used to design a reconciliation business process that references the time sheet and is used to specify, modify, and roll up actuals costs.

The Timesheet business process is used to enter the actual hours you worked on each day. Time can be entered as regular work hours or over-time so that the appropriate billable rate can be applied. Time can be entered for company-level tasks, holidays, paid time off, and project or shell-level work. For billable activities, the billable rate is obtained from the role or from the project/shell booking (average booking rate), as applicable.

In addition to your own time sheet, a separate time sheet can be designed with a workflow schema that will accommodate someone else reporting your time on your behalf. For example, a company may allow a project manager or resource manager to report time for you.

If the Timesheet business process has been designed for line item entries, you can enter line items for time you spent on different types of work during a week, such as different projects. You could use other line items to report holidays, PTO, or company-level work.

The actual hours and corresponding costs from Timesheet business processes feed various sheets at the company and project/shell level, including company and project/shell actuals sheets, and company account and project/shell costs sheets.

To use a time sheet business process

Open a project, and launch the time sheet business process.

The Week Of required field is the limiting factor for the line items. The week begins on Sunday.

Understanding Reverse Auto-population

Certain data elements support reverse auto-population. These are specified in uDesigner. Reverse auto-population means that some values can be updated when other values are modified in a BP that has reached a specified status. Auto-population can occur on BPs that are in the same shell or across shells.

Depending on the setup in uDesigner, reverse auto-population can occur in these instances:

- Changes to data elements in a business process upper form can result in changes to the upper form of another business process.
- Changes to the detail form in a business process can result in changes to the upper form and detail form of another business process.
- Changes to the upper form or detail form of a business process can result in changes in the Asset, Resource, or Planning Manager forms.

In the Resource Manager, reverse auto-population might occur if a Resource Booking business process references a move order business process.

Schedule Manager

The Schedule Manager helps you manage project or shell and program schedules. You can create a **Project Schedule Sheet** that is customized to the project's needs. Once these sheets are created, you can then use them to create project activities and tasks, assign resources to tasks, create relationships between activities, track schedule progress and variables, and calculate the schedule's critical path.

In Unifier, you can also import project schedule records from Primavera Project Planner® or Microsoft® Project. These external project schedules can provide additional detail or supporting schedule information; for example, resource information, or subcontractor or vendor schedules. Imported schedules are editable, and the data can be used in reports.

The Schedule Manager presents schedule activities as interactive Gantt charts, where you can:

- Zoom in to see tasks at the day, week, or month level
- Move activities and add dependency relationships, and automatically update the dates on the schedule
- Create critical path calculations that will flag activities that, if delayed, can cause the schedule to go beyond the planned project end date

Using the snapshot feature, you can take a "picture" of the schedule sheet at any point in time. Using the Schedule Manager's baseline function, you can measure progress and determine payments against original estimates; and with the tracking Gantt feature, you can compare schedule dates, such as baseline estimates against the actual schedule.

If you copy activities from one schedule to another, Unifier will immediately notify you if the change will create a schedule conflict so that you can make corrections as you work. Each change in the Schedule Manager creates a record, which is useful for auditing purposes. An audit report of these records shows detailed information on dates, events, actions, and old values versus new values, along with the user or proxy user who performed the action.

Each project/shell can have multiple schedule sheets, and one master schedule sheet. This master sheet drives project start and end dates, tracks the project's progress, and serves as the interface between the Schedule Manager and other modules. In particular, the master schedule updates resource assignment information in the Resource Manager, which affects timesheets and resource utilization figures; and it integrates cost items on the schedule with the Cost Manager. Users can refresh resource rates on the schedule sheet and post the new rates to the Cost Manager, update the cost sheet with assignment costs, and refresh costs on the sheet to recalculate labor costs and post them to the cost sheet.

Features include the following:

- Fully configurable activity attributes form
- Activities and Gantt chart on the same schedule sheet
- Interactive Gantt chart with ability to drag activity end dates and link activities
- Tracking Gantt chart
- Filters for activities
- Baselines for schedule sheets and activity sheets
- Activity update
- Ability to create one or multiple interactive schedule sheets for the same project or shell

- Integration of Schedule Manager with the Resource Manager, enabling resource loading of schedule activities
- Multiple CBS codes for each activity to capture activity costs, such as labor, non-labor, and fixed costs. If designed in uDesigner, you can add a column to the schedule sheet to display the CBS codes associated with each activity.
- View the cost distribution information by CBS codes from a schedule sheet
- Cut and paste and copy and paste of rows in a sheet
- Update of schedule sheets from linked templates
- Critical path calculation and display
- Streamlined and enhanced integration and interaction between the Schedule Manager, Primavera, and Microsoft® Project
- Activity progress tracking and percentage of work completed per assigned resource
- Works with shells that have the CBS cost type
- Scope Management, with the ability to launch business processes from activities and automate schedule management.
- Budget and progress settings, and the ability to work with progress and earned progress data

For information about language (internationalization) and CSV files refer to *Unifier General User Guide*.

In This Section

Schedule Sheet permissions

User Mode sheet-level permissions can be assigned by the creator or a user with Full Access permission.

Sheet-level permissions are set up on each project or shell Schedule Sheet on the user side, and can also be set up on schedule sheets within project or shell templates.

To assign permissions to a schedule sheet

1) Open the project or shell, or the project/shell template.
2) Select the schedule sheet in the Schedule Sheets log.
3) Click the **Permission** button.
4) Add users or groups and assign permissions:
   - **Modify Permissions:** Allows the user to modify the permissions of a schedule sheet. Checking this permission will check all permissions below.
   - **Edit Data:** Allows the user to edit the sheet, including data, columns, and rows, cut and paste activities. Users that have the Edit Data permission can import data. They can also edit Activity Progress and refresh the schedule sheet.
   - **Edit Data and Structure**: Allows the user to set and clear baselines on schedule sheets and Activity Sheets; also to copy and paste activities. Enables users to add or remove linked schedule sheet templates. Also enables users to edit data element level restrictions on activities on a schedule sheet.

     Users with the Edit Data and Structure permission can edit these activity progress related components:
     - Options tab of the Schedule Sheet Properties
     - Budget and Progress Setup (schedule sheet level or activity level)
     - Activity Progress
     - Activity Progress Log
     - Schedule sheet refresh
   - **View:** Allows the user view-only access to the sheet. Automatically granted if any of the permissions above are granted. Can also view the Linked Template window.
5) Click **OK**.

Create a Schedule Sheet

Each schedule sheet that you create has its own set of properties, which you can use to control schedule sheet behavior.

Unifier separates Schedule Sheet Properties into five tabs; each tab has a distinct purpose.

- The General tab is where you can define basic schedule information, for example, Schedule Sheet Name, and Start Date.
- The Gantt Chart tab is where you can define what you want to see in the visual representation of the sheet, for example, common choices are Activity Name, Start Date, and Finish Date.

- The Tracking Gantt tab is where you can set up comparisons of activities, for example, you can compare Actual Start Date with the originally planned Start Date.
- The Options tab is where you can set up how you want Unifier to update activity status and progress requirements.
- The Schedule tab is where you set the schedule sheet refresh schedule.

You can create a project or shell schedule sheet in the following ways:

- Manually
- Copying from a project/shell schedule sheet template
- Copying from another schedule sheet in your project
- Importing a schedule file.

You can have any number of schedule sheets in a project or shell. You can designate one sheet as a master schedule sheet, which appears in bold in the log. The master schedule sheet drives the activity start and finish dates, and allows you to assign resources to activities. You can use it to track progress and resource assignment information to other modules in Unifier.

> **Note**: You may want to set up the schedule sheet before selecting it as the master sheet. Once you select the sheet as the master sheet, it cannot be deselected.

To create a project or shell schedule sheet manually

1) In User Mode, select the project or shell, and select **Schedule Manager > Schedule Sheets**. The Schedule Sheets log opens.
2) Click **New**. The Schedule Properties window opens.
3) Complete the Schedule Properties tabs. See ***Schedule Sheet Properties General Tab*** (on page 526).

To create a schedule sheet by copying from a project or shell template

1) In User Mode, select the project or shell, and select **Schedule Manager > Schedule Sheets**. The Schedule Sheets log opens.
2) In the Schedule Sheets log, click **Copy > Template**.
3) Select the template to copy and click **Open**.
4) Complete the Schedule Properties tabs. See ***Schedule Sheet Properties General Tab*** (on page 526).

To create a project or shell schedule sheet by copying another sheet

1) In User Mode, select the project or shell, and select **Schedule Manager > Schedule Sheets**. The Schedule Sheets log opens.
2) In the Schedule Sheets log, click **Copy**. The Schedule Sheets window opens showing all sheets in the project/shell (both active and inactive)
3) Select the schedule sheet to copy and click **Open**. The Schedule Sheet Properties window opens.
4) Complete the Schedule Properties tabs. See ***Schedule Sheet Properties General Tab*** (on page 526).

To import CSV files

1) Open the schedule sheet.
2) Choose **File > Import > From CSV**. If a default mapping is not selected, the Select Data Mapping window opens.
3) Select the data mapping you want to use for this import and click **OK**. The File Upload window opens.
4) Browse to select the file to upload.
5) Click **OK**.

To import XML and MPP files

1) Open the schedule sheet.
2) Choose **File > Import > From External Source**. If a default mapping is not selected, the Select Data Mapping window opens.
3) Use the table below to complete the fields in this window.
4) Click **OK**. The File Upload window opens.
5) Browse to select the file to upload.
6) Click **OK**.

In this field:	Do this:
MPP	Data mapping is not required; leave the Data Mapping field empty.
MPP XML	Data mapping is required; select the mapping you want to use.
MPP activity calendar	Select Consider Activity Calendar. This requires an existing calendar in Unifier with the same name. If an activity calendar is not imported and considered, the activity will use the existing calendar defined in the schedule sheet properties.
MPP Resource assignments	Data mapping is not required; leave the Data Mapping field empty. This requires a data set for the SYS Resource Type data element. Use MPP standard resource types: Work, Material, and Cost. Upon import, Unifier will soft-book these resource types.

Before you begin:

- You must have permission to import files. See ***Schedule Sheet permissions*** (on page 523).
- For CSV or XML files, your administrator must first define the data mapping.
- To use the Activity Calendar from Microsoft Project, first create a calendar in Unifier with the same name as the external calendar.

- To import Resource Assignments from Microsoft Project, first add the same MPP resource types to the SYS Resource Type data set in Unifier. We recommend using MPP standard resource types: Work, Material, and Cost.

Schedule Sheet Properties General Tab

To complete the **General** tab of the schedule sheet properties:

1) In **User Mode**, open the project or shell in the left Navigator. Click **Schedule Manager > Schedule Sheets**. The Schedule Sheets log opens.
2) Click **New** or open an existing schedule sheet. The Schedule Sheet Properties window opens.
3) Complete the **General** tab as described in the table below.
4) Click **OK**. The new schedule is available in the log.

From here you can:

- Open the Properties window, the Gantt Chart tab, the Tracking Gantt tab, the Options tab, and the Schedule tab.
- Open the sheet and add columns and rows (activities).

In this field:	Do this:
Schedule Title	Enter a title for the template. This is used as the template identifier and must be unique. (up to 120 characters)
Description	Enter an optional description. (up to 400 characters)
Master Schedule	When you create a new schedule sheet in a project or shell or project or shell template, you can select this checkbox to make the schedule sheet the "master schedule (one per project or shell or project or shell template; once selected, it cannot be deselected).
Status	When you are ready to make the template active and available for use, click Active.
Auto-control	Controls the automatic update of tasks for Scope Management. The default is Off. Setting Auto-control to On enables the automatic launch of BP records. Setting Auto-control to Off means that BPs will not be launched automatically on activities. Also, completion conditions will not be checked on activities. Users can still launch BPs manually. Note: Unifier disregards predecessor/successor dependency relationships when you manually start an activity, even if auto-control is set to On in the schedule sheet properties.
Calendar	Select a calendar to use with the schedule sheet. You can choose from Standard Calendars (company-level calendars), Project/Shell Calendars, or Custom Calendars (defined for the Schedule Manager). This calendar is used by all activities on the schedule sheet. The Calendar data element is also available for use as a column in the schedule sheet. When a new schedule sheet is created, the Project/Shell Calendar is selected by default. Users can change this default selection. The

	calendar selected affects project durations and due dates. For templates, the only choice is Standard calendars. The Schedule Start Date always uses the Project/Shell Calendar. Activity start dates are not affected when you change the calendar. The selected Start Date or Finish Date for an activity can be a non-working calendar day, however the duration of the activity will only account for working calendar days.
Schedule Start Date	Drives the dates of floating activities on the schedule sheet for Scope Management. No activities can begin before this date; however, activities do not have to begin on this date if their preceding activities complete previous to this date. The Manual and Shell Attribute radio buttons are active for a master schedule sheet if the Project Start Date data element has been added to the Shell Attribute form (for CBS shells) in uDesigner, and if no activity has started on the sheet. These buttons allow you to specify whether the Schedule Start Date should be set manually, or automatically populate. For non-master schedule sheets, the choice is always Manual, and Shell Attribute is not selectable. If you select the Manual radio button, you can select a Schedule Start Date. If you select Shell Attribute radio button, the Schedule Start Date automatically populates from the Project Start Date specified on the General tab of the shell properties. Also, the shell Project Start Date can update the master schedule sheet start date and reschedule the sheet accordingly. Sheets that are created with the Project Start Date specified on the shell will generate an entry in the Audit Log if the Project Start Date is changed. If the Schedule Sheet and the Activity Sheet are both in the same shell, and the Schedule Start Date (in the Schedule Sheet) is selected as the Project Start Date, and you update the Project Start Date in P6, then when you perform Get Data (in the Activity Sheet) the Schedule/Project Start Date (in the Activity Sheet) will not change if one or more activities show as Complete or In Progress in the Schedule sheet.
Notify users and/or groups on errors	Select Users and groups to be notified if there are errors during any point during the Scope Management task routing.
Permission: Enforce Activity Level Permissions by Group	Select to specify that you are implementing group activity editing. If you select this checkbox, you must also select a default group.
Default Group	Required if you select Permission Enforce Activity Level Permissions by Group. Select the group to use as the default group for activity-level

	editing.

Gantt Chart tab of the Schedule Sheet Properties

You can define the display of data elements on the activity bars on the Gantt chart. You can add up to three labels: to the left, on top, and to the right of each activity bar. The labels correspond with the data element fields that are available on the Properties window (activity attribute form) for each activity.

> **Note**: If you are selecting specific calendars for your project/shell and schedule sheet, the Gantt chart uses the project-level or shell-level calendar, not the calendar selected for the schedule sheet.

To configure Gantt chart activity bar text

1) Click the **Gantt Chart** tab.
2) Select data elements. You can add one label or all three. The selected data element(s) will display at the Top, Left or Right of the activity bar. The available data element options are derived from the activity form (schedule attribute form or default form).
3) Click **OK**.

Schedule Sheet Properties: Tracking Gantt Chart tab

A tracking Gantt chart allows you to compare two sets of dates for a specific activity. It allows you to track activity progress against the original plan. For example, the tracking Gantt chart allows the comparison between two sets of dates such as baseline and actuals. Users with view permissions can view a tracking Gantt chart. The tracking Gantt chart is view only. It is not interactive like the regular Gantt chart.

You can define the display of data elements on the activity bars on the Tracking Gantt chart. You can add up to three labels: to the left, on top, and to the right of each activity bar. The labels correspond with the data element fields that are available on the Properties window (activity attribute form) for each activity.

To configure Tracking Gantt chart activity bar text

1) Click the **Tracking Gantt Chart** tab.
2) Select data elements. You can add one label or all three. The selected data elements will display at the Top, Left or Right of the activity bar. The available data element options are derived from the activity form (schedule attribute form or default form).
3) Click **OK**.

Options Tab of the Schedule Sheet Properties

These options allow you to control the automatic update of activity status based on Actual Start and Actual Finish dates, to specify that activity progress requires an Actual Start Date, and to enforce a dependency between Activity % Complete and the Actual Finish Date (with the option of auto-update of the Activity % Complete).

See ***Project Progress Data Accumulation and Calculation*** (on page 591) for details on progress data accumulation and earned progress.

To specify that activity status auto updates based on actual start and finish dates

By default, the Activity Status controls Actual Start and Finish of an activity. If you select the Auto update activity based on Actual Start/Finish Dates, the Actual Start date and Actual Finish date control the Activity Status. Selecting this box, makes the Activity Status field read-only on the Activity Properties. When this checkbox is deselected, you can change the Activity Status.

The following table describes the interactivity of the Actual Start, Actual Finish, and Activity Status fields when the Auto update activity status based on Actual Start/Finish Dates checkbox is selected:

Actual Start	Actual Finish	Activity Status
Editable (no date selected)	Editable (no date selected)	Read-only. Not Started option is selected.
Editable (date selected)	Editable (no date selected)	Read-only. In Progress option is selected.
Editable (date selected)	Editable (date selected)	Read-only. Complete option is selected.

1) Click the **Options** tab.
2) Select the **Auto update activity status based on Actual Start/Finish Dates** checkbox.
3) Click **OK**.

To specify that activity progress requires an actual start date

You can specify that activity progress information cannot be entered if there is no actual start date for the activity. For example, an actual start date must be specified for users to be able to enter any activity progress, including Activity % Complete and Earned Progress on the Activity Properties.

When the Checking the Activity Progress requires an Actual Start date checkbox is selected, Unifier validates that there is an Actual Start date specified for the activity. If there is no Actual Start date, and this checkbox is selected, users will not be able to enter activity progress data until the Actual Start date is added for the activity.

> **Note**: You cannot select the Activity Progress requires an Actual Start date checkbox if the activity has recorded progress. If there are any progress entries, the system will not allow you to select this checkbox until a start date is provided or the existing progress data is deleted.

1) Click the **Options** tab.
2) Select the **Activity Progress requires an Actual Start date** checkbox.
3) Click **OK**.

To enforce dependency between Activity % Complete and Actual Finish Date for an activity

You can enforce a dependency between the Activity % Complete and the Actual Finish Date of an activity. When you select Enforce Activity 100% Complete again Actual Finish, Unifier will require the user to enter the percentage for Activity % Complete as 100%. Conversely, when the user specifies that Activity % Complete is 100%, the system will require the user to enter a value for the Actual Finish Date. Also, you can enforce that Activity % Complete is changed to 100% if an Actual Finish Date is entered.

> **Note**: If data has been entered (Activity Finish Data is entered or the Activity % Complete is less than 100%, or vice versa), and then you attempt to select the Enforce Activity 100% Complete against Actual Finish checkbox, the system will prevent you from selecting the checkbox for this option. In this case, you must clear the existing data to be able to select the Enforce Activity 100% Complete against Actual Finish checkbox.

1) Click the **Options** tab.
2) Select the **Enforce Activity 100% Complete against Actual Finish** checkbox.
3) Click **OK**.

> **Note**: Impact on Scope Management: If you have specified a dependency between the Actual Finish Date of an activity and the Activity % Complete, the Activity % Complete value for an activity will automatically update to 100% when an Actual Finish Date is entered for that activity. This can occur when the Activity Status is updated to Complete, whether through a business process or manually.

To auto-update Activity % Complete based on Actual Finish Date for an activity

If you have selected Enforce Activity 100% Complete again Actual Finish, you can further specify that the Activity % Complete value is automatically updated to 100% when the user enters a Actual Finish Date.

1) Click the **Options** tab.
2) Select the **Enforce Activity 100% Complete against Actual Finish** checkbox, and the **Auto-Update % Complete to 100% after entering Actual** checkbox.
3) Click **OK**.

Schedule Tab of the Schedule Sheet Properties

The schedule sheet refresh updates cost data associated with the schedule sheet. The refresh updates activity costs and resource/role costs.

A schedule sheet refresh can fail if:

- An activity has more than one CBS code
- A cost sheet column to which a schedule sheet column is associated is deleted from the cost sheet

You can set the refresh frequency. The refresh frequency you set is shown in the schedule sheet log under the column heading **Scheduled**. Schedule sheets that require refresh are listed in the Schedule Sheet log displaying the refresh icon.

To set the refresh frequency of schedule sheet template data

1) In User Mode, open the project or shell in the left Navigator. Click **Schedule Manager > Schedule Sheets**. The Schedule Sheets log open.
2) Select one or more schedule sheet templates.
3) Choose **Refresh > Set Frequency**. The Set Frequency window opens.
4) Select the **Enable scheduled refresh** checkbox.
5) Select the **Frequency** and the **Range of Recurrence**.
6) Click **OK**.

Create a master schedule sheet

Unifier allows one master schedule sheet per project/shell. You can mark a schedule sheet in a project or shell and project or shell template as the Master Schedule sheet.

Caution: Upon saving, Master Schedule designation is permanent and cannot be undone.

You can use the master schedule sheet to:

- Drive project dates, for example start date, finish date, planned completion, revised completion
- Drive activity start and end dates
- Track progress of activities over the lifetime of the project
- Drive scope management
- Post costs to the Cost Manager
- Support Cash Flow and Earned Value analysis
- Interface with the Resource Manager for resource assignments and availability

You can mark one schedule sheet in a project/shell as the master schedule sheet.

Once you save a schedule sheet as the master, there is no un-do to non-master status.

To mark a sheet as the master schedule sheet

1) In User Mode open the project/shell in the left navigator.
2) Click **Schedule Manager > Schedule Sheets**. The Schedule Sheets log opens.
3) Select the sheet that you want to make a Master Schedule Sheet and click the Properties button. The Properties window opens on the General tab.
4) Select the **Create as master schedule sheet** checkbox.
5) Click **Yes** to confirm.

Open / Modify schedule sheet template properties

You can modify the properties of a schedule sheet template.

To modify schedule sheet template properties

1) In User Mode, open the project or shell in the left Navigator and click **Schedule Manager > Schedule Sheets**. The Schedule Sheets log opens.
2) Select a template.
3) Click the **Properties** button.
4) Modify the properties as needed.
5) Click **OK**.

Changes that occur to copied and pasted activities

- Status will be set to **Not Started** for the pasted activity.
- **Actual Start Date** and **Actual Finish Date** will be cleared.
- Links to BP Record, Record Status are not copied.
- Critical Path elements are recalculated.
- Copying an activity will not copy dependencies.
- Moving **Summary Activities** will automatically move all activities below the summary whether the summary is expanded or collapsed. If the activity is not a summary row, any corresponding summary tasks will be updated automatically to reflect any changes in start, finish, and duration. The **Gantt Chart View** will reflect the new ordering of activities without affecting dependencies.

Activities remain in the buffer until the next copy/cut or save. Allowed actions that do not empty the buffer are:

- Find
- Zoom In or Zoom Out
- Focus
- Opening the Activity Attribute form without changing data.

If you perform any other actions before clicking Paste then the contents of the buffer are lost. A subsequent paste will not result in any action. Actions that empty the buffer are:

- All actions on the toolbar (**Save, Add, Delete, Indent/Outdent, Gantt, Progress, Close Window**.)
- All actions under the **File** menu
- All actions under the **Edit** menu (Except Paste)
- All actions under the **View** menu except Find
- Clicking into any editable cell or modifying dates via **Gantt** or the **Activity Attribute** form.

Add an activity to a schedule sheet

Before you begin: Schedule sheet permission is granted on a sheet-by-sheet basis. Adding or editing an activity requires **Edit Data** or greater permission. If you only have **View** permission you cannot add or edit activities. See ***Schedule Sheet permissions*** (on page 523).

This page contains information on adding activities manually, copying activities from another sheet, and using copy/cut and paste.

For information about importing schedule sheet data directly into Unifier see ***Create a Schedule Sheet*** (on page 523).

Add activities

You can add activities to a schedule sheet in the Activity Properties window.

Click the topic links for information and directions on completing:

- The ***General tab of the Activity properties*** (on page 534)
- The ***CBS tab of the Activity properties*** (on page 535)
- The ***Resources tab of the Activity properties*** (on page 535), and ***Role-related Calculations*** (on page 537)
- The ***Dependencies tab of the Activity properties*** (on page 540)

To manually add an activity to a schedule sheet

1) In User Mode, open the project/shell where the schedule sheet resides, and click **Schedule Manager** in the left navigator.
2) Select **Schedule Sheets**. The Schedule Sheets log opens.
3) From the **Edit** menu, or from the toolbar, click Add and select Manual. The Activity Properties window opens.
4) Complete the activity property tabs as described in ***General tab of the Activity properties*** (on page 534).

To copy an activity from another sheet

1) In User Mode, open the project/shell where the schedule sheet resides, and click **Schedule Manager** in the left navigator.
2) Select **Schedule Sheets**. The Schedule Sheets log opens.
3) Open the sheet you want to change.

   The default order for a new row is at the end of the activities list. You can insert a row where you want it by selecting a row on the sheet. Unifier adds the new row above the selected row.
4) From the **Edit** menu, or from the toolbar, click **Add** and select **Copy Activity From**. The Schedule Manager Picker window opens.
5) Select a schedule sheet from the **Schedule Sheet** drop-down list, which lists all the active schedule sheets in the current project.
6) Select an activity from that sheet and click **Copy**.

   Non-hardbooked roles are copied into the destination schedule sheet.

   The role amount is recalculated for the added activity and for any activity that has its start or finish dates changed as a result of the addition.
7) If you want to make changes to the activity properties, click the activity to open it.

To copy and paste activities in a sheet

1) Open the schedule sheet in the log.
2) Highlight the row or rows you want to copy.
3) Choose **Edit > Copy**.

4) Select the destination for the copied rows. The rows you copy will be inserted above the selected destination row.
5) Choose **Edit > Paste**. You can choose **Edit > Paste** multiple times to repeat pasting the copied rows.
6) Copy and paste copies all data on the copied activity including **Scope Management Setup**, **dependency relationships**, **Baselines**, **CBS**, and **resource assignments**.

To cut and paste activities in a sheet

1) Open the schedule sheet in the log.
2) Highlight the row or rows you want to cut.
3) Choose **Edit > Cut**. The row you want to cut is highlighted, and remains in place until you paste it.
4) Select the destination for the cut rows. The rows you paste will be inserted above the selected destination row.
5) Choose **Edit > Paste**. You can choose **Edit > Paste** multiple times to repeat the pasting of the cut rows.
6) You can undo the cut action by choosing **Edit > Undo Cut**.

General tab of the Activity properties

General tab

The General tab shows fields from the schedule sheet. The fields may vary depending upon how the designer created the schedule sheet attribute form. The table below shows mandatory fields.

In this field:	Do this:
Activity ID	The Activity ID reflects the list order of activities on the schedule sheet. This field is automatically populated and can change if activities are added or removed.
Activity name	The activity name reflects the activity on the schedule sheet. This is an editable field; any changes in the attribute form will show up on the schedule sheet.
Start Date	Enter or edit the date an activity will start. role-related calculation
Finish Date	Enter or edit the date an activity will end. Any changes to the finish date, either in Activity Properties or directly in a schedule sheet column, will trigger Unifier to recalculate the role amount of the role assigned to the activity. This helps you understand the cost impact of a schedule change.
Task Duration	The task duration is automatically calculated from the start and finish dates. If you enter a value that is larger than the difference between the start and finish dates, then the duration is re-calculated from the start date.

CBS tab of the Activity properties

CBS Codes tab

Here you can link a CBS code to an activity, which makes the activity available for cash flow analysis.

To add a CBS code

1) Click the **Add** button located on the bottom left of the window. The Add CBS Code window opens.
2) Select a CBS code from the CBS code picker. The CBS Item automatically populates based on the CBS code selection.
3) Add a value for Split Percent. Unifier highly recommends using 100%.

To remove a CBS code

1) Select the CBS code you want to remove.
2) Click the **Remove** button located on the bottom left of the window.

Resources tab of the Activity properties

Resource tab

Here you can assign resources and roles to an activity using the Schedule Sheet Resource Assignment form, which can be different than the one shown here. Fields can be in a different order on the form, the form can include additional fields than this form, and the form can dynamically change, depending on field selections.

> **Note**: When you assign resources or roles that have multiple rates to an activity sheet, in order to update the total cost (Total Cost value), you must reschedule, or recost, the activity sheet; otherwise, the system will assign earliest assigned resources or roles rates (price/unit) to the activity sheet, and you will not be able to view the correct accumulated cost.

Before you begin, be sure your administrator defined resources and roles in the company-level Resource Manager.

To add or edit a resource

1) Click the **Add** button located on the bottom left of the window. The Resource Assignment window opens.
2) Use the information in the table below to complete the fields on this form.
3) Click **OK** to save the form.

In this field:	Do this:
Resource Type	Select a resource type for the activity.

	Hard Booked resource costs roll up to the total activity cost as a labor cost.They are company defined and can be virtually anything from a person to something like pipe or concrete. Non-hard booked resource costs roll up to the non-labor costs of an activity. They are company defined as well, and can be virtually anything from a person to something like pipe or concrete. Note: Data set values for this drop-down field must start on row 1 and cannot be 0 (zero).
Resource Picker	Select a resource for the activity. If you selected a hard booked resource for the activity, you can use the Resource Picker to assign a resource to this activity. If you selected a non-hard booked resource, the Resource Picker is unavailable and you must enter the Resource Name.
Resource Name	View or enter the resource name. If you selected a hard booked resource, this field is automatically populated. If you selected a non-hard booked resources, you must enter the name of the activity resource.
Resource Code	View or enter the resource code of the assigned resource. If you selected a hard booked resource, this field is populated with the code of the selected resource. If you selected a non-hard booked resource, this field is editable and you can enter a value.
Role Data Picker	If this field is not on your form, disregard these instructions. If this field is on your form, you can select a role for the activity. See ***Role-related Calculations*** (on page 537) for instructions on working with this field.
Role Name	This is a read-only field where you can the role of the resource assigned to the activity. If a hard booked resource is selected, then this field is auto-populated. If a non-hard booked resource is selected, then this field is not populated. If a role data picker is on your form, and you selected a role using the picker, the Role Name is automatically populated.
Quantity (Qty)	Enter the resource quantity, for example tonnage or number of days, as suitable for the resource.
UOM	Select the unit of measure associated with the effort. For

	example, if the Resource Type is Man-hours, the unit of measure is hours.
Rate	View or enter the unit rate of the effort. If a hard booked resource is selected, this value is read-only and populated based on the rate at which the resource is booked. If a non-hard booked resource is selected, you must enter a rate. If you used a role data picker to select the role, the rate is pre-populated.
Amount	View or enter the amount or cost of the effort. If the resource selected is hard booked, this field is read-only and the value is calculated automatically by multiplying Quantity (Qty) with Rate. Otherwise, this data element is editable. You can enter a value in Primavera Unifier or a formula can be defined in uDesigner to calculate the amount.
Role Amount	If this field is not on your form, disregard these instructions. If this field is on your form, this field is automatically calculated.
% Units	View or enter the percentage of the resource available for the activity If a hard booked resource is selected, enter the percentage. If a non-hard booked resource is selected,this field is unavailable. If a role is selected using the role picker, this field is automatically calculated.
% Complete	this is a read-only field that shows the percentage completion of the activity.The value of this data element is calculated using Progress Quantity / Quantity (Qty).

Role-related Calculations

When you use a role data picker to assign a role to an activity, Unifier can use the role information to calculate role costs.

Role-related calculations

Activity role rate: For the activity role rate calculation, Unifier takes into account the effective date of the current role rate and the active currency exchange rate. The system recalculates the role amount under these circumstances:

- The activity role rate changes, or any other activity dates change, for example, finish date or duration.
- The role changes.
- An activity is copied in the sheet.
- An activity is copied from another sheet.

Activity role amount: The system calculates the activity role amount on a daily basis. It considers:

- Value of the role rate, as of the effective date (this can differ by effective date)
- Activity duration (this is the length of time the role rate was applicable before another rate became effective)
- Active currency exchange rate (this can change due to currency fluctuations)
- Percentage of a role's assignment to the activity (% Unit) (this can differ during the activity)

Unifier uses active currency exchange rates for transaction-to-project currency conversions. Exchange rate changes will flag the schedule sheet for refresh.

Role amount recalculation: Any changes to start and finish dates, duration, predecessor activities, constraints, available days (via the calendar), activity levels (indent or out-dent) can trigger Unifier to recalculate the activity role amount. You can see the effect of activity role rate changes in cash flow distribution. The system calculates all values on a daily basis and adds up all amounts.

			Role amount recalculates		Role amount recalculates		Role amount recalculates					
Activity Role Rate	40	40	40	40	42	42	44	44	44	44	44	44
Active Exchange Rate	0.75	0.75	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76
Activity Duration	1/1	2/1	3/1	4/1	5/1	6/1	7/1	8/1	9/1	10/1	11/1	12/1
% Unit	100	100	100	100	100	100	100	100	100	100	100	100

Activity amount: An activity can have more than one role, each with its own costs. If the activity is associated with at least one CBS code, Unifier tallies the role amounts for an activity, rolls up costs to non-labor costs, and displays the sum of CBS code in cash flow.

To use the role picker

1) Open the project or shell where the schedule sheet resides, and click **Schedule Manager > Schedule Sheets** in the left Navigator. The Schedule Sheets log opens.
2) Select the schedule sheet that contains the activity you want to modify and open it.
3) Click the activity you want to modify. The Activities Properties window opens.
4) Click the **Resources** tab and click the **Add** button located on the bottom left of the window. The Resource Assignment window opens.
5) If you are using a role data picker, complete these fields:

In this field:	Do this:
Resource Type	Select a non-hard booked resource type for the activity. Non-hard booked resource costs roll up to the non-labor costs of an activity. They are company defined, and can be virtually anything from a person to something like pipe or concrete.
Resource Picker	This field is not available.
Resource Name	Enter the name of the activity resource.
Resource Code	Enter the resource code of the assigned resource.
Role Data Picker	Select a role for the activity. You can click the Select button or the drop-down arrow and click Roles. This is a dynamic button whose label changes according to the previous selection. For example, after you select a role, the button name changes to Rate so you can access the Role Rate Override.
Role Name	The Role Name is automatically populated.
Quantity (Qty)	Enter the resource quantity, for example tonnage or number of days, as suitable for the resource.
UOM	Select the unit of measure associated with the effort. For example, if the Resource Type is Man-hours, the unit of measure is hours.
Rate	This field is not available for direct edit. Rates can be changed either at the company level or via Role Rate Override.
Amount	This data element is editable. You can enter a value in Unifier or a formula can be defined in uDesigner to calculate the amount.
Role Amount	This field is automatically calculated.
% Units	This field is automatically calculated.
% Complete	This field is read-only; it shows the percentage completion of the activity.The value of this data element is calculated using Progress Quantity / Quantity (Qty).

If you want to override the role rate, go to the next procedure to override the role rate, below. If not, click OK to save and close the form.

To override the role rate

1) In the **Role** picker field click the **Rates** button.

   The Current Effective Rate window opens, which shows the Effective Date, Standard Rate, and Custom Rate for the role selected.
2) In the Current Effective Rates window select the **Custom Rate** field and enter the new rate for the role. You cannot change the Standard Rate from this window.
3) If you want to add another rate that will take effect at a later date, click the **Add** button. Unifier adds a line to the form.
4) In the **Effective Date** field, specify when this rate should take effect. Dates must be unique and fall within Start / Finish dates.
5) In the **Custom Rate** field, specify the rate you want for the role.
6) Click **OK**. Role rates recalculate upon schedule sheet refresh.

Dependencies tab of the Activity properties

Dependencies tab

Here you can add dependencies between the current activity and other activities from the schedule sheet. You can select another activity on the schedule sheet, determine the relationship, (e.g. Finish to Start, Start to Finish, Start to Start, or Finish to Finish), and add a Lag.

> **Note**: Unifier disregards predecessor/successor dependency relationships when you manually start an activity, even if auto-control is set to On in the schedule sheet properties.

To add or edit a dependency

1) Click the **Add** button located on the bottom left of the window. The Add Dependency window opens.
2) In the **Activity Name** field, select the activity to make dependent upon the current activity.
3) In the **Relationship** field, select from one of the following options:
   - **Finish to Start**: the dependency must finish before the Activity can start.
   - **Start to Finish**: the dependency must start before the Activity can finish.
   - **Start to Start**: the dependency must start before the Activity can start.
   - **Finish to Finish**: the dependency must finish before the Activity can finish.
4) In the **Lag** field, enter the number of days for a gap or overlap between the selected activity and the current activity. A positive lag indicates a gap. A negative number indicates an overlap. Non-Working days are not counted.

To remove a dependency

1) Select the dependency to remove.
2) Click the **Remove** button located on the bottom left of the window.

Add a schedule Sheet column

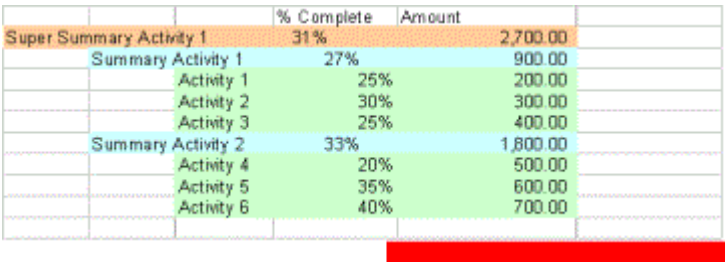
There are three default columns: **Start Date**, **Finish Date**, and **Duration**. Duration always displays the result of **Finish Date** minus **Start Date**. You can add other columns as needed. You can add baseline columns that map to **Start Date**, **Finish Date**, and **Duration.** See ***Set Schedule Sheet Baselines*** (on page 554)

> **Note**: Any changes to an activity start date, either in Activity Properties or directly in a schedule sheet column, will trigger Unifier to recalculate the role amount of the role assigned to the activity. For more information,See ***Role-related Calculations*** (on page 537)

To add a schedule column

1) In User Mode, open the project or shell where the schedule sheet resides and click **Schedule Manager > Schedule Sheet**. The Schedule Sheets log opens.
2) Open the schedule sheet and click the **Columns** button. The Columns Log opens
3) Click the **New** button. The Column Properties window opens.
4) Complete the Column Properties window as described in the following table.
5) Click **OK**.

In this field:	Do this:
Name	This field is populated with the chosen Data Source
Data Source	Select a Data Source from the drop-down list. The options include the data elements in the activity Properties window. When a schedule attribute form is designed in uDesigner, the data sources include all elements on the form, including hidden elements. This list also shows data elements based on Sys Project Cost Data Source data definitions.
Entry Method	Choose one (the options that are available are dependent on the data source chosen): ▸ **Manual Entry**: Users enter values directly on the schedule sheet ▸ **Formula**: Value is calculated using the entered formula. Formulas can include calculating differences between date columns, or adding / subtracting numeric columns / values from dates. This is useful to calculate durations or to calculate one date from another date by adding/subtracting days. ▸ **Cost Sheet Column**: Select a Cost Sheet column to associate with the data element based on the data definition Sys Project Cost Data Source. This pull-down menu lists all of the columns defined on the Cost Sheet. The cost data is refreshed when you or a user choose **File > Refresh** in a Schedule Sheet and refresh immediately or set up a refresh frequency. The Cost Sheet Column selector is available on schedule sheets in projects or shells and in project or shell templates.

	▸ The Cost Sheet Column definition must be reselected in a new schedule sheet that you create by copying a sheet or template, or by copying a project or shell. Definition must also be reselected if you link the schedule sheet.
Data Format	This controls how data is displayed on the schedule sheet. Options are: ▸ **Show as percentage**. Data is displayed as % ▸ **Decimal places**. Choose 1 to 8 ▸ **Use 1000 Separator**. Select checkbox to include a comma (,) separator ▸ **Negative Number Format**. Choose parentheses or minus sign
Summary	This controls the display of numeric and date column data on summary rows. ▸ **Display**: Select the checkbox to display summary data for the column ▸ **Date Rollup**: Available only for Date data types. Select Earliest Date or Latest Date. ▸ **Earliest Date**: To summarize columns that represent activity start dates (e.g. start, planned start, actual start, etc.). The cell on the summary activity will show the earliest date from all child activities. ▸ **Latest Date**: Tto summarize columns that represent activity finish dates (e.g. finish, planned finish, actual finish, etc.). The cell on the summary activity will show the latest date from all child activities. ▸ **Number Rollup**: Available for numeric columns. Choose Total (displays sum total of the rows), Average (displays average value of the rows), or Weighted Average based on and select a field from the Activity Attributes form. For example, you might choose Total for currency or other numeric types; for percentage columns, you might want to choose Average. ▸ **Weighted Average Based On**: The drop-down list for this option lists the data elements available on the Activity Attribute form. Only data elements of the type Numeric are available for selection. Selecting this option and a data element allows Unifier to calculate the weighted average of summary rows. For example: 

Display Mode	Choose to **Show** or **Hide** the column from user view. Users with Create permissions can see hidden column in the Columns Log.
Column Position After	The new column will be inserted after the column selected.

Create a formula column in a schedule sheet

You can create formula columns on a schedule sheet or template. Formulas can calculate differences between date columns, or add / subtract numeric columns / values from dates. This is useful to calculate durations or to calculate one date from another date by adding/subtracting days.

You can define formulas of the following types:

- Numeric: Build a numeric formula. This choice is available if the data source is SYS Numeric Logical.
- Date Difference: Formula is by default Later Date - Earlier Date. This choice is available if the datasource is SYS Numeric Logical.
- Date Add: Add a numeric value to a date. This is available if the datasource is SYS Date Logical.

SYS Numeric Logical and SYS Date Logical are data definitions form which data elements can be created in uDesigner and used on schedule attribute forms.

How to tell which data source to use in building a formula

The ability to build formulas is dependent on the data definitions used to create the data elements on the schedule attribute form. You can navigate to Administration Mode > Data Structure > Data Elements to see which data elements are based on the above data definitions (click the column heading in the Data Elements log to sort by data definition. Alternatively, you can choose a Data Source in the drop-down list, then, with the Data Source field still active, press your keyboard's up and down arrow keys to scroll through the data source options. When one of the above data definitions is reached, the Formula radio button becomes active.

To create a numeric formula

Choose **Numeric** and click **Create**. Activity data type displays data elements that are defined on the detail form along with "SYS Numeric Datasource" and "SYS Numeric Logical Datasource".

To create a date difference formula

1) Choose **Date Difference** and click **Create**.
2) Enter Earlier Date and Later Date:
   a. Click **Select**. The Data Element picker opens.
   b. Choose a data element. Options are data elements from schedule sheet detail form or columns defined on schedule sheet. Only date type (Timestamp) data elements are displayed.

c. Choose **Calculation based on Calendar days** (non-working days will be counted) or Work days (non-working days will be ignored). Work days are defined in the company calendar.

3) Click **OK**.

To create data add formula

1) Choose **Data Add** and click **Create**.
2) Choose a data element for Date and Add (click **Select** to open the data element picker). Data elements on the schedule sheet detail form and schedule sheet columns are available.
   - For Date, only date type (Timestamp) of data elements are displayed.
   - For Add, only numeric (integer, float) type of data elements or columns are displayed in the picker list. This includes Total and Average columns.
3) Choose Calculation based on Calendar days (non-working days will be counted) or Work days (non-working days will be ignored). Work days are defined in the company calendar.
4) Click **OK**.

Working with Schedule Sheets

Working with schedule sheets entails, for example:

- Adding or managing rows and columns.
- Tracking activity progress and costs.
- Managing dependencies and constraints.

In the open schedule sheet you can view activities and columns in the left pane and view the Gantt chart in the right pane. You can move the split screen bar to the left or right as needed. Scroll bars are available on the bottom of the sheet.

Refer to the *Unifier Earned Value Management User Guide* for more details about Activity Sheets and Schedule Sheets.

To open a project or shell schedule sheet

1) In User Mode, open the project or shell where the schedule sheet resides, and select **Schedule Manager > Schedule Sheets** in the left Navigator. The Schedule Sheets log opens.
   - The log lists all active schedule sheets. To view all active and inactive sheets, click the **View** menu and choose **All**.
   - The Refresh icon indicates whether you must refresh a schedule sheet to display the latest data. The refresh icon is not displayed for schedule sheets that are Inactive, or are in a view-only project or shell.
2) Double-click a schedule sheet in the log to open the sheet.

   If the sheet requires a refresh of the data, you will be asked if you want to refresh the sheet. Click **OK** to refresh the sheet, or **No** to close the sheet with out refreshing the data.
3) Select the sheet in the log and click **Open**, or double-click the sheet. The schedule sheet opens.

Schedule sheet toolbar

You can perform the following functions from the toolbar. Click the down arrow next to a button to view further options.

Button	Action
Save	Saves changes made to the schedule sheet.
Add	Click the arrow next to the button and choose one of the options: **Manual:** Add a row (activity) manually. **Copy Activity From:** Add a row by copying a row in a selected sheet.
Delete	Select a row and click **Delete** to delete the activity.
Indent	Select a row and click to indent the row. The row above become a summary row.
Outdent	Select an indented row and click to out-dent.
Gantt	Return to the Gantt chart view.
Progress	Access the Activity Progress view. See ***Entering Progress in the Activity Progress Window*** (on page 604) for details on activity progress.
Columns	Add and manage columns on the sheet.
Find	Click to search for an activity. You can search on any column on the sheet.
Zoom In	Click to zoom in the Gantt chart. The default view is week (by day), which is the maximum zoom-in view.
Zoom Out	Click to zoom out the Gantt chart. You can zoom out to month (by week) view and year (by month) view.
Focus	Select an activity and click to move the activity into focus. The Gantt chart view moves to the beginning date of the selected activity.
Close Window	Close the schedule sheet.

Using a Gantt Chart

The Gantt Chart is displayed in the right pane of the schedule sheet. The activities are shown as bars and align with activities in the left pane. The activity bar is drawn with the start date, finish date, and duration elements of the activity. The Gantt chart is shown in week/day zoom mode by default.

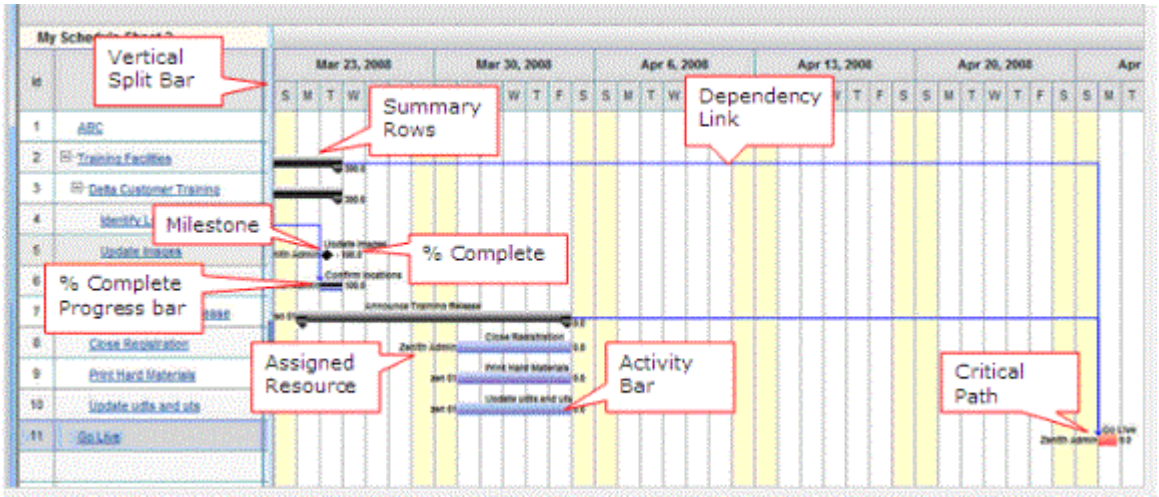
The Gantt chart displays:

- Activity bars, which illustrate start and finish dates and duration
- Dependency links between dependent activities
- Summary rows
- Milestones
- Critical paths

The Gantt chart is interactive. You can:

- Zoom in or out of the Gantt chart view to display detail or overview of scheduled activities.
- Configure activity bar labels; for example, you can display percent complete to monitor the progress of activities, or names of resources assigned to activities, or virtually any activity property. See ***Gantt Chart tab of the Schedule Sheet Properties*** (on page 528).
- Increase and decrease activity schedule durations by dragging on bar ends.
- Move activities from one time frame to another (modifying start and end dates).
- Add or remove a predecessor (dependency). See ***Dependencies tab of the Activity properties*** (on page 540).
- Resize Gantt window by dragging the vertical split bar.
- Display critical paths.

The Gantt chart is refreshed automatically when any changes are made on the activities.



Understanding the Gantt chart view

Zoom in or out of the Gantt chart

You can view the Gantt chart by week (per day), month (per week), or year (per month) by zooming in and out. This allows you to view the Gantt chart in detail or over an extended period of time.

To zoom in or out of the Gantt chart

1) Open the schedule sheet.
2) Do one of the following:
   - Click the **Zoom In** button on the toolbar. The default view is weekly, with each day of the week displayed. This is the maximum detail level that you can zoom in to the schedule sheet.
   - Click the **Zoom Out** button. You can zoom out to view the Gantt chart by month with each week in the month displayed, or by year with each month displayed.

View the critical path

The critical path calculation can be used to flag activities on the schedule that, if delayed, can cause the schedule to go beyond the pre-planned project or shell end date. Therefore, it is important to have fixed project or shell start and end dates defined for the project or shell. Project or shell start and end dates should not automatically adjust as activities are added or rescheduled.

To view the critical path

1) Open the schedule sheet.
2) Click the **View** menu and choose **Critical Path**.

   The activities that are on the critical path will change to red on the Gantt chart. The critical path action will also update the system-defined data element uuu_float to zero if it has been included on the activity attributes form (Activity Properties window).
3) To restore the Gantt chart view, click the **View** menu and choose **Gantt Chart**.

View a tracking Gantt chart

A tracking Gantt chart allows you to compare two sets of dates for a specific activity. It allows you to track activity progress against the original plan. For example, the tracking Gantt chart allows the comparison between two sets of dates such as baseline and actuals. Users with view permissions can view a tracking Gantt chart. See ***Set Schedule Sheet Baselines*** (on page 554) for details on setting baselines.

The tracking Gantt chart is view only. It is not interactive like the regular Gantt chart.

To view a tracking Gantt chart

1) Select the schedule sheet in the log and choose **View > Tracking Gantt**.
2) You can switch back to the regular Gantt chart by choosing **View > Gantt**.

   The tracking Gantt chart displays the data elements as a set of two bars (upper and lower) that allow you to make the comparison.

Using a Tracking Gantt Chart

You can use a Tracking Gantt chart to the compare data sets defined in the schedule sheet properties. The read-only Tracking Gantt chart displays comparison as a set of two bars (upper and lower).

To view a tracking Gantt chart

1) Select the schedule sheet in the log and choose **View > Tracking Gantt**.
2) You can switch back to the regular Gantt chart by choosing **View > Gantt**.

Find an activity

You can search for a specific activity by the values of any column on the schedule sheet.

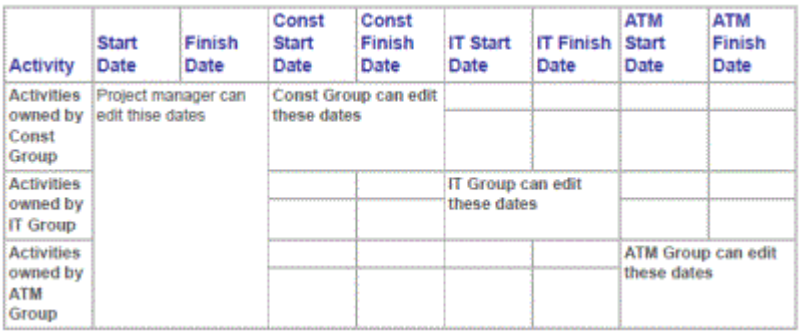
To search for an activity

1) Open the schedule sheet.
2) Click the **Find** button on the toolbar. The Find window opens.
3) Complete the window:
   - **Column:** Click the drop-down list and choose a column to search on. The default is activity name.
   - **Value:** Enter all or part of a value to search for. For example, to search for the word Construction, you can enter the entire word or any part of the word.
   - **Search:** Click the drop-down list and choose to search down or up from a selected row. If you do not select a row, the search will begin at the top row.
4) Click **Find Next**. If an activity is found that matches the search criteria, the row will be highlighted. To keep searching, click **Find Next** again.
5) When you are done searching, click **Cancel** to close the window.

About activity-level editing restrictions

Your Administrator can set up cell editing restrictions in schedule sheets. These restrictions can allow certain work groups to edit specific dates in the sheet, and prevent other groups from editing these dates. If you are a member of a specific work group that has these restrictions set, you will find that you are able to edit only certain cells on the schedule sheet.

The following image shows an example of the impact on dates in a schedule sheet with activity-level editing configured, and with activities and group-specific date columns. In this example, the groups Const, IT, and ATM all have group-specific start and finish dates for activities:



As shown in the example, the date cells in the schedule sheet that are specific to a certain group can be edited only by that group.

Restrict Access to Activity fields and columns

You can restrict user access to selected fields and columns (those based system defined data elements on the General tab, which are on the Activity Attribute form and on the Resource tab, which are on the Resource Assignment Attribute form).

> **Note**: These restrictions also apply to schedule sheet columns when a restricted data element is used as a column.

After a field or column is marked with restricted access for selected users or groups, those users or group members cannot modify those data elements (fields). For Start Data, Finish Date and Duration data elements, users that are restricted cannot modify this group data elements, even if they have restriction on any one of the data elements in the group. Also, the Gantt Chart will be disabled for a user if the Start, Finish, and Duration data elements are restricted for that user.

If a data element cannot be modified by a user or group then data imported through CSV / XML for that data element is ignored. If there is any failure in validation (both user and system defined), Unifier will stop data import.

To restrict access to specified system defined data elements

1) Navigate to the schedule sheet log.
2) Open a schedule sheet.
3) Choose **File > Restrictions**. The Restrictions Setup window opens.
4) Add the user or group name whose access you want to restrict.
5) Choose the data elements to restrict. The data elements listed for the Activity Attribute form and the Resource Assignment Attribute form are those that are system defined (the data element name starts with **uuu**_) and were added to the forms. You can select all of the listed data elements, or individual data elements.
6) Click **OK**.

Use filters in a schedule sheet

You can use filters to locate certain activities in a schedule sheet. The filter is based on criteria that you specify. When you use a filter, it applies only to the schedule sheet you are working with, but the filters you create are visible to all other users.

To add a filter for activities in a schedule sheet

1) Select the records in the schedule sheet that you want to filter.
2) Open the schedule sheet in the log and choose **View > Filters**. The Filters window opens.
3) Click **Add**.
4) In the Add Filter window, specify the filter criteria. Each filter can have multiple criteria based on the data elements in the activity attribute form. You can also use this window to edit or remove filters. The **Add** and **Remove** buttons are enabled only for users who have edit permissions on the schedule sheet.
5) Selecting the **Display Summary Activities** checkbox controls whether the filtered schedule sheet displays summary activities corresponding to any leaf activities displayed in the sheet. The filter is not applied to the summary activities.

6) Click **Apply** to save and immediately apply the filter to the schedule sheet.
7) Click **OK** to save the filter for later use.

To apply a filter to schedule sheet activities

1) Open the schedule sheet in the log and choose **View > Filters**. The Filters window opens.
2) Select the activities you want to filter.
3) Select a filter name and click **Apply Filter**. The schedule sheet refreshes with the filter applied.

To clear a filter from a schedule sheet

1) To return the schedule sheet to the original view, select the schedule sheet in the log.
2) Choose **View > Clear Filters**.

Update rates and cost data

When a resource is assigned, the average booking rate is used to calculate assignment costs.

Average Booking Rate = Total Booking Cost / Total Hours for the entire booking row selected while assigning the resource.

Labor Cost (for a resource assignment) = Total Assigned Hours x Average Booking Rate.

After assignment, the booking rate may change as changes occur to the booking sheet. These rate changes will not automatically affect the assignment (labor) costs stored in the schedule sheet.

You can update resource rates on the master schedule sheet and also update the project or shell cost sheet with corresponding assignment costs. The active currency exchange rate at the time of assignment will be used.

The update has two options:

- **Resource Utilization:** This updates resource rates only.
- **Resource Utilization and Cost Manager:** This updates resource rates on the schedule sheet and posts costs to the cost manager. This option is only enabled on the master schedule sheet.

To update rates on the schedule sheet

1) Open the master schedule sheet.
2) Choose **Edit > Update > Resource Utilization**. Labor costs on the entire schedule sheet are recalculated based on the latest average booking costs and exchange rate.

To update costs on the cost sheet

1) Open the schedule sheet.
2) Choose **Edit > Update > Resource Utilization and Cost Manager**. Labor costs are updated and posted to the cost sheet (column with labor cost data source) based on the CBS codes and split percentage specified on each activity. The existing cost in the cost sheet columns will be replaced by new values. Similarly, any values in the Fixed Cost, Non-Labor Cost, and Total Cost columns in the schedule sheet will be posted to corresponding data sources on the cost sheet.

Constrain Schedule Sheet Activities

You are able to constrain activities on a schedule sheet. A constraint ties a successor activity start date to a predecessor activity completion date, after observing dependencies and lags. Available constraints in Unifier are As soon as possible (ASAP) and None.

To constrain a schedule sheet activity

Before you can constrain an activity, the activity's dependencies must be set.

1) Navigate to the schedule sheet where you want to constrain activities and open the sheet.
2) Double-click the activity you want to constrain. The Activity form window opens.

> **Note**: If the schedule sheet displays the Activity Constraint column, you can assign the constraint without opening the Activity form window.

3) For each activity you want to constrain, select the activity constraint you want, either **As soon as possible** or **None**.

   As soon as possible: If the start date of a predecessor activity changes, either pulls in or pushes out, the start date of an ASAP-constrained successor activity changes accordingly. If an ASAP-constrained activity does not have a predecessor, the schedule sheet start date determines the activity start date; unstarted ASAP-constrained successor activities align accordingly.

   None: The start date of a None-constrained activity does not change if the start date of a predecessor activity changes. The schedule sheet start date does not determine the start date of None-constrained activities that do not have predecessor activities. The only in-built rule is that the start date of the None-constrained activity should not be earlier than the schedule sheet start date.

   Integration: When activities are created through CSV, MPP, MPP XML, or P6, the default value will be None. Upon modification of the activity constraint type, Unifier scheduler will readjust the schedule sheet accordingly.
4) Click **OK** to close the Activity form window and save the schedule sheet.

Add general comments (with or without file attachments)

You can add general comments to a schedule sheet, and can include file attachments with the comments. This is similar to adding general comments to a business process.

To add a general comment to a schedule sheet

1) Select the schedule sheet in the log and click the **Comments** button. The General Comments window opens.
2) Add your text comments in the **Text Comments** box in the upper portion of the window. You can view any previous comments in the Existing Comments section of the window.
3) To attach a file to the general comment, click the **Attach** button.

> **Note**: Once you add a general comment to a schedule sheet, you cannot edit or delete it.

4) Click **OK** to save the general comment.

Refreshing Schedule Sheet data

A schedule sheet refresh is required if there are changes to project costs, activity costs, for example role rates and amounts, currency rates, and schedule sheet or activity calendars. When the schedule sheet requires a refresh, you will see a refresh icon in the log. When you open a schedule sheet that requires a refresh, you will be asked if you want to refresh the data in the sheet. If you decline the refresh the schedule sheet will not open.

Schedule sheet refresh options are set on the Refresh tab of the schedule sheet properties. Options include:

- Cost: Refresh the cost data only from the associated CBS code
- Schedule: Refresh the schedule data only, based on dates
- Cost and Schedule: Refresh both the cost and schedule data
- Set Frequency: Define the schedule sheet refresh frequency. This scheduled refresh updates both cost and schedule data.
- History: View the schedule sheet refresh history

Schedule sheet refresh can fail if:

- An activity has more than one CBS code
- A cost sheet column to which a schedule sheet column is associated is deleted from the cost sheet

To set the frequency of schedule sheet refresh

The schedule sheet refresh frequency you set is shown in the schedule sheet log under the column heading **Scheduled**.

1) Navigate to the schedule sheet log.
2) Select one or more schedule sheets.
3) Choose **Refresh > Set Frequency**.
4) Select the **Enable scheduled refresh** checkbox.
5) Select the **Frequency** and the **Range of Recurrence**.
6) Click **OK**.

To view schedule sheet refresh history

1) Navigate to the schedule sheet log.
2) Choose **Refresh > History**.
3) Select a record and click **Open** to view history details.
4) Click **Cancel Request** to cancel any history query that has not started (has no Start Date).
5) Click **Close Window**.

Print a Schedule Sheet

You can print schedule sheet columns and Gantt charts from the PDF of the schedule sheet.

To print a schedule sheet

1) Navigate to your project or shell and open the schedule sheet you want to print.
2) Click **File > Print** to open the print option window.
3) Select the print options you want.
   - All columns - Check to print all columns of the schedule sheet (default.)
   - Gantt Chart - Prints the current view of the Gantt chart (Gantt, Critical and Tracking.) This is checked by default.
4) Click the **Print to PDF** button.

   Your browser may require you to confirm opening the PDF or saving the PDF. If saving the PDF, click Save. Browse to where you saved the file and open the PDF. If you click Open, an Adobe PDF opens with the schedule sheet.
5) From within Adobe PDF file, click **File > Print**. The Adobe Print window displays.
6) For multiple pages of a schedule sheet, select **Tile All Pag**es from the **Page Scaling** drop-down.

   Note: This option is not available on older Adobe Reader versions. It is recommended that you upgrade to the latest Adobe Reader (free). If you have Adobe Acrobat or Adobe Professional, the Tile All Pages option will print multiple pages of the schedule sheet.
7) Click **OK**. To cancel the print, click **Cancel**.

Schedule Manager audit log

Each change in the Schedule Manager creates a record in Unifier, which is useful for auditing purposes. An audit report of these records shows detailed information on dates, events, actions, and old values versus new values, along with the user or proxy user who performed the action.

To view schedule sheet details in the audit log

1) Navigate to the Schedule Sheets log in the Schedule Manager node.
2) In the **View** menu, click **Audit Log**.

   You can review audit log entries for Date, Event, Action, Field, Old Value, New Value, User Name, Proxy User, and Attachments.

To view cell details in the audit log

1) Navigate to the Schedule Sheets log in the Schedule Manager node and open a schedule sheet.
2) Under the **View** menu, click **Audit Log**.

   You can review audit log entries for Date, Event, Action, Field, Old Value, New Value, User Name, Proxy User, and Attachments.

Notes:

- When you create or import the schedule sheet by way of Configuration Package, the system will not create any audit entry.
- If the Schedule Start Date is updated through a change in the linked project start date, the audit log will show an entry for the updated Schedule Start Date.

Set Schedule Sheet Baselines

A baseline is a set of original project or shell estimates. It consists of the following for a task:

- Start
- Finish
- Duration

Comparing multiple baselines provides insight into project health. With the original estimates, you can track the progress of a project or shell and compare its state at any given time. Unifier leverages the CBS code association between schedule sheets and earned value (EV) sheets to construct baseline comparison. The best way to do this is to:

- Copy the schedule sheet to establish a new baseline
- Create a corresponding detail-level EV sheet for the new schedule sheet
- Create a summary EV sheet to compare selected baseline information

For more information, refer to the *Unifier Earned Value Management User Guide* (User Help).

You can save up to 11 sets of baselines in a single project or shell schedule sheet. You can use these various baselines as snapshots of your project or shell progress over time, with each baseline corresponding to key project or shell events.

The first baseline that you save is named Baseline. Subsequent baselines are named Baseline 1 through Baseline 10. The baseline sets are system-defined data elements that your administrator has included on the activity attribute form. When you set up the baselines, the values from the start, finish, and duration elements are mapped to the baseline set.

Note: The baseline columns are not required, but you must use all three of them, if you use them at all. You must use the complete baseline set of columns (start, finish, and duration) in your sheet. You cannot use one baseline column alone.

All baseline attributes are read only in the schedule sheet. They can be modified only via the set/clear schedule sheet baseline actions. Users with the Edit Data and Structure permission on the schedule sheet can set or clear baselines.

Note: The Edit data permission allows you to import data.

All baseline attributes are read-only on the schedule sheet. They can be modified only via the set/clear schedule sheet baseline actions. Users with the Edit Data and Structure permission on the schedule sheet can set or clear baselines..

You can also set baselines on projects or shells listed on an Activity Sheet. See ***Set up Activity Sheet Baselines*** (on page 564) for details.

To set a baseline on a schedule sheet

1) Open the schedule sheet in the log. If you modify the schedule sheet, you must save the sheet before you can set baselines.
2) Choose **Edit > Baseline**. The Set Baseline window opens.
3) Select the baseline to set. The **Set baseline** radio button is selected by default. Only baselines that have been designed in uDesigner are available.
4) Click **OK**. The values from the start, finish, and duration elements are copied into the corresponding baseline elements. If the baseline elements contain data, you will receive a warning that the baseline will be overwritten You can choose whether to override the data.

To clear a baseline on a schedule sheet

1) Open the schedule sheet in the log.
2) Choose **Edit > Baseline**. The Set Baseline window opens.
3) Select the baseline you want to clear.
4) Select the **Clear baseline** radio button.
5) Click **OK**.

Lock or unlock the schedule sheet structure

You can lock a schedule sheet. This locks the columns and activity rows, preventing editing of the sheet structure.

To lock or unlock a schedule sheet

1) Open the schedule sheet.
2) Click the **File** menu and choose **Lock Structure** or **Unlock Structure**.

Linked schedule sheets

Linked schedule sheets are project or shell schedule sheets that are dynamically linked to a schedule sheet template. You must work with your Administrator to enable and setup the schedule sheet linking.

Linking is optional; it is useful if you have numerous project or shell schedule sheets to update simultaneously with the exact same information and structure.

Linked schedule sheets can be updated manually, but you can only make limited changes to dates and data.

You can change:

- Start and Finish dates
- Durations
- Schedule sheet properties; however a linked template push cannot change sheet properties

You cannot:

- Add Activities
- Delete Activities
- Indent/Outdent Activities
- Import CSV, MPP
- Import with Overwrite or Merge (XML, WS)
- Modify Activity Name, Activity Codes
- Modify Scope Management Setup
- Cannot add /modify/delete columns
- Re-arrange (cut/paste) activities

The overall structure of the sheet (adding or deleting activities, for example) is updated only through the associated linked template. The Administrator must unlink the linked schedule sheets for you to be able to modify the structure of the sheet.

> **Note**: Updating schedule sheets through linked schedule sheet templates can overlay the structure of schedule sheets and the data elements listed below. Be sure that you want the linked sheets to be updated to this extent by the template.

A linked schedule sheet template update to a linked schedule sheet can push:

- Changes to Activity Name
- Changes to Activity Codes
- Changes Activity Id (caused by re-ordering of activities)
- Addition of new activities or deletion of activities
- New or changed predecessor relationships
- Addition, deletion, or modification of column definitions
- Ordering of activities in sheet
- Changes to the indentation of activities

> **Note**: Changes to dependent activity Start Date or Finish Date caused by changes such as modifications to predecessors or the addition or deletion of activities are handled dynamically by the schedule sheet

To view the linked template for a linked schedule sheet

1) Navigate to the schedule sheet log.
2) Select a schedule sheet that is linked to a schedule sheet template.
3) Choose **View > Linked Template**. The Linked Template window opens.
4) Click **Close Window** when you are done viewing the linked templates.

To link existing schedule sheets to a link-enabled template

You can link an existing schedule sheet to a link-enabled template. Linking an existing schedule sheet causes loss of existing data on the project or shell schedule sheet, including all activities, columns and cell data. Project or shell schedule sheet properties, including the Schedule Start Date are retained.

1) Navigate to the schedule sheet log.
2) Select a schedule sheet that you want to link to a schedule sheet template.
3) Choose **View > Linked Template**. The Linked Template window opens.
4) Click **Add**. The Schedule Sheet Templates window opens.
5) Select a template and click Select.
6) Click OK on the confirmation message that data in the newly-linked sheet will be modified when the update is completed using the link between the template and the sheet.
7) Click **OK**.

To unlink schedule sheets from a link-enabled template

Unlinking removes the link between the schedule sheet and the template so no further updates can occur from the template.

1) Navigate to the schedule sheet log.
2) Select a schedule sheet that is linked to a schedule sheet template.
3) Choose **View > Linked Template**. The Linked Template window opens.
4) Click **Remove**.
5) Select the template.
6) Click **OK**.

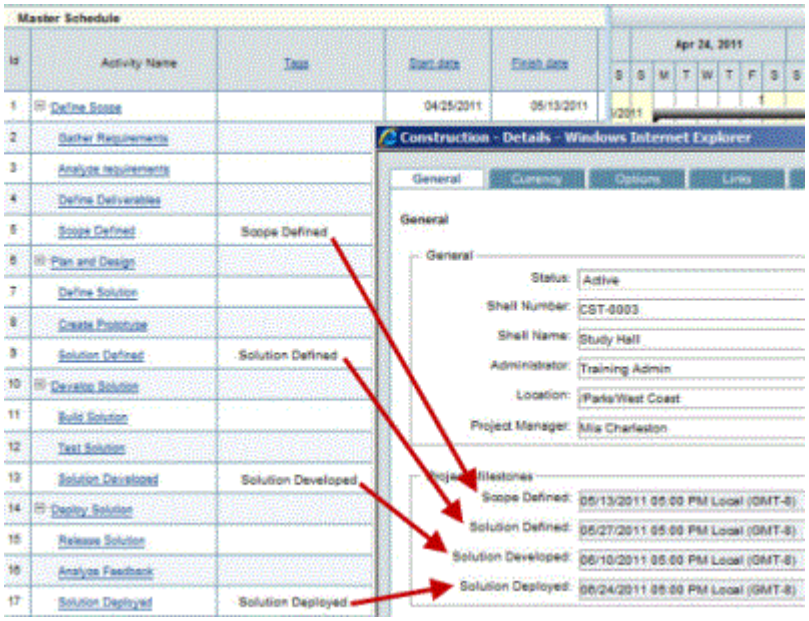
Linked tags and Business Process fields

Tags work with linked elements to connect schedule sheet activities with business processes, shells, and configurable manager objects. With this feature, you can view key activity dates, such as milestones, on forms like project details, without having to open the schedule sheet.

To select a link tag to populate a business process field

1) Add a "Tag" column to the schedule sheet.
2) On the schedule sheet, select the row containing the activity you want to link.
3) Click in the Tag column. The cell becomes editable.
4) Click the arrow and select the tag you want to assign to this activity.

5) When you assign this tag to the activity, any form associated with this schedule that contains a linked element with a matching tag will now show the current value of that activity.



Search for schedule sheets

To search for a schedule sheet in the log:

1) In User Mode, select the project or shell, and select **Schedule Manager > Schedule Sheets**. The Schedule Sheets log opens.
2) Click the **Find** button. The Find box opens at the top of the log.
3) Click the **Search By** drop-down list and enter the field to search by.
4) Enter search criteria in the **Search for** field.
5) Click **Search**.

Program Schedule Sheets

Program-level schedule sheets are created automatically when a project or shell schedule sheet (for a project or shell within the program) is created. The rows are the project or shell sheets. You can configure columns. There is one schedule sheet per program.

To open a program schedule sheet

In User Mode, select **Programs > Schedule Manager > Schedule Sheets**. The Schedule Sheet log opens.

Rows correspond to project schedule sheets. You can click the row to open the project schedule sheet. Default columns are Project Name, Start Date, and Finish Date. You can create additional columns in the same way that you do for a project/shell schedule sheet.

Add a program schedule sheet column

To create a column on a program schedule sheet

1) Open the program schedule sheet.
2) Click the **Columns** button. The Columns Log window opens.
3) Click **New**. The Column Properties window opens.
4) Complete the window as described in the following table.
5) Click **OK**.

In this field:	Do this:
Name	This field is populated with the chosen Data Source
Data Source	Select a **Data Source** from the drop-down list. The options are from project schedule sheets. The drop-down will only show data elements of type Date and SYS Date Logical Data Source (from activity detail form).
Rollup from Project	Configure rollup parameters from project schedule sheets. Select **Enable rollup from project schedule** to rollup project data. When you select **Enable rollup from project schedule**, the data comes from the top-level summary row for the schedule sheet. If you do not have a top-level summary row, do not select **Enable rollup from project schedule**. Instead, select from these options: ▸ **Date rollup:** Choose to roll up the Earliest Date or the Latest Date across all projects for Date type data. ▸ **Number rollup:** Choose roll up Total or Average values for Numeric type data, or Weighted Average based on and select a data element from the Activity Attributes form.
Entry Method	Choose one (the options that are available are dependent on the data source chosen): ▸ **Manual Entry**: Users enter values directly on the schedule sheet ▸ **Formula**: Value is calculated using the entered formula. Formulas can include calculating differences between date columns, or adding/subtracting numeric columns/values from dates. This is useful to calculate durations or to calculate one date from another date by adding/subtracting days.
Data Format	This controls how data is displayed on the schedule sheet. Options are: ▸ **Show as percentage**. Data is displayed as % ▸ **Decimal places**. Choose 1 to 8. If the data element was defined in uDesigner with a specific number of decimal amount, it will override any decimal places you specify here.

	▸ **Use 1000 Separator**. Select checkbox to include a comma (,) separator ▸ **Negative Number Format**. Choose parentheses or minus sign
Summary	This controls the display of numeric and date column data on summary rows. ▸ **Display**: Select the checkbox to display summary data for the column ▸ **Date Rollup**: Available only for Date data types. Select Earliest Date or Latest Date. ▸ **Earliest Date**: To summarize columns that represent activity start dates (e.g. start, planned start, actual start, etc.). The cell on the summary activity will show the earliest date from all child activities. ▸ **Latest Date**. To summarize columns that represent activity finish dates (e.g. finish, planned finish, actual finish, etc.). The cell on the summary activity will show the latest date from all child activities. ▸ **Number Rollup**: Available for numeric columns. Choose Total (displays sum total of the rows) or Average (displays average value of the rows). For example, you might Total for currency or other numeric types; for percentage columns, you might want to choose Average.
Display Mode	Choose to **Show** or **Hide** the column from user view. Users with Create permissions can see hidden column in the Columns Log.
Column Position After	The new column will be inserted after the column selected.

Activity Sheets in Schedule Manager

Activity sheets exist in the Schedule Manager at the Program level. An activity sheet allows you to view, edit, and update activity dates across project and shells. The activity data is from the Master Schedule Sheets only.

For example, uParks Company has 1000 projects that fall within four categories. Four programs are created to manage the Schedule Sheet activities. Each program has its own Program Manager, controlling 250 projects. uParks has a finite number of resources and needs to stagger the work so resources can be used evenly over time. The Program Managers want to adjust their project forecast dates so that 20 projects will complete each month for the next 12 months (with 30 completing in month 12, so that all 250 are completed in a year). Using activity sheets, you can manage your project and shell data in this way.

Activity sheet terminology

- **Activity Sheets**: Used to view and update the Master Schedule Sheet data from projects and shells within Programs.
- **Activity ID**: A value in a Program activity sheet used to map to an activity in one or more projects or shells.
- **Sub-columns**:
  - Columns grouped under an Activity Code
  - Displays data from projects/shells
  - Updates data in a project/shell

The activity sheet allows you to:

- Display and edit Master Schedule Sheets activity data across projects and shells as columns and sub-columns
- Modify editable elements
- Affects down stream dates of linked activities
  - Start, Finish, Duration
  - Estimated Start, Finish, Duration
  - Critical path dates

Project or shell names form the rows of the activity sheet; the activity codes and activity data elements form the columns and sub-columns in the sheet. The activity sheet also allows you to update multiple activities after modifying and saving the activity sheet. This update automatically updates the downstream dates of linked activities, such as Start Date, Finish Date, Duration, Estimated Start Date, Estimated Finish Date, or other dates.

> **Note**: In Cash Flow, Cost Sheet, and Earned Value, you can replace the Summary Sheet with the Activity Sheet as a source.

Create an Activity Sheet

The permissions for creating an Activity Sheet are the same as those for creating a Schedule Sheet. You can create a new sheet or use a template.

To create an activity sheet

1) Navigate to your shell in User mode and click the **Schedule Manager** grouping node to expand.
2) Click **Activity Sheet**.
3) Click **Create**. The Activities Sheet properties window opens.
4) Complete the General block as needed.
5) Complete the Activity Sequence Numbering block as needed.

To complete the **General** block:

In this field	Do this
Name	Enter a name for the sheet. This is used as the sheet

	identifier and must be unique. (up to 120 characters)
Description	Enter an optional description. (up to 400 characters)
Status	When you are ready to make the sheet active and available for use, click Active. The default is Active.
Calendar	Select the type of calendar that will be used for the activities in the sheet.
Select Project Schedule Start Date Source	Select **Manual** if you would like to manually set a start date for the schedule. If you select From Shell Attribute, this field becomew read only and auto-populates with the start date defined in Shell Properties.
Schedule Start Date	If you selected Manual in the **Select Project Schedule Start Date Source** field, this field will become editable, and you can input the desired start date for the schedule.
Time Zone	Select the time zone that will be used when saving the date and time of activities in the sheet.
Data Date	This field is auto-populated with the current date and read only.
Schedule Type	This field is auto-populated and read only.

To complete the **Activity Sequence Numbering** block:

In this field	Do this
Activity ID Prefix	When creating an activity in the activity sheet, the Activity ID will start with the alphanumeric characters in this field.
Activity ID Suffix	When creating an activity in the activity sheet, the Activity ID will end with the number in this field.
Increment	When creating an activity in the activity sheet, the number in the Activity ID will increase by this number from the highest Activity ID number in the log.

Update Multiple Activities

You can use the Activity Sheet to update multiple activities at once.

- Changes to activity Start and Finish dates made via program activity sheets prompt role amount recalculation on the affected schedule sheets.
- All changes are captured in the History Log, found in the menu with the three horizontal bars.

To update multiple activities

1) Navigate to your shell in User mode and click the **Schedule Manager** grouping node to expand.
2) Click **Activity Sheet**.
3) Double click an activity sheet to open.
4) Modify the data as needed. Cells that are modified are highlighted on the sheet. Only elements that were marked as editable can be modified. To undo changes to the log, click **Cancel** or **Refresh**.
5) Click the **Save** button.

   If there is an error in the log, such as if the activity start date entered is before the Schedule Start Date, or if a date entered conflicts with a dependency, the Save option will be disabled until the error is resolved.

   You can modify data elements other than the system defined Start Date, Finish, Date or Duration directly to matching activities without affecting other activities.

   If there are Finish-Start dependencies:

   - If you modify the Start Date on any activity, the system will compute the Finish Date of current activity, keeping the Duration Constant
   - If you modify the Start Date on any activity, the Start Date of the successor (downstream) activity is updated
   - If you modify the Finish Date on any activity, the system will compute the Start Date, keeping Duration constant
   - If you modify the Finish Date on any activity, the system will modify the Start Date of successor (downstream) activity
   - If you modify the Duration on any activity, the system will compute a new Finish Date, keeping the Start Date constant
   - If you modify the Duration on any activity, the system modifies the Start Date of successor (downstream) activities

   Changes to activities that occur through Activity Sheet update are shown on the Audit Log.

Update Activity Sheet Properties

To update Activity Sheet properties:

1) Navigate to your shell in User mode and click the **Schedule Manager** grouping node to expand.
2) Click **Activity Sheet**.
3) Select an activity sheet from the log.
4) In the right pane, click the **Properties** tab.

Export Activity Sheets

You can export the entire Activity Sheet to a CSV file.

To export an Activity Sheet

1) Navigate to your shell in User mode and click the **Schedule Manager** grouping node to expand.
2) Click **Activity Sheet**.
3) Double-click to open the sheet you want to export.
4) Click the **Menu Options** (three horizontal bars)
5) Hover over **Export**, then select either **Activity Detail**s or **All Activities**. This will export a CSV file to your system containing the respective information.

Set up Activity Sheet Baselines

You can set baselines on Activity Sheets at the program level. On Activity Sheets, baselines can be set for multiple projects or shells, and so affect all activities on the selected project or shell schedule sheets. The baselines you set on the Activity Sheet will affect all of the activities on the selected projects or shells, regardless of which activities are displayed on the Activity Sheet. Setting baselines at the Activity Sheet level can be useful if you are managing several projects or shells as a program. This functionality enables you to have insight into the activities for all of the selected projects or shells, and be able, for example, to discover quickly whether there has been any delay in any of the project or shell activities.

Users with the Edit Data and Structure permission on the project or shell schedule sheet can set or clear baselines for the activities from those projects or shells on the activity sheet.

See ***Set Schedule Sheet Baselines*** (on page 554) for further details on baselines.

To set a baseline on an Activity Sheet

1) Open the Activity Sheet in the log. If you have modified the Activity Sheet, you must save it before you can set baselines.
2) Click the **Actions** menu.
3) Click **Create Baseline** and set a name.

To update a baseline on an Activity Sheet

1) Open the Activity Sheet in the log. If you have modified the Activity Sheet, you must save it before you can set baselines.
2) Click the **Actions** menu.
3) Click **Update Baseline** and set a name.

Activity Sheet (Integrated with an External Application) in Schedule Manager

> **Note**: Integration with P6 application applies to the CBS type Shell only. The integration does not apply to the Unifier Project (Standard).

For more details about the Activity Sheet, refer to the *Unifier Earned Value Management User Guide*.

Additional information about an Activity Sheet integrated with an external application

- It is required that an Activity Sheet to have the following fields as fixed columns:
  - **Activity ID**
  - **Activity Name**

> **Note**: You cannot remove the two required fields from an Activity Sheet.

- When an Activity Sheet attribute form is deployed to Unifier for the first time, all fields present in the Activity Sheet attribute form are saved and displayed as columns in the Activity Sheet following the same order.
- If you remove a field from an Activity Sheet attribute form and the Activity Sheet attribute form is deployed to Unifier, then the deployment does not go through if the field that you had removed from the Activity Sheet attribute form is present as a column in the Activity Sheet; otherwise, the deployment goes through if the field that you had removed from the Activity Sheet attribute form is not present as a column in the Activity Sheet.
- If you add a new field to an existing Activity Sheet attribute form and the Activity Sheet attribute form is deployed to Unifier, then the columns in the Activity Sheet do not reflect this change and you need to add the field to the columns in the Activity Sheet manually.
- You can add columns to or remove columns from an Activity Sheet view.
- You can arrange the columns order in an Activity Sheet.
- You can find, sort, group, and filter Activity Sheets.
- The data within and Activity Sheet is synchronized with P6 by way of Gateway (Import/Export Synchronization) daily.

> **Note**: Exchange of data with inactive CBS type Shells is not permitted whether initiated manually or by Gateway.

You can map the P6 CBS Code to the Unifier CBS Code (`bitemID`) in Gateway (in the field mappings).

When the Activity Sheet data is synchronized between P6 and Unifier, then Unifier Provider converts the P6 CBS Code to the corresponding Unifier CBS Code (`bitemID`), and the Activity Sheet is populated automatically.

When the data is synchronized between Unifier and P6, then Unifier Provider converts the Unifier CBS Code (`bitemID`) to the corresponding P6 CBS Code, and the Activity Sheet, in P6, is populated automatically.

The CBS auto-population works differently in Base commit, Change commit, and Payments with respect to other classifications that are under Cost type business processes.

The auto-population for the CBS Code occurs in Base Commit business processes and Change Commit business processes.

In Payments business processes, the CBS Code matches with the Commit line item of SOV, then the CBS Code is auto-populated; otherwise, the CBS Code does not auto-populate.

- If there is only one Commit line item matching the CBS Code/Cost Code, then the CBS Code will be auto-populated along with the Commit line item from the SOV, if the CBS Code/Cost Code matches with what is present in the SOV.
- If there is more than one Committed line item (where the CBS Code matches with the Activity picker), then the value for the CBS code remains as it was.
- If the Activity picker is associated with a CBS Code that is not used by any of the Committed line items in the SOV, then the value for the CBS code remains as it was.

You can change the CBS Code by clicking the CBS Picker, which will over-write the auto-populated value.

Gateway and Unifier Provider

The Activity Sheet object in Unifier must be available for integration through Gateway.

> **Note**: The Activity Sheet object, in its entirety, must be available as a fields in both Gateway and Unifier.

To synchronize data between a P6 Activity object and a Unifier Activity Sheet object, data mapping must take place. The following sections explain data mapping in detail.

Data Mapping Templates

About Data Mapping templates

When a project in Unifier is linked to a project in P6, each project retain their respective name, with no changes applied to the names.

Establishing a link between a project in Unifier and a project in P6 is based on a specific Data Element (uuu_int_p6_Project_id) corresponding to a specific P6 element (Project ID).

The following lists the out-of-the-box (OOTB) Data Mapping templates available for use and provides a description for each template.

Create Activity Sheet from P6

Use this template to map all the fields in the Activity Sheet to the P6 Activity object that is needed from P6. You can use this template to create a new Activity Sheet in projects.

There are 26 pre-defined elements that are included in the Activity Sheet Attribute form. By default, this template contains the first 24 pre-defined elements that are included in the Activity Sheet Attribute form, and the fields are mapped to the corresponding P6 Activity object.

The following elements are excluded from this template:

- Primary Constraint
- Secondary Constraint

You can deploy custom activity attributes to Gateway and then add those attributes to this template.

Update Activity Sheet from P6

Use this template to update an existing Activity Sheet in a project based on P6 data.

There are 26 pre-defined elements that are included in the Activity Sheet Attribute form. By default, this template contains 22 pre-defined elements that are included in the Activity Sheet Attribute form, which cannot be populated by Reverse Auto-Population. As a result, the template does not contain the following elements:

- Actual Start
- Actual Finish
- Primary Constraint
- Secondary Constraint

You can deploy custom activity attributes to Gateway and then add those attributes to this template.

Send Activity data to P6

Use this template to map those fields in the Activity Sheet Attribute form, to P6 Activity object, that might get updated in Unifier by way of a Business Process record. These fields need to be updated from Unifier to P6 through Gateway.

There are 26 pre-defined elements that are included in the Activity Sheet Attribute form. By default, this template contains the 2 fields that can be populated by Reverse Auto-Population. As a result, the template contain the following two elements, only:

- Actual Start
- Actual Finish

You can deploy custom activity attributes to Gateway and then add those attributes to this template.

> **Note**: The fields in this template must be maintained exclusive of the fields in the "Update Activity Sheet from P6" template. There are no common fields between the "Send Activity Data to P6" template and the "Update Activity Sheet from P6" template. If you add the common fields to the two templates, inaccurate information can be generated in either application (Unifier or P6).

Editing Data Mapping templates

You can edit (take out a field or add a new field) any of the Data Mapping templates mentioned in this section by going to Gateway > Configuration > Customization.

1) From the Customization window, select the "Activity" business object from the "Select Business Object" drop-down list to see all Data Mappings, based on the "Activity" object.
2) Select any Data Mapping template.
3) Click Edit and go to the Mappings tab.
4) Add a new field, to exchange data for example.

You can add any custom field to an Activity Sheet Attribute form in uDesigner and Deploy the Activity Sheet Attribute form to Gateway. All the fields from the Activity Sheet Attribute form appear in Unifier (P6 Activity Sheet drop-down list). As a result, you can select any Activity Sheet Attribute form that you have defined in Unifier and map the Activity Sheet Attribute form to a corresponding activity field (fixed field or user-defined field) in P6; however, ensure that you map the Unifier element to the Activity Sheet Attribute form in a way that the "Data Types" of the P6 Activity elements match the Data Definitions (DEs) of the Activity Sheet Attribute form. The following shows the mapping of data between the P6 Data Types and the corresponding DEs.

P6 Data Type	Corresponding Unifier Data Definition
Text (40 chars)	SYS Short Description Text 50
Text (120 chars)	SYS Short Description Text 120
Text (UDF* Fields)	SYS Short Description Text 255
Date	Date Picker
Cost	Currency Amount
Number	Decimal Amount
Integer	Integer Amount
Indicator	SYS P6 Indicator **Note**: In the Edit window of the Data Mapping template, Gateway does not display "Indicator," as an available field type. As a reasult, you need to map an "Indicator" type field from Unifier to P6 UDF and set the "Data Type" as "String."
Activity Status Pulldown	SYS Short Description Text 50
Activity Type Pulldown	SYS Short Description Text 50

*UDF: User-defined Field

Additional information about editing Data Mapping templates

In P6 some activity attributes fields, cannot be updated manually, or by way of any other methods. These fields must be calculated using the P6 internal logic. If you modify the "Send Activity Data to P6" Data Mapping template to map to a P6 activity attributes field that cannot be updated, then:

- The P6 internal logic prevents the mapping during integration and synchronization will fail.
- The data in P6 is updated incorrectly.

Ensure that you are aware of the limitations when you add a new field to the "Send Activity Data to P6" Data Mapping template.

Since the "Actual Finish" field is added to the "Send Activity Data to P6" Data Mapping template and based on the value of the "Activity Type" field in P6, the "Actual Finish" field gets calculated, in P6, you must not keep the "Actual Finish" field in the "Send Activity Data to P6" Data Mapping template. Instead, you must keep the "Actual Finish" field in the "Update Activity Sheet from P6' Data Mapping template.

In short, you need to keep, or designate, only one application as the source for each field. This is to prevent a field to get updated in both applications.

Business Flows

The Unifier Provider allows you to filter Shells using "Project IDs." You can do this filtering in two ways:

- By entering a fixed list of comma-separated Project IDs values (corresponding to each Shell), and when you synchronize, all the Projects that match those Project IDs are pulled.
- By using any Shell attribute (custom or system defined). When Object = Project, you can go to the "Source App Parameters" window and add filter conditions to a synchronization, using any data element of "Data Type = String" or "Data Type = Integer"' from a Shell attribute form. The "Field" drop-down lists in the Edit Business Flow window has an option called, "Shell Attribute." You can:
  1. Select **Shell Attribute**.
  2. Use the information presented (in the **Value** box) to enter any Shell attribute DE name of Data Type = "**String**" or "**Integer**."
  3. Click **Add Row** and set the item as a condition to filter the Unifier Shell.

  Notes:

  - You can set only one value for a Shell attribute within a given condition; however, you can add more than one condition for a Shell attribute.
  - If you set conditions for a DE which is neither "Text" nor "Integer," the synchronization will fail and you will receive an error-message.

There are two templates available for OOTB Business Flows:

- **Get Activity data from P6**
  - To create Activity Sheet in the Unifier Projects.
  - To update an existing Activity sheet.
- **Send Activity data to P6**

  To transfer, or push, data from a Unifier Activity Sheet object to a P6 Activity object.

  Note: For details, see the "***Data Mapping Templates***" section.

The "Import Project data" flow ("Send Activity Data to P6" flow) has the Data Mapping template the "Send Activity Data to P6" set a "Update" only to prevent the accidental creation of activities in P6 from Unifier. P6 is the source for all activities.

Synchronization

The synchronization of the following two commands (on the OOTB Data Mapping templates) is scheduled to run *daily*:

- **Get Activity Data from P6**
- **Send Activity Data to P6**

> **Note**: For details, see the "***Data Mapping Templates***" section.

Synchronization can be performed:

- From Unifier by executing the "Get Data" or "Get Activity Sheet Data" commands from the "Activity Sheet" log or the Shell log.
- From Gateway, manually.

The Unifier Provider performs a check to see if the Unifier Project is linked to the corresponding P6 Project.

- If the Project is not linked to the corresponding P6 Project, you need to establish the link.
- If P6 does not have a corresponding project, then a message will notify you that the project has not been created in P6.

To ensure a successful synchronization, do the following:

1) Set the Shell attribute DE = `uuu_integrated_with` to P6.

> **Note**: If the attribute was missing, after this setup the integration will take place.

2) Receive the Activity Sheet data from Gateway and:
   - If an "Activity Sheet" does not exist in Unifier, create the "Activity Sheet," populate the fields with the data received, and name the sheet as: `<P6 project name>`.
   - If an "Activity Sheet" exists, update the "Activity Sheet" with data from Gateway.

You need to perform the steps above to create the "Activity Sheet" within Unifier Shells for the first time, only. Once you create an "Activity Sheet," the hourly synchronization updates the "Activity Sheet" with the latest data received from Gateway.

When projects between Unifier and P6 are linked for the first time, Gateway ensures that a P6 Project attribute that is integrated is checked.

If a "Get Activity Data from " synchronization is performed, but the P6 Project that must correspond to the Unifier Project is not found by Gateway, then the system will generate an error-message.

Sending Activity Sheet data to P6

When you synchronize, the Unifier Provider performs the following:

- Checks to ensure that the Unifier Project contains an "Activity Sheet."
  - If an "Activity Sheet" does not exist, then the system generates an error-message.
  - If an "Activity Sheet" exist, then you can continue on with pulling (receiving) data.

- Pull all updated "Activity Sheet" data by way of Reverse Auto-Population since the last "Send Activity Data to P6" synchronization. You can send the updated "Activity Sheet" to Gateway in Portable Database Image (PDI) format.
  - If the "Activity Sheet" has not been updated by way of Reverse Auto-Population, then you do not need to send data to P6.
  - If you add a DE to a Data Mapping template that is read-only in P6, then the system generates an error-message.

Additional information about synchronization

- If an Activity Type, in a Schedule, is set as “Start Milestone,” then P6 does not allow you to update the "Actual Finish Date." If you proceed with updating the "Actual Finish Date," then you generate inconsistent data.
- If an Activity Type, in a Schedule, is set as “Finish Milestone,” then P6 does not allow you to update the "Actual Start Date." If you proceed with updating the "Actual Finish Date," then you generate inconsistent data.
- You must define the filter condition before you filter the Unifier Project using the "Send Activity Data to P6" synchronization command.

> **Note**: If a filter condition is defined in Business Flow, but a filter condition is not defined in the synchronization, Gateway will not know which Project to send data from. As a result, filter condition must be defined within the synchronization itself.

Connectivity issues with Gateway or incorrect Gateway parameters will cause synchronization to fail. Use History, Admin mode, to see the list of failed synchronizations, if any.

Criteria for successful data exchange

Ensure that the fields ("Update Activity Sheet from P6" and "Send Activity data to P6") in the Data Mapping templates are not overlapping and a field that is set to map from P6 to Unifier is not added to the "Send" template.

> **Note**: The OOTB Data Mapping templates are designed in a way that the fields are exclusive; therefore, when you edit a Data Mapping template, ensure that you keep the fields that are exclusive intact.

If you use DE = uuu_int_p6_project_id for linking P6 and Unifier projects, when the "Project ID" field in P6 is updated, then the "P6 Project ID" (uuu_p6_project_id), field in corresponding Unifier Shell, must be updated manually.

UDR, Data Views, and ER View

You can access and open an "Activity Sheet" in Unifier by way of User-Defined Reports (UDRs), Data Views, and ER views.

The new Data Type that you need to use for creating UDRs is the "Shell Activity Sheet."

Using Schedule Sheets

Before you begin: ***Schedule Sheet permissions*** (on page 523) are granted on a sheet-by-sheet basis. Adding or editing an activity requires **Edit Data** or greater permission. If you only have **View** permission you cannot add or edit activities. The Schedule Manager helps you manage project or shell and program schedules by:

- Creating project activities
- Assigning cost codes to activities
- Assigning roles to activities
- Creating relationships between activities
- Tracking schedule progress and variables
- Calculating the schedule's critical path

Best Practice is to set up your schedule sheets and complete with activity rows, in the project template. However, you can create **Project Schedule Sheets** and add activities in existing projects.

In Primavera Unifier, you can also import project schedule records from Primavera P6. Imported schedules are editable, and the data can be used in reports. If you copy activities from one schedule to another, the system will immediately notify you if the change will create a schedule conflict so that you can make corrections as you work.

Each change in the Schedule Manager creates a record in Primavera Unifier, which is useful for auditing purposes. An audit report of these records shows detailed information on dates, events, actions, and old values versus new values, along with the user or proxy user who performed the action.

Each project can have multiple schedule sheets, and one Master Schedule Sheet. The master schedule sheet drives project start and end dates, tracks the project's progress, and serves as the interface between the Schedule Manager and other modules. The master schedule integrates cost items on the schedule with the Cost Manager. Users can refresh resource rates on the schedule sheet and post the new rates to the Cost Manager, update the cost sheet with assignment costs, and refresh costs on the sheet to recalculate labor costs and post them to the cost sheet.

Features include the following:

- Fully configurable activity attributes form
- Activities and Gantt chart on the same schedule sheet
- Interactive Gantt chart with ability to drag activity end dates and link activities
- Tracking Gantt chart
- Filters for activities
- Baselines for schedule sheets and activity sheets
- Activity update
- Ability to create one or multiple interactive schedule sheets for the same project or shell
- Integration of Schedule Manager with the Resource Manager, enabling resource loading of schedule activities

- Multiple CBS codes for each activity to capture activity costs, such as labor, non-labor, and fixed costs. If designed in Primavera uDesigner, you can add a column to the schedule sheet to display the CBS codes associated with each activity.
- View the cost distribution information by CBS codes from a schedule sheet
- Cut and paste and copy and paste of rows in a sheet
- Update of schedule sheets from linked templates
- Critical path calculation and display
- Streamlined and enhanced integration and interaction between Primavera Unifier's Schedule Manager and Primavera and Microsoft Project
- Activity progress tracking and percentage of work completed per assigned resource
- Works with shells that have the CBS cost type
- Scope Management, with the ability to launch business processes from activities and automate schedule management.
- Budget and progress settings, and the ability to work with progress and earned progress data

You will need to add activity rows to the schedule sheet before you can enter your company data to the schedule sheet.

Scope Management

The Scope Management defines deliverables, responsible roles, actual assignees and their schedules, and drives coordinated production of these deliverables. The Scope Management initiates actions for producing deliverables based on the completion of dependencies. It routes them to the responsible person or group, monitors their completion, and updates deliverable statuses automatically. It manages different activities across schedules for different team members simultaneously.

Team members work on BPs that are linked to activities in a schedule sheet. The Scope Management allows you to use existing schedule management functionality with added data elements to automate the management of a project's scope and schedule with all associated activities, tasks, and deliverables. This feature provides project managers with the ability to manage each scope item's task assignments, ownerships, and durations.

Project managers can use scope management to manage high-volume, quick turnaround projects that have standardized scope and scheduled activities. Examples of projects that would benefit from the use of scope management functionality are retail construction projects such as bank branches or chain fast food restaurants. Unifier scope management capabilities are also useful for large capital projects with complex scope and schedules, and that have numerous dependent activities and milestones with associated tasks and deadlines.

Scope management:

- Coordinates the creation of the defined deliverables using the schedules of the various assignees
- Automatically moves tasks to the next assignee.

- Routes tasks related to the deliverables to the next responsible assignee (person or group), monitors the state of the tasks, and updates deliverable status automatically. Actions for the creation of deliverables are based on fixed-time durations and the completion of dependencies.
- Launches business processes that are linked to activities

This functionality can be enabled on any schedule sheet, including a master schedule sheet. Scope management enables you to link BPs with schedule sheet task activities and route those BPs with an automatic update of status as they are routed and worked on. The BPs represent the work that needs to be done to complete the task. You can override automatic routing at any time and launch the BPs manually. The BP-related task is completed when specified conditions are met.

Working with Schedule Sheets with Scope Management

You can have any number of schedule sheets. There is one master sheet, which appears in bold in the log. The master schedule sheet drives the activity start and finish dates. You can use it to track progress and resource assignment information to other modules in Primavera Unifier. You can use scope management on any schedule sheet. You must have the correct permissions to be able to view and modify scope management data. If you find that you cannot access the functionality that you need, see your company administrator.

To access project schedule sheets

1) In User Mode, select **Project Standard tab > project > Schedule Manager > Schedule Sheets** or **Shells tab > shell type> shell instance > Schedule Manager > Schedule Sheets**. The Schedule Sheets log opens.
2) By default, the log lists all active schedule sheets. To view all active and inactive sheets, click the **View** menu and choose **All**.

Scope management and multiple calendars

In Scope Management a business process record can be created from an activity based on the setup. As part of setup, you can define how the system should calculate the workflow duration of the business process record that gets created.

These are the following options:

Enforce Activity Duration:

System will take the planned duration of the activity and will pass it to business process record to calculate workflow due date and the workflow duration.With multiple calendars, it is possible that the activity has a different calendar than the calendar used on business process (which was the project/shell calendar). In this scenario, the system will take the duration from the activity and calculate the record/workflow due date based on business process calendar.

Enforce Activity Finish Date:

System will set planned finish date as the workflow due date. With multiple calendars, it is possible that the activity has a different calendar than the calendar used on business process (project/shell calendar). In this scenario system will take planned finish date of activity and force it to due date of business process record.

In both cases when progress comes back from business process record to the activity, the system will take the actual end date and updates activity actual finish date. In this scenario, the system will not consider activity calendar.

Manage scope management properties

Scope Management functionality can be enabled on any schedule sheet (including master schedule sheets). You can modify the properties associated with scope management. These include:

- Auto-control
- Schedule start date
- Error notification to users and groups

To manage scope management properties

1) In User Mode, navigate to the project or shell Schedule Manager and select Schedule Log. The Schedule Sheets log opens.
2) Select a schedule sheet and click **Properties**.
3) On the General tab, complete or modify the fields described in the following table and then click **OK**.

In this field:	Do this:
Auto-control	Controls the automatic update of tasks. The default is Off. Setting auto-control to On enables the automatic launch of BP records. Setting auto-control to Off means that BPs will not be launched automatically on activities and completion conditions will not be checked on activities. Users can still launch BPs manually. Note: Unifier disregards predecessor/successor dependency relationships when you manually start an activity, even if auto-control is set to On in the schedule sheet properties.
Schedule Start Date	Drives the dates of floating activities on the schedule sheet. Activities cannot begin before this date, unless their preceding activities complete previous to this date.
Notify users and/or groups on errors	Select users and groups to be notified if there are errors during the scope management task routing.

About scope management data elements

There are data elements that are specific to scope management, which were added to the schedule attribute form in uDesigner. These data elements can be added to the scope management schedule sheet as columns as you work with the sheet. If data elements are on both the schedule attribute form and on the business process that you will be using to run the activity task for scope management, the values are copied from the form to the business process and vice versa.

When you are planning to use scope management, consult with the uDesigner user and your company administrator to achieve the setup of data elements and business processes that will meet your business needs for managing scope.

The scope management-specific data elements that are added to the schedule attribute form are:

Data Element Name	Description
Actual Start Date	Actual start date of the activity.
Actual Finish Date	Actual finish date of the activity.
Actual Duration	Actual duration of the activity. This is calculated from the Actual Start Date and Actual Finish Date.
Status	Activity status. The default is Not Started.
Predecessors	A list of the predecessor activities. **Note**: Activities that have no predecessors are known as floating activities.
Record Number	Hyperlink to the linked business process record.
Record Status	Hyperlink to the linked business process record.
Estimated Start Date	Calculated date.
Estimated Finish Date	Calculated date.
Estimated Duration	Calculated duration.
Auto-update Activity Data	Enables the automatic update of activity data. The default is unchecked. If this checkbox is not selected, the activity must be completed manually, and automatic completion will be turned off. This means you must change the activity status to compete and enter an actual finish date.
Linked BP Name	Name of the linked business process.

Set up scope management for activities

You can set up the schedule sheet activities to link to BPs, specify responsible users or groups, enter a due date, and create completion conditions.

You can change all setup options for activities that have the status of not started or not applicable. For activities that have an in-progress status and have a linked BP record, you can change only the completion conditions. You cannot change setup options for activities with the status complete.

To set up scope management for an activity

1) In User Mode, navigate to the Schedule Manager and select Schedule Log. The Schedule Sheets log opens.
2) Select a schedule sheet click the **Open** button.
3) Select an activity in the sheet.
4) Choose **File > Setup Scope Management**. The Activity Task Setup window displays on the right side of the pane, replacing the view of the Gantt portion of the window.

> **Note**: You can return to the Gantt chart view by clicking the **Gantt** button.

5) Complete the **Activity Task Setup** portion of the window as described in the table below.
6) Repeat these steps for each activity.
7) Click the **Save** button when your changes are complete.

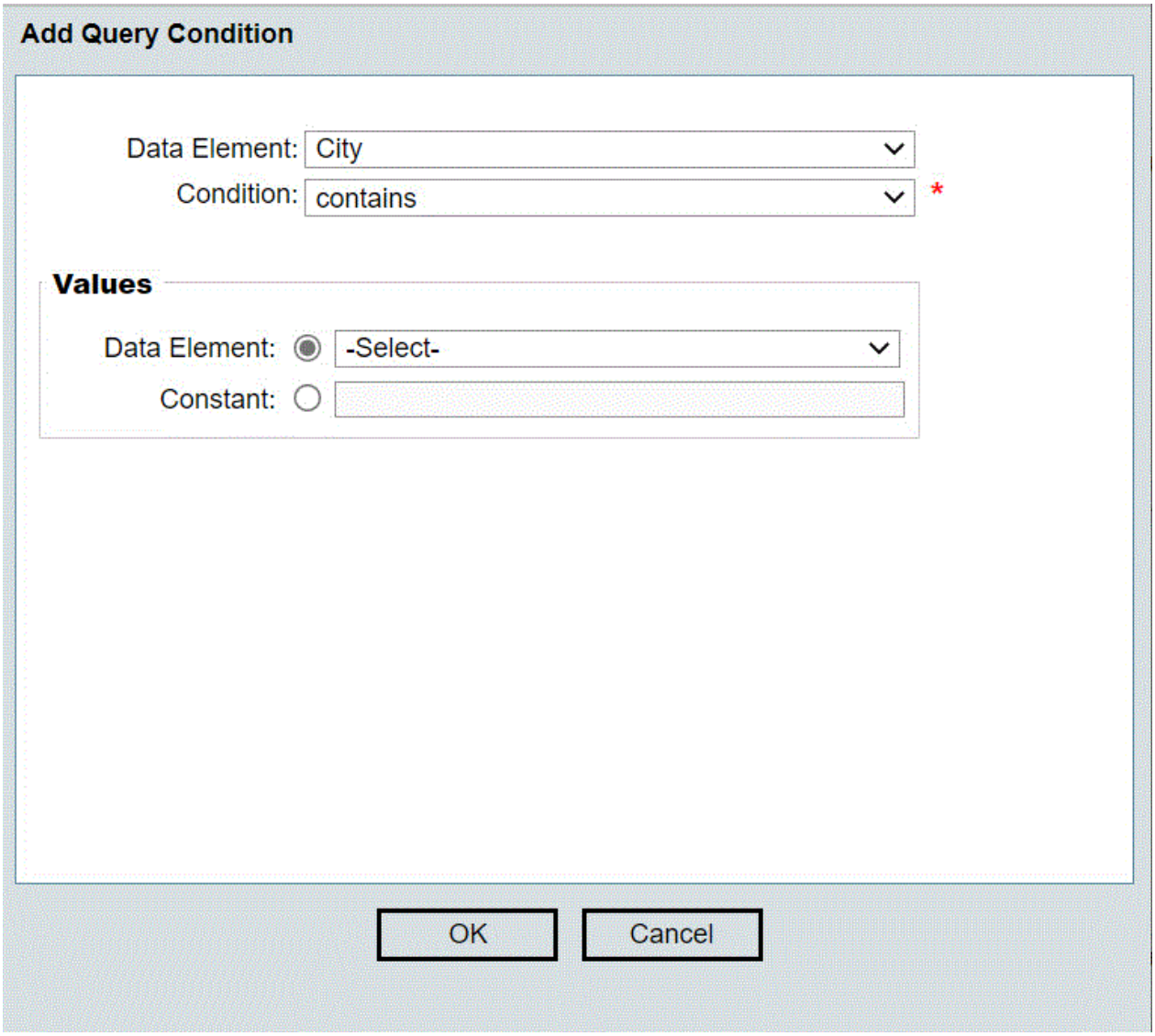
In this field:	Do this:
Linked Business Process	Select a project or shell level workflow BP that will launch from the activity.
Bypass initiation step during auto-creation	Auto-created records normally appear in users' Tasks and BP logs as an initiation step (I Step). Select this check box if you want to bypass the I step that this auto-creation normally creates. If you select this option, the auto-created record will skip the initiation step and will appear in the user's BP log at the step that the Administrator designated on the BP's Auto-Creation tab during setup.
Record Due Date	Select **Enforce Activity Duration** (default) or **Enforce Activity Finish Date**. When a BP is launched automatically or manually from an activity, you can specify whether the record due date on the newly launched BP record is set to use the activity duration or the activity finish date. **Enforce Activity Duration:** The finish date of the activity is not considered. If the Record Due Date option is set to enforce the activity duration, the value is calculated as: Record Due Date = Current Date (date/time) + Activity Duration (days) **Enforce Activity Finish Date:** If the Record Due Date option is set to enforce the activity finish date, it is calculated as: Record Due Date = Activity Finish Date

	Note: This functionality applies to workflow BPs launched from Scope Management only. Non-workflow BPs cannot be launched using Scope Management. Note: If you select Enforce Activity Finish Date, the workflow due date for the business process might be affected. Be sure to select Yes for Override Workflow Due Date in the workflow setup for the affected business process.
Responsible User(s) /Group(s)	Select one or more users or groups to which to route the business process. Be sure to add users and groups to this field so the business process associated with the activity will launch properly.
Completion Conditions	Add one or more conditions to indicate the completion condition on the activity. Click **Add** and select from the data elements for the selected BP, enter a label for the condition data element, select a condition, and select a value. Click **OK**. Conditions can be a BP status, a monetary value, or the completion of certain predecessor activities. You set up several completion conditions for each activity. See ***Completion Conditions*** (on page 578) for details.
Show results matching ANY condition	Select to complete the activity if any of the completion conditions are met for the activity.

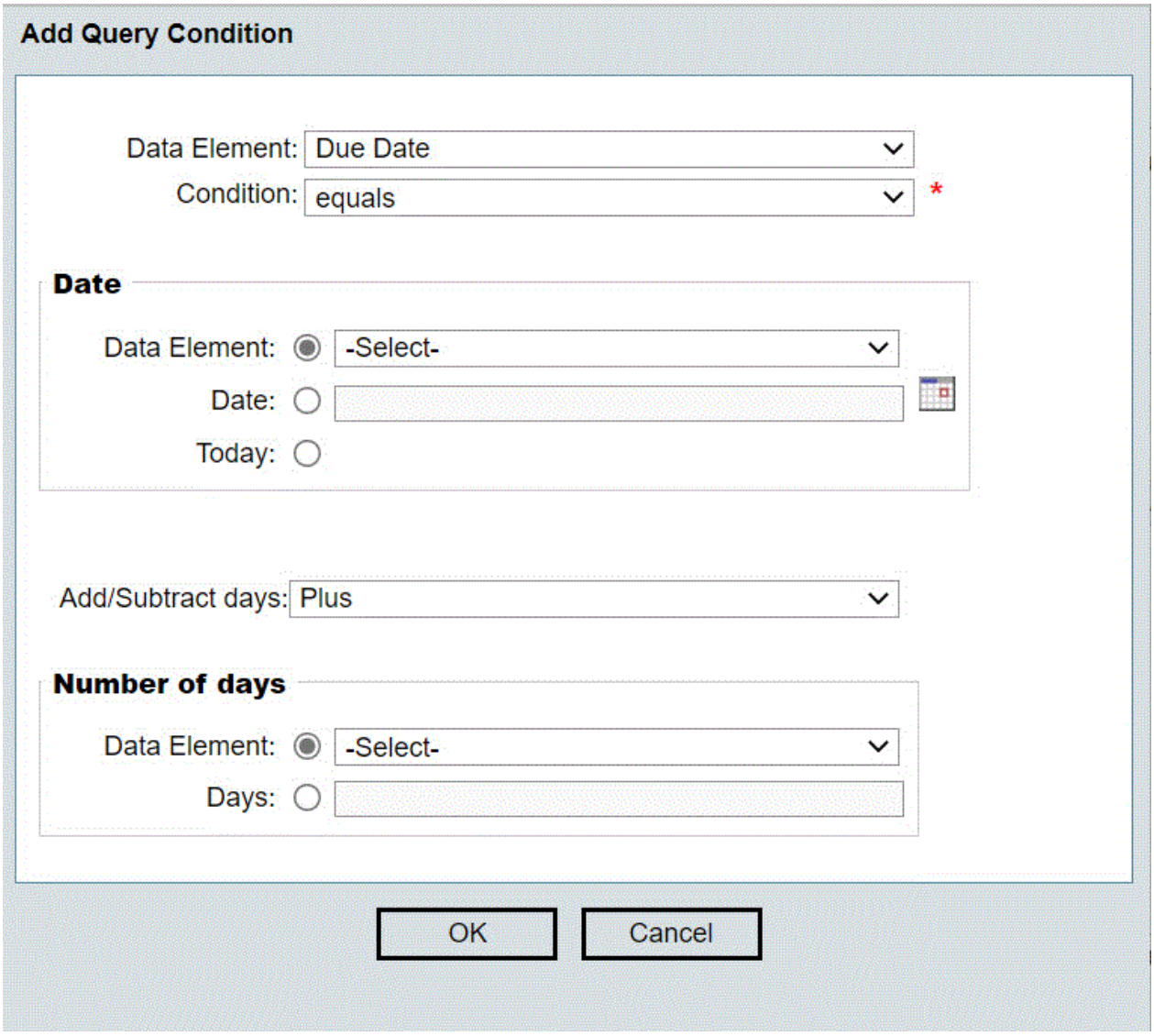
Completion Conditions

You can set up completion conditions for a string or a date.

For example, for the string *City*:



For example, for a date:



Launching Business Processes from Activities

While the scope management functionality is automatic after it is set up, you can also manually launch or remove BPs from activities and manage the activity properties.

> **Note**: If a project or shell changes status from Active to View-Only or Inactive, business processes associated with activities are not launched while the project or shell has the View-Only or Inactive status. When the project or shell reverts to Active status, you must adjust the dates on these business processes and launch them manually.

Manually launch a business process

When you manually launch a BP associated with an activity, you override the Auto-control property setting. See ***Manage scope management properties*** (on page 575) for details on properties.

See ***About Launching or Removing Business Processes from Activities*** (on page 583) for details on the conditions under which you can manually launch BPs.

To manually launch a BP associated with an activity

1) In User Mode, navigate to the Schedule Manager and select Schedule Log. The Schedule Sheets log opens.
2) Select a schedule sheet and click the **Open** button.
3) Select an activity.
4) Choose **Edit > Linked Business Process > Start**. You can select one or more BPs and launch them. They will be routed to the assignees that have been specified.

Remove the link between a business process and an activity

You can remove (unlink) a BP from an activity. See ***About Launching or Removing Business Processes from Activities*** (on page 583) for details on the conditions under which you can remove BPs from activities.

To remove the link between an activity and a BP

1) In User Mode, navigate to the Schedule Manager and select Schedule Log. The Schedule Sheets log opens.
2) Select a schedule sheet and click the **Open** button.
3) Select an activity.
4) Choose **Edit > Linked Business Process > Remove Record**. You can select one or more BPs. The BP itself is not deleted.

> **Note**: The link between a BP and an activity is automatically removed if the BP is terminated. When a linked BP is terminated, the BP hyperlink is removed from the associated activity, and the activity is set to not started.

Update activity properties

To update activity properties for scope management:

1) In User Mode, navigate to the Schedule Manager and select Schedule Log. The Schedule Sheets log opens.
2) Select a schedule sheet and click the **Open** button.
3) Click the link for an activity. The Activity Properties window displays.
4) Modify the activity properties as needed. The properties shown in the Activity Properties window depend on the design configured in uDesigner. Activity properties associated with scope management can include what is shown in the table below.
5) Click **OK**.

Property Name	Definition
Activity Statuses	Read-only for automatically controlled activities. Editable for manually controlled activities. The statuses are: **Not Started:** All activities have this as the initial status by default. Indicates that the BP linked to the activity has not yet been launched. **In Progress:** Indicates that predecessor activities are complete and that the current activity is not started. A new BP record is created and linked to the activity. Note: You cannot modify certain activity attributes while an activity is In progress. **Complete:** Indicates that an activity is complete based on the completion conditions set up for the activity.
Linked BP Name	Read-only; displays the BP linked to the activity.
Record Number	Read-only; displays the current record number that is linked with the activity.
Record Status	Read-only; displays the current status of the BP record linked to the activity.
Actual Start Date	Read-only or editable, depending on the setting for the Auto-update activity data box. This value is set when the linked BP is launched for the activity.
Actual Finish Date	Read-only or editable, depending on the setting for the Auto-update activity data box. This value is set when the linked BP is completed based on the completion conditions.
Estimated Start Date	Read-only; indicates the estimated start date for the activity.
Estimated Finish Date	Read-only, indicates the estimated finish date for the activity.
Auto-update activity status	The default is not selected. Indicates if the current activity is automatically controlled or manually controlled.
Dependencies	Read-only; lists the predecessor activities for the current activity using a coding format indicating lag and lead time: Finish to Start (FS), Start to Start (SS), Finish to Finish (FF), and Start to Finish (SF). For example: 3FS + 3d (Activity 3 is a predecessor with FS relationship with 3 days lag) 2SS - 1d (Activity 2 is a predecessor with SS relationship with a 1 day lead) An activity can have multiple dependencies separated by a comma. The value is updated every time there is an addition or change to the predecessors.

Status Transitions and Activities

Scope management activities have statuses that control the transition of the activity from one state to another as it progresses toward completion. You can perform certain changes to the activity during its progress, but it can be limited as to what you can change while an activity has the status In Progress. The activity status transitions vary depending on whether an activity is automatically or manually launched.

Automatic activity status transitions

When activities are auto-controlled (the Auto-update Activity Status box is checked), activity status is read only. The statuses automatically transition as follows:

- **Not started** (default)
- **In progress** (this is when the linked BP is launched)
- **Complete** (when the BP completion conditions are met)

Manual activity status transitions

You can change the activity status manually when the Auto-update Activity Status box is not checked. You can change the status during any of the states (not started, in progress, or complete).

- If you change the status of an activity to In Progress, you can enter the actual start date. This clears the existing actual finish date.
- If you change the status of an activity to Not Started, both the actual start date and the actual finish date are read only.
- If you change the status of an activity to Complete, you can enter an actual finish date. In this case, the actual start date, if it is not populated, is set to the actual finish date at activity completion.

About Launching or Removing Business Processes from Activities

Scope management functionality enables automatic or manual creation of business processes (BPs) from activities on a schedule sheet. A new BP record can be created for every eligible activity. The BP record will be permanently linked to the activity, unless you terminate or remove the BP. An activity can be linked to only one BP record at a time. Any two activities cannot link to the same BP record.

Automatic launching of business processes

For BPs to launch automatically from activities, these conditions must be met:

- **Auto-control** must be set to **On** on the Schedule Sheet properties
- Activity is not manually controlled, which means that **Auto-update Activity** is selected
- Activity has a BP setup
- Activity has the status **Not Started**
- Activity has no predecessors or the predecessors are all in **Complete** status
- The **Start Date** for the activity is not in the future

Manually launching business processes

You can launch BPs manually by selecting an activity and choosing **Edit > Linked Business Process > Start**. To manually launch BPs, these conditions must be met:

- Activity has the status Not Started
- BP setup is present on the activity

> **Note**: A BP can be launched manually to override the setting of the Auto-control flag on the Schedule Sheet Properties and Auto-update Activity Data on the Activity Properties.

Manual launch under various conditions:

Auto-control on Schedule Sheet Properties	Auto-update Activity Status on Activity	System Behavior
On/Off	Checked	Manually launched BP is tracked by the system, and actuals will be auto-populated on launch and completion.
On/Off	Unchecked	Scope Management will not keep track of BP completion and auto-population of actual start and finish dates of manually launched BP.

Manually remove business process link

You can remove a linked BP record manually if these conditions are met:

- Activity is in manual mode; that is, Auto-update Activity Status on Activity is unchecked
- Activity is in any status.

Automatic removal of business process link

If a BP is terminated by the user, the termination removes the BP link from the activity and sets the activity back to Not Started.

About Activity Completion

This section covers the criteria for automatic and manual completion of scope management activities.

Conditions for the automatic completion of activities

Unifier checks the linked BP record workflow for in-progress status activities that are not manually controlled (Auto-update Activity Data box is checked for the activity).

When the system detects BP completion based on the conditions, it performs the following actions:

1) **Actual finish** is updated with current date
2) **Activity status** is updated to complete
3) Success of activities is evaluated for the automatic launching of further BPs

If there is no BP setup or if the activity is manually controlled, the system does not evaluate the BP completion conditions but waits for you to manually complete the activity.

Conditions for the manual completion of activities

Activities that are manually controlled **(Auto-update Activity Data** box is unchecked) can only be completed manually. In this case, you must change the activity status to **Complete** and enter the actual finish date, which is required for the activity to complete successfully.

About Manual or Automatic Control of Individual Activities

This section describes the behavior of manual and automatic control of scope management activities.

Auto-update activity data on activity attributes

Activities can be controlled in two modes: automatic or manual. This choice depends on the value of the Auto-update Activity Data checkbox.

If **Auto-update Activity Data** is checked, automatic launching of BPs and completion checks with the possibility of launching the BP sooner.

If **Auto-update Activity Data** is unchecked (default value), the user has manual control, but basic scope completion rules are enforced. BP link is maintained. New BPs can be launched manually. The BP is not checked for completion.

The following table summarizes the behavior in each mode:

Behavior	Automatic	Manual
Auto-update Activity Data checkbox	Checked	Unchecked (default)
BP setup allowed	Yes	Yes
Create BP record link	Yes	Retain existing link if any exists
BPs launched by scheduler	Yes	No
Manual BP launch	Yes	Yes, but completion and actuals are not tracked
BP condition check	Yes	No
Scope status updated	Updated by system	Manual update via drop-down list choice
Scope status update	Yes	Yes

rules enforced		
Actual dates	Automatic	Manual

Rules for modifying the Auto-update Activity Data checkbox

These are the rules for using the Auto-update Activity Data checkbox.

- The Auto-Update Activity Data checkbox is unchecked by default for all schedule sheets.
- As soon as a new BP is set up for the activity (by choosing **File > Setup Scope Management**), the Auto-update Activity Data checkbox will be checked only for activities in the Not Started status.
- Updating the BP setup on an activity later will only check the Auto-update Activity Data checkbox automatically if the activity is in the Not Started status. If you have not set up any BP linking, by default, the box is unchecked. In that case, you can update the Actual Start, Actual Finish, and Status fields.
- You can manually modify the Auto-update Activity Data checkbox for any activity status, including complete.

System behavior when the Auto-update Activity Data checkbox is modified

The following is the sequence of the system behavior when the Auto-update Activity Data checkbox is modified:

1) The Auto-update Activity Data checkbox is unchecked by default, assuming that no BP setup exists for the activity. As soon as a new BP is set up or modified for the activity, the Auto-update Activity Data checkbox is checked.
2) Unchecking the Auto-update Activity Data checkbox will:
   a. Retain the BP record link (if any).
   b. Retain the original status of the activity.
   c. Change the activity status of an editable field.
   d. Retain existing actuals but allow them to be modified.
3) Subsequent checking of the Auto-update Activity Data checkbox will:
   a. Retain the BP record link if it exists.
   b. If a BP record link exists, update BP record status on the activity, and check the BP record for complete condition and set the appropriate status of the activity (either Complete or In Progress).
   c. If a link does not exist and conditions allow the start of the BP, the system launches the BP and sets the activity status to In Progress.
   d. If a link does not exist and conditions do not allow the start of the BP, the system sets the activity status to Not Started.

> **Note**: Setting the status to Not Started or Not Applicable in manual control mode does not clear the BP record link. The actual start cannot be a future date when entered manually, and the actual finish cannot be a future date when entered manually.

Impact of Schedule Start Date

The schedule start date on schedule sheet properties defines the earliest possible date on the schedule sheet. The start dates of all activities on the schedule sheet must be greater than or equal to the schedule start date.

The schedule start date affects the first activity in a group of linked activities and controls the start of any floating activities. Floating activities are activities that have no predecessor activities.

When you change the schedule start date, the entire schedule moves, and all the dates adjust in relation to the new schedule start date.

The schedule start date is a required field on schedule sheet properties. Updates to the schedule start date start activities are based on following rules:

- Floating activities start and retain the offset from the schedule start date specified on the sheet properties.
- The start date on floating activities can be updated; however, the activities start date cannot be earlier than the schedule start date.
- The start date of any floating activity will drive the start of the system update process. Each floating item may be the root of a tree and hence will have its own system update process that drives launching and completion of BPs for the current activity and successor activities.
- Forecast dates (start date, finish date) can only be changed for not started or in-progress activities.
- The schedule start date cannot be changed when at least one activity is in progress or complete.
- Manual launch cannot be done on any activity before the schedule start date on the sheet properties.

Calculation of Estimated Start and Finish Dates

Estimated dates are used to predict the effect of delayed or early completion of predecessor activities on successor activities. They are useful to identify potential problems or the potential for schedule compression.

The estimated start, finish, and duration are read-only elements calculated by the system. They are updated by the system each time activities complete. Succeeding estimated dates are adjusted based on the logic below.

For completed or predecessor complete activities:

- Estimated Start Date = Actual Start Date
- Estimated Finish Date = Actual Finish Date

For in-progress or not started activities:

- Estimated Start Date = Predecessor (latest) Estimated Finish Date
- Estimated Finish Date = Estimated Start Date + Forecast Duration

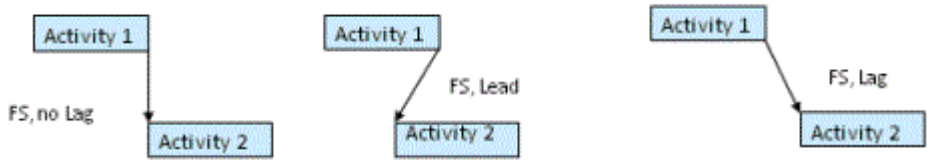
Impact of Successor and Predecessor Activities on Launching and Completion of BPs

This section discusses the interaction of activities and the launching of BPs. The start of an activity is affected by whether there is a lag or a lead, as shown in the examples below.

Finish-to-start (FS)

The successor activity is launched when the activity completes or the Calculated Date = Predecessor Actual Finish + Lag (if not already past).

In case of a lead, the successor activity is launched on the forecast start date (similar to a floating activity.

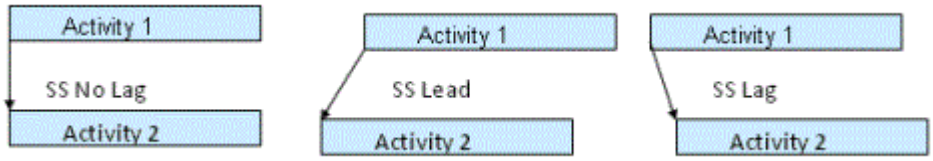


Finish-to-start

Start-to-start (SS)

When an activity's predecessor is started (for example, status = in-progress), it is also placed into an in-progress status (assuming zero lag).

- **Lag**: Success, or activity will be started on forecast date
- **Lead**: Success, or activity will be started on forecast date



Start-to-start

Finish-to-finish (FF) and start-to-finish (SF)

The activities will be treated as floating activities. They are launched on their forecast date.

- **Lag**: Success, or activity will be started on forecast date
- **Lead**: Success, or activity will be started on forecast date

Finish-to-finish, start-to-finish

Entering and Viewing Cost Data

In uDesigner, data elements can be added that allow you to enter and view cost data on schedule sheets. These data elements are Activity Cost 1 (and Activity Total Cost 1 Per CBS) and Activity Cost 2 (and Activity Total Cost 2 Per CBS). The Cost and Per CBS data elements have a predefined association between them. Also, the Activity Latest Progress As Of data element can be added to allow you to track the date of the last change to an activity.

> **Note**: Unifier refreshes the cost data when you choose File > Refresh in a Schedule Sheet and refresh immediately or set up a refresh frequency. See ***Refreshing Schedule Sheet data*** (on page 552) for details.

In the activity setup performed by the Administrator, one of more CBS Codes can be associated with an activity. The value carried by the Total Cost data element on add to a Schedule Activity Attribute form gets passed onto these CBS codes as the result of calculations such as data roll up to a Cost Sheet, or earned value calculations. The logic used by the Activity Cost 1 and Activity Cost 2 and the associated Activity Total Cost 1 Per CBS and Activity Total Cost 2 Per CBS data elements is based on the association of an activity to a CBS code.

The values for Activity Total Cost 1 Per CBS and Activity Total Cost 2 Per CBS data elements are calculated by the system based on the corresponding Activity Cost 1 or Activity Cost 2 data element values.

These are the steps the system follows to calculate values for Activity Total Cost 1 Per CBS and Activity Total Cost 2 Per CBS data elements:

1) If the combination of Cost and Per CBS data elements are used on an Schedule Activity Attribute form, the system will scan through all of the activities and associated CBS codes.
2) The system will accumulate all of the values in the Activity Cost 1 or Activity Cost 2 data elements for all activities per CBS code associated with each activity.
3) Use the total value calculated in step 2 per CBS code as the value for each Activity Total Cost 1 Per CBS and Activity Total Cost 2 Per CBS data element specified for each activity.
4) Each activity gets a total value calculated in step 2 based on the CBS code associated with it.

The following example explains these calculations. For this example, the data elements Activity Cost 1 and Activity Total Cost 1 Per CBS have been added to the attribute form:

Activity Name	Activity Cost 1	Activity Total Cost 1 Per CBS
Control Account 1	$28,000.00	
Control Activity 1.1	$19,000.00	
Control Point 1.1.1	$10,000.00	$28,000.00
CBS - 1	$10,000.00	

Control Point 1.1.2	$9,000.00	$28,000.00
CBS - 1	$9,000.00	
Control Activity 1.2	$9,000.00	
Control Point 1.2.1	$5,000.00	$28,000.00
CBS - 1	$5,000.00	
Control Point 1.2.2	$4,000.00	$28,000.00
CBS - 1	$4,000.00	
Control Account 2	$20,000.00	
Control Activity 2.1	$20,000.00	
Control Point 2.1.1	$8,000.00	$20,000.00
CBS - 2	$8,000.00	
Control Point 2.1.2	$12,000.00	$20,000.00
CBS - 2	$12,000.00	

In the above example, Control Point 1.1.1 has a value $28000.00, which was arrived at by adding the value of CBS - 1 across all activities.

Effects of multiple calendars

Activities can be affected by calendar selection, if there are multiple calendars implemented. There can be a Calendar column in the activity sheet, for example. This column will allow to select a calendar per activity as needed. If this column exists, you can select from the Company level calendars and Project/Shell calendars as permissions allow. Any defined Custom calendars (which are defined for the Schedule Manager at the project or shell level) are not available for selection on the Activity Sheet.

If you are using an Activity Attribute form designed in uDesigner to manage activities, the data element uuu_activity_calendar can be added to the form so users can select calendars. If you are not using a designed Activity Attribute form (are letting Unifier use the default form provided), the data element uuu_activity_calendar is automatically included in the Activity Attribute form.

When activities are updated through the Activity Sheet, they consider the calendar in use for the activity. The Start Dates, Finish Dates and Durations can be affected by the calendar used for an activity. Double-click on the Calendar cell to see a list of Company level calendars and project/shell calendars (not the custom calendar). You can select another calendar for the activity.

The selected Start Date or Finish Date for an activity can be a non-working calendar day, however the duration of the activity will only account for working calendar days.

> **Note**: When you select the alternate calendar and click Save, the schedule sheet associated with the activity is marked for refresh with the refresh icon (rotating arrows).

Project Progress Data Accumulation and Calculation

The Schedule Manager allows you to enter activity progress, which is accumulated and used to calculate the earned progress for each activity. Earned progress represents how much has been earned on an activity. Depending on type of activity, earned progress can be tied to activity progress directly. However, it is also possible nothing is earned even if the progress is 99%, if the activity has been defined to have earned progress counted upon 100% of activity completion.

Earned progress is a quantitative measurement to indicate how much has been earned on an activity over the duration of the activity. Earned Progress can be represented by amount, quantity and a percentage value. Earned Progress is based on the progress entered by the user on an activity.

Each activity can earn progress in different ways. One way to earn is when progress is entered. Another way to earn is by % of activity when the activity is started and earn remaining % when that activity is finished. Unifier captures earned progress for an activity as well as resources that assigned to an activity. Earned progress data from the Schedule Manager is related to CBS codes and is used by the Earned Value module (in the Cost Manager) to calculate different key components that are required to perform Earned Value analysis.

The Schedule Manager also allows you to enter activity progress in the activity properties.

The calculations described in this section pertain to the progress and earned progress data accumulation and calculation discussed in ***Progress and Earned Progress Calculations*** (on page 608). If you do not need to work with progress or earned progress data to ultimately calculate Earned Value, you do not need to read this section.

> **Note**: The calculations described in this section pertain to the progress and earned progress data accumulation and calculation. If you do not need to work with progress or earned progress data to ultimately calculate Earned Value, you do not need to read this section.

Terminology

Progress: A percentage that indicates how much of an activity has been accomplished.

Earned Progress: This quantity represents the progress earned for a given activity over a time period. Depending on type of activity, earned progress can be tied directly to activity progress. Also, earned progress can be set up to be given at activity finish. For example, earned progress might not be awarded for incremental percentages of progress, and not be counted until 100% of an activity is complete.

Earned Progress and Earned Value

The Earned Value module uses the concept of Earned Value Management (EVM), which is an analytical tool that allows Project Managers and stake holders of a project to determine whether a project is on schedule and on budget. Based on the outcome of the earned value analysis, the project manager can determine if corrective action is needed to ensure that the project can be completed with in its constraints. Examples of corrective action can be the change of project scope, extension of the schedule, or the addition of resources.

There are a number of parameters that are used to calculate Earned Value to determine if a project is on schedule and on budget. Some of these parameters are Budget, Progress, or Actual Cost. All of these parameters must be considered together to determine the current state of a project. One of the key components of this technique is to capture the progress of a project. This progress is usually provided by a General Contractor or the person who is in charge of the project. These progress entries are analyzed to determine the state of the project. Progress information entered by user can be analyzed to determine the progress of the project with respect to budget and schedule.

Add a progress filter for earned value to a column

If the **Schedule Attribute** form includes an **Activity Earned Value Filter** field (**uuu_activity_ev_filter**), you can set up progress filtering for earned value sheets in the Cost Manager.

To set up the schedule sheet for progress filtering

1) Open a schedule sheet in a template or project/shell.
2) Add the **Activity Earned Value Filter** data element as a column to the schedule sheet.
3) Enter an alphanumeric value, such as "progressable" or "non-progressable," into the column cell. (Use whatever term you like.)
4) Save the schedule sheet.

Enter progress and earned progress information

In Unifier, there are several areas that enable you to enter (based on settings), view progress and earned progress information, or control the accumulation of progress information:

1) **Budget and Progress Setup window**: First, set up how you want your progress data calculated. See ***Setting Up the Budget and Progress Method*** (on page 593) for details.
2) **Enter data on the attribute forms**. The fields that allow you to enter data are determined by the settings on the Budget and Progress Setup window:
   - Resource Assignment Attribute form (Resource tab of Activity Properties)
   - Schedule Attribute form (General tab of Activity Properties)

See ***Entering Progress Data on the General and Resource Tabs of Activity Properties*** (on page 603) for details.

3) **Activity Progress window**: View activity and resource progress; depending on settings on the Budget and Progress Setup window, you can enter progress data in this window. This window is available only if you have imported the Resource Assignment Attribute form. See ***Entering Progress in the Activity Progress Window*** (on page 604) for details.
4) **Check activity and resource progress in the logs**: View and enter progress data as needed:
   - Activity Progress log
   - Resource Progress log

   See ***Using the Activity Progress and Resource Progress Logs*** (on page 608) for details.
5) **Options tab of the Schedule Sheet Properties**: The options on this tab allow you to control the automatic update of activity status based on Actual Start and Actual Finish dates, and to specify that activity progress requires an Actual Start Date.

Setting Up the Budget and Progress Method

The Schedule Manager allows you to set up a budgeted cost of work schedule profile for each activity on a schedule sheet to distribute budget associated with the activity.You can enter this profile information in the Budget and Progress setup window, either at the schedule sheet level (for all of the activities on the sheet) or at the individual activity level.

These settings include selecting a profile, an entry method, and calculation methods for % Complete and % Earned. The settings you select in this window control how the progress and earned progress data that is entered on the Resource Assignment Attribute form (Resource tab for Activity Properties) and the Activity form (General tab for Activity Properties) is calculated. Also, you can choose the workpackage-related CBS codes to link to, and lock the progress so it cannot be updated outside of a defined period.

You can configure the setup for progress (both resource and activity) and earned progress settings independently. At the same time, you can also have activity or resource progress calculate earned progress automatically or the earned progress calculate the progress.

Most of the Budget and Progress settings that you can use at the schedule sheet level are also available at the activity level, however there are some differences. This section will first document the settings for the schedule sheet level, and mention when there are variations at the activity level and refer to the appropriate section.

> **Note**: The Budget and Progress Method setup options for an activity cannot be modified after a user begins to enter progress for that activity. This includes activity progress or progress of the resource assigned to that activity.

The calculations used to derive progress and earned progress are explained in ***Progress and Earned Progress Calculations*** (on page 608).

To setup the budget and progress method

1) Navigate to a schedule sheet log.
2) Open a schedule sheet.

3) Choose **File > Budget and Progress Setup > Schedule Sheet** or **File > Budget and Progress Setup > Activity**. At the activity level, the Budget and Progress Method Setup window opens in the right side of the schedule sheet window, and replaces the Gantt chart. When you are done working with the activity-level Budget and Progress Method Setup window, you can choose **View > Gantt Chart**.
4) Select the Budget and Progress settings. The Budget and Progress Method Setup window has several sections where you can choose settings.
   - **Activity Budget Distribution Profile**: See ***Select the activity budget distribution profile*** (on page 594) for details on the profile setting choices.
   - **% Complete and Earned Progress**: See ***Select the entry method for the % complete and earned progress*** (on page 596) for details on the entry methods.
   - **% Complete Calculation Method**: See ***Select the calculation method for % complete*** (on page 597) for details on these calculation methods.
   - **% Earned Calculation Method**: See ***Select the calculation method for % earned*** (on page 599) for details on these calculation methods.
   - **Additional Options (schedule sheet level only)**: See ***Select CBS codes filtered by workpackage (schedule sheet level only)*** (on page 602) and ***Lock the reporting and progress entry period (schedule sheet level only)*** (on page 602) for details.
5) Click **OK**.

Select the activity budget distribution profile

You can choose the option that determine how the budget of an activity is distributed.

To set up budget distribution for activities at the schedule sheet level

1) Open a schedule sheet.
2) Choose **File > Budget and Progress Setup > Schedule Sheet**. The Default Budget and Progress Method Setup window opens.
3) Under the **Activity Budget Distribution Profile** section, choose an option. This option will apply to all activities in the schedule sheet, unless it is overridden by the selection of a different option for an individual activity.

Data Element Name	Description
Linear	This option distributes the activity budget linearly.
S-curve Sigma Mu %	This option distributes the activity budget based on Sigma and Mu values. S-curve calculations are based on Sigma and Mu values that are provided as setup parameters. The system will generate data using following probability density function: $f(x) = \frac{1}{\sqrt{2\pi\sigma^2}} e^{-(x-\mu)^2/(2\sigma^2)}$ Parameters in this equations are: *X* is determined based on the number of periods. *Mu* is the mean that is calculated based on user input.

	Sigma is the standard deviation that is used based on user input.
On Start and Finish % budgeted on Start and Finish	This option distributes the activity budget based on the Start and Finish Dates of the activity. % budgeted on Start: This option allows you to enter the percentage that should be budgeted on start of the activity. % budgeted on Finish: This is a read-only field, and is calculated based on the % budgeted on Start value. The value for this filed is (100 - % budgeted on Start).
Import distribution data from external sources	This option allows Unifier to import progress data from Primavera. Data mapping is required in the schedule sheet to ensure the spread will be populated correctly in the EV sheet. All required fields must be mapped.
Distribution profile based on resource	This option distributes the cost of a role per activity by rolling up the rate of all the resources assigned to the activity. If hard booked resources are allocated, the total cost = (role rate) x (currency rate) x (quantity.) If the resources are not allocated, the total cost is manual entry (from a formula). In a schedule sheet's activity, you will need to match the activity's total cost to the role cost total. The total amount is rolled up to the cash flow module to create a cash flow profile based on the resource(s) cost on the activity.

The tables below show incremental and cumulative examples of how these three options work, and the differences between them. This data is assumed for these examples:

- **Start Date**: 01/1/2009
- **Finish Date**: 12/1/2009
- **Total Cost**: $12000.00
- **For S-Curve**: Sigma = 2 and Mu = 50%
- **For Start and Finish**: % budget distribution on start = 5%, % budget distribution on finish = 95%

Incremental

Option	01-09	02-09	03-09	04-09	05-09	06-09	07-09	08-09	09-09	10-09	11-09	12-09
Linear	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
S-Curve	26.52	104.88	323.06	789.30	1462.17	2120.93	2401.43	2120.93	1447.85	774.98	323.06	104.88
On Start and Finish	600	0	0	0	0	0	0	0	0	0	0	11400

Cumulative

Option	01-09	02-09	03-09	04-09	05-09	06-09	07-09	08-09	09-09	10-09	11-09	12-09
Linear	1000	2000	3000	4000	5000	6000	7000	8000	9000	10000	11000	12000
S-Curve	26.52	131.40	454.46	1243.76	2705.93	4826.86	7228.29	9349.22	10797.07	11572.10	11895.10	11999.99
On Start and Finish	600	600	600	600	600	600	600	600	600	600	600	12000

To set up budget distribution for activities at the activity level

1) Open a schedule sheet.
2) Highlight an activity row in the sheet.
3) Choose **File > Budget and Progress Setup > Activity**.
4) Under the **Activity Budget Distribution Profile** section, choose an option. This option will apply specifically to the selected activity, and will override any default option set up at the schedule sheet level. The behavior of these Activity Budget Distribution Profile options at the activity level is the same as the default options at the schedule sheet level.

Select the entry method for the % complete and earned progress

You can select an entry method for the progress and earned progress data, and can enter progress (both resource and activity) and earned progress independently. Also, you can select an entry method that allows you to enter the progress of activity or resource then calculate earned progress, or enter earned progress and calculate progress for an activity or resource.

To select the entry method for the % complete and earned progress for activities at the schedule sheet level

1) Open a schedule sheet.
2) Choose **File > Budget and Progress Setup > Schedule Sheet**.
3) In the **Default % Complete and Earned Progress** section, choose a default entry method. This entry method will apply to all activities in the schedule sheet, unless it is overridden by the selection of a different entry method for an individual activity.

Use this Entry Method	To do this:
Independently Control % complete and earned quantity	Enter the progress of activity or resource independent of earned progress.
Activity and resource % complete updates % earned	Enter the progress of activity or resource, and earned progress will be automatically calculated.
Activity and resource % earned updated % complete	Enter the earned progress of activity or resource, and progress will be

	automatically calculated.
Do not allow update of % complete and % earned	**Not** enter either progress or earned progress. You cannot enter any type of activity progress information with this option selected.

To select the entry method for the % complete and earned progress for activities at the activity level

1) Open a schedule sheet.
2) Highlight an activity row in the sheet.
3) Choose **File > Budget and Progress Setup > Activity**.
4) Under the **% Complete and Earned Progress** section, choose an entry method. This option will apply specifically to the selected activity, and will override any default entry method set up at the schedule sheet level. The behavior of these % Complete and Earned Progress Entry Method options at the activity level is the same as the default options at the schedule sheet level.

Select the calculation method for % complete

You can select an option that allows you to enter progress information for a key quantity (referred to as the Leader) of an activity which will determine the overall progress of other resources and the activity itself. For example:

- **Example 1**: Assume that there are two resources on an activity, called Resource 1 and Resource 2. If the key quantity is Resource 1 and you enter progress (say 30%) on Resource 1, then Resource 2 should also progress with same 30%. Also, overall activity progress should progress by 30%.
- **Example 2**: Assume that the key quantity (Leader) in this example is Activity % Complete. If you enter progress of 50% on the activity, Resource 1 and Resource 2 are updated with the same progress of 50%.

The key quantity is referred to as the Leader in Unifier.

To select the % complete calculation method for activities at the schedule sheet level

1) Open a schedule sheet.
2) Choose **File > Budget and Progress Setup > Schedule Sheet**.
3) Under the **Default % Complete Calculation Method** section, choose an option. This option will apply to all activities in the schedule sheet, unless it is overridden by the selection of a different option for an individual activity.

> **Note**: Company holidays based on company calendar should be considered while distributing budget. Budget should not be distributed on days that are marked as holidays on company calendar.

Use this Calculation Method	To do this:
Manual activity % complete and resource % complete	Enter the progress of activity and resource independent of each other. Entering Activity %

	Complete will not update resource progress and entering resource % complete will not update Activity % Complete.
Manual activity % complete - updates resource % complete	Enter the progress of an activity, and resource % complete will be updated automatically. If this option is selected, Activity % Complete will become the key quantity or Leader, which will control the progress of the entire activity, including resources.
Resource updates Activity - weighted average of resource costs	Enter progress for each resource independently. Activity % Complete is read-only and will be automatically calculated based on weighted resource cost. The following formula is used to calculate this value: {Sum of [Resource Progress Quantity / Resource Quantity) * (Resource Amount)] / Sum of (Resource Amount) } * 100 All resources are considered in this calculation, including hard booked resources.
Resource updates Activity - weighted avg. of resource hours	Enter progress for each resource independently. Activity % Complete will be read-only and will be automatically calculated based on weighted resource man hours. The following formula is used to calculate this value: {Sum of [Resource Progress Quantity / Resource Quantity) * (Resource Amount)] / Sum of (Resource Quantity) } * 100 The only resources considered in this calculation are hard booked resources.

Note: Progress entry for Resource and Activity before importing Resource Assignment Attribute form is based on Activity % Complete and Resource % Complete. After the Resource Assignment Attribute form is imported, progress on activity will be Activity % Complete, but for Resource it is Progress Quantity the data element. Resource % Complete is then read-only and always calculated.

To select the % complete calculation method for activities at the activity level

1) Open a schedule sheet.
2) Choose **File > Budget and Progress Setup > Activity**.

3) Under the **% Complete Calculation Method** section, choose an option. This option will apply specifically to the selected activity, and will override any default entry method set up at the schedule sheet level. The behavior of these % Complete Calculation Method options at the activity level is the same as the default options at the schedule sheet level. The exception is **Lead resource updates Activity and other resources**, described in the next step.
4) Under the activity level, you can select **Lead resource updates Activity and other resources**, and choose resources (including hard booked) that are assigned to the activity on the Resource tab. This option allows you to select a resource as a key quantity or a Leader. If you select this option and a resource from the drop down menu, then you can enter progress on only that resource. Activity % Complete and Resource % Complete on all other resources are read-only and will be automatically calculated based on the progress entered on key quantity or leader resource.

   For example:

   Assume that there is an activity with Resource 1 and Resource 2, with the Activity % Complete at 0%:

Resource	Work Hours	% Complete
Resource 1	200	0
Resource 2	500	0 (read-only)

   For a further example, assume that Resource 1 is the key quantity or Leader, with the Activity % Complete at 30%:

Resource	Work Hours	% Complete
Resource 1	200	30
Resource 2	500	30 (read-only)

   You can change the Lead resource updates Activity and other resources drop down menu selection until there is progress or earned progress entries for the activity or resource. After progress or earned progress data is entered, the Budget and Progress Method Setup for the activity is disabled and you cannot delete the resource selected as Leader. If you find that you must change the settings for the activity, you must delete the activity and start over with new data and settings.

Select the calculation method for % earned

Earned progress is a quantitative measurement to indicate how much has been earned on an activity over its duration. Earned progress can be represented by amount, quantity and a percentage value.

Earned progress is based on the progress entered on an activity. Activities can earn progress in when progress is entered, or by % of activity budget, when the activity is started and earn remaining the remaining percentage when that activity completes.

Unifier allows you to accumulate and calculate earned progress for an activity as well as resources assigned to an activity:

- Earned Progress is calculated at activity level and each resource assigned to that activity.

- Earned Progress calculated under a schedule sheet for activity and assigned resources is used later in the Earned Value module (in the Cost Manager) to calculate Budgeted Cost of Work Performed (BCWP).
- Earned Progress calculated at the activity level is used when BCWP needs to be represented by the cost.
- Earned Progress calculated at resource assignment level is used when BCWP is represented by a unit of measure (for example, Hours).

To select the % earned calculation method for activities at the schedule sheet level

1) Open a schedule sheet.
2) Choose **File > Budget and Progress Setup > Schedule Sheet**.
3) Under the **Default % Earned Calculation Method** section, choose an option. This option will apply to all activities in the schedule sheet, unless it is overridden by the selection of a different option for an individual activity.

Use this Calculation Method	To do this:
Manual activity % earned and resource % earned	Enter earned progress of activity and resource independent of each other. Entering Activity earned progress will not update resource earned progress and entering resource earned progress will not update activity earned progress.
Manual activity % earned - updates resource % earned	You can select this option only if Manual activity % earned and resource % earned is selected. Allows you to enter earned progress of an activity and resource earned progress will be updated automatically.
Resource updates Activity - weighted average of resource costs	Enter earned progress for each resource independently. Activity earned progress will be read-only and will be automatically calculated based on weighted resource cost. Following formula will be used. (Sum of Resource Cost * Resource Earned Progress / Total Activity Work Hours) * 100 All resources will be considered in this calculation including hard booked resources.
Update Activity and all resources on activity start and finish % earned on Actual Start and Actual Finish	Allow the system to calculate earned progress based on actual start and finish of the activity % earned on Actual Start: This option will allow user to enter % that should be earned on start of the activity. User can enter a value. % earned on Actual Finish: This is a read-only field. Should always be calculated based on % earned on Actual Start. Value for this filed should be (100 - % earned on Actual Start).

	If you select this option, earned progress is calculated based on Update Activity and all resources on activity start and finish of the activity. Unifier will automatically calculate earned progress for activity and assigned resources when actual start and finish dates are entered.

To select the % earned calculation method for activities at the activity level

1) Open a schedule sheet.
2) Choose **File > Budget and Progress Setup > Activity**.
3) Under the **% Earned Calculation Method** section, choose an option. This option will apply specifically to the selected activity, and will override any default entry method set up at the schedule sheet level. The behavior of these % Earned Calculation Method options at the activity level is the same as the default options at the schedule sheet level. The exception is **Lead resource updates Activity and other resources**, described in the next step.
4) Under the activity level, you can select **Lead resource updates Activity and other resources**, and choose resources (including hard booked) that are assigned to the activity on the Resource tab. This option allows you to select a resource as a key quantity or a Leader. If you select this option and a resource from the drop down menu, then you can enter progress on only that resource.

   For example:

   Assume that there is an activity with Resource 1 and Resource 2, with the Earned Progress at 0%:

Resource	Work Hours	% Complete
Resource 1	200	0
Resource 2	500	0 (read-only)

   For a further example, assume that Resource 1 is the key quantity or Leader, with the Earned Progress at 30%:

Resource	Work Hours	% Complete
Resource 1	200	30
Resource 2	500	30 (read-only)

   You can change the Lead resource updates Activity and other resources drop down menu selection until there is progress or earned progress entries for the activity or resource. After progress or earned progress data is entered, the Budget and Progress Method Setup for the activity is disabled and you cannot delete the resource selected as Leader. If you find that you must change the settings for the activity, you must delete the activity and start over with new data and settings.

Select CBS codes filtered by workpackage (schedule sheet level only)

An activity in a schedule sheet can be associated with one or more CBS Codes. This assignment is used to create a mapping between costs associated with an activity to a Cost Code (CBS Code). Unifier allows you to choose a workpackage to use to filter the CBS codes you can select in the Activity Properties, CBS Codes tab. You can choose one workpackage to use as a filter.

> **Note**: The Workpackage must be active and contain CBS codes, and also transactions must have occurred using the pertinent CBS codes, or the CBS codes tab will not contain codes for you to select.

To filter CBS codes by workpackage

1) Open a schedule sheet.
2) Choose **File > Budget and Progress Setup > Schedule Sheet**.
3) Under the **Additional Options** section, in the **Workpackage** field, click **Select**.

Lock the reporting and progress entry period (schedule sheet level only)

You can prevent users from entering or modifying progress data entries made prior to the current week or the current month. These selections allow you to control the activity and resource data entered on the Activity Progress window. See ***Entering Progress in the Activity Progress Window*** (on page 604) for details.

To specify a restriction on data entry or reporting for progress data

1) Open a schedule sheet.
2) Choose **File > Budget and Progress Setup > Schedule Sheet**.
3) Under the **Additional Options** section, in the **Reporting Period** field, select **Week** or **Month**. If there is an activity calendar specified, that calendar affects the reporting period for these options.
4) Check the **Do not allow progress entry older than current period** checkbox. This checkbox works in conjunction with Reporting Period that you select. If you select Week as the reporting period then users cannot enter or modify progress entered prior to current week; if you select Month as the reporting period then users cannot enter or modify progress entered prior to current month.
5) In addition, you can select **Allow editing of last period progress** and specify a number of working days into the current period. Selecting this option allows users to modify progress of the last period (based on the reporting period) until a specified number of days into the current period.
6) Click **OK**.

Entering Progress Data on the General and Resource Tabs of Activity Properties

The Resource Assignment Attribute form (when imported, replaces the Resources tab of the Activity Properties and provides data elements to other areas) contains fields related to resources assigned to an activity to that allow you to enter effort and expense information related to that effort. The Resource Assignment Attribute form allows you to assign a resource to a Resource Type, rather than to a hard booked resource. Also, it allows the capture of progress with respect to effort, and the base lining of resource assignment.

The Schedule Attribute form is used as the General tab of the Activity Properties can also include fields that allow you to enter progress and earned progress data.

The ability to enter progress and earned progress on the Schedule Attribute and the Resource Assignment Attribute forms is based on the options selected on the Budget and Progress Setup for a given activity. See ***Setting Up the Budget and Progress Method*** (on page 593). Fields on the forms are editable or read-only and calculated based on the option settings.

This progress or earned progress is time stamped when entered:

- For an activity:
  - Date on which the progress or earned progress is entered or calculated.
  - Activity % Complete value
  - Earned Progress value
- For a resource:
  - Date on which the progress quantity and or earned progress is entered or calculated
  - Progress Quantity value
  - Earned Progress value

You can access time stamped information through the Activity Progress Log or the Resource Progress Log. See ***Using the Activity Progress and Resource Progress Logs*** (on page 608) for details on the logs.

The calculations used to derive progress and earned progress are explained in ***Progress and Earned Progress Calculations*** (on page 608).

To enter data into the attribute forms

1) Navigate to a schedule sheet.
2) Click an activity name.
3) On the **General** tab, you can enter progress or earned progress data in these fields, depending on settings on the Budget and Progress Setup window, and if the data elements for these fields have been added to the Schedule Attribute form and that form has been imported:
   - Earned Progress
   - Earned Amount
   - Forecast 1 Start
   - Forecast 1 Finish
   - Activity Percent 1

4) On the **Resource** tab, you can enter progress or earned progress data in these fields, depending on settings on the Budget and Progress Setup window, and if the data elements for these fields have been added to the Resource Assignment Attribute form and that form has been imported The fields you see may vary:
   - Resource Name
   - Role Name (Picker)
   - Resource Type
   - Quantity (Qty)
   - UOM
   - Amount
   - % Units
   - Earned Progress
   - Earned Amount
   - ETC
   - ETC Amount
   - Resource % 1

   > **Note**: You can double-click the resource name to view the Resource Assignment Attribute form in view-only mode.

5) Click **Add**.
6) Enter resource data as needed.
7) Click **OK**.

Entering Progress in the Activity Progress Window

The Activity Progress window allows users to quickly modify the daily activity and resource progress data for a selected activity. Users can move down the rows of activities with the Activity Progress window open and quickly modify the progress for each activity without having to open the activity.

> **Note**: The Activity Progress window is available only if the Resource Assignment Attribute form is designed and imported into Unifier.

You can access the Activity Progress Log and the Resource Progress Log from the Activity Progress window. The logs display the progress data that is entered over time, and allow the user to view and modify the progress data for activities and resources. See ***Using the Activity Progress and Resource Progress Logs*** (on page 608) for details.

Note: If you enter partial activity progress data, for example enter Activity Progress for a day, but do not enter the Resource Progress (or enter Resource Progress and do not enter Activity Progress at that time), and then save the data, you cannot enter the Resource Progress later that day. You can however, enter the progress the next day.

To view or enter activity progress on the Activity Progress window

1) Navigate to a schedule sheet.
2) Highlight an activity name.
3) Click the **Progress** button. The Activity Progress window opens on the right side.

   The Activity Progress and Resource Progress fields are editable or read-only depending on settings on the Budget and Progress Method setup window.
4) Click **Save**.

In this field:	Do this:
Activity progress as of	Select a date for which you want to enter progress data. Today's date shows by default. This date is used as the time stamp for progress data entered on this window. If you choose a date that conflicts with the date restriction you have set up on the Budget and Progress Method Setup under Additional Options (see ***Lock the reporting and progress entry period (schedule sheet level only)*** (on page 602) for details) you will receive a warning message. If you have select the Reporting Period: ▸ Week: You cannot select a date prior to current week. Weeks are counted as Sunday to Saturday. For example, if today is Monday, June 22, you cannot select a date prior to Sunday, June 21. ▸ Month: You cannot select a date prior to current month. For example if the current month is June 2009, you cannot select a month prior to June 2009. You can select a date in the future if it is in the current period. You cannot select a date which is designated as a company holiday on company calendar.
Activity Progress - latest activity progress information	
Activity Progress Log button	Click to access the Activity Progress Log. See ***Using the Activity Progress and Resource Progress Logs*** (on page 608) for details. This log displays all activity progress entries made by user.
Activity Percent Complete	Enter or view activity progress data. This field is read-only or editable based on settings in Budget and Progress Method setup window for the activity. Unless you enter a value, the latest previously-entered value is retained in this field.
Earned Progress	Enter or view activity progress data. This field is read-only or editable based on settings in Budget and Progress Method setup window for

	the activity. Unless you enter a value, the latest previously-entered value is retained in this field.
Latest Progress as of	View the date on which Unifier last calculated activity progress. This field corresponds with Primavera Current Data Date. The system retains Current Data Date on schedule sheets imported from Primavera.
Latest % Complete	View the latest activity % complete.
Latest Earned Progress	View the latest earned progress of the activity.
Resource Progress - latest resource progress information	
Activity Progress Log button	Click to access the Resource Progress Log. See ***Using the Activity Progress and Resource Progress Logs*** (on page 608) for details. This log displays all resource progress entries made by user.
Leader Column	View an icon to indicate the leader selected on the Budget and Progress Method Setup window.
Resource Name	View the name of the resource. This column will show Resource Name for each resource from resource assignment form.
Quantity	View the quantity for each resource from the Resource Assignment Attribute form.
Progress Quantity	Enter progress quantity. Unless you enter a value, the latest previously-entered value is retained in this field.
Earned Progress	View the earned quantity of each resource, which is associated with the Earned Progress on Resource Assignment Attribute form. Unless you enter a value, the latest previously-entered value is retained in this field.
UOM	View the unit of measure for each resource from the Resource Assignment Attribute form.
Resource Latest Progress - latest progress information for each resource. Select a resource listed under Resource Progress to see the latest progress for each resource.	
Resource Name	View the name of the selected resource.
Progress as of	View the latest progress entry date of the resource.
Progress Quantity	View the latest progress quantity entered.
Earned Progress	View the latest earned quantity of the resource.
UOM	View the unit of measure for the resource.

To view or enter activity progress on the Activity Progress window for a summary activity

1) Navigate to a schedule sheet.
2) Highlight a summary activity name.
3) Click the **Progress** button. The Activity Progress window opens on the right side. For an explanation of the fields on this window, see the table below.
4) Click **Save**.

Activity Progress window fields:

In this field:	Do this:
Activity % Complete	View the activity percent complete for the activities.
Latest Progress as of	View the latest progress entry date across all leaf activities under the selected summary activity.
Earned Progress	View the latest earned quantity of the activities.

Export and Import Activity Progress data

You can export and import to import Activity Progress using CSV files. This CSV export and import functionality is available only if the Resource Assignment Attribute form has been imported.

To export Activity Progress data

You can export Activity Progress data to a CSV file with latest activity and resource information. The CSV will only contain leaf level activities. This is an example of an exported Activity Progress CSV file:

	A	B	C	D	E	F	G	H	I	J
1	Note									
2	Columns with '!' cannot be modified									
3										
4	Progress as of!									
5	8/27/2009									
6	A!	Activity ID!	Activity Name!	Leader!	Activity % Complete	Earned Progress	Latest Progress as of!	Latest % Complete!	Latest Earned Progress!	
7	R!	Resource Name!	Quantity!	Leader!	Progress Quantity	Earned Progress	Latest Progress as of!	Latest Progress Quantity!	Latest Earned Quantity!	UOM!
8	A	1	Activity 1				08/26/2009	30.00	30.00	
9	R	Manhours	400				08/26/2009	30.00	30.00	Hrs
10	R	Equipment	1				08/26/2009	30.00	30.00	Each
11	R	Material	1000	Yes			08/26/2009	30.00	30.00	L.ft
12	A	2	Activity 2				08/20/2009	20.00	10.00	
13	R	Manhours	500				08/15/2009	15.00	10.00	Hrs
14	A	3	Activity 3	Yes			08/20/2009	20.00	10.00	
15	R	Manhours	500				08/20/2009	20.00	10.00	Hrs

Example of Activity Progress CSV file

In the example, notice that the first column is named *Progress as of!*. This date is used as a timestamp on the progress information. There are two headers in this example file:

Notice that there is a *Leader!* Column. This column identifies which row is a leader for an activity. This is based on Budget and Progress setup profile option of an activity. If the activity is updating all resources then the activity shows *Yes* in the Leader column. If a resource is updated all other resources then the resource shows *Yes* in the Leader column. For all other options, the Leader column will be empty.

1) In a schedule sheet, choose **File > Export > Activity Progress Template**.
2) Modify the CSV file as needed to add activity progress data.
3) Save the CSV file and import.

To import Activity Progress data

1) In a schedule sheet, choose **File > Import > Activity Progress**.
2) Browse to select the CSV file to import.
3) Click **OK**.

Using the Activity Progress and Resource Progress Logs

After entering activity or resource progress data, the user can view or modify the data by going to an Activity Progress Log or Resource Progress Log. These logs are accessible only from the Activity Progress window. From these logs, the user can view progress effective date, progress quantity and earned quantity. The user can also modify the progress and earned quantity data, for the most recent entry and for entries in the past, depending on the settings for the editing of period progress on the Budget Progress and Method Setup window. See ***Lock the reporting and progress entry period (schedule sheet level only)*** (on page 602) for details.

For example, you might want to use this log to modify data if you need to change past progress data based on actual start of data calculation, which saves you from having to delete the activity and loose all of the data associated with that activity.

> **Note**: Modifying log information will not change the current information on Schedule Attribute form and Resource Assignment Attribute form unless data related to today is modified.

To view or modify progress data from the Activity Progress or Resource Progress logs

1) Navigate to a schedule sheet.
2) Highlight a summary activity name.
3) Click the **Progress** button. The Activity Progress window opens on the right side.
4) Click the **Activity Progress Log** button or **Resource Progress Log** button.
5) Modify progress data as needed. Select the row you want to modify and double click the cell that needs to modify. The Progress Quantity or Earned Progress columns can be editable depending on settings on Budget and Progress Method Setup window for the activity.
6) Click **Save**.

Progress and Earned Progress Calculations

> **Note**: The calculations described in this section pertain to the progress

and earned progress data accumulation and calculation discussed in ***Project Progress Data Accumulation and Calculation*** (on page 591). If you do not need to work with progress or earned progress data to ultimately calculate Earned Value, you do not need to read this section.

This section explains calculations involved in calculating progress and earned progress at activity and resource level based on different options selected on Budget and Progress Method setup window. The data elements on the Schedule Attribute and Resource Assignment Attribute forms are considered and affected by the progress and earned progress calculations are:

- Activity
  - Total Cost
  - Activity % Complete
  - Earned Progress
  - Earned Amount (Value of this data element is always based on uDesigner design)
- Resource
  - Role
  - Quantity
  - Rate
  - Amount
  - Resource % Complete (Value of this data element is calculated as (Progress Quantity / Quantity) %
  - Progress Quantity
  - Earned Quantity
  - Earned Amount (Value of this data element is always based on uDesigner design)

The calculations are described in terms of the calculation options in relation to the % Complete and Earned Progress entry method selected:

- ***Independently Control % complete and Earned quantity*** (on page 609)
- ***Activity and resource % complete updates % earned*** (on page 622)
- ***Activity and resource % earned updates % complete*** (on page 626)
- ***Do not allow update of % complete and % earned*** (on page 632)

See ***Select the entry method for the % complete and earned progress*** (on page 596) for details on these methods.

Independently Control % complete and Earned quantity

This section contains scenarios for calculations based on the entry method **Independently Control % complete and earned quantity** and the **% Complete Calculation Method** option selected.

Method is Manual activity % complete and resource % complete

This section contains scenarios based on the option selected for % Complete Calculation Method being **Manual activity % complete and resource % complete**.

% Earned Calculation Method option is Manual activity % earned and resource % earned

If the entry method and option settings on the Budget and Progress Method Setup window are:

- % Complete and Earned Progress entry method = Independently Control % complete and earned quantity
- % Complete Calculation Method option = Manual activity % complete and resource % complete
- % Earned Calculation Method option = Manual activity % earned and resource % earned

then this data entry method scenario results:

Activity or Resource	Data Element	Data Entry Method
Activity		
	Activity % Complete	Manual entry
	Earned Progress	Manual entry
Resource		
	Progress Quantity	Manual entry
	Earned Progress	Manual entry

% Earned Calculation Method option is Manual activity % earned - updates resource % earned

If the entry method and option settings on the Budget and Progress Method Setup window are:

- % Complete and Earned Progress entry method = Independently Control % complete and earned quantity
- % Complete Calculation Method option = Manual activity % complete and resource % complete
- % Earned Calculation Method option = Manual activity % earned - updates resource % earned

then this data entry method scenario results:

Activity or Resource	Data Element	Data Entry Method
Activity		
	Activity % Complete	Manual entry

	Earned Progress	Manual entry
Resource		
	Progress Quantity	Manual entry
	Earned Progress	Calculated (read-only) (Activity-level Earned Progress * Quantity)

% Earned Calculation Method option is Resource updates Activity - weighted average of resource costs

If the entry method and option settings on the Budget and Progress Method Setup window are:

- % Complete and Earned Progress entry method = Independently Control % complete and earned quantity
- % Complete Calculation Method option = Manual activity % complete and resource % complete
- % Earned Calculation Method option = Resource updates Activity - weighted average of resource costs

then this data entry method scenario results:

Activity or Resource	Data Element	Data Entry Method
Activity		
	Activity % Complete	Manual entry
	Earned Progress	Calculated (Weighted Cost) and read-only. {Sum of [(Resource Earned Progress / Resource Quantity) * (Resource Amount)] / Sum of (Resource Amount) } * 100
Resource		
	Progress Quantity	Manual entry
	Earned Progress	Manual entry

% Earned Calculation Method option is Lead resource updates Activity and other resources

This combination of settings is not available.

% Earned Calculation Method option is Update Activity and all resources on activity start and finish

If the entry method and option settings on the Budget and Progress Method Setup window are:

- % Complete and Earned Progress entry method = Independently Control % complete and earned quantity
- % Complete Calculation Method option = Manual activity % complete and resource % complete
- % Earned Calculation Method option = Update Activity and all resources on activity start and finish

then this data entry method scenario results:

Activity or Resource	Data Element	Data Entry Method
Activity		
	Activity % Complete	Manual entry
	Earned Progress	Calculated (Weighted Cost) and read-only. {Sum of [(Resource Earned Progress / Resource Quantity) * (Resource Amount)] / Sum of (Resource Amount) } * 100
Resource		
	Progress Quantity	Manual entry
	Earned Progress	Calculated (read-only) based Update Activity and all resources on activity start and finish. For example: If % earned on Actual Start = 5% and % earned on Actual Finish = 95 % then, when Actual Start is entered, Earned Progress = 5% * Quantity When Actual Finish is entered, Earned Progress = 100% * Quantity.

Method is Manual activity % complete - updates resource % complete

This section contains scenarios based on the option selected for % Complete Calculation Method being **Manual activity % complete - updates resource % complete**.

% Earned Calculation Method option is Manual activity % earned and resource % earned

If the entry method and option settings on the Budget and Progress Method Setup window are:

- % Complete and Earned Progress entry method = Independently Control % complete and earned quantity
- % Complete Calculation Method option = Manual activity % complete - updates resource % complete
- % Earned Calculation Method option = Manual activity % earned and resource % earned

then this data entry method scenario results:

Activity or Resource	Data Element	Data Entry Method
Activity		
	Activity % Complete	Manual entry
	Earned Progress	Manual entry
Resource		
	Progress Quantity	Calculated (read-only). (Activity-level Activity % Complete * Quantity)
	Earned Progress	Manual entry

% Earned Calculation Method option is Manual activity % earned - updates resource % earned

If the entry method and option settings on the Budget and Progress Method Setup window are:

- % Complete and Earned Progress entry method = Independently Control % complete and earned quantity
- % Complete Calculation Method option = Manual activity % complete - updates resource % complete
- % Earned Calculation Method option = Manual activity % earned - updates resource % earned

This data entry method scenario results:

Activity or Resource	Data Element	Data Entry Method
Activity		
	Activity % Complete	Manual entry
	Earned Progress	Manual entry
Resource		
	Progress Quantity	Calculated (read-only). (Activity-level Activity % Complete * Quantity)
	Earned Progress	Calculated (read-only). (Activity-level Earned Progress * Quantity)

% Earned Calculation Method option is Resource updates Activity - weighted average of resource costs

If the entry method and option settings on the Budget and Progress Method Setup window are:

- % Complete and Earned Progress entry method = Independently Control % complete and earned quantity
- % Complete Calculation Method option = Manual activity % complete - updates resource % complete
- % Earned Calculation Method option = Resource updates Activity - weighted average of resource costs

then this data entry method scenario results:

Activity or Resource	Data Element	Data Entry Method
Activity		
	Activity % Complete	Manual entry
	Earned Progress	Calculated (Weighted Cost) {Sum of [(Resource Earned Progress / Resource Quantity) * (Resource Amount)] / Sum of (Resource Amount) } * 100
Resource		
	Progress Quantity	Calculated (read-only). (Activity-level Activity % Complete * Quantity)
	Earned Progress	Manual Entry

% Earned Calculation Method option is Lead resource updates Activity and other resources

This combination of settings is not available.

% Earned Calculation Method option is Update Activity and all resources on activity start and finish

If the entry method and option settings on the Budget and Progress Method Setup window are:

- % Complete and Earned Progress entry method = Independently Control % complete and earned quantity
- % Complete Calculation Method option = Manual activity % complete - updates resource % complete
- % Earned Calculation Method option = Update Activity and all resources on activity start and finish

then this data entry method scenario results:

Activity or Resource	Data Element	Data Entry Method
Activity		

	Activity % Complete	Manual entry
	Earned Progress	Calculated (Weighted Cost) {Sum of [(Resource Earned Progress / Resource Quantity) * (Resource Amount)] / Sum of (Resource Amount) } * 100
Resource		
	Progress Quantity	Calculated (read-only). (Activity-level Activity % Complete * Quantity)
	Earned Progress	Calculated based Update Activity and all resources on activity start and finish. For example: If % earned on Actual Start = 5% and % earned on Actual Finish = 95 % then, when Actual Start is entered, Earned Progress = 5% * Quantity When Actual Finish is entered, Earned Progress = 100% * Quantity.

Method is Resource updates Activity - weighted avg. of resource hours

This section contains scenarios based on the option selected for % Complete Calculation Method being **Resource updates Activity - weighted avg. of resource hours**.

% Earned Calculation Method option is Manual activity % earned and resource % earned

If the entry method and option settings on the Budget and Progress Method Setup window are:

- % Complete and Earned Progress entry method = Independently Control % complete and earned quantity
- % Complete Calculation Method option = Resource updates Activity - weighted avg. of resource hours
- % Earned Calculation Method option = Manual activity % earned and resource % earned

then this data entry method scenario results:

Activity or Resource	Data Element	Data Entry Method
Activity		
	Activity % Complete	Calculated (Weighted Hours) and (read-only). {Sum of [(Resource Progress Quantity / Resource Quantity) * (Resource Quantity)] / Sum of (Resource Quantity) } * 100 Only hard booked resources will be considered.

	Earned Progress	Manual entry
Resource		
	Progress Quantity	Manual entry
	Earned Progress	Manual entry

% Earned Calculation Method option is Manual Activity % earned - updates resource % earned

If the entry method and option settings on the Budget and Progress Method Setup window are:

- % Complete and Earned Progress entry method = Independently Control % complete and earned quantity
- % Complete Calculation Method option = Resource updates Activity - weighted avg. of resource hours
- % Earned Calculation Method option = Manual activity % earned - updates resource % earned

then this data entry method scenario results:

Activity or Resource	Data Element	Data Entry Method
Activity		
	Activity % Complete	Calculated (Weighted Hours) and (read-only). {Sum of [(Resource Progress Quantity / Resource Quantity) * (Resource Quantity)] / Sum of (Resource Quantity) } * 100 Only hard booked resources will be considered.
	Earned Progress	Manual entry
Resource		
	Progress Quantity	Manual entry
	Earned Progress	Calculated (Activity-level Earned Progress * Quantity)

% Earned Calculation Method option is Resource updates Activity - weighted avg. of resource costs

If the entry method and option settings on the Budget and Progress Method Setup window are:

- % Complete and Earned Progress entry method = Independently Control % complete and earned quantity
- % Complete Calculation Method option = Resource updates Activity - weighted avg. of resource hours

- % Earned Calculation Method option = Resource updates Activity - weighted avg. of resource costs

then this data entry method scenario results:

Activity or Resource	Data Element	Data Entry Method
Activity		
	Activity % Complete	Calculated (Weighted Hours) and (read-only). {Sum of [(Resource Progress Quantity / Resource Quantity) * (Resource Quantity)] / Sum of (Resource Quantity) } * 100 Only hard booked resources will be considered.
	Earned Progress	Calculated (Weighted Cost) {Sum of [(Resource Earned Progress / Resource Quantity) * (Resource Amount)] / Sum of (Resource Amount) } * 100
Resource		
	Progress Quantity	Manual entry
	Earned Progress	Manual entry

% Earned Calculation Method option is Lead resource updates Activity and other resources

This combination of settings is not available.

% Earned Calculation Method option is Update Activity and all resources on activity start and finish

If the entry method and option settings on the Budget and Progress Method Setup window are:

- % Complete and Earned Progress entry method = Independently Control % complete and earned quantity
- % Complete Calculation Method option = Resource updates Activity - weighted avg. of resource hours
- % Earned Calculation Method option = Update Activity and all resources on activity start and finish

then this data entry method scenario results:

Activity or Resource	Data Element	Data Entry Method
Activity		
	Activity % Complete	Calculated (Weighted Hours) and (read-only).

		{Sum of [(Resource Progress Quantity / Resource Quantity) * (Resource Quantity)] / Sum of (Resource Quantity) } * 100 Only hard booked resources will be considered.
	Earned Progress	Calculated (Weighted Cost) {Sum of [(Resource Earned Progress / Resource Quantity) * (Resource Amount)] / Sum of (Resource Amount) } * 100
Resource		
	Progress Quantity	Manual entry
	Earned Progress	Calculated based Update Activity and all resources on activity start and finish. For example: If % earned on Actual Start = 5% and % earned on Actual Finish = 95 % then, When Actual Start is entered, Earned Progress = 5% * Quantity When Actual Finish is entered, Earned Progress = 100% * Quantity.

Method is Resource updates Activity - weighted avg. of resource costs

This section contains scenarios based on the option selected for % Complete Calculation Method being **Resource updates Activity - weighted avg. of resource costs**.

% Earned Calculation Method option is Manual activity % earned and resource % earned

If the entry method and option settings on the Budget and Progress Method Setup window are:

- % Complete and Earned Progress entry method = Independently Control % complete and earned quantity
- % Complete Calculation Method option = Resource updates Activity - weighted avg. of resource costs
- % Earned Calculation Method option = Manual activity % earned and resource % earned

then this data entry method scenario results:

Activity or Resource	Data Element	Data Entry Method
Activity		
	Activity % Complete	Calculated (Weighted Hours) and read-only. {Sum of [(Resource Progress Quantity / Resource Quantity) * (Resource Amount)] /

		Sum of (Resource Amount) } * 100 All resources will be considered.
	Earned Progress	Manual entry
Resource		
	Progress Quantity	Manual entry
	Earned Progress	Manual entry

% Earned Calculation Method option is Manual activity % earned - updates resource % earned

If the entry method and option settings on the Budget and Progress Method Setup window are:

- % Complete and Earned Progress entry method = Independently Control % complete and earned quantity
- % Complete Calculation Method option = Resource updates Activity - weighted avg. of resource costs
- % Earned Calculation Method option = Manual activity % earned - updates resource % earned

then this data entry method scenario results:

Activity or Resource	Data Element	Data Entry Method
Activity		
	Activity % Complete	Calculated (Weighted Hours) and read-only. {Sum of [(Resource Progress Quantity / Resource Quantity) * (Resource Amount)] / Sum of (Resource Amount) } * 100 All booked resources will be considered.
	Earned Progress	Manual entry
Resource		
	Progress Quantity	Manual entry
	Earned Progress	Calculated (Activity-level Earned Progress * Quantity)

% Earned Calculation Method option is Resource updates Activity - weighted avg. of resource costs

If the entry method and option settings on the Budget and Progress Method Setup window are:

- % Complete and Earned Progress entry method = Independently Control % complete and earned quantity

- % Complete Calculation Method option = Resource updates Activity - weighted avg. of resource costs
- % Earned Calculation Method option = Resource updates Activity - weighted avg. of resource costs

then this data entry method scenario results:

Activity or Resource	Data Element	Data Entry Method
Activity		
	Activity % Complete	Calculated (Weighted Hours) and read-only. {Sum of [(Resource Progress Quantity / Resource Quantity) * (Resource Amount)] / Sum of (Resource Amount) } * 100 All resources will be considered.
	Earned Progress	Calculated (Weighted Cost). {Sum of [(Resource Earned Progress / Resource Quantity) * (Resource Amount)] / Sum of (Resource Amount) } * 100
Resource		
	Progress Quantity	Manual entry
	Earned Progress	Manual entry

% Earned Calculation Method option is Lead resource updates Activity and other resources

This combination of settings is not available.

% Earned Calculation Method option is Update Activity and all resources on activity start and finish

If the entry method and option settings on the Budget and Progress Method Setup window are:

- % Complete and Earned Progress entry method = Independently Control % complete and earned quantity
- % Complete Calculation Method option = Resource updates Activity - weighted avg. of resource costs
- % Earned Calculation Method option = Update Activity and all resource on activity start and finish

then this data entry method scenario results:

Activity or Resource	Data Element	Data Entry Method
Activity		

	Activity % Complete	Calculated (Weighted Hours) and read-only. {Sum of [(Resource Progress Quantity / Resource Quantity) * (Resource Amount)] / Sum of (Resource Amount) } * 100 All resources will be considered.
	Earned Progress	Calculated (read-only) based Update Activity and all resources on activity start and finish. For example: If % earned on Actual Start = 5% and % earned on Actual Finish = 95 % then, When Actual Start is entered, Earned Progress = 5% When Actual Finish is entered, Earned Progress = 100%
Resource		
	Progress Quantity	Manual entry
	Earned Progress	Calculated (read-only) based Update Activity and all resources on activity start and finish. For example: If % earned on Actual Start = 5% and % earned on Actual Finish = 95 % then, When Actual Start is entered, Earned Progress = 5% * Quantity When Actual Finish is entered, Earned Progress = 100% * Quantity.

Method is Lead resource updates Activity and other resources

This section contains scenarios based on the option selected for % Complete Calculation Method being **Lead resource updates Activity and other resources**. There is only one data entry scenario for this setting.

% Earned Calculation Method option is Lead resource updates Activity and other resources

If the entry method and option settings on the Budget and Progress Method Setup window are:

- % Complete and Earned Progress entry method = Independently Control % complete and earned quantity
- % Complete Calculation Method option = Lead resources updates Activity and other resources.
- % Earned Calculation Method option = Lead resource updates Activity and other resources

then this data entry method scenario results:

Activity or Resource	Data Element	Data Entry Method
Activity		
	Activity % Complete	Calculated (Weighted Hours) and read-only. {Sum of [(Resource Progress Quantity / Resource Quantity) * (Resource Amount)] / Sum of (Resource Amount) } * 100 All resources will be considered.
	Earned Progress	Calculated (Weighted Cost) and read-only. {Sum of [(Resource Earned Progress / Resource Quantity) * (Resource Amount)] / Sum of (Resource Amount) } * 100
Resource		
	Progress Quantity	Manual Entry (Only resource that is selected under drop-down). For all other resources, Progress Quantity will be calculated based on (Leader Progress Quantity / Leader Quantity) * Resource Quantity
	Earned Progress	Manual Entry (only resource that is selected under drop-down). For all other resources, Progress Quantity will be calculated based on (Leader Earned Quantity / Leader Quantity) * Resource Quantity

Activity and resource % complete updates % earned

This section contains scenarios for calculations based on the entry method **Activity and Resource % Complete Updates % Earned** and the **% Complete Calculation Method** option selected.

Method is Manual activity % complete and resource % complete

This section contains scenarios based on the option selected for % Complete Calculation Method being **Manual activity % complete and resource % complete**. There is only one data entry scenario for this setting.

% Earned Calculation Method options are not available

If the entry method and option settings on the Budget and Progress Method Setup window are:

- % Complete and Earned Progress entry method = Activity and resource % complete updates % earned
- % Complete Calculation Method option = Manual activity % complete and resource % complete

- % Earned Calculation Method option = Not available

then this data entry method scenario results:

Activity or Resource	Data Element	Data Entry Method
Activity		
	Activity % Complete	Manual entry
	Earned Progress	Calculated (read-only) Same as Activity % Complete
Resource		
	Progress Quantity	Manual entry
	Earned Progress	Calculated (read-only) Same as Progress Quantity

Method is Manual activity % complete - updates resource % complete

This section contains scenarios based on the option selected for % Complete Calculation Method being **Manual activity % complete - updates resource % complete**. There is only one data entry scenario for this setting.

% Earned Calculation Method options are not available

If the entry method and option settings on the Budget and Progress Method Setup window are:

- % Complete and Earned Progress entry method = Activity and resource % complete updates % earned
- % Complete Calculation Method option = Manual activity % complete - updates resource % complete
- % Earned Calculation Method option = Not available

then this data entry method scenario results:

Activity or Resource	Data Element	Data Entry Method
Activity		
	Activity % Complete	Manual entry
	Earned Progress	Calculated (read-only) Same as Activity % Complete
Resource		
	Progress Quantity	Calculated (read-only)

		(Activity-level Activity % Complete * Quantity)
	Earned Progress	Calculated (read-only) Same as Progress Quantity

Method is Resource updates Activity - weighted avg. of resource hours

This section contains scenarios based on the option selected for % Complete Calculation Method being **Resource updates Activity - weighted avg. of resource hours**. There is only one data entry scenario for this setting.

% Earned Calculation Method options are not available

If the entry method and option settings on the Budget and Progress Method Setup window are:

- % Complete and Earned Progress entry method = Activity and resource % complete updates % earned
- % Complete Calculation Method option = Resource updates Activity - weighted avg. of resource hours
- % Earned Calculation Method option = Not available

then this data entry method scenario results:

Activity or Resource	Data Element	Data Entry Method
Activity		
	Activity % Complete	Calculated (Weighted Hours) and read-only. {Sum of [(Resource Progress Quantity / Resource Quantity) * (Resource Amount)] / Sum of (Resource Amount) } * 100 Only hard booked resources will be considered
	Earned Progress	Calculated (read-only) Same as Activity % Complete
Resource		
	Progress Quantity	Manual entry
	Earned Progress	Calculated (read-only) Same as Progress Quantity

Method is Resource updates Activity - weighted avg. of resource costs

This section contains scenarios based on the option selected for % Complete Calculation Method being **Resource updates Activity - weighted avg. of resource costs**. There is only one data entry scenario for this setting.

% Earned Calculation Method options are not available

If the entry method and option settings on the Budget and Progress Method Setup window are:

- % Complete and Earned Progress entry method = Activity and resource % complete updates % earned
- % Complete Calculation Method option = Resource updates Activity - weighted avg. of resource costs
- % Earned Calculation Method option = Not available

then this data entry method scenario results:

Activity or Resource	Data Element	Data Entry Method
Activity		
	Activity % Complete	Calculated (Weighted Hours) and read-only. {Sum of [(Resource Progress Quantity / Resource Quantity) * (Resource Amount)] / Sum of (Resource Amount) } * 100 Only hard booked resources will be considered
	Earned Progress	Calculated (read-only) Same as Activity % Complete
Resource		
	Progress Quantity	Manual entry
	Earned Progress	Calculated (read-only) Same as Progress Quantity

Method is Lead resource updates Activity and other resources

This section contains scenarios based on the option selected for % Complete Calculation Method being **Lead resource updates Activity and other resources**. There is only one data entry scenario for this setting.

% Earned Calculation Method option is Lead resource updates Activity and other resources

If the entry method and option settings on the Budget and Progress Method Setup window are:

- % Complete and Earned Progress entry method = Activity and resource % complete updates % earned
- % Complete Calculation Method option = Lead resource updates Activity and other resources
- % Earned Calculation Method option = Lead resource updates Activity and other resources

then this data entry method scenario results:

Activity or Resource	Data Element	Data Entry Method
Activity		
	Activity % Complete	Calculated (Weighted Hours) and read-only. {Sum of [(Resource Progress Quantity / Resource Quantity) * (Resource Amount)] / Sum of (Resource Amount) } * 100 All resources will be considered
	Earned Progress	Calculated (read-only) Same as Activity % Complete
Resource		
	Progress Quantity	Manual entry. (Only resource that is selected under drop-down). For all other resources, Progress Quantity will be calculated based on (Leader Progress Quantity / Leader Quantity) * Resource Quantity
	Earned Progress	Calculated (read-only) Same as Progress Quantity

Activity and resource % earned updates % complete

This section contains scenarios for calculations based on the entry method **Activity % Earned and Resource % Earned Updates % Complete** and the **% Earned Calculation Method** option selected.

Method is Manual activity % earned and resource % earned

This section contains scenarios based on the option selected for % Earned Calculation Method being **Manual activity % earned and resource % earned**. There is only one data entry scenario for this setting.

% Complete Calculation Method options are not available

If the entry method and option settings on the Budget and Progress Method Setup window are:

- % Complete and Earned Progress entry method = Activity and resource % earned updates % complete
- % Complete Calculation Method option = Not available
- % Earned Calculation Method option = Manual activity % earned and resource % earned

then this data entry method scenario results:

Activity or Resource	Data Element	Data Entry Method
Activity		
	Activity % Complete	Calculated (read-only) Same as Earned Progress
	Earned Progress	Manual entry
Resource		
	Progress Quantity	Calculated (read-only) Same as Earned Progress
	Earned Progress	Manual entry

Method is Manual activity % earned - updates resource % earned

This section contains scenarios based on the option selected for % Earned Calculation Method being **Manual activity % earned - updates resource % earned**. There is only one data entry scenario for this setting.

% Complete Calculation Method options are not available

If the entry method and option settings on the Budget and Progress Method Setup window are:

- % Complete and Earned Progress entry method = Activity and resource % earned updates % complete
- % Complete Calculation Method option = Not available
- % Earned Calculation Method option = Manual activity % earned - updates resource % earned

then this data entry method scenario results:

Activity or Resource	Data Element	Data Entry Method
Activity		
	Activity % Complete	Calculated (read-only) Same as Earned Progress
	Earned Progress	Manual entry
Resource		
	Progress Quantity	Calculated (read-only) Same as Earned Progress
	Earned Progress	Calculated (read-only) (Activity-level Earned Progress * Quantity)

Method is Resource updates Activity - weighted avg. of resource costs

This section contains scenarios based on the option selected for % Earned Calculation Method being **Resource updates Activity - weighted avg. of resource costs**. There is only one data entry scenario for this setting.

% Complete Calculation Method options are not available

If the entry method and option settings on the Budget and Progress Method Setup window are:

- % Complete and Earned Progress entry method = Activity and resource % earned updates % complete
- % Complete Calculation Method option = Not available
- % Earned Calculation Method option = Resource updates Activity - weighted avg. of resource costs

then this data entry method scenario results:

Activity or Resource	Data Element	Data Entry Method
Activity		
	Activity % Complete	Calculated (read-only) Same as Earned Progress
	Earned Progress	Calculated (Weighted Hours) and read-only. {Sum of [(Resource Earned Progress / Resource Quantity) * (Resource Amount)] / Sum of (Resource Amount) } * 100 All resources will be considered
Resource		
	Progress Quantity	Calculated (read-only) Same as Earned Progress
	Earned Progress	Manual entry

Method is Lead resource updates Activity and other resources

This section contains scenarios based on the option selected for % Earned Calculation Method being **Lead resource updates Activity and other resources**. There is only one data entry scenario for this setting.

% Complete Calculation Method options are not available

If the entry method and option settings on the Budget and Progress Method Setup window are:

- % Complete and Earned Progress entry method = Activity and resource % earned updates % complete

- % Complete Calculation Method option = Not available
- % Earned Calculation Method option = Lead resource updates Activity and other resources

then this data entry method scenario results:

Activity or Resource	Data Element	Data Entry Method
Activity	Activity % Complete	Calculated (read-only) Same as Earned Progress
	Earned Progress	Calculated (Weighted Hours) and read-only. {Sum of [(Resource Earned Progress / Resource Quantity) * (Resource Amount)] / Sum of (Resource Amount) } * 100
Resource		
	Progress Quantity	Calculated (read-only) Same as Earned Progress
	Earned Progress	Manual Entry (Only resource that is selected under drop-down).
		For all other resources, Earned Progress will be calculated based on(Leader Earned Progress / Leader Quantity) * Resource Quantity

Method is Update Activity and all resources on start and finish

This section contains scenarios based on the option selected for % Earned Calculation Method being **Update Activity and all resources on activity start and finish**. There is only one data entry scenario for this setting.

% Complete Calculation Method options are not available

If the entry method and option settings on the Budget and Progress Method Setup window are:

- % Complete and Earned Progress entry method = Activity and resource % earned updates % complete
- % Complete Calculation Method option = Not available
- % Earned Calculation Method option = Update Activity and all resources on activity start and finish

then this data entry method scenario results:

Activity or Resource	Data Element	Data Entry Method
Activity		
	Activity % Complete	Calculated (read-only) Same as Earned Progress
	Earned Progress	Calculated (read-Only) based Update Activity and all resources on activity start and finish. For example: If % earned on Actual Start = 5% and % earned on Actual Finish = 95 % then, When Actual Start is entered, Earned Progress = 5% When Actual Finish is entered, Earned Progress = 100%
Resource		
	Progress Quantity	Calculated (read-only) Same as Earned Progress
	Earned Progress	Calculated (read Only) based Update Activity and all resources on activity start and finish. For example: If % earned on Actual Start = 5% and % earned on Actual Finish = 95 % then, When Actual Start is entered, Earned Progress = 5% * Quantity When Actual Finish is entered, Earned Progress = 100% * Quantity.

Creating Schedule Manager Custom Calendars

Unifier allows you to create Custom Calendars to be used by the Schedule Manager. The Custom Calendar that you specify can override the company-level Standard Calendar. If there is no Custom Calendar, the Standard Calendar marked as the default calendar is the calendar that is used by the Schedule Manager.

Unifier allows you to create multiple Custom Calendars, enabling you to create a library of calendars that can be selected for use on your schedule sheets. The multiple calendars enable you to have calendars to support varying work schedules (depending on locality) and to account for holidays and other non-working days. For example, some countries in the Middle East have weekends that are other than Saturday and Sunday.

You must have permissions granted to create, modify, delete, or view Custom Calendars.

About Calendars and Activities

When you select or change an activity calendar, the calendar affects the following dates and date pickers:

- **Start Date** date picker
- **Finish Date** date picker
- Duration calculation
- **Actual Start Date** date picker
- **Actual Finish Date** date picker
- Actual Duration
- Forecast Start calculation
- Forecast Finish calculation
- Forecast Duration calculation
- Critical Path
- Estimate dates
- Estimate duration
- Float calculation
- Progress window Progress As Of Date date picker
- Budget and Progress options **Do not allow progress entry older than the current period** and **Allow editing of last progress**
- Any date or date only picker data element

This is how the dates are changed when the activity calendar changes. Changes occur when the schedule sheet is refreshed.

- Activity (not started): If the Start Date is affected by a new activity calendar, the Start Date and Finish Date will change to keep the Duration as specified. The system will use the next day on the calendar.
- Activity (not started): If the Finish Date is affected by a new activity calendar, the system will select either a previous or next working day on the calendar.
- Activity (in progress): If the Finish Date is affected by a new activity calendar, the system will select either a previous or next working day on the calendar. The Start Date is not affected in this case.
- Activity (completed): No impact on Start Date or Finish Date for the activity.

Create a Custom Calendar in the Schedule Manager

To create a custom calendar in the Schedule Manager, you must have Create permission. You can create a new calendar manually, or by copying and modifying an existing calendar.

To create Custom Calendars

1) In User Mode, select the project or shell, and select **Schedule Manager > Custom Calendars**. The Custom Calendars log window opens.
2) Click **New**. The Calendar Properties window opens.
3) Enter the calendar name and an optional description.

4) Specify the working and non-working days for the calendar you are creating. Browse to the month and year using the pull-down menus at the top of the calendar. Saturdays and Sundays are set as non-working days by default. Do one of the following:
   - To set a particular date as a non-working day (for example, a holiday), click the date on the calendar and select **Non Working**. The date will appear greyed out, and will not be used in date calculations.
   - To set a non-working day as a working day, click a greyed cell and select **Working**.
   - To set a particular day of the week (for example, every Saturday) as a non-working day, click the day at the top of the calendar (for example "Sat"), then click **Non Working**. All Saturdays in the calendar will be changed to non-working days (grey).
   - To set a particular day of the week as a working day, click the day at the top of the calendar, then click **Working**.
   - If you only want to set the day of the week in a particular month as working or non-working days, select each day individually and click **Working** or **Non Working**.

   > **Note**: If you have marked the day of the week as a non-working day throughout the calendar by selecting the day at the top of the calendar (for example "Sat"), then you will not be able to mark individual days (that is, individual Saturdays in this example) as working days. To be able to include both working and non-working instances of a day of the week on the calendar, you must select them individually.

5) Specify the Default Work Time with the **Start Time** and **Hours/Day** fields.
6) Click **OK**.

To copy an existing calendar

1) In User Mode, select the project or shell, and select **Schedule Manager > Custom Calendars**. The Custom Calendars log window opens.
2) Select a calendar in the log.
3) Click **Copy**. The Calendar Properties window opens with the calendar description and calendars days specified. You can copy from Standard (Company level) or Custom (project or shell level) calendars.
4) Enter the calendar name and change the optional description as needed.
5) Modify the working and non-working days that are specific to the new calendar you are creating. Browse to the calendar months you want to modify. Select the calendar day and click the working days and default work time as needed.
6) Click **OK**.

Do not allow update of % complete and % earned

When the **Do not allow update of % complete and % earned** entry method is selected, these fields are disabled.

- Activity
  - Activity % Complete
  - Earned Progress

- Resource
  - Resource % Complete
  - Progress Quantity
  - Earned Quantity

P6 Summary Sheets

Unifier allows you to store summarized data from P6 in the P6 Summary Sheets node.

Refer to the *Unifier Earned Value Management User Guide* for more details about Activity Sheets and P6 Summary Sheets.

To view the P6 Summary Sheets node in a Project or Shell, User mode, the Project or Shell attribute form must have the Data Element (DE) *uuu_int_schedule_type*, and you (User) must have the appropriate permissions for accessing the node.

The placement of P6 Summary Sheet node under the Schedule Manager is by default. A User can move P6 Summary Sheet node under other Summary nodes (Example: Cost Manager) if needed.

The P6 Summary Sheets node contains one sheet, or more, that contains “summarized” P6 data:

- **Master Summary Sheet**

  Contains summarized data from the P6 Project and the sheet is linked to the current Project or Shell.

  Note: the Master Summary Sheet is not displayed as "Master" in the Master Summary Sheet properties.
- **Baseline Summary Sheet**

  A P6 Project can contain any number of baselines, or not baselines at all. A baseline is a copy of the P6 Project that contains frozen data per Data Date. You can select to bring summarized baseline data from a P6 Project to Unifier, via Gateway. The Baseline Summary Sheets that you bring to Unifier, from a P6 Project, reside in the Master sheet below the P6 Summary Sheets node.

  Note: The Baseline Summary Sheet appears as an additional Schedule Sheets node under the Schedule Manager.

Notes:

- When a P6 User enters the actual and progress data in P6 Schedule, the date is displayed as "Progress as of" date in P6 Schedule.
- You cannot create a new P6 Summary Sheet manually. Unifier allows a total of 12 summary sheets to be integrated: 1 current Schedule Summary sheet and 11 Baseline Summary Sheets, or 12 Baseline Summary Sheets.

Schedule Sheet Integration

Unifier supports out of the box (OOTB) mapping for integration between P6 and Unifier, using Schedule Sheets.

This OOTB mapping is available as part of Project Control installation as a shell template (T-002). You must create a new shell by copying shell template (T-002) in order to integrate P6 and Unifier using Schedule Sheets.

To view the data mapping fields in Unifier:

1) Go to **Company Workspace** > **Admin** mode > **Templates** > **Shells** > **Projects**.
2) Open the **T-002** (Project #) **Owner Project Template**(Project Name).
3) From the left-hand navigator, click **Schedule Manager** > **Schedule Sheets**.
4) In the **Schedule Sheets** log, open **Project Schedule Sheet**.
5) From the menu bar, click **File** > **Data Mappings**.
6) Click **P6** (to select) > **Modify** > **Activity** tab.

The column name and XML elements are listed as shown below. You can use the XML elements for integration with P6.

Column	XML Element
Activity Name	Name
Activity Percent	PercentComplete
Actual Finish Date	ActualFinishDate
Actual Start Date	ActualStartDate
Duration	PlannedDuration
Early Start date	EarlyStartDate
Early finish date	EarlyFinishDate
Finish date	PlannedFinishDate
Late Start date	LateStartDate
Late finish date	LateFinishDate
P6 Activity Number	Id
P6 CBS	CBSCode
Start date	PlannedStartDate

Auto-Scheduling of Activities

You can disable automatic re-scheduling within Unifier Schedule Sheet to:

- Schedule Activities manually.

- Integrate Activities with their dependencies with the same schedule as exists in P6 and MPP.

Disabling Automatic Scheduling of Activities

When Activities with dependencies are integrated by Direct Integration with P6, or imported through MPP XMLS, the activities are re-scheduled automatically within the Schedule Sheet to retain the dependencies, leading to Data change. You can disable this automatic reschedule in Schedule sheet to integrate or import the data as is and to schedule the Activities manually, if desired.

To enable or disable auto-scheduling:

1) Go to the **Schedule Sheet Properties** window, **General** tab.
2) Select your option in **Auto-Schedule** field. The default selection is **Enable**.

In the **Schedule Sheets** log, the column **Auto-Schedule** displays the condition of the sheet.

When the auto-scheduling is *disabled*:

- You will be able to edit the **Activity Properties** of a particular **Activity**, for example **Start Date**, **Finish Date**, **Duration**, **Predecessor**, **Dependencies,** etc. The properties of the dependent activities are not impacted because of disabling automatic scheduling is disabled.
- You can, manually, reschedule the schedule sheet to implement your changes by refreshing it through manual **Schedule** refresh, **Cost and Schedule** refresh, or enabling scheduled refresh (**Set Frequency**). These options are available under **Refresh** option in the log toolbar.
- After changing the **Activity Properties** of individual activities, when the schedule sheet is refreshed manually or through **Schedule** refresh, then the entire schedule sheet will be re-scheduled. The impact on dependent activities can be reviewed after refresh.
- The refresh status of schedule sheet is displayed on **Schedule Sheet Refresh** window (**History Details** window).
- No updates will take place for resource rates on the master schedule sheet and also update to shell cost sheet with corresponding assignment costs until you allow manual scheduling through manual or **Schedule** refresh. Once the schedule sheet is manual scheduled, the updates will take place.
- On clicking **Update** > **Resource Utilization** (on the master schedule sheet) and also **Update** > **Resource Utilization and Cost Manager**, the following alert message is displayed: *Cannot update cost till Sheet is scheduled.*

Calendar

When the calendar that is defined for a particular **Activity** is changed in the **Activity Properties**, then Unifier changes the **Finish Date**. In this case, if the auto-scheduling is *disabled*, then no impact of this change is reflected in the dependent activities.

When the calendar that is defined for a particular **Schedule Sheet** is changed in the **Schedule Sheet Properties**, then the next time you open the schedule sheet, the following message is displayed: *Schedule sheet requires a refresh due to modifications to a Calendar or Rates associated to a Role on a Resource. Do you want to refresh schedule sheet?*

If you select **Yes**, then the schedule sheet will be rescheduled on refresh, as an impact of Calendar change, irrespective of whether Auto-scheduling is enabled or disabled.

If you select **No**, then no impact of Calendar change is reflected in the schedule sheet.

Activity Manager

Unifier enables you to create, consolidate, and monitor activities that must be completed on a schedule by way of the **Activity Manager**.

The **Activity Manager** grouping node, contains the following sub-nodes, when available:

- **Activity Sheet**
- **OBS Sheet**
- **Rate Sheet**
- **WBS Sheet**

> **Note**: To view the **Activity Sheet**, or other sheets, you must have the appropriate permissions.

To access the **Activity Manager** node:

1) Go to your shell in **User** mode.
2) Click **Activity Manager** node to expand.

The following provides summary details about each functional node (sub-nodes).

Activity Sheet functional node

The **Activity Sheet** sub-node contains a list of activity sheets listed in the **Activity Sheets** log window. You can have have multiple activity sheets.

An activity sheet captures scheduling data from the mapped P6 projects and role and resource rates from the company-level Master Rate Sheet (default) or shell-level rate sheets, and calculates the Earned Values metrics and derivatives. It is the primary source of data for the Earned Value Analysis.

OBS Sheet functional node

An **OBS Sheet** (Organization Breakdown Structure sheet) contains the following information:

- Full Name
- Short Name
- Unifier User
- Title
- Department
- Status
- WBS Name
- Contract No
- Weekly Capacity

The OBS Sheet node log displays the only available OBS sheet.

Refer to the *Unifier Earned Value Management User Guide* for details.

Rate Sheet functional node

The **Rate Sheet** node captures the list of resources and roles (based on the latest data available in activity sheet) and corresponding rates from the master rate sheet.

In P6, users can assign a role, or resource, to an activity under the **Assignments** tab of an activity for any project. In P6, rates are assigned to a role or resource at global level. To maintain the consistency, we will import the P6 global data to Unifier company workspace. This data will be captured under a new entity called Master Rate Sheet. The rate sheet being created through P6-Unifier integration will be saved as 'Master Rate Sheet' under a new node in company workspace called Master Rate Sheet.

The rates (Price/Unit) for assigned roles and resources are managed at global level in P6, which can then be used in a project while doing the costing (calculating Present Value, Earned Value, etc.) of the project depending on the rate source (resource, role or override) corresponding to that assignment in an activity.

For a resource loaded schedule, we need rates corresponding to roles and resources for costing of any project in Unifier. There are two types of rate sheets:

- Master Rate Sheet (at company workspace)
- Rate Sheet (at Shell) explained in the subsequent sections.

A company will only have one Rate Sheet called the "Master Rate Sheet." So, users are not allowed to create a copy sheet of the Master Rate Sheet under company workspace. This sheet will contain rates for both roles and resources, users will be able to toggle between resource and role rates from the display. By default, the rates present in master rate sheet will be used across all the resources and roles present in all activity sheets across all shells unless user has assigned another rate sheet present at the shell level to the activity sheet/project.

To override the price or unit. The Planning and Actuals will be fetched from corresponding Rate Sheet or Overridden Price/Unit from override action. Whenever a different Rate is assigned to a Resource, system will display the following alert message: Perform Recost to see updated costs.

Refer to the *Unifier Earned Value Management User Guide* for details.

WBS Sheet functional node

A **WBS Sheet** (Work Breakdown Structure sheet) contains the following information:

- Planned Units
- Planned Total Cost
- Actual Units
- Actual Total Cost
- Remaining Units
- Remaining Total Cost
- At Completion Units
- At Completion Total Cost

The WBS Sheet node log displays the only available WBS sheet.

Refer to the *Unifier Earned Value Management User Guide* for:

- Details about the functional nodes, mentioned above.
- Information related to the **System Activity Sheet**, **Master Rate Sheet**, and **Rate Sheet**.

In This Section

Activity Sheet Sub-Node

The **Activity Sheet** sub-node contains a list of activity sheets (including the **System Activity Sheet**), and they are all listed in the **Activity Sheets** log or window.

You can have multiple activity sheets.

You can create User-Defined Reports (UDRs) from the Activity Sheet Data Elements (DEs).

The system uses the following schedule types to determine the activity schedule when sending activity data to the Cash Flow:

Note: The Cash Flow properties will be displayed based on the activity sheet schedule type.

Type	Description
Resource	The Activity Sheet receives the entire duration based information from P6 The Activity Sheet receives the entire resource assignment related information (Not always) The Activity Sheet receives the entire cost related information The Activity Sheet is available as a source for Cash Flow and Cost Sheet The Activity Sheet has all cost related feature (Assign rate sheet and Recost) The Activity Sheet is available for Earned Value Analysis

Type	Description
Cost	The Activity Sheet receives the entire duration based information from P6 The Activity Sheet receives the entire resource assignment related information The Activity Sheet receives the entire cost related information The Activity Sheet is available as a source for Cash Flow and Cost Sheet The Activity Sheet does not have any cost related feature (Assign rate sheet and Recost) The Activity Sheet is available for Earned Value Analysis The Activity Sheet is available for Earned Value Analysis **Note**: The system uses the data directly from P6 and does not perform any calculations for a cost loaded schedule.
Duration (without 'Based')	The Activity Sheet receives duration based information from P6 (Not always) The Activity Sheet receives resource assignment related information (Not always) The Activity Sheet receives cost related information The Activity Sheet is not available as a source for Cash Flow and Cost Sheet The Activity Sheet does not have any cost related feature (Assign rate sheet and Recost) The Activity Sheet is not available for Earned Value Analysis

The following explain the **Activity Sheets** log or window elements, followed by information regarding manual activity sheets.

Activity Sheets Log and Manual Activity Sheets

Activity Sheets Log

The **Activity Sheets** log contains a list of manually created activity sheets. The log also contains the **System Activity Sheet**. The activity sheets listed are referred to as manual activity sheets.

All the activity sheets that are defined in Unifier will be displayed with source type as 'Custom' in the **Activity Sheets** log.

Manual Activity Sheet

To create and maintain project schedules within the system, you can manually define activity sheets.

A manual activity sheet captures the:

- Schedule of activities, within a project
- Resource assignments
- Rate

> **Note**: When you assign resources or roles that have multiple rates to an activity sheet, in order to update the total cost (Total Cost value), you must reschedule, or recost, the activity sheet; otherwise, the system will assign earliest assigned resources or roles rates (price/unit) to the activity sheet, and you will not be able to view the correct accumulated cost.

A manual activity sheet also tracks the progress of activities, over the life time of the project.

> **Note**: For information about the **System Activity Sheet**, refer to the Activity Manager section in the *Unifier Earned Value Management User Guide*.

You can use an activity sheet to:

- Define simple project schedules.
- Define tasks, milestones, and relationships between tasks, to enhance user experience.
- Assign resources and track project progress by capturing actuals and calculating remaining work that needs to be done.

In an activity sheet you can:

- Set the view to WBS and add activities or update and remove the activities in the **WBS** view, similar to the **Default** view.
- Include attachments and comments for the activities.
- View the **History** log (within Activity Sheet and Schedule) by using the **Data Date**.
- Add, edit, and remove the activities and dependencies and assignments in the user defined views. Also will be able to view the dates, costs, units, and other summary data within the WBS hierarchy view.
- Within the WBS hierarchy, add, copy, or remove the activities in WBS view and user-defined views.
- Add, edit, or remove both the column and row data in user-defined views.
- Add additional notes to the tasks or activities.
- Schedule the activities based on data date and view the schedule history.
- Create a project schedule
-
- Define a list of activities or tasks, their relationships, and their schedules.
- Assign the resources and roles to activity through the **Assignments** tab.
- Assign the resources and roles received from P6 or added manually in the Master Rate Sheet to the activities.

- Automatically calculate the planned start and the planned finish dates for the assigned resources, based on activity type.
- View and manage the cost estimates per activity and for the entire project schedule based on resource allocation and resource rate per unit. The next topics provide more details about how the values are calculated. The cost columns in the **Assignments** tab are read-only.
- Define the Planned, At Completion, Actual, and Remaining units, for the assigned resource, based on the resource calendar and default units/time.
- Spread the Planned, Actual, Remaining, and At Completion units by using a profile selected for the assigned resources and roles based on the data date.
- Calculate the Planned, Actual, At Completion, and Remaining cost using resource rates on the effective date.

> **Note**: This can be achieved in a similar way that the System Activity Sheet calculates the costs by assigning a Rate Sheet.

- Maintain the historical data
- Perform earned value calculations (BAC, EAC, EV, SV, CV, CPI, SPI, etc.) that are used for Earned Value Analysis and:
- View the EV metrics in the activity sheet (Activity Sheet)
- Select EV metrics from the activity sheet within the cost sheet
- View the EV metrics from the activity sheet that has been rolled up to the WBS sheet

In the Activity Sheet the following two default views are available:

- **Default View**
- **WBS View**

> **Note**: Any existing views that were created prior to the 20.10 upgrade will not be seen in the View drop-down field.

The **Default View** will be seen by default when you open the sheet. In the **Default View** drop-down field, all of the activities will be in flat mode.

When you select the **WBS View** drop-down field, all of the activities within the sheet will be grouped by WBS hierarchy. At WBS (Summary level), all of the costs show the sum of the costs of all of the activities, as well as the costs that are received at the summary level.

The **Start** and **Finish** dates, in the WBS row, will show the earliest start date and latest finish dates for all of the activities under that WBS.

All the attributes defined in the **Activity Attribute** form will be displayed as columns in the **WBS View**, similar to the **Default View**. The order of columns will be the same as selected in the design.

You can create views with filters, groupings, and so forth (within an activity sheet) in order to view the filtered and small list of activities and associated columns, instead of scrolling down and right to navigate to specific activities.

For the default and user-defined views, you can perform the following functions, in addition to adding, deleting, and updating the activities and the schedules:

- Drag and drop columns and reorder the columns, except the first 2 columns (Activity ID and Activity Name) which are fixed.
- Click at a column header to change the Sort By option.
- Right-click at a column header and select Lock after this column option to lock a column.
- Right-click at a column and select Lock after this column option to lock a column.

> **Note**: You cannot lock before this column beyond the **Activity Name** column.

Similar to a Cost Sheet or a WBS Sheet, you can group selected columns in the sheet.

Activity Sheet

The values for the following cost-related units are calculated according to the assignments, as follows:

Planned Cost & **Remaining Cost**

Planned Cost and Remaining Cost for the assigned resource will be calculated based on the number of the units * the rate per unit.

Planned Cost is calculated as Planned units * price/unit.

If the rate source is an override, then the system uses the rate present in the activity sheet that corresponds to that assignment.

The resource rate is derived from the rate based on the effective date between the start and the finish dates.

The exchange rates for that day are applied if the resource/role does not have the same currency as the project.

Remaining Cost

Remaining Cost for the assigned resource will be calculated based on the number of remaining units * price per unit.

If the rate source is an override, then the system uses the price/unit for the calculating remaining cost.

Actual Cost

The system calculates the Actual Cost based on the number of actual units * rate per unit.

The rate is based on the Actual Start Date onwards.

The unit rate is based on the effective date which falls on the actual start date.

At Completion Cost

At Completion Cost value is equal to: **Actual Cost** + **Remaining Cost**.

All of the calculated costs (Planned Cost, Actual Cost, Remaining Cost, and At Completion Cost) will be rolled up to the activity sheet and to the:

- Planned Total Cost
- Actual Total Cost
- Remaining Total Cost
- At Completion Total Cost

The following units will be rolled up from **Assignments** tab:

- Planned Total Units
- Actual Total Units
- Remaining Total Units
- At Completion Total Units

Activity % Complete

The system calculates this field as a simple and intuitive formula for **Units % Complete of Activities,** with labor or non-labor assignments:

Activity % Complete = [Actual Units] / ([Actual Units] + [Remaining Units])

Earned Value Calculations at the Activity level:

- Planned Value (uuu_P6PVCost)

  This is the planned total cost of the activity that is completed as of the data date.
- Earned Value (uuu_P6EVCost)

  The cost of all activities in the project that are actually completed as of the data date.

  The **Budget At Completion** is calculated from the project baseline and is calculated as: **Budget At Completion** multiplied by **Performance % Complete**.
- Estimate to Complete (uuu_P6ETC)

  The estimated cost to complete the activity, WBS, or project.

  It is calculated as **Remaining Total Cost** for the activity or the **Performance Factor** multiplied by (**Budget At Completion** minus **Earned Value**), depending on the **Earned Value** technique selected for the activity's WBS.

  The **Budget at Completion** is calculated from the project baseline. The ETC technique will be fetched from the WBS sheet for the respective activity.
- Schedule Performance Index (uuu_P6SPIndex)

  A measure of the work accomplished as a percentage of the work scheduled.

  The **Schedule Performance Index** indicates whether you are meeting earned and planned values within your schedule. A value less than 1 indicates that less work was performed than was scheduled.

  It is calculated as **Earned Value** divided by **Planned Value**.
- Cost Performance Index (uuu_P6CPIndex)

  A measure of the value of work accomplished as a percentage of the actual costs.

  The **Cost Performance Index (CPI)** indicates whether you have spent money over the budget to date.

  It is calculated as **Earned Value Cost** divided by **Actual Cost**. A value less than 1 indicates that the actual cost has exceeded the planned value.
- Cost Schedule Index (uuu_P6CSIndex)

  It is a product of **Schedule Performance Index** & **Cost Schedule Index**.
- Schedule Variance (uuu_P6ScheduleVariance)

  The measure of **Schedule Performance Index** on a project. A negative value indicates that less work was actually performed than was scheduled.

It is calculated as **Earned Value** minus **Planned Value**.

- Cost Variance (uuu_P6CostVariance)

  A measure of **Cost Schedule Index** on an activity, WBS, or project. A negative value indicates that the actual cost has exceeded the planned value.

  It is calculated as **Earned Value** minus **Actual Cost**.

- To Complete Performance Index (uuu_P6TCPIndex)

  The ratio of the remaining work to the remaining funds.

  It is calculated as (**Budget at Completion** minus **Earned Value**) divided by (**Estimate at Completion** minus **Actual Units** or **Cost**).

- Estimate at Completions (uuu_P6EACCost)

  The expected total cost of a schedule activity, a work breakdown structure (WBS) component, or the project when the defined scope of work will be completed.

  It is calculated as **Actual Cost** plus **Estimate to Complete Cost**. The method for calculating estimate to complete depends on the earned value technique selected for the activity's WBS.

- Budget at Completion (uuu_P6BAC)

  The planned total cost through activity or project completion.

  It is calculated as **Planned Labor Cost** plus **Planned Non-labor Cost** plus **Planned Expense Cost** plus **Planned Material Cost**.

- Variance at Completion (uuu_P6VAC)

  The difference between the baseline total cost and the current estimate of total cost. A negative value indicates an estimated cost overrun.

  The **Budget At Completion** is calculated from the current baseline.

  It is calculated as **Budget At Completion** minus **Estimate At Completion**.

All the earned value calculations will be performed at activity level.

- Assign a CBS Code at Assignment level :

  You can assign the CBS Code at the resource level similar to the CBS Code assignment at the activity level. CBS code is a picker column which shows active CBS Codes defined in the project cost sheet.

  All the costs and units will be rolled up to the cost sheet and cash flow based on the CBS assignment.

> **Note**: All of the calculations will be performed during recosting.

Cost Sheet

You can roll-up all of the units (Planned, Actual, Remaining, and At Completion) and costs (Planned, Actual, Remaining, and At Completion) from manual activity sheets, both at the resource and activity level, into the cost sheet by using logical sources.

In the column properties, when you select **From Activity Sheet** as type, the **Sheet Name** drop-down field displays all of the active manual activity sheets, and you can select columns (Planned Units, Actual Units, Planned Cost etc.) at the activity and resource level.

The following columns are displayed when you select the manual activity sheet:

Activity

- Planned Total Cost - cost (uuu_P6PlannedTotalCost)
- Actual Total Cost - cost (uuu_P6ActualTotalCost)
- At Completion Total Cost - cost (uuu_P6AtCompletionTotalCost)
- Remaining Total Cost - cost (uuu_P6RemainingTotalCost)
- Planned Units - units (uuu_P6PlannedTotalUnits)
- Actual Units - units (uuu_P6ActualTotalUnits)
- At Completion Units - units (uuu_P6AtCompletionTotalUnits)
- Remaining Units - units (uuu_P6RemainingTotalUnits)
- Planned Duration
- Actual Duration
- Remaining Duration
- At Completion Duration
- Performance % Complete
- User Defined Data Elements which are of currency and decimal type data elements

Resource

- Planned Cost - cost (uuu_P6PlannedCost)
- Actual Cost - cost (uuu_P6ActualCost)
- At Completion Cost - cost (uuu_P6AtCompletionCost)
- Remaining Cost - cost (uuu_P6RemainingCost)
- Planned Units- Units (uuu_P6PlannedUnits)
- Actual Units- Units (uuu_P6ActualUnits)
- At Completion Units- Units (uuu_P6AtCompletionUnit)
- Remaining Units- Units (uuu_P6RemainingUnits)

If the selected activity sheet becomes inactive, then the new data will not be rolled up to the Cost Sheet.

The system changes the value of the current **Sheet Name** from **Activity Sheet 1** to **System Activity Sheet** at both Activity and Resource level.

All of the existing columns that are available from the **System Activity Sheet** are displayed for other manual activity sheets that you have selected.

You can pull data from all costs and units and all other custom defined decimal and currency fields from the manual activity sheets.

The cost sheet template (company and shell levels) remains as it is, except that the label will change.

WBS Sheet

You can see the rolled-up value against WBS codes in the WBS sheet.

Activity Sheets Log (Toolbar Options)

The **Activity Sheets** log contains the following toolbar options:

- **Create**

  To open the **Create Activity Sheet** window and manually proceed to create a new standard, project or shell, or custom activity sheet. See ***Creating Manual Activity Sheet*** (on page 655) for more details.

- **View**

  Enables you to determine the type of activity sheets that you want to view. Your options are:

  - **Active**
  - **All**

- **Actions**

  - **Permissions**

    This option is not applicable to the **System Activity Sheet**. This option is available when you select a single or multiple activity sheets (manual or custom). The functionality is the same as when the **Permissions** option is selected using the *gear menu* (⚙) option. You can assign permissions to multiple activity sheets that are created manually from the log. his includes the sheets created using import from MPP or P6 XML files.

  - **Import**

    - **Microsoft MPP**
    - **P6 XML**

- **Get Data into System Activity Sheet**

  See ***Creating Manual Activity Sheet*** (on page 655) for more details.

- **Send Data from System Activity Sheet**

  See ***Creating Manual Activity Sheet*** (on page 655) for more details.

- **Refresh**

  To update the information displayed on the screen.

  When a different rate sheet is assigned to roles and resources or when recost is performed, values in the sheet are not automatically updated. Click **Refresh** to display updated data in the fields.

- **Print**

  To print the information displayed on the screen. Your other options are:

  - **Export To CSV**
  - **Export To Excel**

- **Find on Page**

  To search the information displayed on the screen in order to find a particular item or entry.

If you have the **Create Manual Activity Sheets** permission, or the **Full Access** permission (see the Activity Sheet in Shell (User Mode) Permissions topic in this document), then the toolbar options in the **Activity Sheets** log are as follows:

Toolbar Option	Description
Create	Enables you to create new activity sheets. This option is enabled when the user has at least the **Create** permission for the manual activity sheets. The **Create** option has two additional sub-options to support the manual creation of an activity sheet and creating an activity sheet from Activity Sheet templates (when the Activity Sheet templates is made available in the admin mode). When you click **Create**, the system checks for manual activity attribute form, if a system activity sheet has been created by using the system activity sheet attribute form. If there is no system activity sheet attribute form defined, or there is no manual activity attribute form, in the design, the system uses the canned form for the activities in the activity sheet. An activity attribute form must be defined in order for you to be able to create custom activity sheets. If a system activity attribute form is defined, but there is no manual activity attribute form, the system displays this message: `Activity attribute form must be defined in order to create custom activity sheets.`

Toolbar Option	Description
View	Enables you to select how to view the list of the activity sheets that are available. To be able to see any activity sheets in the Activity Sheets log, you must have the **View** permission, or above. The **View** drop-down field displays the following out-of-the box, or default, options: **All** To display all of the activity sheets. **Active** To display all of the activity sheets with active status. Available if there are activity sheets in the log that have active status. **Note**: The System Activity Sheet will be active (Status) at all times, and the status cannot be changed.
Actions	To set permissions and import options: **Permissions** To assign activity sheet-level permissions similar to the record-level permissions set for the non-Workflow BPs. **Import** (**Microsoft MPP** or **P6XML**)

Toolbar Option	Description
Get Data  **Get Data into System Activity Sheet**	The **Get Data** option will be enabled when you have the **Get Data** permission at the node level in the **Permissions** tab. This option enables you to receive the schedules from P6 or Primavera Cloud based on synchronization selected in Gateway settings. Use the **Get Data** option to: ▸ Create an activity sheet for the first time. ▸ Update an existing activity sheet with the most recent activity spread data from the Oracle Primavera Cloud project. Updating an existing activity sheet triggers a new OOTB import synchronizations if you have selected the Select Synchronization to Exchange Activity Data option in Gateway integration settings drop-down list. All of the synchronized Oracle Primavera Cloud project activities, planned dates, actual, at completion dates, and associated WBS Code will be displayed in the activity sheet. **Note**: A WBS code assignment is applicable to only manual activity sheet; whereas, a CBS code assignment is applicable to both manual and system activity sheet. If the shell is not active (inactive shell), Gateway integration will fail. When you select **Get Data**, the system checks for the Oracle Primavera Cloud project that as defined in the **Integration** tab and then brings the Oracle Primavera Cloud project activity data and their schedules into the activity sheet based on the import synchronization defined in Gateway settings, and if Oracle Primavera Cloud and Unifier projects are linked. If you select **Get Data** and there is no Project ID added in the **Integration** tab, the system will display this message: Valid Project ID is not specified in the Shell Integration Tab. Unifier does not bring the baseline (project data) from Primavera Cloud.

Toolbar Option	Description
Send Data  **Send Data from System Activity Sheet**	The **Send Data** option will be enabled when you have the **Send Data** permission at the node level in the **Permissions** tab. This option enables you to receive the schedules from P6 or Primavera Cloud based on synchronization selected in Gateway settings. Use the **Send Data** option to run the export synchronization in order to send the updated activities and schedules from the Unifier Activity Sheet to the Oracle Primavera Cloud. The data elements in the business processes, or the shell attribute form, which have been set to reverse auto-populate (RAP) back to the Oracle Primavera Cloud Activity Sheet (using P6 Activity Picker), will get the latest updates into the Oracle Primavera Cloud Activity Sheet. You can send the updated Activity Sheet data (such as: updated Actual Start Date or Finish Dates) to the Oracle Primavera Cloud project which is linked by way of the OOTB export synchronization option: Update Unifier Activity data in to Primavera Cloud. The **Schedule** tab, in the **Activity Sheet** log, shows this option, and you can set the scheduled send data based on frequency. Before the initial synchronization, the **Get Data** is the only toolbar function available in the log. Click **Get Data** to initiate synchronization and create the Activity Sheet.
Refresh	To retrieve the latest number of activity sheets created in the log.
Print	To print the log contents into HTML, CSV, or Excel formats.
Find on Page	To search in the log.

If you do not have the **Create Manual Activity Sheets** permission, or the **Full Access** permission, then the toolbar options in the **Activity Sheets** log will not display the **Create** option.

Activity Sheets Log (Columns)

The **Activity Sheets** log contains the following columns:

- **Refresh**

  A refresh icon will be displayed in this column if the activity calendar is edited in the following areas:

  - Working and Non-working days
  - Working hours
  - Start time of working day

  Use the **Refresh** toolbar option to update the sheet based on the new calendar values. The refresh will be captured in the **History** tab of the sheet.
- **Name**

  The name of the manual activity sheet.
- **Description**

  The description for the manual activity sheet.
- **Source Type**

  To show whether the source for the manual activity sheet is standard, project or shell, or custom.

  > **Note**: The **Source Type** for a **System Activity Sheet** is **P6**.

- **Status**

  To show whether the manual activity sheet is active, or not.
- **Last Updated On**
- **Creation Date**
- **Created By**

Activity Sheets Log (Manual Activity Sheet Gear Menu)

Go to the shell (**User** mode) > **Activity Manager** module > **Activity Sheet** node to open the **Activity Sheets** log which lists the activity sheets. Each activity sheet is listed in a row, in the log, and each activity sheet has a *gear menu* (⚙). The following table explains the functions of each option within the *gear menu* (⚙):

Option	Description
Open	To open the Activity Sheet from the log. Alternatively, you can highlight a row, right-click, and use the **Open** option.

Import Microsoft MPP	To import the activity sheet by way of MPP. This option enables you to bring the file from P6 and import them into an activity sheet to create a schedule. The import will remove the existing data from the activity sheet.
Import P6 XML	To import the activity sheet by way of P6 XML. This option enables you to bring the file from P6 and import them into an activity sheet to create a schedule. The import will remove the existing data from the activity sheet.
Permissions	To assign **Edit**, **View**, and **Modify** permissions to other users for the selected activity sheets. The functionality supported is same as assigning permissions to non Workflow BPs.

Activity Sheets Log (Manual Activity Sheet Properties Tabs)

In the **Activity Sheets** log, when you click and select an activity sheet (manually created), the following properties tabs appear in the right pane:

- **Properties** tab
- **Permissions** tab
- **Audit Log** tab
- **History** tab

The following table describes the tabs listed above:

See ***Creating Manual Activity Sheet*** (on page 655) for details.

Tab Name	Description
Properties	The **Properties** tab displays the following properties of the selected activity sheet, based on the values entered when the activity sheet was created: - **Name** - **Description** - **Status (Active or Inactive)** - **Calendar** - **Select Project Schedule Start Date Source (Manual or From Shell Attribute)** - **Schedule Start Date** - **Time Zone** (cannot be changed after creation)

Tab Name	Description
	▸ **Data Date** ▸ **Schedule Type** ▸ **Assign Rate Sheet** (block) which contains the **Rate Sheet (Planning)** and **Rate Sheet (Actual)** fields. ▸ **Activity Sequence Numbering** (block) which contains the **Activity Id Prefix**, **Activity Id Suffix**, and **Increment** fields, all required. You can change the values for the following fields: ▸ **Name** ▸ **Description** ▸ **Status** ▸ **Calendar** ▸ **Assign Rate Sheet** (block): Assigning a Rate Sheet is optional. If a Master Rate Sheet is defined at the Company level, it is assigned to the **Rate Sheet (Planning)** and **Rate Sheet (Actual)** fields by default; however, you can select a different Rate Sheet for a project. ▸ **Activity Sequence Numbering** (block) The **Project Schedule Start Date** can be modified if there are no activities that are in progress in the log. You can modify the activity sequence number in the **Properties** tab. The modified sequence will be displayed for any new activity sheets that are created after the sequence got modified. The activity sheets will not be impacted with this change in the activity sequencing. When changes are made in the **Properties** tab, the **Cancel** and **Save** options will be enabled. There will be an entry in the activity sheet **Audit Log** tab for the changes made. The **Schedule Type** field (by default the value is **Duration**) determines the type as resource-based or cost-based.
Permissions	The **Permissions** tab enables you to view or conduct a user or group search and view the corresponding permissions. Use the **Permissions** tab to define, edit, or view other members' permissions in the project. The activity sheet owner, or the user with full access permission, will be able to assign, modify, and view other members' permissions. The permissions that are allowed to be assigned to other users are: ▸ **Modify Permissions** ▸ **Edit Data** ▸ **View** The permissions will be similar to record-level permissions set for earned value reports or non-workflow business process. You can select an activity sheet or multiple activity sheets, right-click, and select Permissions. This

Tab Name	Description
	action enables you to assign permissions to multiple groups and users.
Audit Log	The **Audit Log** tab in the Activity Sheets log captures the following events: ▸ Creation of the sheet. ▸ Update of the activity sheet properties, including the data date and activity sequence numbering field. ▸ Cost Sheet roll up of costs (in the future). The **Audit Log** tab will be available for the activity sheets that are created manually. The **Audit Log** tab provides the following details regarding the events that have taken place in the **Activity Sheets** log: ▸ Date ▸ Event ▸ Action ▸ Field Name ▸ Old Value ▸ New Value ▸ User Name ▸ Proxy User You can use the toolbar options in the **Audit Log** tab to refresh the list on the page, print (including exporting the list to CSV or Excel), and search and find an item in the page.
History	This tab contains the history information about an activity sheet, based on: ▸ **Action** ▸ **Requestor** ▸ **Initiated On** ▸ **Start Date** ▸ **End Date** ▸ **Status**

Creating Manual Activity Sheet

The manual activity sheet is mainly used for projects (such as building owners projects) that do not use a P6 and Unifier integration, and the project schedule is simple.

> **Note**: The maximum duration of an activity in a Manual Activity Sheet is 5 years (rounded to 20000 working hours).

You can create an activity sheet, manually, in the **Activity Sheets** log (**User** mode), and if you have the following permissions, the **Activity Sheets** log displays the following options in the log window, in addition to the other options:

- Receive and send the scheduling and resource data into an activity sheet from P6 or Primavera Cloud
- Create activity sheets both manually and through synchronization with P6 or Primavera Cloud

Create

If you have the **Create Manual Activity Sheets** permission, or the **Full Access** permission, you will see the **Create** option in the log window.

If only the standard activity attribute form is defined but not manual activity attribute form, the **Create** option in the **Activity Sheets** log is not displayed.

Get Data ()

Get Data into System Activity Sheet

If you have permission to use **Get Data** only, then you will see the **Get Data** option in the log window.

The **Get Data** synchronization that created the activity sheet also populates the activity sheet with the:

- Scheduling data (activities along with assignments and spread data) from the P6 projects mapped to the current shell in the **Integration** tabs (**Gateway Integration** for P6 and **Primavera Cloud Integration** for OPC).
- Role and resource rates data from the **Master Rate Sheet** for the mapped projects.

Subsequent updates of CBS Code, Role Rate, and Resource Rate in P6 will not trigger the update of the CBS Code (in the **Activity Sheet**) and Role Rate and Resource Rate (in the **Master Rate Sheet**) in Unifier. This is to prevent data in Unifier from being overwritten by updates in P6.

Send Data ()

Send Data from System Activity Sheet

To create an activity sheet, you must use the **Create** option.

> **Note**: The **Get Data** and **Send Data** options are used to create a **System Activity Sheet**.

To create a manual activity sheet

1) In the **Activity Sheets** log, click **Create** to open the **Create Activity Sheet** window.

2) Proceed to name the manually created activity sheet, determine the status, select a calendar, select the source for the project schedule start date, select the schedule start date, data date, and the activity sequence number.

   The **Time Zone** and **Schedule Type** selected in the properties will be saved and cannot be reverted. The **Time Zone** defaults to the time zone indicated in the **User Preference**, and the **Data Date** defaults to the Project Schedule Start Date.

3) When you are done, click **Create**, and click **Yes** when the confirmation message appears.

The following explains the **Create Activity Sheet** window fields and block:

Name

Use this required field to specify the name of the activity sheet. The name specified should be unique. Also, do not use "System Activity Sheet" as the name. The field supports names of 150 characters or less.

Description

Use this long-description field to describe the activity sheet. This field supports alphanumeric characters, as well as all special characters, and can be up to 400 characters in length.

Status

Use this field to make an activity sheet active or inactive. The default status is Active. The activity sheet can later be set as active or inactive through the properties screen. Only the active sheet data will be rolled up to other cost modules like Cost Sheet, EVM Sheet, Cash Flow, and so on.

Calendar

This field lets you select any calendar for the project schedule. You cannot deselect the calendar from the drop-down, but you can change the selected calendar.

This field has the following options to select from:

- Standard (24x7 Calendar or Company Calendar)
- Project / Shell (Project/Shell Calendar)
- Custom (Custom Calendar)

The 'Project/Shell Calendar' is the default value.

The drop-down field lists all of the calendars that have been defined at the Custom Calendars node, in the shell, project, and company calendars (as defined in Standards & Libraries).

Select Project Schedule Start Date Source

This field lets you select a manual start date, or the start date in the shell properties, for your project (project schedule start date).

- **Manual**
- **From Shell Attribute**

This field is identified as the start date for the project schedule as defined in the activity sheet.

The project schedule start date can be entered manually by selecting the **Manual** option or by using the shell attribute: **uuu_project_start_date**. This is a required field in the activity sheet properties.

If it is selected as manual, then you must provide a start date in order to be able to save the activity sheet properties.

The second option, **From Shell Attribute**, will populate the start date on the activity sheet by using the targeted project start date (**uuu_project_start_date**) on the shell or project properties which in turn can be received from the project creation business process.

Any change in the project start date in shell properties will automatically update the activity sheet start date. Synchronous update to the activity sheet takes place as long as there is no activity which is either in-progress or has been completed.

Schedule Start Date

If you select Manual in the previous field, this field lets you enter a specific start date for the project schedule.

Time Zone

The field defaults to the User Preference time zone. This time zone is used when saving the activities date and time within the sheet. The users or groups who have view access to this sheet will see the activity dates and times based on the specified time zone.

Data Date

This field displays the date that the project can be scheduled. This date can be the same as the project start date, for initial schedules. The value in this field will populate the data date for the scheduled activity sheet. Initially, the value is the project start date, if no schedule has been run.

Schedule Type

The value in this field is used to determine the activity schedules (as resource-based or cost-based) when the activity data is sent to the Cash Flow. The values can be: **Duration** or **Resource**. The default setting is **Duration**, which renders the field read-only because cash flow only supports a duration-based schedule.

Assign Rate Sheet

Use these optional fields to select Rate Sheets for a project. The system will use the resource or role rates from the selected Rate Sheets for both Planning and Actuals to calculate the Planned, Actual, At Completion, and Remaining Costs.

- **Rate Sheet (Planning)**
- **Rate Sheet (Actual)**

If a Master Rate Sheet *is* defined at the Company level, by default, the resource or role rates in the activity sheet are retrieved from the Master Rate Sheet and applied across all the projects. If the Master Rate Sheet is selected, the following guidelines apply:

- The system pre-populates the Rate Sheet (Planning) and Rate Sheet (Actual) lists with Master Rate Sheet, which lets a Project Manager assign resources or roles and perform resource management.
- To get the project rates for assignments, users can assign any Rate Sheet that they defined at the project/shell level.

- If the assigned Rate Sheet selection is removed from the Activity Sheet properties, the system defaults to using Master Rate Sheet so that recosting is be done based on rates defined in the Master Rate Sheet.

> **Note:** When an Activity Sheet is created from a shell template, the Master Rate Sheet (if it exists) is also assigned by default.

If a Master Rate Sheet is *not* defined at the Company level, the following guidelines apply:

- The system allows creation of Activity Sheets, and the Project Scheduler can be used to define the activities and their schedules.
- The Assignments tab will be visible, but users cannot add resources and roles.
- If a user accesses the Recost option from the gear menu, the following message is displayed: "No Rate Sheet is assigned to the selected Activity Sheet to calculate costs."

Activity Sequencing Numbering (block)

To define the sequence number for the **Activity ID** while defining activities or tasks in the activity sheet.

The following mandatory sub-fields are available:

Activity Id Prefix (a letter value)

To define the sequence prefix which can be a sequence of characters. The limit on the number of characters will be between 1 to 20. This is a required field, and the default value is 'A.' The field allows alphanumeric characters.+

Activity Id Suffix (a number value)

This field defines the suffix for the Activity ID. It allows integer digits from 1 to 6 characters long. The range will be between 1 to 999,999. No negative and decimal values are allowed. The default value will be 1000.

Increment (a number value)

To define the increment that each activity sheet can be incremented. It allows only integer digits from 1 to 1000. The default value i '1.' No negative and decimal values are allowed. The system shows the unique ID for each activity sheet that is defined.

Example

Prefix of A combined with the suffix of 1000 with default increment as '1' would show the activity IDs as A1000, A1001, etc.

The above activity sequencing format will be retained for all new activities that get created within the Sheet. Any activities that get imported from an external source (MPP or P6 XML) or CSV import then the activity ID column will show the imported IDs if provided otherwise would use the activity sequence defined in the sheet properties to generate a unique Activity ID for all the activities that are imported.

You can change the activity sequencing anytime from the properties window. All of the new activities will retain the new sequence format, if the activity sequencing is changed. Any changes to the activity sequence numbering fields will be audited (Audit Log).

Technique for computing Estimate to Complete (ETC)

The technique for computing Estimate to Complete (ETC) is available when you are:

- Creating an activity sheet, or

  An ETC user value will be added for the user to select the ETC technique, as explained below.
- In the activity sheet properties (See ***Manual Activity Sheet Tabs*** (on page 676) for details on activity properties).

  An ETC user value will be added for the user to select the ETC technique, as explained below.

By default, the ETC technique for the activity sheet is applicable for all of the WBS codes and Activities, unless there is a different ETC technique for the WBS or Activity.

The ETC drop-down will have the following values:

a) ETC = remaining cost for the activity, the default setting

b) ETC = [PF*(Budget at Completion- Earned Value Cost)]

   PF = 1

   PF = 1/CPI

   PF = 1/(CPI * SPI)

   PF = user defined value

After creating the activity sheet manually by defining the properties, the system creates a default activity sheet. You can then update the activities. (If an activity sheet was created by integration, it contains activities that you can subsequently update.)

The **Activity Sheets** page contains the following sections:

- Toolbar
- Log
- Properties tabs. The Properties tabs include Preview, Permissions, Audit Log, and History.

> **Note**: In the process explained above, the **Project Start date** (**Start**) and **Project Finish Date** (**Finish**) fields (columns) will not be seen in Unifier 20.12.

Manual Activity Sheet Default

When you create a new activity sheet, after defining the activity sheet properties, the system creates a default activity sheet.

You can populate the newly created activity sheet by way of opening an existing activity in the log.

> **Note**: In the process explained above, the **Project Start date** (**Start**) and **Project Finish Date** (**Finish**) fields (columns) will not be seen in Unifier 20.12.

In the newly created activity sheet:

- **Project Start Date**

  Displays the earliest date of all the activities. In the case of a blank activity sheet, the scheduled start date will be the project start date.
- **Project End Date**

  Displays the latest date of all the activities on the activity sheet. In the case of a blank activity sheet, the scheduled start date will be the project end or finish date.

The following explains the first five columns displayed in a created activity sheet, in the grid section of the activity sheet:

- **Row Number**

  Displays the row number and errors, if any. This is a read-only column, with a sequential number starting from 1 (one).
- **Activity ID**

  Displays the activity ID for each added activity sheet. The system uses the default sequence number specified in activity sheet properties to populate the activity ID. You can edit the column and enter custom activity ID for a selected activity sheet. This is a required field and alphanumeric characters are allowed, only. Verify that no special characters are entered when defining the activity ID.
- **Activity Name**

  Displays the name of the activity sheet. This is a required field and alphanumeric characters are allowed.

> **Note**: The attachments and notes features will not be seen in the activity sheet in Unifier 20.12, but the features will be made available in later releases.

A default lock will be seen after the first three columns.

- **Attachments**

  Displays the attachment icon. You can add attachments to the activity sheet in the Attachments tab (in the right pane or dock bottom pane).
- **Notes**

  Displays the notes icon. You can add notes for the selected activity sheet in the Notes tab. The functionality will be the same as in the CBS rows. This functionality will allow you to enter the notes. For example, you can use notes to specify the reasons for the change of the activity sheet dates or duration from the initial baseline.

All the other columns are displayed in their defined order, followed by the Notes column. If there is no attribute form defined (for manual activity sheets), all the P6 data elements (uuu_P6 data elements) are displayed as columns.

Manual Activity Sheet

When you open an activity sheet, the **Activity Sheet** window, or page, opens. You can also double-click on an activity sheet, in the log, to open the activity sheet.

The **Activity Sheet** window, or page, contains:

- Toolbar options, including the view options (Baseline or Current), if applicable
- Columns grid
- Activity properties (presented in the **General**, **Dependencies**, **Notes**, and **Audit Log** tabs, below the columns grid).

Each row in the **Activity Sheet** window contains an activity. Each activity has a *gear menu* (⚙) that lets you:

- **Add Activity**
- **Duplicate**
- **Add Milestone**
- **Delete**
- **Copy**

You can use the toolbar options in the **Activity Sheet** window to:

- Add a rate sheet to the project.
- Schedule the project.
- View, create, edit, and manage log views.
- Filter information by project.
- Switch between schedule types (current or baseline) of the project.

Manual Activity Sheet Toolbar Options

The following table explains the manual activity sheet toolbar options:

Add	To add a new row. The row will have the Activity ID field value pre-populated with the sequence number specified in the activity sheet properties. The Activity Name field is displayed as required and other required columns will be highlighted with red triangle, on the right-hand side corner. Upon selecting Save All, the required fields will show as errors in the first column (similar to manage rows in the cost sheet). ▸ If you select an activity and click **Add**, then the new activity row will be created after the selected activity. ▸ If you do not select an activity and click **Add**, then the new activity row will be created after the selected activity. ▸ If the user do not select any activity, then the new activity row will be created at the very end. **Note**: The activity sheet shows the flat list of activities. Any user with edit permissions would be able to add and update the activities to the activity sheet.

Schedule	When you open an activity sheet, from the Activity Sheets log, the activity sheet details page will be displayed. On this page, when you click **Schedule**, select a **Data Date**, and click **Schedule Now**, the log (upper right-hand corner) displays a check-mark icon (a circle with a check-mark) which indicates the status of the schedule as completed. You can click the icon to open the **History Log** window and review the details of scheduling that have been done to the activity sheet. The **Schedule** option, in an activity sheet, is similar to the scheduling option in P6. You can use the **Schedule** option to: ▸ Apply selected data necessary for scheduling the project. ▸ Schedule activities based on Data Date value. When you click **Schedule**, the **Schedule** window opens which enables you to select a date (from the Data Date field) and click Schedule Now to initiate the scheduling process. ▸ Schedule activity sheet after you added activities and updated activity schedule (such as planned, actual dates, duration, and so forth). ▸ Remove activities. Upon removal of activities, all of the dependent activities will be rescheduled based on the Data Date value specified in the schedule. **Additional information about the Schedule option**: ▸ If you click the **Schedule** option in a blank sheet, the system displays this message: There are no activities in the sheet to be scheduled. ▸ Scheduling more than 2000 activities will take time to complete. ▸ Any unsaved changes to the sheet will be lost after the scheduled refresh. ▸ The activity sheet data will be refreshed after the schedule completion. ▸ When you open an activity sheet, from the Activity Sheets log, the activity sheet details page will be displayed, and when you click **Schedule**, select a **Data Date**, and click **Schedule Now**, on the activity sheet page (top left-hand corner) the **Schedule Status** icon  appears (a green dotted circle with a check-mark) which indicates the status of the schedule as completed. You can click the **Schedule Status** icon  to open the **History Log** window and review the details of scheduling that have been done to the activity sheet. ▸ As a part of scheduling, you can use the **History Log** (also available under **Menu Options**) to view a lot of the actions that have been performed on the activity sheet. **The following actions will be performed as a part of rescheduling**: ▸ If the activity start, finish, duration, calendar, or predecessor changes, the system reschedules the successor activities (based on the data date). ▸ If the activity is in progress, the system calculates the remaining duration of the activity (based on the data date) and recalculates the successor activities start and finish dates (if not started). The system also calculates the remaining duration for all incomplete activities (based on the data date). ▸ The system moves the activities, or tasks, that are not finished (based on the data date). This happens even if the activities, or tasks, expected finish date is earlier than the data date. The system retains the relationship logic for the dependent activities, for example, the system recalculates the start and finish dates for the successor activities. ▸ The system retains the schedule logic. The system moves the activities that are in progress and activities that are incomplete (with finish date earlier than the data date) to the data date which makes the activities the first tasks that must be completed. This also moves the start date of the successor activities to a future date, based on the Lead/Lag time and relationship.

View	To create a new view or manage the existing views. You can create and manage views in the activity sheet by using the following options: ▸ **Default** ▸ **Create New View** ▸ **Manage Views** You can add activities and change column structure in the **Default** view, also. Same as in the **System Activity Sheet**, the **View** drop-down list displays the system-defined view **Default** and **WBS View**, by default. Similar to the other activity sheets, the data creation (both rows and columns) will be available in the default view. The **View** field enables you to create the **WBS View** which displays all the activities based on WBS codes in one screen as well as the roll-up data for each WBS. In this view, similar to the default view, you can add an activity (*gear menu* (⚙) > **Add Activity**) under a WBS code and add information such as the activity name (click in the **Activity Name** cell) and so forth, such as units and duration. The newly created WBS code can be dragged and dropped under a different WBS. The roll-up, in this scenario, will be calculated automatically. You can use the default view, or the custom view, to add, update, delete, link, unlink activities, milestones, and scheduling.

Edit View	To open the **Edit View** window and: ▸ Select a name for your view (**View Name**). ▸ Access tabs The list of tabs: ▸ **Columns** tab: To set the contents of columns and lock columns. ▸ **Filters** tab: To set filters on activity attributes. For example, WBS Code can be set to contain, or not contain, a certain value. ▸ **Group By** tab: To group activities. ▸ **Sort By** tab: To sort activities.

Actions	To conduct the following: ▸ **Create Baseline**, if not available. ▸ **Link Selected Activities** ▸ **Unlink Selected Activities** You must have **Edit Data** permission, for the manual activity sheet, to be able to use these options. Use the **Create Baseline** option to create the baseline data for the project schedule defined in the activity sheet. After you create the baseline, the **Update Baseline** option appears in the **Actions** drop-down allowing you to update the baseline view with the latest data and date. In the **Project Baseline** view, the window title will show the name that is given while creating the baseline, and the baseline creation date will be shown on the right-hand corner. This date retains the date preference set for the logged in user. Within the **Project Baseline** view, all of the fields are read-only and contain the current project data including CBS and WBS assignments. You can view the activity sheet details in the **General** tab. The creation date will be populated with the current date. The baseline name will be defaulted to the project schedule name. Use the **Update Baseline** option to update the baseline data for the project schedule defined in the activity sheet. This option becomes available after you create a baseline. If there are no baselines, the **Update Baseline** option will be replaced by the **Create Baseline** option. You can navigate to the **Project Baseline** view by clicking the **Switch to Project Baseline** view link (this function is similar to the **System Activity Sheet**, after the baseline is created). You can export all the activities using the **Menu Options** > **Export** > **All Activities**. Use the **Link Selected Activities** to link multiple activity sheets. The selected activity sheets will be linked with the default relationship (Finish-to-Start) if no relationship exists. See the "***Manual Activity Sheet Dependencies Tab*** (on page 683)" topic for more details. Use the **Unlink Selected Activities** to unlink multiple activity sheets.

Refresh	To update the information displayed on the screen. If there are unsaved changes in the activity sheet and you click Refresh, your unsaved changes will be lost.
Print	To print the information displayed on the screen. Your other options are: ▸ **Print** ▸ **Export To CSV** ▸ **Export To Excel**
Find on Page	To search the information displayed on the screen in order to find a particular item or entry.

Menu Options ≡	All of the existing export and import options available for CBS Code activities and assignments will be seen in the **Menu Options**. Depending on your permissions, the **Menu Options** option enables you to: **Export** - Activity Details - All Activities Use the **Export** > **Activity Details** to export the CSV template with activity attributes defined in uDesigner. All of the columns that are seen in the Activity Sheet will be exported. The order of columns seen in the CSV template would be the same as in the activity sheet. The Required columns will show additional required symbol in the CSV template. All of the existing activities details will be exported. Use the **Export** > **All Activities** to include all of the activities. **Import** - Activity Details Use the **Import** > **Activity Details** to import the activities and add new activities if activities do not exist. When you select this option, the existing activities in the sheet will be exported to CSV template. **View History Log** To open the **History Log** page to see the following: ▸ Action ▸ Requestor ▸ Initiated On ▸ Start Date ▸ End Date ▸ Status Dates and Numeric values displayed in tool-tip are based on the user preference set at company-level.

Gantt	Click the **Gantt** icon to associate a Gantt chart with an activity and see the baseline comparison (Baseline Comparison icon). You can click the **Grid** icon to return to the previous view. To split the screen and view the Gantt chart. If applicable, the following toolbar options will be displayed: **Grid** Focus Activity **Baseline Comparison**  Enables you to see the baseline bars along with current activities. The relationship between the current activities will be seen, also. Use the **Baseline Comparison** option to compare the current project dates and costs with the baseline dates and costs and highlight the cells where: ▸ The activity progress is not as expected, or ▸ The activities are delayed (comparing to the baseline). The link to view the baseline data will be seen only when the baseline is created successfully. You can view the schedule comparison of current project data with baseline data by way of the **Menu option** > **Baseline Comparison**. When you click **Baseline Comparison**, the **Baseline and Current Project Comparison** window opens. This window displays all of the activities comparing the schedules based planned, actual, remaining dates, and other dates. Variance will show the number of days the activity has been delayed, and the number of days the activity has started ahead or on time. By default, all of the columns within the current activity sheet will be compared with the baseline. This is shown as **Default** view. The **View** option enables you to filter the columns that can be seen. You can filter the columns that can be seen in the **Baseline and Current Project Comparison** window by navigating to **Views** and create a new view and filtering the columns displayed. **Critical Path**  The critical path calculation follows a standard mathematical algorithm known as the Critical Path Method (CPM). The CPM enables you to calculate the starting and ending times for each activity. CPM determines which activities are critical (uuu_float = 0) to the completion of the project (called Critical Path) and reevaluates activities with uuu_float values. The tooltip for the current activities will show the current and baseline dates, and the variance in number of days between the baseline start and start dates. The options above enable you to access a visual representation of the activity-related processes. The **Show** drop-down field will be editable after you select Gantt from the toolbar. This drop-down has the following options: ▸ **Default Gantt** ▸ **Critical Path** ▸ **Baseline Comparison**

Project view options (Baseline or Current), if applicable	Depending on whether a baseline has been set, or not, the following additional links will also be present in the activity sheet page, or in the sheet: ▸ **Switch to Baseline Project View** (from project view): To see the baseline for the project. ▸ **Switch to Current Project View** (from baseline view): To add activity and change the activity schedule.

Manual Activity Sheet Gantt View

The **Activity Sheet** node supports the manual Activity Sheets in order to define project schedules. To be able to view the activities and the relationship between the activities and their associated resources that define the project schedule, the system provides the option to view the **Gantt** chart (bar chart) in the manual Activity Sheets.

The **Gantt** chart provides a representation all of the activities of the project in a time-line view, the amount of time each activity is expected to take, the time-frame in which an individual task has to be completed, and the relationship between various activities.

The Gantt chart can be launched from both the System Activity Sheet and the Manual Activity Sheet (the Gantt option on the toolbar).

After you click **Gantt**, the right-pane will show the Gantt representation of the project schedules, and you will be able to view and perform the following functions:

- Show project schedules activities in a Gantt mode.
- Zoom in or zoom out to view the details of the activities and links.
- Show dependencies between activities (predecessors and so forth).
- Show assigned resources by category.
- Show percent (%) complete for each activity to monitor the progress of the activities.
- Allow changing the activity durations by dragging the bars.
- Allow moving activities from one time-frame to another (modifying start and end dates at the same time).
- Allow critical path calculation and viewing activities in the critical path.
- Show tooltips for the activity, link, and milestones.

Increasing duration of activities and moving activities

In Gantt view, you can move the activities (tasks) that do not start ahead of the schedule. The selected activity start and finish dates are updated along with duration. When you select the schedule option in the toolbar, the successor activities start and finish date will be updated along with the current updated activity according to the new data date, and the Gantt view will reflect the changes in activity start and finish dates. The tooltip will show the updated start and finish dates, duration, and so forth upon selecting the activities.

You can increase or decrease the duration of the activity using drag-and-drop of the selected activity. In this scenario, the duration and the Finish Date values will be updated accordingly, for the selected activity.

The following shows the basic keyboard shortcuts for moving activities:

- Tab: Tab to the Gantt view and use the arrow keys to navigate to the task you want to move. You can select multiple tasks and move them together.
- Ctrl + m: Click "Ctrl + m" to enter into the move mode. Use the left arrow and the right arrow keys to move the activities (tasks) horizontally, and use the up arrow and so keys to move the task(s) to different rows.
- Enter: Enter to finalize the move and exit move mode, or Esc to cancel and exit move mode

To perform task resize, use:

- Alt + s
- Alt + e

Manual Activity Sheet Columns

The activity details are presented in columns. The columns are displayed in the order defined in uDesigner, followed by the **Notes** column. If there is no attribute form defined (for manual activity sheets), all the P6 data elements (uuu_P6 data elements) are displayed as columns.

You can change the default view by creating and managing custom views in the **View** drop-down list.

> **Note**: The attachments and notes features will not be seen in the activity sheet in Unifier 20.12, but the features will be made available in later releases.

Columns	Description
Sequence No.	This is a read-only column, with a sequential number starting from 1 (one). The numbering sequence of activities. The column cells are pre-populated with the sequence number provided in the activity sheet properties. The sequence number is a unique value. This column displays the row number and errors, if any. To select an activity, click inside the corresponding **Sequence No.** cell.
Group By	Grouping activities according to shells. Click the plus (+) or minus (-) symbols to expand or collapse grouped activities.

Columns	Description
Activity ID <label of the uuu_P6ActivityID>	The activity identification number for each added activity sheet, starting with letter "A". The **Activity ID** column shows color icon-based on the activity status and the activity type. For example, the green rectangular icon indicates that an activity has not started, the yellow rectangular icon indicates that an activity is in progress, the light green rectangular icon indicates that an activity is completed, and the diamond icon indicates that an activity is milestone activity. The system uses the default sequence number specified in activity sheet properties to populate the **Activity ID**. You can edit the column and enter custom activity ID for a selected activity sheet. This is a required field and alphanumeric characters are allowed, only. Verify that no special characters are entered when defining the **Activity ID**. You can edit the Activity ID column data.
Activity Name <label of the uuu_P6ActivityName>	The name of the activity sheet. This is a required field and alphanumeric characters are allowed. You can edit the **Activity Name** column data. You must specify the activity name. All the alpha numeric characters are allowed for the activity name.
Attachments	The column with the attachment icon. You can add attachments to the activity sheet in the **Attachments** tab (in the right pane or dock bottom pane).

Columns	Description
Notes	If available, notes related to the activity. You can add notes for the selected activity sheet in the **Notes** tab. The activity sheet window, or page, also contains a **Notes** (paper and paper-clip icon) column that indicates whether and activity sheet has a note (entered from the **Notes** tab in the properties pane), or not. You must have permission to be able to post notes. The functionality will be the same as in the CBS rows. This functionality will allow you to enter the notes. For example, you can use notes to specify the reasons for the change of the activity sheet dates or duration from the initial baseline.

The following shows a list of typical column headings in the **Activity Sheet** window (the default layout):

Columns	Description
Start <label of uuu_P6StartDate>	The start date for the activity. This column is populated with the project start date by default. You can edit the date by selecting date picker in the column. You can edit the date before or later but cannot move the date before project start date. For Activities that are 'In Progress' and 'Completed,' the start date will be the **Actual Start Date** (uuu_P6ActualStart). For new activities, once the project is scheduled on certain data date, the new activities start date will be by default the data date. Upon scheduling, if the activity is still not started as per the 'Data Date,' then the activity will be rescheduled according to the data date.

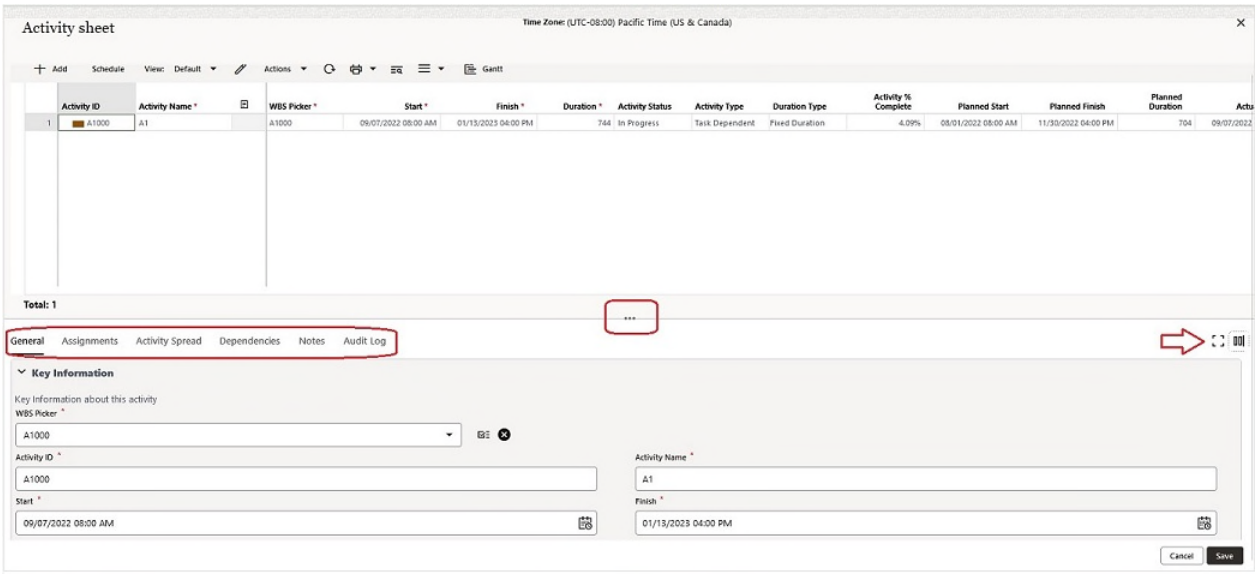
Columns	Description
Finish <label of uuu_P6FinishDate>	The finish date for the activity. This column is populated with the project start date by default for activities with status 'Not Started'. You can edit the date. When the activity sheet is not scheduled, the 'Data Date' will be the project start date. For activities that have been created after the activity sheet is scheduled (on certain data date), the finish date will be defaulted to the start date which is the 'Data Date'. For Activities that are 'In Progress' and 'Completed,' the finish date will be the date from Data Date plus duration. When an activity sheet has not been scheduled, the 'Data Date' will be the project start date.
Duration <label of uuu_P6Duration>	The duration of the activity. This column is populated with duration as one (1) day by default for regular Tasks/Activities and duration as 0 for the milestone activity. Duration will be updated by means of finish date changes or user can manually update the duration column. Finish date will be calculated accordingly.
At Completion Duration	The total working time from the activity start date to the activity finish date.
Planned Start	The scheduled start date.
Planned Finish	The scheduled finish date.
Planned Duration	The scheduled duration of the activity.
CBS Code	The Cost Breakdown Structure code.
Calendar	The calendar type that has been used.
WBS Code	The Work Breakdown Structure code.
WBS Name	The Work Breakdown Structure name.

Columns	Description
Activity Status <label of uuu_P6ActivityStatus>	The default 'Not Started' will be displayed, and the activity icon (seen before the activity ID) will be in blue color, for not started activities. When the **Activity Status** changes to 'In Progress' or 'Completed' (based on the activity actual start date and finish dates), the color of the **Activity ID** will be changed accordingly.
Activity Type	This column is populated with the default value of 'Task Dependent.' You can select other values such as 'Start Milestone' which will automatically the task to milestone with 0 (zero) duration days and 'Resource Dependent' which will preserve the calendars of the associated resources/roles. Resource Dependent activities adjust to resource calendars when resources are assigned.
Planned Start Date <label of uuu_P6PlannedStart>	This column is populated with the default value of **Start Date** (uuu_P6Start) for the activities with status 'Not Started'. When the project is scheduled by using project scheduler, the values for the **Start** and **Planned Start Date** will move to the **Current Data Date**, if they are past dates.

Columns	Description
Planned Finish Date <label of uuu_P6PlannedFinish>	This column is populated with the default value of **Finish Date** (uuu_P6Finish) for the activities with status 'Not Started'. When the project is scheduled by using project scheduler, the values for the **Start** and **Planned Finish Date** will be the **Planned Start Date** plus **Duration**. The task dependent activities base their duration on the working and non-working days of the activity calendar, but the resource dependent activities base their duration on the working and non-working days of the assigned resource's calendar. When multiple resources are assigned, the **Finish Date** of the activity will be based on the time required by the last resource it will take to finish the same task, based on the resource calendar. You can edit the **Duration** column value in the activity sheet. This field will allow only integer-type data with no negative values. **Note**: The calendar that you select for each activity will be used to calculate the finish date.
Milestone	When the activity type is selected as 'Milestone,' the system designates the activity as a milestone activity. The duration of a milestone activity is always 0 (zero). You cannot update the duration for milestone activity. The Activity Status for a milestone-type activity can have only two values: 1) 'Not Started' and 2) 'Completed.' The default value is: 'Not Started.'

Manual Activity Sheet Tabs

When you open an activity from the list of activities, when available, a series of tabs can be accessed from the bottom of the window, or page, as shown below:



The following table explains the activity sheet properties tabs:

General

The **General** tab provides information about **Activity Name**, **Start** date, **Finish** date, and so forth.

Assignments

The **Assignments** tab to view the resources and roles assigned to the activity selected in the main grid. See the next topic for more details about the **Assignments** tab.

Activity Spread

In **Activity Spread** tab, you can see the spread data of the selected activity. The **Activity Spread** tab enables you to select the values for:

- **Frequency**
- The Frequency drop-down field enables you to select the frequency of the spread in:
  - Day
  - Week
  - Month
  - Year
- **Cost & Rate Type**
  - Enables you to select:
  - All Cost Types |Direct
  - All Cost Types |Indirect
  - Standard |All Rate Types

Dependencies

The **Dependencies** tab provides information about an activity predecessors and successors. Depending on you permissions, you can use the **Add** option to add activities in either category. See the next topic for more details about the **Dependencies** tab.

Notes

Use the **Notes** tab to enter comments regarding the activity and when finished click **Post**. You must have permission to add notes.

Audit Log

Displays the audit details at the activity level in the following columns:

- Date
- Event
- Action
- Field Name
- Old Value
- New Value
- User Name
- Proxy User

Assignments Tab

Use the **Assignments** tab to view the resources and roles assigned to the activity selected in the main grid. The costs associated with the resources allocated for an activity will be calculated and rolled up to the Activity and WBS level summaries. The cost associated with each resource will be calculated based on the number of total planned units * price per unit.

> **Note**: The **Assignments** tab is not available for the milestones or WBS Summaries.

The following toolbar options will be available in the **Assignments** tab:

- **Assign**
  - **Resources**
  - **Roles**
- **Refresh**
- **Print**
  - **Print**
  - **Export to CSV**
  - **Export to Excel**
- **Find on page**

The **Assignments** tab log displays the following fixed columns, as seen in the **Assignments** tab for the *System Activity Sheet*:

- Resource Name

The Resource Name is read-only and is populated according to the assigned resource, as defined in Master Rate Sheet regardless of the status.

- Role Name

  The Role Name is read-only and is populated according to the assigned role, as defined in Master Rate Sheet regardless of the status.
- Rate Source
- Cost Code
- Planned Units,
- Actual Units
- Remaining Units
- At Completion Units
- Price/Unit (Planning)
- Price/Unit (Actuals)
- Planned Units/Time
- Remaining Units/Time
- Start
- Finish
- Duration (hrs)
- Planned Start
- Planned Finish
- Planned Duration (hrs)
- Actual Start
- Actual Finish
- Remaining Early Start
- Remaining Early Finish
- Planned Cost
- Actual Cost
- Remaining Cost
- At Completion Cost
- Profile

All of the duration columns are also displayed:

- Planned Duration
- Duration
- Actual Duration along with dates
- Remaining Duration along with dates

The system calculates the duration based on Finish - Start for all date types.

The following columns in the **Assignments** tab log are required:

- Start
- Finish
- Planned Start
- Planned Finish

- Planned Units/Time
- Remaining Units/Time

You can edit all of the columns in the **Assignments** tab log except the Planned and Actuals Price/Unit for which the value will be populated from the assigned rate sheet for the resources. The rate displayed will be based on the current date (the rate as of the current date as an effective date). You can edit this column only if the rate source is selected as **Override**.

Planned Units/Time column will populate with the default number of units that the assigned resource is available for, per hour. By default, this value will be populated from the Master Rate Sheet. You can edit the Planned Units/Time column, which means that you can increase or decrease the resource capacity, per hour. Only numeric values are allowed for the Planned Units/Time. The AtCompletion units will be set to the same value as the Planned Units/Time.

Remaining Units/Time column will populate with the default number of units that the assigned resource is available for, per hour. By default, this cell value will be populated with Planned Units/Time but can be editable. Only numeric values are allowed for the Remaining Units/Time.

Planned Units column is editable. By default, the Planned Units will show the calculated value which means the number of working days between the planned start and planned finish date times, based on the Activity calendar, multiplied by the number of the Planned Units/Time.

Remaining Units is by default calculated as Number of working days between Remaining start and Remaining end date times the number of Remaining Units/Time.

Actual Units can be entered manually. If the Actual Units for the resource assignments is enter manually, then the Activity Status will be 'In Progress'. The actual cost will be calculated based on the number of units per day and rate per effective date. You can enter the units manually or through P6 XML or Microsoft Project import.

When a resource/role is assigned to an activity in the **Assignments** tab, the Planned Start and Planned Finish dates will be defaulted to show the Start (uuu_P6Start) and Finish(uuu_P6Finish) dates of the activity. The system should allow modification of these dates.

Remaining Units will default to the AtCompletion Units - Actual Units for Not Started activities. When you enter the Actual Units, the Remaining Units will not change unless you updated the Remaining Units manually.

When you update the AtCompletion Units, the Remaining Units will be AtCompletionUnits - Actual Units

AtCompletion Units will be calculated as Actuals Units + Remaining Units.

The *gear menu* options for the resource, in the **Assignments** tab, vary depending on the project type. The *gear menu* options are:

- **Add Resource**

  This option enables you to open the **Resource Picker** and select a resource to add.
- **Add Role**

  This option enables you to open the **Role Picker** and select a role to add.
- **View Assignment Spread**

This option (for any selected resource) displays the spread data for that resource, in a split screen **Assignment Spread of <resource>** at the bottom of the window. In the **Assignment Spread of <resource>** screen you can set the frequency and the cost and rate type to see the following details for your selections. The **Cost & Rate Type** field enables you to select either a **Cost Type Grouping** or a **Rate Type Grouping**.

- Period Start
- Cost & Rate Type
- Planned Units
- Actual Units
- Remaining Units
- At Completion Units
- Planned Cost
- Actual Cost
- Remaining Cost
- At Completion Cost

- **Remove**

  This option enables you to remove the assignment and its associated costs. When an existing assignment is removed, the resource assignment and the associated costs will be removed and subsequently all of the costs at the activity level will be recalculated based on the updated or changed assignments list.

The additional options seen will allow the user to add new resources or roles using resource or role picker and remove the existing assignments.

You can add the resources or roles from the activity sheet grid (right click and select **Assign** > **Resource** or **Assign** > **Roles**). When selected, the **Add Resources** (a resource picker) window will be displayed which displays all the active resources available in the company *Master Rate Sheet*.

The resource picker user interface, and the function, is same as when accessed by way of the **Assignments** tab.

The resource picker will show all of the resources whether they were created manually or created through receiving from a source, such as P6. You can select one or multiple resources from the list and contains the following columns:

- **ID**

  Displays the ID of the resource.
- **Name**

  Displays the name of the resource.
- **Type**

  Displays the type of the resource. It can be Labor, Non-labor, and Material type.
- **Status**

  Displays the status of the resource.
- **Source**

Will display either as Unifier or P6 currently based on the resources created in the Master Rate Sheet.

When you assign the resource, a row will be inserted in the Assignments tab, and the following data will be populated for that row:

- The Planned start and Planned finish date will default to the uuu_P6plannedstart and uuu_P6plannedfinish of the activity and can be edited. Similarly, the:
- Assignments Start and Finish will be defaulted to uuu_P6Start and uuu_P6Finish.
- Remaining Start and Remaining Finish will be defaulted to uuu_P6Remainingearlystart and uuu_P6Remainingearlyfinish of the activity.
- For an activity that is In progress, if any new assignment is added, then the new assignment will default the actual start date to uuu_P6ActualStart of the activity.
- For an activity that is Completed, if any new assignment is added, then the new assignment will default the actual start date and actual finish date to uuu_P6ActualStart and uuu_P6ActualFinish of the activity.
- The Price/Unit (Planned and Actuals) will be populated with the standard rate, defined for the resource in the Master Rate Sheet, and the columns are editable if the rate source is selected as Override, similar to the *System Activity Sheet*.

You can assign the Rate Sheet per activity sheet in the log, and the rates defined in that selected Rate Sheet will be retained for calculating costs for units spread. If there is no rate defined in the assigned rate sheet on an effective date, then the rate will be considered as zero (0). The default Price/Unit will show the rate that is the earliest one, at which resource has started (effective rate close to the start date of the assignment).

If multiple effective rates are defined for the assignment, then the costs will be calculated based on multiple rates. In this case, the Planned Cost, Actual Cost, Remaining Cost, and AtCompletion Cost will be total of the cost spread.

The Rate Source in the Assignments tab is a drop-down field, and it is editable. You can either pick the rate from the resource or override it for the assigned resources. You can override the rate within the sheet. The Price/Unit will become editable if you select to override both the Planned and the Actuals. If the role is assigned, then the rate source will show Role or Override, and the default rate (from the Master Rate Sheet) will be selected, if a rate sheet is not assigned.

When you select multiple activities, excluding milestones, and right click, you can see the **Assign** > **Resource** or **Assign** > **Roles** options which enables you to assign a source to multiple activities. The **Assign** > **Resource** or **Assign** > **Roles** options will not be available if you select multiple activities, including milestones.

When you copy an activity (select the activity and click **Copy**), you have the option to also copy the assignments and dependency information, if you need. You can select any activity to copy, regardless of the Activity Status.

> **Note**: When you select **Duplicate** from the gear menu options, the activity details will be copied, along with assignments and dependencies.

Fixed Duration

If the duration type data element is included in the activity attributes, then the duration type will be selected as **Fixed Duration**, by default.

If the duration type data element is included in the activity attributes, or the activity sheet is created using the standard method or without activity attribute form, then the value for the following columns in the **Assignment** tab will be as if duration type selected as **Fixed Duration**, by default. In the activity sheet properties, the value for the duration type field will default to **Fixed Duration**.

- Units
- Duration
- Units/Time

The following table details the behavior of duration and unit data elements in the activity sheet, and the **Assignments** tab.

Field	Activity Level when Activity % Complete entered/updated	Resource Level when Activity % Complete entered/updated
Start	Start Date of the Activity. When checks it becomes the Actual Start and will set the Actual Start for all Resource Assignments.	Start Date of the Activity. When checks it becomes the Actual Start and will set the Actual Start for all Resource Assignments.
Finish	Defaults to 8 units after the start date. If changed then the Planned Duration will be recalculated as Finished - Started.	Defaults to 8 units after the start date. If changed then the Planned Duration will be recalculated as Finished - Started.
Activity % Complete	You need to update or enter a value, manually.	You need to update or enter a value, manually.
Planned Duration	Defaults to the Finished - Started. When changed it will change the Finished date to Started + Planned Duration.	Defaults to the Finished - Started. When changed it will change the Finished date to Started + Planned Duration.
Actual Duration	Actual Duration will be calculated whenever the project is scheduled based on the Data Date - Actual Start Date.	Actual Duration will be calculated whenever the project is scheduled based on the Data Date - Actual Start Date.
Remaining Duration	Remaining Duration calculated as Planned Duration - ((1-Activity % Complete) * Planned Duration). This can be edited and will recalculate the Activity % Complete. (Planned Duration - Remaining Duration) / Planned Duration.	Remaining Duration calculated as Planned Duration - ((1-Activity % Complete) * Planned Duration).
At Completion Duratio	At Completion Duration is Actual Duration + Remaining Duration.	At Completion Duration is Actual Duration + Remaining Duration.

Field	Activity Level when Activity % Complete entered/updated	Resource Level when Activity % Complete entered/updated
n		
Planned Units	Planned Units	
Actual Units	Actual Units can be rolled up from the resource assignments or can be entered manually. If entered manually then the values are pro-rated across the assignments if the assignment has an actual start date.	Actual units will not be updated and can be entered manually. These will then be rolled up to the Actual Units at the Activity level.
Remaining Units	Remaining Units calculated as Planned Units - ((1-Activity % Complete) * Planned Units). This can be overridden and entered manually. If entered manually then the values are pro-rated across the assignments remaining units.	Remaining Units calculated as Planned Units - ((1-Activity % Complete) * Planned Units). This can be overridden and entered manually.
At Completion Units	At Completion Units is Actual Units + Remaining Units.	At Completion Units is Actual Units + Remaining Units.

Dependencies Tab

Use the **Dependencies** tab to:

a) Link one or more activities.

b) Define relationship between activities.

You can also enter predecessor dependencies between a selected activity and another activity. The dependency relation is used to automatically shift activity dates forward or backwards based on changes to the predecessor. This is also reflected in the Gantt chart.

In the predecessor section, you can add predecessor activities, in bulk, by using the **Add** option in the predecessor section. In the successors section, you can add the successors, in bulk, to a selected activity by using the **Add** option in successors section.

Predecessors block

ID

The **ID** column displays the activity ID of the predecessor for the current activity. The **ID** column is added by way of the **Add** option, in the toolbar. This field is editable, and you can change the activity ID. If you enter a value in the **ID** column in the grid and that activity ID does not exist, the system displays an error message. You can only enter alphanumeric characters in the **ID** column.

Activity Name

The value in the **Activity Name** column is populated with the activity ID that was entered. This is a read-only column in the grid, and you cannot enter or edit the **Activity Name** column value.

Relationship

The following relationship types are supported:

- Finish-to-Start
- Finish-to-Finish
- Start-to-Finish
- Start-to-Start

Lead/Lag (days)

The **Lead/Lag (days)** column enables you to specify the number of days the activity can start ahead (lead), or delayed (lag), by mentioning the number of lead or lag days. This is an integer type field which allows both the negative and the positive integers.

The lead days will be provided by specifying the negative number, and the lag days can be provided by specifying positive number (specifying the days that the successor activity can be delayed to start).

When you click **Add**, a picker with a list of all activities that were defined in the activity sheet will be displayed. This list does not include activities which are successors and current activity. Can select one or multiple activities as predecessors. The default relationship shown in the grid is Finish to Start after the user adds the activities.

User should be able to select the relationship between the predecessor and current activity by choosing the relationship drop-down and lead/lag days.

The same functionality as seen while adding predecessors is applicable in the case of adding successors in the **Dependencies** tab.

Successors block

ID

The activity **ID** column displays the activity ID of the predecessor for the current activity. This is added via the Add action on the tool bar.

Activity Name

The value in the **Activity Name** column is populated with the activity ID that was entered. This is a read-only column in the grid, and you cannot enter or edit the **Activity Name** column value.

Relationship

The following relationship types are supported:

- Finish-to-Start
- Finish-to-Finish
- Start-to-Finish
- Start-to-Start

Lead/Lag (days)

The **Lead/Lag (days)** column enables you to specify the number of days the activity can start ahead (lead), or delayed (lag), by mentioning the number of lead or lag days. This is an integer type field which allows both the negative and the positive integers.

The lead days will be provided by specifying the negative number, and the lag days can be provided by specifying positive number (specifying the days that the successor activity can be delayed to start).

When you click **Add**, a picker with a list of all activities that were defined in the activity sheet will be displayed. This list does not include activities which are successors and current activity. Can select one or multiple activities as predecessors. The default relationship shown in the grid is Finish to Start after the user adds the activities.

User should be able to select the relationship between the predecessor and current activity by choosing the relationship drop-down and lead/lag days.

The same functionality as seen while adding predecessors is applicable in the case of adding successors in the **Dependencies** tab.

Bulk Assigning WBS Code to Different Activities

You can highlight the WBS Code column for multiple activities and assign the same code to all of the selected activity sheet, by using the WBS picker.

Link Activities (Adding Dependencies)

You can link multiple activity sheets by selecting one or more activity sheets, right-click, and selecting the **Link Selected Activities** option. The selected activity sheets will be linked with the default relationship (Finish-to-Start) if no relationship exists.

The **Predecessor** and **Successor** columns in the **Activity Sheet** log show the activity sheets that are linked based on the Finish-to-Start relationship of the selected activity sheets. This setup will also reflect in the Gantt Chart.

Similarly, you can unlink the selected activity sheets by highlighting one or more activity sheets, right-click, and selecting the **Unlink Selected Activities** option. The **Unlink Selected Activities** option will be available only if the selected activity sheets are linked.

When you link multiple activity sheets (using the **Link Selected Activities** option):

- If the same relationship exists for all of the selected activity sheets, the system will not update any values.
- If the predecessor activity has been already added as successor for the highlighted row, the system will display an error message.
- If the successor activity has been already added as predecessor for the highlighted row, the system will display an error message.
- If you select a single activity sheet and try to link (using the **Link Selected Activities** option from **Actions** menu), the system will display an error message.

Manual Activity Sheet Gear Menu

The following explains the *gear menu* (⚙) options when you select a single activity (**Activity Manager** node > **Activity Sheet** > **Activity Sheets** log > open an activity > select an activity > click gear menu).

Note: You can add, duplicate, copy-paste, and delete the activities by using the *gear menu* (⚙). Whenever a new activity is created by default, the Activity ID would be populated and you need to enter all of the other mandatory data (such as Name and any other required fields) in order to be able to save the activity details.

Add Activity	This option should not be available if you select more than one activity row at a time. When you select this *gear menu* (⚙), while highlighting an activity, a new row will be inserted below the selected activity. The **Activity ID** will have a generated sequence number, and you have to enter the required fields to save the newly created activity row. The **Cancel** and **Save** options, in the sheet, will be enabled.
Duplicate	You can select an activity and click duplicate to create a new activity with same information. The new activity will be created underneath the selected activity. All of the information related to selected activity (such as dependencies, WBS, and assignments) will be copied into the new activity. The **Activity ID** will have a generated sequence number, as specified in properties, and you can update the activity information.
Add Milestone	Use this option to create a new activity which is of activity type 'Start Milestone'. The duration of this activity will be always 0. If you change the **Change Start Date**, then the **Finish Date** will also be updated to the same date as the **Start Date** and vice versa. The **Duration** field cannot be updated, and it is always read-only.

Delete	You can select one or more activities and click **Delete** to remove the selected activities. A confirmation message will be displayed and if you select **Yes**, then the selected activities along with dependencies, assignments, and WBS will be removed.
Copy	When you highlight the activities and selects **Copy** from the *gear menu* (⚙) option, the **Paste** *gear menu* (⚙) option will become available. Selecting **Copy** copies all of the activities along with dependencies, assignments, WBS, and actuals, for the selected activities. The other *gear menu* (⚙) options will be seen after you select **Copy**.
Paste	This *gear menu* (⚙) option will be seen only if the activities are copied or cut. When you select **Paste**, a confirmation message will be displayed and if you select **Yes**, then all of the activities along with dependencies, assignments, WBS, and actuals will be copied into the destination row selected.

Manual Activity Sheet Start Date, Finish Date, and Duration

The values for the **Start Date**, **Finish Date**, and **Duration** columns are controlled by an automatic formula.

- If you change the **Duration**, then the **Finish Date** will change.
- If you change the **Finish Date**, then the **Duration** will change.
- If you change the **Start Date**, then the **Finish Date** will change.

These fields also control the display on the **Gantt** chart, and their values can change when you manipulate the activity bar, in the **Gantt** chart.

The **Activity Status** will be changed into 'In Progress' if the **Actual Start Date** is entered.

To edit the activity % complete (progress), you have to enter the **Actual Start Date**. Also, you can change the **Activity Status** to 'In Progress' to change the **Actual Start Date** to the current date and make the activity % complete (progress) editable.

Similarly, when an **Activity Status** is changed to 'Completed,' the **Actual Start Date** and the **Finish Date** will populate with current date, and the % complete value will be: 100%.

You cannot change the **Activity Status** to 'Not Started' if there are values for the **Actual Start Date** and % complete. To change the **Activity Status**, the values for the **Actual Start Date** and % complete must be removed. Also, when the actual finish date is entered, the **Activity Status** will be changed to 'Completed.' When the **Activity Status** is changed to 'Completed,' the actual finish date will be updated.

If you clear the **Start Date** or **Finish Date**, the system displays an alert notifying you that the fields are required. All the date columns (uuu_P6Start ,uuu_P6Finish, and uuu_P6Duration) are required columns in the activity sheet. You cannot reset the **Start Date** or **Finish Date**, and the system displays an error message if you attempt to do so.

- If you enter a **Start Date** that is earlier than the **Project Schedule Start Date** (specified in the activity sheet properties), the system displays the following message: "<uuu_P6Start> cannot be earlier than Project Schedule Start Date."
- If you update the Finish Date <uuu_P6Finish> with a date earlier than <uuu_P6Start>, the system displays the following message: "<uuu_P6Finish> cannot be earlier than <uuu_P6Start>."

The **Duration** <uuu_P6Duration> and the **Finish Date** <uuu_P6Finish> values will change based on the activity sheet calendar selected. The **Activity Calendar** drop-down field will show all of the calendars that are defined at the project-level (which are located, by default, under **Schedule Manager** > **Custom Calendars**).

The **Activity Status** (uuu_P6ActivityStatus) value will be "Not Started," by default

The **Start Date** and the **Finish Date** values will show the **Project Schedule Start Date**, specified in properties, by default.

The **Activity Type** (uuu_P6ActivityType) value will be "Task Dependent," by default. You can update the task to "Resource Dependent' or "Milestone."

Manual Activity Sheet and CSV Template

In this section, the following topics are covered:

CSV Template for Activity Details

When you export the CSV template file (using **Export** > **Activity Details**), the order of the columns in the CSV template matches the order of the data elements that are added in the integration phase. You can:

- Add new activities by specifying the details for each row.
- Enter data for all editable data. The values entered in the CSV file will be ignored if that data element is a formula column in the sheet.
- For Unifier 20.12, the CSV import does not allow activities with dependencies and assignments.

CSV import of activities

The Activity ID is generated using the activity sequence numbering set up at properties level, if no value is provided in the Activity ID column. You can enter only alphanumeric characters in the Activity ID column.

You cannot leave any of the required field in an activity attributes form blank. If the CSV file imported does not have data for all of the required fields in the activity attributes form, then import will fail.

Only columns that are editable can be updated, for the existing activities. Changes to read-only columns in the CSV file will be ignored.

The WBS Code and CBS Code for the activities can be added for new activities. For the existing activities, the WBS Code and CBS Code for the activities can be updated.

CSV restrictions

The data elements that are added in the Integration tab must match the names, or labels, in the exported CSV template.

All of the data elements that are defined in the Integration tab will be seen as column headers in the CSV template. The order of the column headers are as they appear in the Integration tab.

If no integration interface is defined, then all of the uuu_P6 pre-defined columns will be seen in the CSV template. In this case, the Activity ID and Activity Name will be shown as the first two columns, followed by other uuu_P6 data elements.

The existing rows (activities) must be in the same order as currently seen in the sheet.

The Activity ID and Activity Name columns are shown as required in the exported CSV template, along with other required fields.

During the CSV import (for creating new activities), the system performs the following validations:

- Required field validations will be shown, except for the Activity ID which uses the activity sequence specified in sheet properties. New rows will automatically generate the next sequence and show it as a new Activity ID.
- Activity Name is shown as required in the exported CSV template. If you do not enter the Activity Name, then the "required field" error message will be displayed.

- Other than the Activity Name (uuu_P6ActivityName), the uuu_P6 data elements which are marked as required in the design will not show as required in the exported CSV template, if there are no default values.
- If you enter the Activity ID value in the CSV template, then this input will have high priority. A new row will be created using the Activity ID specified in the CSV template. The Activity ID value column allows alphanumeric values only in the input CSV file.
- If no value is entered, then the Activity ID will take the next auto-sequence number that is generated. If you provide the Activity ID, then a new activity is created with the value that you enter (provided that there is no activity with the same ID in the Activity Sheet).
- If not available in the input CSV file, then the default values will be used for the following columns:
  - Start Date
  - Finish Dates
  - Duration
  - Activity Status
  - Activity Type
  - Calendar
- If the user did not provide any value for these columns in the CSV file, then by default the value for the:
  - Activity Status (uuu_P6ActivityStatus) will be: Not Started.
  - Start Date will be the project schedule start date specified in the properties.
  - Finish Date will be the project schedule start date specified in the properties.
- Activity Calendar (uuu_P6ActivityCalendar) will be the default calendar, as the calendar selected in the activity sheet properties window. If the calendar is specified in the CSV file, the system validates the calendar name to ensure that it is a custom calendar or a company calendar.
- You must specify the entire path for the WBS Picker (uuu_cmwbs_picker) and CBS Picker (bitemID) columns in the input CSV file. Check for valid WBS Code and CBS Code when updating existing activities or importing new activities.
- All the required fields must be entered for the CSV import to be successful.

You will encounter error messages when creating new activities by way of CSV import if:

- You enter a Start Date (uuu_P6Start) that is earlier than the Schedule Start Date (act_sch_start_date).
- You enter a Start Date (uuu_P6Start) that is later than the Finish Date (uuu_P6Finish), and vice versa.
- You enter an Actual Finish Date (uuu_P6ActualFinish) that is earlier than the Actual Start date (uuu_P6ActualStart).
- The above date-related errors will be displayed when you enter input values for the following date combinations:
  - uuu_P6PlannedStart, uuu_P6PlannedFinish, and uuu_P6PlannedDuration
  - uuu_P6Start, uuu_P6Finish, and uuu_P6Duration
  - uuu_P6RemainingDuration, uuu_P6RemainingEarlyFinish, and uuu_P6RemainingEarlyStart

- You enter the Actual Start Date (uuu_P6ActualStart) that is after the current date.
- If the Start Date (uuu_P6Start) is provided in the input CSV file, but the Finish Date (uuu_P6Finish) is not provided in the input CSV file.
- If the Finish Date (uuu_P6Finish) is provided in the input CSV file, but the Start Date (uuu_P6Start) is not provided in the input CSV file.
- You enter a CBS Code that is currently inactive or does not exist in the Cost Sheet.
- You enter a WBS Code that is currently inactive or does not exist in the Project WBS Sheet.
- The uuu_P6Start and uuu_p6Finish dates are different for the milestone-type activity.

You will encounter the following validations when creating new activities by way of CSV import:

- The Start(uuu_P6Start) alone is provided with the Activity Name. In this case, the activity is created with default duration 1 and finish (uuu_P6Finish) same as uuu_P6Start.
- The Duration (uuu_P6Duration) and Start (uuu_P6Start) are provided. In this case, the duration will be calculated based on Finish Date and uuu_activity_calendar.
- The Start (uuu_P6Start) and Finish (uuu_P6Finish) are provided. In this case, the uuu_P6Duration will be calculated accordingly.
- When the Start, Finish, and Duration values are provided. In this case, the Duration will be calculated based on Start and Finish values.
- When you enter Actual Finish Date (uuu_P6ActualFinish) without Actual Start Date (uuu_P6ActualStart). In this case, after the CSV import, the uu_P6ActualStart and uuu_P6ActualFinish will have the same date, and the uuu_P6ActivityStatus will be shown as: Completed

> **Note**: The error validation applies to all dates in the input CSV file.

- When you enter Activity Percent Complete (uuu_P6PercentComplete), you can enter a value for Performance Percent Complete (uuu_P6PerfPercComplete). In this case, the value must be between 0 and 100 (zero and one hundred).
- The value of the Duration (uuu_P6Duration) must be entered in the number of days, in the CSV file. You cannot enter a negative or decimal number.
- You can enter the CBS Code, or WBS Code, for the new activities. When entering the CBS Code, or WBS Code, you must specify the entire path.
- When you enter the Activity Type as "Start Milestone" (for the new activities in the input CSV file), the sheet shows the activity as milestone-type with uuu_P6Start and uuu_P6Finish shows the same date and duration as 0, after a successful import.
- You only enter the uuu_P6Start in the input CSV file for the milestone-type activity.

Using CSV Import to Update Activities

The editable data elements in the activities that exist in the sheet can be updated by using the CSV import, including:

- Activity Name (uuu_P6ActivityName)
- Start Date (uuu_P6Start)
- Finish Date (uuu_P6Finish)
- Duration (uuu_P6Duration)
- Activity Status (uuu_P6ActivityStatus)

- Percent Complete (uuu_Percent Complete)

When updating through CSV import, the system validates the existing activities including:

- Activity Name (uuu_P6ActivityName)
- Start Date (uuu_P6Start)
- Finish Date (uuu_P6Finish)

If the Start Date (uuu_P6Start) exists for an activity and the Duration (uuu_P6Duration) is also provided in the input CSV file, the system calculates the Finish Date (uuu_P6Finish). In this case, if Finish Date (uuu_P6Finish) is provided, the system calculates the Duration (uuu_P6Duration) based on the Finish Date (uuu_P6Finish) and uuu_P6ActivityCalendar.

In the CSV file, for existing activities:

- You cannot change the status of an activity that is "In Progress" to "Not Started."
- The Actual Finish Date cannot be earlier than the Actual Start Date.
- You can update the Percent Complete column. The range of values are 0 to 100 (zero to one hundred).
- When you enter the Actual Start Date (uuu_P6ActualStart) in the CSV file after the import, the system changes the status for that activity from "Not Started" to "In Progress."
- You can update an activity with Actual Finish Date (uuu_P6ActualFinish) status as "In Progress."
- If you update the Actual Finish Date for an activity that has not started (Status + Not Started), the Actual Start Date shows the same value as the Actual Finish Date, and the status shows as "Completed" with the Percent Complete as 100% (one hundred percent).
- If you enter the Percent Complete value without providing an Actual Start Date or an Actual Finish Date, the system dismisses the Percent Complete value.
- For an activity that is in progress (Status = In Progress), if you update the Percent Complete value to 100% (one hundred percent), the system updates the Actual Finish Date to the current date.
- When you update the Actual Start Date and the Actual Finish Date values, the dates cannot be earlier than the Scheduled Start Date.
- When you update the Actual Start Date and the Actual Finish Date values, the dates cannot be later than the Current Date.
- You can add or update the CBS Code (bitemID) and the WBS Code (uuu_cmwbs_picker).
- The system changes the Start Date of the successor activities accordingly and based on the Scheduling.
- You can use reschedule the remaining activities by way of the Schedule option, in the toolbar.

New and Existing Activities Through CSV Import

For the new activities with uuu_P6ActivityStatus as "Not Started" the following cases apply for Start, Finish, and Duration:

> **Note**: Invalid values for any of the date and duration columns will result in error.

- If duration is provided without a start date, then the duration will be ignored.

- If duration is provided with a start date, then the finish date is calculated.
- If the start date and the finish date are provided, then duration is calculated.
- If duration is provided without a start date or a finish date, then an error message will be displayed.
- If only the duration is provided, then an error message will be displayed.
- If only the start date is provided, then an error message will be displayed.
- If only the end date is provided, then an error message will be displayed.
- If the start date and the duration are provided, then the finish date will be calculated.
- If the start date and the finish are provided, then the duration will be calculated.

> **Note**: Any new activities created without any dates entered in the input CSV file will retain the Project Start Date.

uuu_P6 Start	uuu_P6 Finish	uuu_P6 Duration	uuu_P6 PlannedStart	uuu_P6 PlannedFinish	uuu_P6 PlannedDuration	uuu_P6 RemainingEarlyStart	uuu_P6 RemainingEarlyFinish	uuu_P6 RemainingDuration	Behavior after Import
No value entered	No value entered	No value entered	No value entered	No value entered	No value entered	No value entered	No value entered	No value entered	Activity will be created with default value as project Start date for Start, Finish, Planned Start, Planned Finish, Remaining EarlyStart, Remaining EarlyFinish.

uuu_P6 Start	uuu_P6 Finish	uuu_P6 Duration	uuu_P6 PlannedStart	uuu_P6 PlannedFinish	uuu_P6 PlannedDuration	uuu_P6 RemainingEarlyStart	uuu_P6 RemainingEarlyFinish	uuu_P6 RemainingDuration	Behavior after Import
Valid date entered >= Project Start Date	Valid date >=Project Start Date and > uuu_P6Start	Calculated field if not provided explicitly	If not provided then should show same as P6Start	If not provided then should show same as P6Finish	Duration calculated between planned start and Planned finish	If not provided then should show same as P6Start	If not provided then should show same as P6Finish	Duration calculated using remaining start and remaining finish	Activity will be created with duration calculated based Start and Finish Dates
No date entered, then same as uuu_P6PlannedStart; otherwise, retain the date entered	No date entered, then same as uuu_P6PlannedFinish; otherwise, retain the date entered	Calculated field if not provided explicitly	Valid date entered >= Project Start Date	Valid date >= Project Start Date and uuu_P6PlannedStart	Duration calculated between planned start and Planned finish	No date entered, then same as uuu_P6PlannedStart; otherwise, retain the date entered	No date entered, then same as uuu_P6PlannedFinish; otherwise, retain the date entered	Duration calculated using remaining start and remaining finish	Activity will be created with duration calculated based Start and Finish Dates

uuu_P6 Start	uuu_P6 Finish	uuu_P6 Duration	uuu_P6 PlannedStart	uuu_P6 PlannedFinish	uuu_P6 PlannedDuration	uuu_P6 RemainingEarlyStart	uuu_P6 RemainingEarlyFinish	uuu_P6 RemainingDuration	Behavior after Import
No date entered, then same as uuu_P6RemainingEarlyStart; otherwise, retains the date entered	No date entered, then same as uuu_P6RemainingEarlyFinish; otherwise, retains the date entered	Calculated field if not provided explicitly	No date entered, then same as uuu_P6RemainingEarlyStart; otherwise, retains the date entered	No date entered, then same as uuu_P6RemainingEarlyFinish; otherwise, retains the date entered	Not applicable	Valid date entered >= Project Start Date	Valid date >= Project Start Date and uuu_P6RemainingStart	Duration calculated using remaining start and remaining finish	Activity will be created with duration calculated based Start and Finish Dates

The validations mentioned above will be applied to the following dates and durations:

- uuu_P6PlannedStart
- uuu_P6PlannedFinish
- uuu_P6PlannedDuration
- uuu_P6RemainingDuration
- uuu_P6RemainingEarlyFinish
- uuu_P6RemainingEarlyStart

New "In Progress" and "Completed" Activities

In the input CSV file for a new activity creation, the following applies to:

- Actual Start
- Actual Finish
- Actual Duration

The invalid values for any of the date and duration columns will result in error.

uuu_P6ActualStart	uuu_P6ActualFinish	uuu_P6ActualDuration	uuu_P6ActivityStatus	uuu_P6PercentComplete	Behavior
Valid date entered and on or after Project	Valid date entered and >= uuu_P6Actu	Not applicable	Not applicable	Not applicable	Activity will be created with Activity Status as

uuu_P6ActualStart	uuu_P6ActualFinish	uuu_P6ActualDuration	uuu_P6ActivityStatus	uuu_P6PercentComplete	Behavior
Schedule Start Date	alStart				"Complete" Activity Complete will be 100% Actual Duration will be duration between Actual Start and Actual Finish. uuu_P6RemainingStart and uuu_P6Rea mining Finish will not show any dates as the activity is complete If provided, the remaining dates in the input CSV file for completed activity will be ignored and remaining duration will be 0 (zero) **Note**: If not provided in the CSV input file, the P6Start, P6Finish, P6PlannedSt art, and P6PlannedFi nish will be the project start date;

uuu_P6ActualStart	uuu_P6ActualFinish	uuu_P6ActualDuration	uuu_P6ActivityStatus	uuu_P6PercentComplete	Behavior
					otherwise, the user-provided dates will be retained.
No date entered for uuu_P6Start, uuu_P6Finish and entered uuu_P6ActualStart	No Value provided	No Value provided	No Value provided	Valid value entered	Activity will be created with Activity Status as "In Progress" Activity Percentage as entered in input CSV file Actual Duration will be 0 (zero), if not entered **Note**: If not provided in the CSV input file, the P6Start, P6Finish, P6PlannedStart, and P6PlannedFinish will be the project start date; otherwise, the user-provided dates will be retained. The uuu_P6RemainingStart will be the Actual Start Date and the uuu_RemainingFinish will

uuu_P6ActualStart	uuu_P6ActualFinish	uuu_P6ActualDuration	uuu_P6ActivityStatus	uuu_P6PercentComplete	Behavior
					be the uuu_P6RemainingStart + uuu_P6RemainingDuration
Valid date entered for uuu_P6Start, uuu_P6Finish but no uuu_P6ActualStart is provided.	Valid date entered and on or after Project Schedule Start Date	No Value provided	No Value provided	No Value provided	Activity will be created with Activity Status as "Completed" Actual Start and Actual Finish Dates are shown with same date as provided in Actual Finish Date and Activity % Complete should be 100% (one hundred percent) Actual Duration will be duration between Actual Start and Actual Finish **Note**: If not provided in the CSV input file, the P6Start, P6Finish, P6PlannedStart, and P6PlannedFinish will be the project start date;

uuu_P6ActualStart	uuu_P6ActualFinish	uuu_P6ActualDuration	uuu_P6ActivityStatus	uuu_P6PercentComplete	Behavior
					otherwise, the user-provided dates will be retained The uuu_P6RemainingStart and uuu_P6Remaining Finish will not show any dates because the activity is complete (if provided in the input CSV file for completed activity, then the dates will be ignored and remaining duration will be 0) Actual Duration will be total duration between Actual Start and Actual Finish
No Value provided	No Value provided	Valid value entered for uuu_P6Actual Duration	No Value provided	No Value provided	Activity will be created with Activity Status as "Not Started" Activity Complete will be 0% (zero percent)

uuu_P6ActualStart	uuu_P6ActualFinish	uuu_P6ActualDuration	uuu_P6ActivityStatus	uuu_P6PercentComplete	Behavior
					Actual Duration value will be ignored if entered without uuu_P6ActualStart If the uuu_P6Start and uuu_P6Actual Start are both entered, then those dates are retained; otherwise, the uuu_P6Start and uuu_P6Finish will be the project start date, if it exists The uuu_P6PlannedStart will be same as uuu_P6Start, and the uuu_P6PlannedFinish will be same as uuu_P6Finish The uuu_P6RemainingStart and uuu_P6Remaining Finish will be the

uuu_P6ActualStart	uuu_P6ActualFinish	uuu_P6ActualDuration	uuu_P6ActivityStatus	uuu_P6PercentComplete	Behavior
					same as uuu_P6Start and uuu_P6Finish
Valid date entered in uuu_P6Start and uuu_P6Finish Valid date entered and on or after Project Schedule Start Date	Valid date entered and <= uuu_P6ActualStart	Not applicable	Not applicable	Not applicable	Error message indicating that the uuu_P6ActualFinish cannot be earlier than uuu_P6ActualStart

Update Activities

uuu_P6 Start	uuu_P6 Finish	uuu_P6 Planned Start	uuu_P6 Planned Finish	uuu_P6 ActualStart	uuu_P6 ActualFinish	uuu_P6 RemainingEarly Start	uuu_P6 RemainingEarly Finish	Behavior after import
For Not Started Activity: Valid date provided	No Change	No Change	No Change	No Value	No Value	No Change	No Change	Activity will be updated with uuu_P6 Start update provided uuu_P6 Finish will be calculated based on Start and duration

uuu_P6 Start	uuu_P6 Finish	uuu_P6 Planned Start	uuu_P6 Planned Finish	uuu_P6 ActualStart	uuu_P6 ActualFinish	uuu_P6 RemainingEarly Start	uuu_P6 RemainingEarly Finish	Behavior after import
								All other dates - Planned Start, Planned Finish, Remaining Early Start and Remaining Early Finish will be updated same as Start and Finish Activity status will be "Not Started"
No Change	Valid date provided	No Change	No Change	No Value	No Value	No Change	No Change	Activity will be updated with uuu_P6 Finish and duration will be recalculated All other dates - Planned Start, Planned Finish, Remaining Early

uuu_P6 Start	uuu_P6 Finish	uuu_P6 Planned Start	uuu_P6 Planned Finish	uuu_P6 ActualStart	uuu_P6 ActualFinish	uuu_P6 RemainingEarly Start	uuu_P6 RemainingEarly Finish	Behavior after import
								Start and Remaining Early Finish will be updated same as Start and Finish Activity status will be "Not Started"
No Change	No Change	No Change	No Change	Valid Value entered	No Value	No Change	No Change	Activity will be updated with uuu_P6 Start same as uuu_P6 ActualStart Planned Start and Planned Finish will not be changed Remaining Early start will be same as uuu_P6 ActualStart and

uuu_P6 Start	uuu_P6 Finish	uuu_P6 Planned Start	uuu_P6 Planned Finish	uuu_P6 ActualStart	uuu_P6 ActualFinish	uuu_P6 RemainingEarly Start	uuu_P6 RemainingEarly Finish	Behavior after import
								Remaining Early Finish will be same as uuu_P6 Finish Activity status will be "In progress"

uuu_P6 Start	uuu_P6 Finish	uuu_P6 Planned Start	uuu_P6 Planned Finish	uuu_P6 ActualStart	uuu_P6 ActualFinish	uuu_P6 RemainingEarly Start	uuu_P6 RemainingEarly Finish	Behavior after import
No Change	No Change	No Change	No Change	No Change	Valid date entered	No Change	No Change	Activity will be updated with uuu_P6 Finish same as uuu_P6 ActualFinish Planned Start and Planned Finish will not be changed Remaining Early start and Finish will not show any dates (empty) as the activity is completed Activity status will be "Complete" Activity percent will be 100% (one hundred percent)

Note: When you change any of the above dates, the system updates the dates accordingly. For activities that are marked as "Not Started," the values for the Start, Finish, Planned Start, Planned Finish, Remaining Early Start, and Remaining Early Finish will be the same.

Add Start Milestone Activity

uuu_P6 Start	uuu_P6 Finish	uuu_P6 Duration	Activity Status	Activity Type	uuu_P6 ActualStart	uuu_P6 ActualFinish	uuu_P6 Percent Complete	Behavior
Valid date provided	No value	No value	No value	Activity type is provided as 'Start Milestone'	No value	No value	No value	Activity will be created as milestone with Activity Type selected as "Start Milestone" Activity Status will be "Not Started" uuu_P6 Start and uuu_P6 Finish will be the same date as given in input CSV for uuu_P6 Start. uuu_P6 Duration will be 0

uuu_P6 Start	uuu_P6 Finish	uuu_P6 Duration	Activity Status	Activity Type	uuu_P6 ActualStart	uuu_P6 ActualFinish	uuu_P6 Percent Complete	Behavior
								(zero)
No value	Valid date provided.	Valid value provided or not provided.	No value	Activity type is provided as 'Start Milestone'	No value	No value	No value	Activity will be created as milestone with Activity Type selected as "Start Milestone" Activity Status will be "Not Started" uuu_P6 Start and uuu_P6 Finish will be the same as uuu_P6 Finish uuu_P6 Duration will be 0 (zero)
No value	No value	No value	Activity Status is provided as 'Not	Activity type is provided as 'Start	No value	No value	No value	Activity will be created as milestone with

uuu_P6 Start	uuu_P6 Finish	uuu_P6 Duration	Activity Status	Activity Type	uuu_P6 ActualStart	uuu_P6 ActualFinish	uuu_P6 Percent Complete	Behavior
			Started'	Milestone'				Activity Type selected as "Start Milestone" Activity Status will be "Not Started" uuu_P6 Start and uuu_P6 Finish will be the project schedule start date uuu_P6 Duration will be 0 (zero)
No value	No value	No value	Activity Status is provided as 'Completed'	Activity type is provided as 'Start Milestone'	No value	No value	No value	Activity will be created as milestone with Activity Type selected as "Start Milestone" Activity Status

uuu_P6 Start	uuu_P6 Finish	uuu_P6 Duration	Activity Status	Activity Type	uuu_P6 ActualStart	uuu_P6 ActualFinish	uuu_P6 Percent Complete	Behavior
								will be "Completed" uuu_P6 Start and uuu_P6 Finish will be the project schedule start date uuu_P6 ActualStart and uuu_P6 ActualFinish will be the project schedule start date uuu_P6 Duration will be 0 (zero) uuu_P6 Percent Complete will be 100 (one hundred)
Valid date provided	Valid date provided and not	Valid value provided or not	No value	Activity type is provided as 'Sta	No value	No value	No value	Activity will be created as mileston

uuu_P6 Start	uuu_P6 Finish	uuu_P6 Duration	Activity Status	Activity Type	uuu_P6 ActualStart	uuu_P6 ActualFinish	uuu_P6 Percent Complete	Behavior
	same as uuu_P6 start	provided.		rt Milestone'				e with Activity Type selected as "Start Milestone" Activity Status will be "Not Started" uuu_P6 Start and uuu_P6 Finish will be the same date as given in input CSV for uuu_P6 Start uuu_P6 Duration will be 0 (zero)
No Value	No Value	Valid value provided or not provided.	No value	Activity type is provided as 'Start Milestone'	No value	No value	No value	Activity will be created as milestone with Activity Type selected as "Start Milestone

uuu_P6 Start	uuu_P6 Finish	uuu_P6 Duration	Activity Status	Activity Type	uuu_P6 ActualStart	uuu_P6 ActualFinish	uuu_P6 Percent Complete	Behavior
								e" Activity Status will be "Not Started" uuu_P6 Start and uuu_P6 Finish will be the same date as given project schedule start date uuu_P6 Duration will be 0 (zero)
Valid date provided	Valid date provided and not same as uuu_P6 start or Value not provided	Valid value provided or not provided.	No value	Activity type is provided as 'Start Milestone'	No value	No value	No value	Error message Note: This is the same case when uuu_P6 ActualStart and uuu_P6 ActualFinish are provided, and they are

uuu_P6 Start	uuu_P6 Finish	uuu_P6 Duration	Activity Status	Activity Type	uuu_P6 ActualStart	uuu_P6 ActualFinish	uuu_P6 Percent Complete	Behavior
								different dates.
Valid date provided	Valid date provided and same as uuu_P6 start or Value not provided	No value	No value	Activity type is provided as 'Start Milestone'	Valid date provided	No value	No value	Activity will be created as milestone with Activity Type selected as "Start Milestone" Activity Status will be 'Completed'. uuu_P6 ActualStart and uuu_P6 ActualFinish will be same date as provided uuu_P6 Start and uuu_P6 Finish will be the same date as uuu_P6 ActualSt

uuu_P6 Start	uuu_P6 Finish	uuu_P6 Duration	Activity Status	Activity Type	uuu_P6 ActualStart	uuu_P6 ActualFinish	uuu_P6 Percent Complete	Behavior
								art uuu_P6 Duration will be 0 (zero) uuu_P6 Percent Complete will be 100 (one hundred) Activity will be created as milestone with Activity Type selected as "Start Milestone" Activity Status will be 'Completed'. uuu_P6 ActualStart and uuu_P6 ActualFinish will be same date as provided uuu_P6

uuu_P6 Start	uuu_P6 Finish	uuu_P6 Duration	Activity Status	Activity Type	uuu_P6 ActualStart	uuu_P6 ActualFinish	uuu_P6 Percent Complete	Behavior
								Start and uuu_P6 Finish will be the same date as uuu_P6 ActualStart uuu_P6 Duration will be 0 (zero) uuu_P6 Percent Complete will be 100 (one hundred)

The following dates will show the same date as uuu_P6Start, uuu_P6Finish and uuu_P6Duration for the milestone activities:

- uuu_P6PlannedStart
- uuu_P6PlannedFinish
- uuu_P6PlannedDuration
- uuu_P6RemainingDuration
- uuu_P6RemainingEarlyFinish
- uuu_P6RemainingEarlyStart

Update Existing Activity (Not Started) to Start Milestone

uuu_P6 Start	uuu_P6 Finish	uuu_P6 Duration	Activity Status	Activity Type	uuu_P6 ActualStart	uuu_P6 ActualFinish	uuu_P6 Percent Complete	Behavior
Valid value provided or not provided.	Valid value provided or not provided.	Valid value provided or not provided.	Valid value provided or not provided.	Activity type is provided as 'Start Milestone'	Not applicable	Not applicable	Not applicable	Activity will be created as milestone with Activity Type selected as "Start Milestone" Activity Status will be "Not Started" uuu_P6 Start and uuu_P6 Finish will be the same as project schedule start date uuu_P6 Duration will be 0 (zero)

Update Existing Activity (In Progress or Completed) to Start Milestone

uuu_P6Start	uuu_P6Finish	uuu_P6Duration	Activity Status	Activity Type	uuu_P6ActualStart	uuu_P6ActualFinish	uuu_P6PercentComplete	Behavior
Valid value provided or not provided.	Valid value provided or not provided.	Valid value provided or not provided.	Valid value provided or not provided.	Activity type is provided as 'Start Milestone'	Valid value provided or not provided.	Valid value provided or not provided.	Valid value provided or not provided.	Activity will be created as milestone w

								ith Activity Type selected as "StartMilestone" Ac

								tivity Status will be "Completed" uuu_P6Startand u

								uu_P6Finish will be the same date as uuu_P6ActualS

								tartuuu_P6Duration willbe 0 (zero) uuu_P6ActualSt

								art and uuu_P6ActualFinish will be same date and uu

								u_P6ActualDuration will be 0 (zero) uuu_P6PercentC

								omplete willlbe 100 (one hundred) Activity willlbe

								created as milestone with Activity Type selected

								as "StartMilestone" Activity Status will be "Compl

								ed" uuu_P6Start and uuu_P6Finish will be the same

								date as uuu_P6ActualStart uuu_P6Duration will be

								0 (zero)uuu_P6ActualStartanduuu_P6ActualFinish

								will be same date and uuu_P6ActualDuration will be

								0 (zero) uuu_P6PercentComplete will be 100 (one hu

								ndred)

Manual Activity Sheet Categories

There are three categories of Activity Sheet:

- Duration Based Schedules
- Cost Loaded Schedules
- Resource Loaded Schedules

Duration Based Schedules

The Duration Based Schedules are schedules in which you use P6 to capture “durations” of the schedules, only. Users define the CBS structure, Activities, Start / End Dates of Activities, Durations, and so forth, but you do not do Resource Assignments or Cost management in P6.

Cost Loaded Schedules

Users use P6 to capture CBS structure, activities, durations, resource assignments, as well costs.

The Activity Sheet, in this case, receives costs as well as dates that come from P6. Users can directly use Unifier advanced modules (Earned value) for cost comparisons.

Resource Loaded Schedules

Users use P6 to capture “durations” as well as resource assignments (resource units, resource CBS assignment, resource units spread, actual resources consumed till date, etc.). There are no costs captured within P6. A manual activity Sheet, in this case, can receive all the resource units and calculate costs using P6 data and rates.

Note: The advanced modules (Earned Value) use the calculated costs.

Manual Activity Sheet (Schedule Types)

The following explains each of the manual activity sheet Schedule types:

Duration Based Schedules

- The manual Activity Sheet receives duration based information from P6 only through XML import

- The manual Activity Sheet is available as a source for Cash Flow
- The manual Activity Sheet does not have any cost related feature (Assign rate sheet and Recost)
- The manual Activity Sheet is not available for Earned Value Analysis

Manual Activity Sheet Dates

Activities with Status: Not Started

> **Note**: For **Not Started** activities, the dates are always the same for Start, Finish, Planned Start, Planned Finish, Remaining Early Start, and Remaining Early Finish dates.

Start	Finish	Planned Start	Planned Finish	Actual Start	Actual Duration	Actual Finish	Remaining Early Start	Remaining Early Finish
Default to Project Schedule Start Date or to Data Date if the Project Schedule Start Date moved forward. Can modify the date.	Default to Project Schedule Start Date or to Data Date if the Project Schedule Start Date moved forward. Can modify the date. Calculated based on start date + duration.	Default to Start Date. Can be modified.	Default to Finish Date. Calculated based on Planned Start date + duration Can be modified.	Not applicable.	Not applicable.	Not applicable.	Default to Start Date. Can be modified.	Default to Finish Date. Calculated based on Remaining Start date + duration. Can be modified.

Activities with Status: In Progress

> **Note**: For **In Progress** activities, the Start and Actual Start would always be the same, and the Remaining Early Start will be >= Actual Start Date.

Start	Finish	Planned Start	Planned Finish	Actual Start	Actual Duration	Actual Finish	Remaining Early Start	Remaining Early Finish
Default to Actual Start Date Can	Start Date + Duration. Can modify	Planned Start Date will not be updated to latest schedul	Calculated based on Planned Start date +	Can enter date in the column >= project	In the attribute form and activity sheet, this field	Not applicable.	Default to Start or Actual Start if not schedul	Calculated based on Remaining Start Date +

Start	Finish	Planned Start	Planned Finish	Actual Start	Actual Duration	Actual Finish	Remaining Early Start	Remaining Early Finish
modify the date. If Start date is modified then update Actual Start date and vice versa. Can be updated by means of the update of Actual Start Date.	the date >= Start Date.	e data dates. Can be modified manually.	duration. Can be modified.	schedule start date. Start will be updated accordingly to align with Actual Start Date. Can be updated by means of Activity Status.	is read-only. The value for this field will be updated as the Duration calculated between Actual Start Date and Duration.		ed. Can be updated to later date by means of the actual start date or start date. If scheduled, then Remaining Start Date will be Data Date. Can be modified > = Data Date.	Duration If Scheduled, then Remaining Finish will be Data Date + Remaining Duration. Can be modified >= Remaining Start.

Activities with Status: Complete

Start	Finish	Planned Start	Planned Finish	Actual Start	Actual Duration	Actual Finish	Remaining Early Start	Remaining Early Finish
Default to Actual Start Date Can modify the date. If Start Date is modified	Default to Actual Finish Date. Can modify the date >= Start Date.	Planned Start Date will not be updated. Can be modified manually.	Calculated based on Planned Start Date + Duration. Can be modified.	Can enter date in the column >= project schedule start date. Can be updated	In the attribute form and activity sheet, this field is read-only. The value for this field will	Not applicable.	Will be empty as the activity is completed.	Will be empty as the activity is completed.

Start	Finish	Planned Start	Planned Finish	Actual Start	Actual Duration	Actual Finish	Remaining Early Start	Remaining Early Finish
then update Actual Start Date and vice versa. Can be updated by means of the update of Actual Start Date.				by means of Activity Status.	be updated as the Duration calculated between Actual Start Date and Actual Finish.			

Activity Sheet User Defined Report (UDR)

You can create User-Defined Reports (UDRs) from the data present in your activity sheet.

The **Create User-defined Report** window lets you define the following fields for your UDR (template or individual reports):

- **Data Type**
- **Element**
- **Report Type**
  - **Tabular**
  - **Cross Tab**
  - **Summary**
  - **Alert**
- **Access Type**

> **Note**: The same fields will be available for system and permission-based data sources.

The elements (Currency/Decimal) in the OOTB Activity Sheet, along with any user-defined column, will be available as DEs for your report.

> **Note**: Only the data elements available in the Activity Sheet will be available in the respective UDR.

Data for reports can be imported to Unifier from the CSV file. You can import data for Date Field, only (if it is in the same format as in the Unifier client). In cases where the client is using mm/dd/yyy, you have to create custom settings in the CSV file.

In Excel, add the new custom formats as follows:

1) Right-click the applicable cell and select **Format Cells**.
2) On the **Number** tab, select the **Custom** category, and specify a **mm/dd/yyyy** format.

Roll Up Activity Sheet to Cost Sheet

The **Column Properties** window enables you to select your cost sheets.

The **Type** field enables you to select the following:

- Worksheet
- Activity Sheet

The **Name/ID** field displays the name of the worksheet that you have selected; otherwise, this field displays the Activity Sheet, using the following naming conventions:

- Activity Sheet 01 (Activity) - for Activity Sheet with ID 01
- Activity Sheet 01 (Resource)

If there is no data or sheet for that ID, then Unifier displays an error message when you click **OK**, after making the selection, and the value will be zero in the Cost Sheet for that column.

The **Column** field enables you to select the currency and decimal fields from the Activity Sheet that are available to be rolled up into the Cost Sheet as a column.

Assignments

- uuu_P6PlannedCost (Planned Cost - cost)
- uuu_P6ActualCost (Actual Cost - cost)
- uuu_P6AtCompletionCost (At Completion Cost - cost)
- uuu_P6RemainingCost (Remaining Cost - cost)
- uuu_P6PlannedUnits (Planned Units- Units)
- uuu_P6ActualUnits (Actual Units- Units)
- uuu_P6AtCompletionUnit (At Completion Units- Units)
- uuu_P6RemainingUnits (Remaining Units- Units)

Activity

- uuu_P6PlannedTotalCost (Planned Total Cost - cost)
- uuu_P6ActualTotalCost (Actual Total Cost - cost)
- uuu_P6AtCompletionTotalCost (At Completion Total Cost - cost)
- uuu_P6RemainingTotalCost (Remaining Total Cost - cost)
- uuu_P6PlannedTotalUnits (Planned Units - units)
- uuu_P6ActualTotalUnits (Actual Units - units)

- uuu_P6AtCompletionTotalUnits (At Completion Units - units)
- uuu_P6RemainingTotalUnits (Remaining Units - units)

> **Note**: The decimal type Data Element (DE) is available in the cost formula.

The **Column Name** field, in the **Cell Details** window, displays the DE field label in the respective Activity Sheet.

> **Note**: You can have from 1 to 100 predefined cost DEs created in the Cost Sheet.

Importing Manual Activity Sheet

You can use (import) data from P6 or Microsoft Project into a Unifier project, including creating or managing activity, activity schedules, dependencies, and resource assignments.

> **Note**: If you select multiple activity sheet or System Activity Sheet, import options will not be seen.

You also have the ability to import project schedules that are maintained in P6 (.xml) or Microsoft Project (.mpp) in the manual activity sheets. You can create a project schedule in Unifier (manual activity sheet) and bring data by way of importing a Microsoft Project file (.mpp). After a successful import, you can see that all the activities, their dependencies, and assignments are created in a new activity sheet.

You can create a project schedule in Unifier (a manual activity sheet) and bring data by way of importing a P6 (.xml). After a successful import, you can see that all of the activities, their dependencies, and assignments are created in a new activity sheet.

The imported data can be further used in the earned value calculations, cash flow management, and so forth.

For the manual activity sheets, the system supports:

- Integrating with P6 or Microsoft Project to be able to import activities and related data to a specified activity sheet.
- Adding new activities in an activity sheet, through P6 or Microsoft Project import, with no additional setups.
- Synchronizing matching activities, through P6 or Microsoft Project import.
- Integrating with P6 or Microsoft Project out of the box (OOB), without any data mapping.
- Importing activity schedules, dependencies, and resource assignments, through P6 or Microsoft Project import.
- Updating the activities that are created, through P6 or Microsoft Project import.

To import from data from P6 or Microsoft Project:

1) Click to select a manual activity sheet.
2) Click the *gear menu* (⚙) and select either **Import Microsoft MPP** or **Import P6 XML**, to open the source and import either a Microsoft Project or P6 XML file.

The options above are available for the users who have the **Create** permission, at the activity sheet node level.

> **Note**: The *gear menu* (⚙) displays the same options, for any selected activity sheet.

You can export the XML version of an existing project schedule (of an activity sheet) into other sources, such as MS project or P6 schedules.

The **History** tab contains the details for any import that you have initiated. (**Activity Sheets** log > click on a manual activity sheet > properties pane > **History** tab)

After a successful import, a new activity sheet will be created.

The import will remove any existing data in the activity sheet. Only activities for the selected activity sheet will be removed. The WBS associated to the activity sheet will not be removed.

The following file formats are supported, for the file upload:

- The .mpp format (Microsoft Project Standard)
- The .xml format (P6 schedule)

The following objects are supported:

- Activity Sheet properties

  The project schedule start date and calendar. If there is no calendar, then the default project or shell calendar is used, and the earliest start date (across all of the activities in the sheet) will be the project schedule start date.
- Activity Sheet

  The activity attributes (uuu_P6 elements only), Dependencies (Predecessors and Successors), and Resource Assignments (units and costs).
- WBS Sheet

  All of the WBS attributes (**WBS Code**, **WBS Name**, and other default mapped attributes).

  After the activities are created in the sheet, you can assign a WBS Code (**Select WBS Code** window) to a selected activity by using the WBS picker. By default, all of the activities created in the manual activity sheet will show the project-level WBS row as assigned WBS. You can select a single WBS Code from the hierarchy. You can bulk assign the same WBS Code to multiple activities, through drag-and-drop at the cell level within the activity sheet.
- Master Rate Sheet:

  Resources/Roles (along with calendars). The Resource ID and Name/Role ID and Name, Currency, Calendar, Default Units/time, type of resource, and standard rates.

You can modify an existing activity sheet data only if you have the **Edit** permission.

The following data from the source file will be copied into an activity sheet:

- Activity Sheet properties
- Activity details

  For Not Started, In Progress, and Completed activities: All uuu_P6 activity data elements and other system defined data elements like uuu_successor, uuu_predecessor, and so forth.

  For In Progress and Completed activities: The uuu_P6percentcomplete will be updated.

- WBS Summaries

  Project WBS Sheet will be updated with the Summary tasks as WBS items, if no data exists.
- Dependencies

  All the relationships between the activities will be retained during the import. Those dependencies will be imported as successors and predecessors.
- Assigned Resources/Roles

  Master Rate Sheet will be updated with adding new resources and roles.
- Resource Assignments

  All the Resources/Roles assigned in the project schedule will be imported, along with units and costs. All activities will show the rolled-up costs and units when there are assignments.

In case of errors, the system aborts the importing process. The **History** tab will contain details about failed or successful imports.

Import Activities (Microsoft Project)

Activities are uniquely identified within one Microsoft Project file by the Unique ID (<UID>). The following applies when importing activities from Microsoft Project:

- New activities inserted
  - A new activity row will be created for each <UID>
  - The <ID> will be copied into Activity ID (uuu_P6ActivityID)
  - The <Name> will be the Activity Name (uuu_P6ActivityName).
  - The Unique ID (<UID>) will be copied from the corresponding Microsoft Project activities.
  - All other default (mapped) elements will be copied into the new activity.
- Dependencies of new activities
  - Dependencies will be added for the new activities (if dependencies exist) using elements within the PredecessorLink tags.
- WBS summaries for new activities
  - The WBS will be identified using the hierarchy provided within the <WBS> tag in the .xml file.
  - This is **WBS Code** field in the source (the .mpp file for each activity in the Advanced tab).
  - All the summary tasks (in .mpp file) will be created as WBS in project WBS Sheet, if they do not exist.
- Resource assignments for new activities
  - When a new activity is created, all assignments for that activity will be created. If the resource does not exist (resource ID does not exist), then a new resource will be created in Master Rate Sheet, with resource name from Microsoft Project as resource ID and Name. If the resource exists and matches the source, then the resource will not be updated, and the existing resource will be assigned to the activity. If the resource exists but does not match the resource (resource ID is different from the ID in the source Microsoft Project file), then you must create a new resource with resource ID and Name identical to the source file.

Also, when importing the project schedule by using Microsoft Project (.mpp), for:

- **Activities with start date earlier than the project schedule start date**:

  The project schedule start date will show the earliest start date across all the activities and the activities will be imported according to the schedule specified in the import file. In case the project schedule start date is selected (from shell attribute), the system displays: Import has failed as activities have <label of uuu_P6start> earlier than project schedule start date for the selected Activity Sheet. This takes place when importing the project schedule with activities earlier than project start date. Similarly, when the required field values are missing in the source Microsoft Project file, the system displays: Could not add Activity <Activity ID> as <Field1> is required.

- **WBS Code import**:

  The summary tasks in Microsoft Project will be imported as a WBS summaries into the project WBS Sheet. All of the summaries with hierarchy will be imported as a WBS hierarchies into the Project WBS Sheet. Only the WBS Code and the Name will be populated for the WBS Summaries.

  > **Note**: Ensure that you add a new WBS Code and associate the activity, or task, with the existing WBS Code if there is an existing WBS Code (with the same WBS name but different WBS code), when importing the summary tasks as WBS codes.

  If the WBS Code exists in the project WBS Sheet, create an activity with the WBS Picker populating the WBS Code. The Used By field, in the project WBS Sheet, will be populated with Activity Sheet that the WBS Code is associated with. Similarly, when the required fields are missing in the source Microsoft Project file, the system displays the message: Could not add WBS <WBS Code> as <Field1> is required.

- **Resources that do not exist in the Master Rate Sheet in Unifier**:

  The system matches the resources by resource name, in the Master Rate Sheet.

  If the resource is not found in the Master Rate Sheet, then the resources will be added with the resource ID and Name because the resource name (from the Microsoft Project), and the source are selected as user-defined (User Defined).

  If the resource exists in the Master Rate Sheet with the same name, but the ID does not match, then you must create a new resource.

  The default values will be used for the resources that you create.

  If the resource has a required field that is not available in the source Microsoft Project file, the system displays the message: Could not add resource <Resource ID> as <Field1> is required.

- **Roles**:

  The Microsoft project resource assignment does not specify a role.

- **Project calendar in the Microsoft Project does not match with the Activity Shee**t:

  Use the project schedule calendar that is selected for the Activity Sheet. All of the imported activities will be adjusted based on the calendar in the project schedule start date.

- Resource calendar in the Microsoft Project does not match with any calendars available in Standards & Libraries:

  Use the company calendar for the resources that have calendar that do not match. All of the imported resource assignments will be adjusted to the company calendar.

- **Currencies and formats**:

  All costs will be converted to the shell currency, from the source file, for the activities and assignments.

- **Constraints and dependencies**:

  The import process will match the dependencies based on the connected activities. If a dependency is matched, all properties of the dependency will be updated from the Microsoft Project file, based the mapping described earlier. Activities will be moved to retain the new dependency values. By default, all of the activities will have the "**As Soon As Possible**" constraint even if there are different constraints set for the activities.

- **Impact on milestone activities**:

  You can import the milestone activities into the activity sheet. All the activities that are created as milestone will have activity type selected as: **Start Milestone**.

- **Required fields not part of Import file**:

  If there are any required elements in the activity attributes, and the imported file does not have any values for the required elements, the system will display the following message in the History tab, and the import will fail: <field name> is a required field in activity details. Or <field name> is a required field in WBS details.

  Note: The above condition applies to all of the required elements (in the WBS Sheet and Master Rate Sheet) when importing the WBS Summaries and Resources.

- **Rollback on error**:

  The various conditions (such as resources are not matched or no data for mandatory fields) described above can cause the import process to abort. In such cases, all of the changes made in the project schedule, by the import, will be reverted.

  The errors and warnings will be reported in the History tab (log) for various miscellaneous conditions such as: Activities with start date that is beyond the project start date, and the activity sheet has "From Shell" attribute that is selected for project start date.

  You can import the schedule irrespective of the status of the activity sheet.

Space Manager

The Space Manager is where you can perform the tasks of facilities management.

Notes:

- The Space Manager is only available to shells; it cannot be used in the Projects (Standard) node.
- You cannot view .DWF files in Google Chrome or Mozilla Firefox browsers.

Using the Space Manager, you can gather data about the levels in your facility (such as floors and parking lots) and the spaces that exist on each level (cubicles, offices, conference rooms, etc.). Similar to the Asset Manager, categories (called types) of spaces can be designed in uDesigner, and you can then add records of individual spaces to these types and manage them on an electronic sheet.

The Space Manager is a means of organizing all the square footage in your facility to make monitoring, maintaining, and revising your facility more efficient. The Space Manager can be integrated with other managers or business processes to give you a broader view of your company's physical capital and resources. For example, the Space Manager can be integrated with the Asset Manager to include the computers that reside in each cubicle on a level; or integrated with the Resource Manager to include the employees who occupy each space on a level.

In uDesigner, one attribute form is designed for a “level” type in your facility and multiple attribute forms for “spaces” types. With these attribute forms, you can create a hierarchy of levels and spaces within levels to store the facilities data you choose to collect.

The **Sheets** node in the Space Manager stores the manager sheet on which all the levels in your facility are shown. Unifier automatically creates a level sheet for every level type that is created. From the level sheet, you can also automatically update individual level records with data added to the sheet, either manually or via a formula created for a column.

The **Stack Plans** node is where you can create stack plans to show the actual usage of the levels in the company's building(s). You can choose the information (data elements or specific spaces) you want to see on the stack plan and update the plan periodically to keep abreast of changes in the levels' space usage. For example, you might want to know the square footage used by each department on each floor (level); or how many square feet of a floor are vacant versus leased.

The **Levels** node lists all the levels that exist in your facility. This is where you can create new levels or update existing ones, import data from CSV files, or export templates to CSV.

The **Spaces** node shows a list of all the space types, and under the space type sub-node, all the spaces that exist in your facility. This is where you can create new spaces or update existing ones, import data from CSV files, or export templates to CSV.

The Space Manager allows you to identify floors and each space by type and associate attributes to the particular spaces. For example, a multi-floor building could have many types of spaces, such as offices, cubicles, restrooms, conferences room, laboratories, and eating areas.

You manage spaces according to space type. Examples of space types are:

- Gross measured area, which is the entire square footage of a floor, from wall to wall
- Common area, such as hallways, lobbies, and entrances
- Usable space, such as cubicles, offices, and conference rooms
- Vertical penetration, which includes elevators, stairwells, and columns

The Space Manager is available within a shell. Each shell can have only one Space Manager. A building is at the shell level. An example hierarchical arrangement of objects in the Space Manager is as follows:

- Buildings (shell level)
  - Levels (Floors) of the building or other similar structures (in this case, Floor is an example of a level record)
    - Spaces in the building. These are the various spaces in the structure, such as storage rooms, offices, and other interior spaces (space records). Spaces is a fixed node designed in uDesigner.

The Space Manager includes a sheet to help you manage levels and spaces. The sheet will allow you to create formulas to calculate total leasable and rentable space for a facility or building.

Space Manager prerequisites

- Generic or CBS shells configured
- Level and space attribute forms defined in uDesigner

For information about language (internationalization) and CSV files refer to *Unifier General User Guide*.

In This Section

Accessing the Space Manager

The Space Manager is available within a shell. Each shell can have one space manager.

To access the Space Manager:

1) In user mode, select the shell that you are working in.
2) In the shell, Click the **Space Manager** module to open.
3) Click the appropriate node to access a level or space.

Quick Calendar

The Quick Calendar is available for Space Manager. For details, refer to the "Working with Quick Calender Entry" section in the Unifier Business Processes User Guide.

Working with Levels (Standard View)

The **Levels** log enables you to view record summary, take actions from the log, and make log adjustments as explained in the following sections.

When you select a record in the log, Unifier opens a pane (on the right-hand side of the page), **Record Details** tab, that enables you to view the details of the selected record. In addition, you can:

- Print the log based on the current view. This would output a report similar to a UDR.
- Select the order of the columns in the log and define which columns must be visible.
- Sort on one or many columns within the log.
- Group based on one column, or up to 3 columns, and define how the groups are sorted and how rows are sorted within the groups.
- Apply filters to individual columns.
- Lock columns so that they are fixed on the left-hand side and the remaining columns scroll on the right-hand side.

> **Note**: For details about the existing functionalities, not described in this section, refer to the topics under the Unifier Space Manager.

Levels Log Options (Standard View)

Levels log toolbar options:

- **Create**
- **Actions**
  - **Import**
  - **Export CSV Template**
  - **Bulk Edit**
  - **Last Import Log**

    Enables you to open the **Last Import Log** window which displays the pertinent information.
- **View**

  The system-defined views are:
  - **All Records**
  - **Records Created by Me**
  - **Create New View**
  - **Manage Views**
- **Edit View**

Enables you to change the View settings.

- **Refresh**
- **Printing the log content**
- **Search as defined in uDesigner**
- **Find on Page**
- **Help**

The *gear menu* (⚙) options:

- **Open**
- **Copy**
- **View Spaces** (Spaces)

  Enables you to open the space picker field. The title is "Spaces on <Level Name>," and the floor name is considered the level name value for the level that you select.
- **Print - HTML**
- **Print - PDF**
- **Print - Custom**

> **Note**: If an attribute form is present, then you can hover over the question mark (?) symbol to see more information in the form of a tooltip.

Creating a New Level Record (Standard View)

To create a new level:

1) Go to your project (**User** mode).
2) Click **Space Manager** to expand.
3) Click **Levels** to open the log. The log is divided into two panes. The left-hand pane contains the toolbar options and columns which provide details about the level. The right-hand pane (properties pane) contains the following tabs:
   - **Record Details**
   - **Permissions**
4) Click **Create**.
5) When the **Create New Levels** window opens, enter the values in the required fields. At this point, you are creating the floor details. If the properties window is not open, click the three vertical dots icon (located on the right-hand border of the **Create New Levels** window, in the middle) to open the properties pane. The properties pane contains the following tabs:
   - **Comments**

     Contains additional details about the record. You can add comments to the space attribute in the edit mode, only.
   - **Linked Records**

     Enables you to link records to the space attribute. The functional flow is similar to that of a non-Workflow BP.

- **Linked Mail**

  Enables you to link email to the space attribute. The functional flow is similar to that of a non-Workflow BP.

6) When finished, click **Submit**.
7) When the log appears, click the refresh icon to refresh the screen. Review your recently created level.

The details of a level:

1) Open a level from the log to see the level window. The window is divided into two panes. The left-hand pane contains the following blocks:
   - **General**
   - **Floor Plan Image**

   The right-hand pane (properties pane) contains the following tabs:
   - **Comments**
   - **Linked Records**
   - **Linked Mail**
   - **Audit Log**

     Lists all the actions taken by a user (Bulk Edit, Create, etc.)
   - **Level Content**

   The toolbar options are **Edit** and the horizontal lines icon drop-down arrow (hamburger icon). Use the hamburger icon to print, view spaces, access help, or close the record. Depending on the availability of associated images, the menu options can change (View Drawing). The View Spaces option enables you to access information about any space associated with the level, if any. Records with associated drawings have a file icon next to the record, on the log.
2) If you change or add any information, click **Submit** to make your changes a part of reference record to the level details or content. Click the **Level Content** tab to see the details.

To copy an existing level record:

1) In User Mode, in the shell, select **Space Manager** > **Levels**.
2) In the level log, select a level and select **Copy**. The levels form opens with the information from the original level record.
3) Modify the form as needed.
4) Click **Finish Editing** to save the new level record.

Exporting and Importing CSV Level Templates and Records (Standard View)

1) Navigate to the **Space Management** node.
2) Click **Export CSV Template**. The exported CSV template is based on the Integration interfaced design of Level that was created in uDesigner.
3) Save the CSV file to your desktop.

To modify an imported file

1) Open the CSV file in Microsoft Excel or a compatible software application. You can also edit the CSV file in a text editor such as Notepad.
2) Add data to the CSV file, one record per row. Do not add, move, or delete columns or change the structure of the file.
3) Save the file.

> **Note**: Excel 2003 cannot handle CSV files with 15 or more rows. In CSV files, columns are separated with commas. When you open a CSV file with Excel that has empty columns at the end of the file, Excel drops the additional commas from the 15th row onward, resulting in an error when you try to import the file. To work around this problem, do one of the following:
>
> - Add your data to the CSV file in Excel and save the file. Then reopen the file in a text editor such as Notepad, find the rows that have the missing commas, and add the additional commas to these rows.
> - Use the text editor instead of Excel to modify column values in the CSV file.

To import CSV files

1) In **Space Management**, select the level which you want to import the new record or drawing file. Be sure that you are importing the correct file.
2) Click **Import**.
3) In the File Upload window, browse for the file and click **OK**.

   Unifier checks the file for the following items to make sure that valid records are created:
   - The file format of the imported file matches the interface design created in uDesigner.
   - Make sure that you are importing into the same log from which you exported the CSV template file.
   - The required fields contain data in the correct format.

   If an error occurs, an error message gives you the option to save a text file that lists the errors.

To view the import validation error file

1) At the import error **Confirmation** window, click **Yes**. You can then choose **Open** to open the file or **Save** to save the file to your local machine.
2) The error file is a CSV file. Click on a cell to view the full contents of the listed error.
3) After fixing the errors, you can use this file to re-import the records.

Opening Levels (Standard View)

You can view any of the level or space records in the logs. If there are many records listed in a level or space log, you can use search criteria to narrow the options.

To view a level record and its associated drawing

1) In User Mode, in the shell, select **Space Manager** > **Levels.**
2) Select a level record from the log window and double click the record or select **Open** from the *gear menu* (⚙) to open the levels detail window.
3) Click the **Spaces** option (on the toolbar) to view the associated spaces of the selected level. To view the space records of a particular space type, click the **Space Type** drop-down menu and select the desired space type.

To view the level on the associated drawing, select **View on Drawing** from the *gear menu* (⚙) on a particular level record.

Locating and Opening Space Records from Within a Level Record (Standard View)

To open a space record from a level

1) In User Mode, in the shell, select **Space Manager** > **Levels**.
2) Select a level.
3) Click **Open**.
4) Select a space record in the bottom portion of the window.
5) Click **Open**. The detail form for the selected space record opens.

   You can highlight the entire floor and view all available spaces.

Working with Space Log (Standard View)

The Space log enables you to view record summary, take actions from the log, and make log adjustments as explained in the following sections.

When you select a record in the log, Unifier opens a pane (on the right-hand side of the page), **Record Details** tab, that enables you to view the details of the selected record. In addition, you can:

- Print the log based on the current view. This would output a report similar to a UDR.
- Select the order of the columns in the log and define which columns must be visible.
- Sort on one or many columns within the log.
- Group based on one column, or up to 3 columns, and define how the groups are sorted and how rows are sorted within the groups.
- Apply filters to individual columns.
- Lock columns so that they are fixed on the left-hand side and the remaining columns scroll on the right-hand side.

Opening Space Records (Standard View)

To open a Space record follow these steps:

1) **User** mode > **Shell** > **Space Manager** > **Spaces** > **<space type>**.

2) Select a Space record from the log and click **Open**.

You can open a Space record from an advanced log, also. An advanced log creates a tree hierarchy structure for records. This tree structure makes it easier to view and select records from a log of spaces in the Space Manager. To open a space record from an advanced log, use the middle navigation column to narrow the focus of the log; then pick the space from the log in the right pane.

Business Process (BP) Query-based Tab (QBT) in the Space Records

Once a BP QBT is configured and the Space is deployed after changes made, the QBT appears in the Space for which the QBT has been configured.

Space Log Options (Standard View)

Space log toolbar options:

- **Create**
- **Actions**
  - **Import**
  - **Export CSV Template**
  - **Bulk Edit**
  - **Print**
  - **Delete**

    The **Delete** option in the **Delete Records** window is disabled until you enter a reason for deletion. If you enter the reason and then remove it completely, then the **Delete** option will become disabled again. You cannot leave a blank space in the available box and click **Delete**.
  - **Deleted Record History**

    A window opens and displays the history of deleted items.
- **View**

  The system-defined views are:
  - **All Records**
  - **Records Created by Me**

  In addition, there are option for user to:
  - **Create New View**
  - **Manage Views**
- **Edit View**

  Enables you to change the View settings. Rules for changing views will be the same as other logs.
- **Reload the page**
- **Printing the log content**
  - **Print**
  - **Export to CSV**
  - **Export to Excel**

- **Search as defined in uDesigner**
- **Find on Page**
- **Help**

The *gear menu* (⚙) options:

- **Open**
- **Copy**
- **Delete**

> **Note**: If an attribute form is present, then you can hover over the question mark (?) symbol to see more information in the form of a tooltip.

Creating a New Space Record (Standard View)

To create a new space:

1) Go to your project (**User** mode).
2) Click **Space Manager** to expand.
3) Click **Spaces** to expand.
4) If available, click an element (for example, **Leasable Spaces**) to open the log. The log is divided into two panes. The left-hand pane contains the toolbar options and columns which provide details about the space. The right-hand pane (properties pane) contains the following tabs:
   - **Record Details**
   - **Permissions**
5) Click **Create**.
6) When the **Create New <space>** window opens, enter the values in the required fields. At this point, you are creating a space. If the properties window is not open, click the three vertical dots icon (located on the right-hand border of the **Create New <space>** window, in the middle) to open the properties pane. The properties pane contains the following tabs:
   - **Comments**

     Contains additional details about the record. You can add comments to the space attribute in the edit mode, only.
   - **Linked Records**

     Enables you to link records to the space attribute. The functional flow is similar to that of a non-Workflow BP.
   - **Linked Mail**

     Enables you to link email to the space attribute. The functional flow is similar to that of a non-Workflow BP.
7) When finished, click **Submit**.
8) When the log appears, click the refresh icon to refresh the screen. Review your recently created space.

The details of a space:

1) Open a space from the log to see the space window. The window is divided into two panes. The left-hand pane contains the following tabs:
   - **Details**
   - **Asset**

     Contains the assets associated with the space. If any QBDEs are associated with the record, the **Asset** tab will list the QBDEs. You can click **Create**, to open the **Create New Assets** window and enter asset information. The **Create New Assets** window has the following elements:

     Left-hand pane: **Asset Details** tab (**General** and **Preventive Maintenance Information** blocks), **Gauges & Meters** tab, and **Components** tab.

     Right-hand pane: **Attachments** tab, **Comments** tab, **Linked Records** tab, and **Linked Mail** tab.

   The right-hand pane (properties pane) contains the following tabs:
   - **Comments**
   - **Linked Records**
   - **Linked Mail**
   - **Audit Log**

     Lists all the actions taken by a user (Bulk Edit, Create, etc.)
   - **Space Content**

     This tab contains the list of records that are associated with the space. A graphical representation is also present for the same. The **Space Content** tab will be similar to the Reference Records seen in the Business Processes, with the following differences:

     'Reference Records' = 'Space Content'

     'Business Process' = 'Record Type'

     Objects seen in the link will be based on the referring or referred object type.

     Similar to Reference records, the **Space Content** tab displays the linked records and the reference records.
2) If you change or add any information, click **Submit** to make your changes a part of reference record to the space details or content. Click the **Space Content** tab to see the details.

Click the horizontal lines icon drop-down arrow (hamburger icon) to print, reload, view associated drawing (for a floor/level), access help, or close the record.

Working with Levels Sheet (Standard View)

The **Space Manager** includes a sheet to help you manage levels and spaces. The sheets allow you to create formulas to calculate "leasable" space and other related information in a building. You can create levels sheets for a **Space Manager**. You can create only one sheet per shell.

The levels sheet is listed in the **Levels Sheet** log in the **Space Manager**.

> **Note**: You must have permissions to access a sheet.

Levels Sheet Log Options (Standard View)

The **Levels Sheet** log contains two panes. The left pane contains a list of sheets, and the right pane displays the Properties tab which displays the following properties for each sheet:

- **Title**
- **Description**
- Levels that are included in the sheet (**All Levels** or **Levels with statuses**)
- Status of the levels such as occupied and inactive

You can modify and save the properties, provided that you have permission.

The left pane contains the levels sheet and the following information is provided in column format:

- **Name**
- **Description**
- **Last Modified Date**

Creating a New Levels Sheet Record (Standard View)

When there is no levels sheet available, Unifier displays the **Create** toolbar option. To create a new levels sheet:

> **Note**: You must have the **Create** permission in order to be able to create a levels sheet.

1) Go to your shell or project and switch to user mode.
2) Click **Space Manager** to expand.
3) Click **Levels Sheet**.
4) Click **Create**. and select one of the following options:
   - **Manual**
   - **From <shell or project>**

If you click the **Manual** option, the **Create Levels Sheet** window opens. Enter and select values in each field and click Save.

If you decide to create levels sheet from a shell or project, click the **From <shell or project>** option, to open the **Levels Sheet** window. Use the **Find on Page** option to find the desired shell or project, click **Select**, and follow the prompts. You can create one levels sheet per shell or project, only.

Once the sheet is created, use the **Refresh Sheet Data** toolbar option to refresh the data on a sheet (updating the data). This toolbar option does not refresh the log items that are displayed in the **Levels Sheet** log. Note that when you click the **Refresh Sheet Data** toolbar option, the cell under **Last Modified Date** will show "In Progress" until the data update is complete, after which the date of the refresh is displayed.

To add columns to a level sheet:

1) In User Mode, navigate to the Space Manager in a shell and select **Level Sheets**.
2) Select the level sheet, and click **Open**.
3) Click **Columns**. The Columns Log window opens.
4) Click **New**. The Column Definition window opens.
5) In the **Datasource** drop-down list, select the data element to use. The list includes the data elements found on the level form.
6) For **Entry Method**, choose how information is entered in the column. The choices depend on the data source selected.
7) For **Data Format**, select the format for numeric columns. The options are:
   - **Show as Percentage**: Displays data in percentage. For example, if 0.25 is entered, it displays as 25%.

     Note: When entering the percentage values in your sheet, if you are working in Classic View, then enter the value by using decimal number format. For example, for ten percent, enter: 0.1, and if you are working in Standard View, then enter the value by using percent format. For example, for ten percent, enter: 10%. The value that Unifier uses to validate the value of the Percentage column, when applicable, will be: 0-100.

   - **Decimal Places**: Select the number of decimal places to display.
   - **Use 1000 Separator (,)**: Data is formatted using separators. For example, one thousand is displayed as 1,000 with a comma, not 1000.
   - **Negative Number Format**: Select how negative values are displayed: with a negative sign or in parentheses.
8) For **Display Mode**, select **Hide** to make the column invisible to users or **Show** to display it.
9) For **Total**, select what is shown in the bottom summary row for each column. The options are:
   - **Blank**: Summary row is blank.
   - **Sum of All Rows**: Displays the sum total of all row values for this column.
   - **User Formula Definition**: Displays the result of the formula entered in the Formula field.
10) For **Average**, select **Blank** or the average of all rows.
11) For **Column Position After**, select a column from the list to specify its position on the sheet.
12) Click **OK**.

Exporting and Importing CSV Files (Standard View)

To export a sheet

1) In User Mode, in the shell, select **Space Manager** > **Levels Sheet**.
2) Select a sheet, and click **Export**. See ***Exporting and Importing CSV Level Templates and Records*** to export and modify the template.

To import a CSV file

For instructions on importing a CSV file, see ***Exporting and Importing CSV Level Templates and Records***.

Working with Stack Plans

A stack plan is a two-dimensional graphical display of facility or building data. Usually, these graphs display area calculations by different attributes (for example, rented, leased, vacant, occupied by a tenant). The y-axis lists levels, and the x-axis lists areas. Stack plans allow you to view area information across all building levels or floors based on defined attributes. Stack plans display only space records. If you have permission, you can create and modify stack plans.

Creating a Stack Plan

- ***To create a stack plan:***

1) In User Mode, select **<shell>** > **Space Manager** > **Stack Plans**.
2) Click **New**. The Properties window opens.
3) Complete the **General** tab as described in the first table below.
4) Click the **Options** tab and complete as shown in the second table below.
5) Click **Apply** to save changes, or **OK** to save and exit.

In this field:	Do this:
Name	Enter the stack plan name.
Description	Enter an optional description.
Include: ▸ All levels ▸ Levels with statuses	Select to specify that all levels be included in the stack plan, or that only levels of selected status be included in the stack plan.

In this field:	Do this:
Space Types	Select a space type.
Stack By: ▸ Space Type ▸ Data Element	Select whether to stack by selected space type or by a data element.
Stacking View	Select to specify standard stacking or 100% stacking.
Sort Floors By:	Select to sort floors by a selected data element from the Level Attribute form.
Show Legend	Select to display a legend for the stack chart.

Conditions	Add a condition to filter the number of space records included in the stack plan calculation. The stack plan calculation logic sums up the values from the uuu_area data element used on the space-type detail form.

Viewing a Stack Plan

- ***To view a stack plan:***

1) In User Mode, select **<shell>** > **Space Manager** > **Stack Plans**.
2) Select a stack plan from the log.
3) Click **Open**. If your stack plan contains no data, you will see a gray box. Your stack plan must contain data in order to display. You can scroll up and down the stack plan if there are numerous records listed.

Modifying a Stack Plasn Display Mode

You can change the display mode of the Stack Plans to display a standard view (Stack Plans - Current View) or display the bars in the graph as proportional percentages of varying length.

To change the display mode for a stack plan

1) Go to your shell > **User** mode > **Space Manager** > Stack Plans.
2) Select a stack plan from the log.
3) Click **Open**.
4) Select the **Explicit Value** or **Percent** radio buttons to modify the stack plan view.

Printing a Stack Plan

- ***To print a stack plan:***

1) In User Mode, select **<shell>** > **Space Manager** > **Stack Plans**.
2) Select a stack plan from the log.
3) Click **Open**.
4) Click the print icon. The displayed area is printed. Scroll down the stack plan and click the print icon again to print more of the stack plan records.

Print a Space Manager Form

You can print a copy of a Space Manager form. When printing Level or Space attribute forms, you can choose PDF, HTML or Custom print formats and select one of the following options:

- Save a copy of the form as a PDF file and print the file
- Print an HTML view
- Print from a Word file if a custom print layout has been created for the form

The Custom Print formats include the BI Publisher custom print templates designed in the **Custom Templates** node. If custom print layouts have been created for the Planning Manager, the form will print according to the layout that you select. See the following Custom Format Print Options for details. See the following ***Printing Options - Custom Format*** for details.

To preview and print an Space Manager form:

1) Open the Space Manager record that you want to print.
2) From the **File** menu, choose **Print Preview**, then choose one of the following:
   - **HTML** to view the form in the browser which can then be printed.
   - **PDF** to open the form in Adobe Reader, which can be saved or emailed as a PDF file, or printed process, you are asked to save the changes to the form.
   - **Custom** to select the BI Publisher, Microsoft Word, and PDF custom print templates from the same place as the current custom prints. See the following ***Printing Options - Custom Format*** for details.

   The Print Options window opens. This window displays the record information that can be printed.
3) Select the check boxes for the information that you want to print.
4) To select all the checkboxes, click the **Select All** checkbox. To deselect all, uncheck the **Select All** checkbox. If you deselect all checkboxes, only the header and footer will print.
5) Click **OK**. The preview form opens in an HTML or PDF (Adobe Acrobat or Reader) window, from which you can print.

   If you chose PDF, you can save a copy by clicking the **Save a Copy** button, or print. To print from HTML format, click on the **Print** icon in the upper right corner.

Print Options for Space Manager Form

Following is a summary of the print options for a Space Form.

Print option	What it prints
Line Item List	Selected by default. This prints the information present on the tabs displayed on the Space.
Detail Form	This prints the information entered on the form. Depreciation details in the line items are not printed.
General Comments	The general comment text and create details are printed.
Record Attachments	File attachments to the record are listed alphabetically by file name, and also include the file title, issue date, revision number, and file size.
Record Attachments > Comments	Prints comments associated with file attachments to the record. "Record Attachments" must also be selected to select this option.

To print an Space Manager form with a custom print layout:

1) Open the Space Manager form that you want to print. Be sure it is in a view mode.

2) From the **File** menu, choose **Print Preview**, then choose **Custom** to select the BI Publisher, Microsoft Word, or PDF custom print templates from the same place as the current custom prints (Custom Format Print selection window).
3) Select a layout and click **OK**. The **File** Download window opens.
4) Choose to **Open** or **Save** the file, which is a Microsoft Word DOC file.
5) Open the file in Microsoft Word and print. This feature can be used with Microsoft Word 2003 and 2007.

Printing Options - Custom Format

The Custom Format Print window has two sections:

- Select a custom print template
- Select a template and format to print

Both sections facilitate custom print template and format selections.

Select a custom print template

Lists all the custom print templates, including the custom print templates created in the **Custom Templates** node and the custom print templates. For example, the list may include BI Publisher custom print templates, Word, and PDF custom print templates.

If there are multiple custom print templates, all the published templates are listed in this section.

The "Select a template and format to print" is populated by the selection made in the "Select a custom print template" section.

Select a template and format to print

- If you select a BI Publisher custom print, then you can select the desired template and format from the drop-down lists.
- Template drop-down displays all the available templates for the selected format.
- Format drop-down displays the available formats for the selected template.
- If the custom print template was created using PDF or Word, then the "Select a template and format to print" is disabled.

Default template and format

- If a BI Publisher print template is selected, then the default values in the drop-down lists are set based on the default in the custom print template.
- When a BI Publisher print template is selected in the "Select a custom print template" section, the template and format are populated based on the default value selected at the time of designing the print template.