Administrator's Guide
Axiom Cost Accounting
Version 2019.4

KaufmanHall
AXIOM

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Version: 2019.4

Updated: 6/4/2021

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Getting Started

This chapter provides information on the basics of using Axiom Cost Accounting, such as:

- General system navigation and user interface
- Managing favorites
- Launching Axiom software applications
- Viewing system information

Welcome to Axiom Cost Accounting

Axiom Cost Accounting plays an important role in the financial management of healthcare organizations by providing cost information for activities, supplies, and services at the patient or encounter level. The benefits of cost accounting information and its application in health service organizations are numerous and may include:

- Identification of high cost activities for improved cost management.
- Identification of low or negative margin services for improved service line management.
- Identification of patient care cost variations across services, populations, and providers for improved care management.
- Evaluation of fixed and variable costs as they relate to products and services for informing decisions about pricing.
- Identification of key trends in patient, encounter, and activity costs for improved management decisions.
- Cost information by payer and insurance plans for improved managed care and contract management decisions.

Axiom Cost Accounting contains all the necessary tools to record, track, and report costs incurred by an organization to aid management in decision support. These tools include the ability to:

- Copy or load cost information from a variety of sources such as General Ledgers, payroll, supply masters, and so on.
- Load encounter information, including detailed activity or chargeable items.
- Summarize encounter level activities to calculate volumes by posting and service dates.

- Adjust and reclass the cost information in a flexible and easy manner, while retaining the ability to reconcile the reclassifications and keep track of the original data.
- Allocate overhead to direct patient care departments for full-absorption costing and reconcile the allocations.
- Define cost behavior in terms of fixed, variable, or semi-variable costs at the account, department, and entity level by cost category.
- Develop activity unit costs using multiple methods within the same department. These methods include Microcosts, Reverse Markup, Relative Value Units (RVUs), Ratio of Cost to Charges (RCCs), and Relative Cost Units (RCUs).
- Apply unit costs to patient activities and to encounters for reporting by various dimensions, which include entities, patient types, service lines, providers, payers and insurance plans, diagnosis, procedures, DRG, and so on.

What's new

Welcome to Axiom Cost Accounting 2019.4!

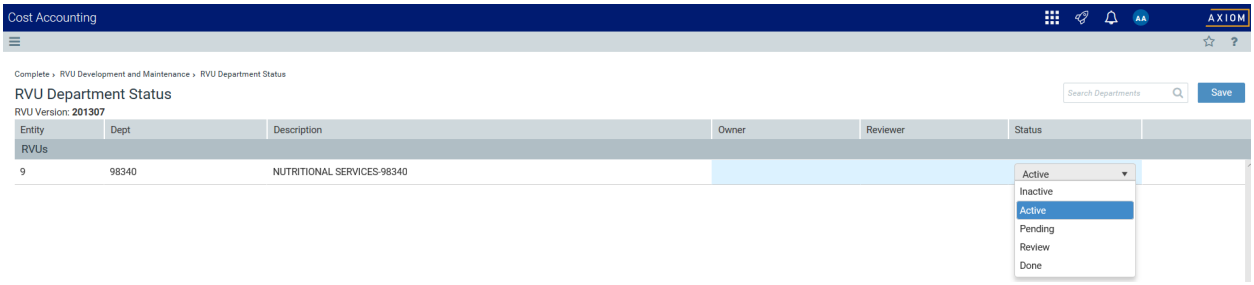
Enhancements in this release include:

- Set custom run order for reclass definitions - Axiom Cost Accounting now processes reclass definitions in the order you define. You can also group order definitions by method type - Payroll, Account, and Department - by using the new Reorder by Reclass Method button at the top of the page. Even if you decide to group definitions, you can still edit the order of the definitions within each group.
- Activate or deactivate definitions - Instead of deleting reclass or overhead allocation definitions, you can now simply deactivate and activate them as needed. Users can perform these actions from the definition list view page or the add/edit definition dialog. Hide or display the deactivated definitions in the list of definitions by clicking the **Show only active definitions** check box at the top of the list page.
- Add new allocation button - The top of the reclass and overhead allocation definition pages now include a button that allows users to quickly add new definitions to the system. This adds the new definition to the bottom of the list of active definitions.
- Manage and review department RVU - Users can now track the status of the RVU review process for their departments using the new RVU Department Status page. People that are outside of your organization's costing department can be set up by the administrator with the new RVU User role profile to allow them to access this page and designated as an owner and/or reviewer.

Manage and review department RVUs

Users can now track the status of the RVU review process for their departments using the new RVU Department Status page. People that are outside of your organization's costing department can be set up by the administrator with the new RVU User role profile to allow them to access this page and designated as an owner and/or reviewer.

From the RVU Department Status page, owners and reviewers can set the status for each department's RVU for the RVU version, view the department's RVU values, and view a change history for each department.



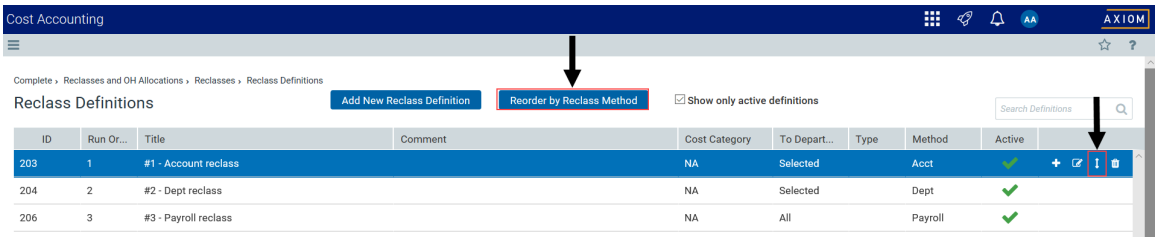
For more information, see the following:

- Setting up RVU users
- Managing department RVU status

Enhancements to reclass and overhead allocation definitions

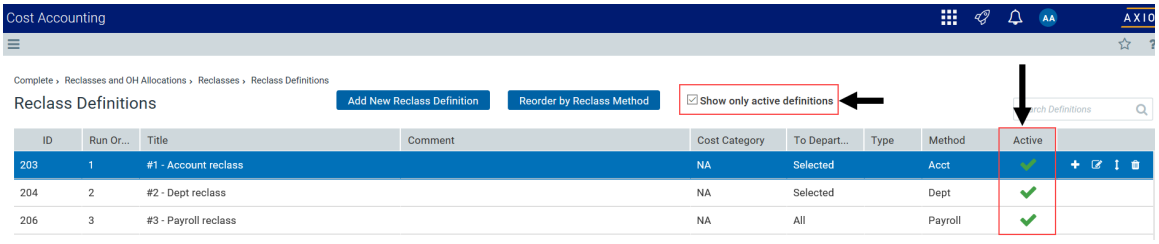
New enhancements include the following:

- **Set custom run order for reclass definitions** - Axiom Cost Accounting now processes reclass definitions in the order you define. You can also group order definitions by method type - Payroll, Account, and Department - by using the new Reorder by Reclass Method button at the top of the page. Even if you decide to group definitions, you can still edit the order of the definitions within each group.



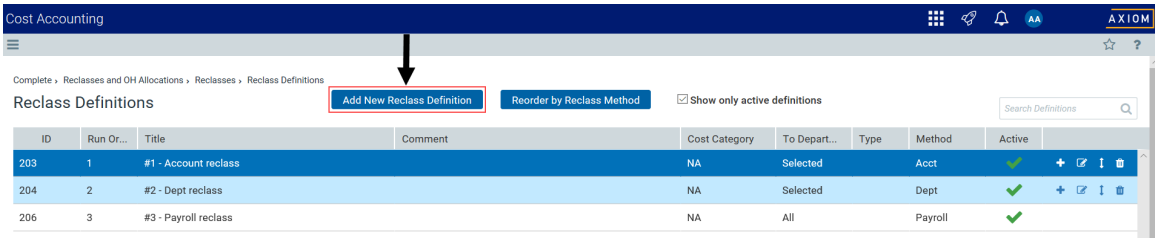
For instructions, see Ordering reclass definitions.

- **Activate or deactivate definitions** - Instead of deleting reclass or overhead allocation definitions, you can now simply deactivate and activate them as needed. Users can perform these actions from the definition list view page or the add/edit definition dialog. Hide or display the deactivated definitions in the list of definitions by clicking the **Show only active definitions** check box at the top of the list page.



For instructions, see Activating or deactivating reclass definitions or Activating or deactivating overhead allocation definitions.

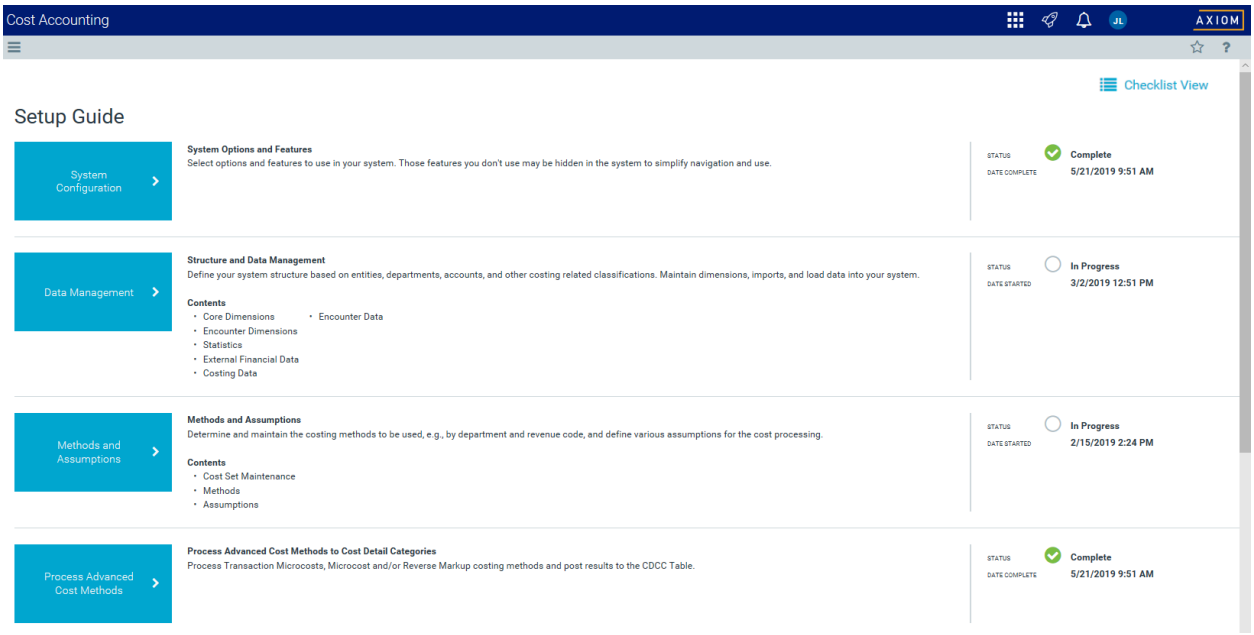
- **Add new allocation button** - The top of the reclass and overhead allocation definition pages now include a button that allows users to quickly add new definitions to the system. This adds the new definition to the bottom of the list of active definitions.



For instructions, see Adding, editing, or cloning reclass definitions or Adding, editing, or cloning overhead allocation definitions.

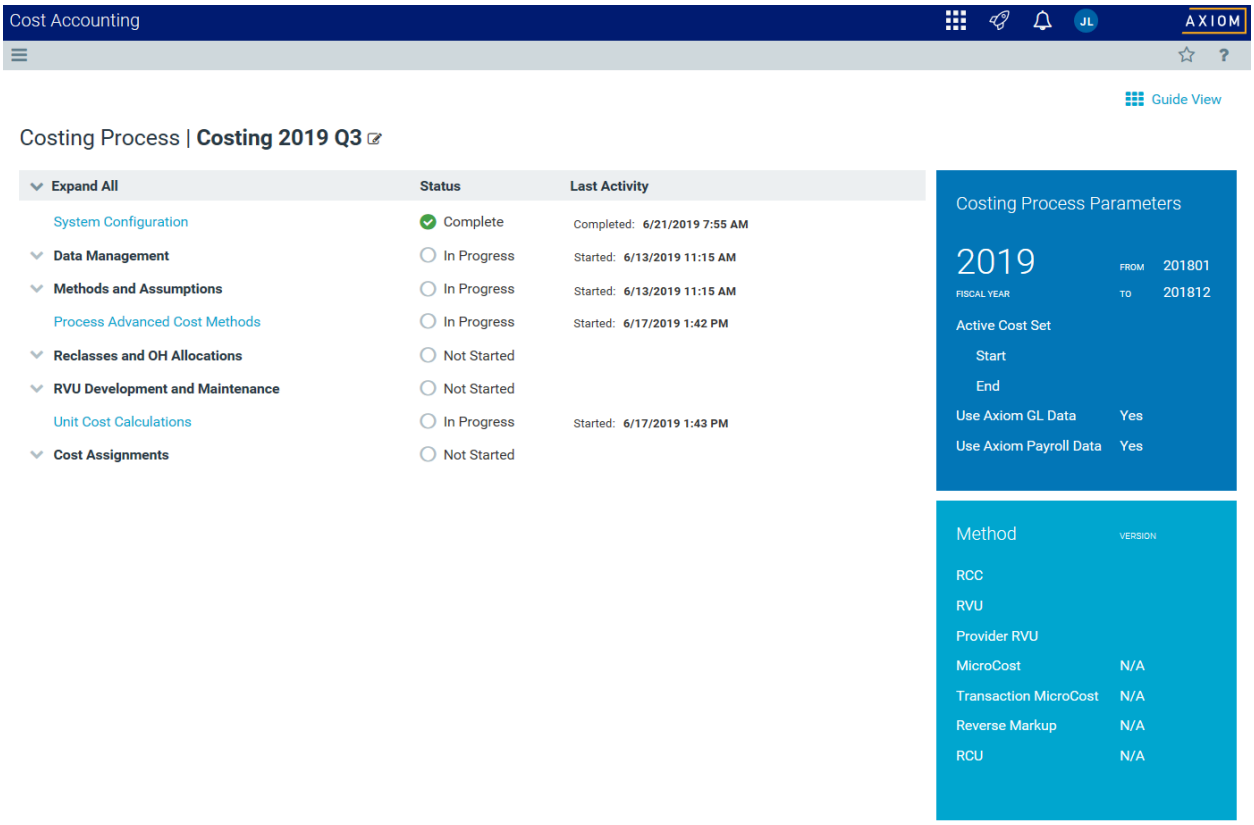
Using Axiom Cost Accounting

Set up and configuration of Axiom Cost Accounting is performed mostly using a Web Client interface. From here, you can easily walk through the process of configuring default system settings, managing data, setting up and processing methods, reclasses, and overhead allocations. You can also manage unit cost calculations and cost assignments.

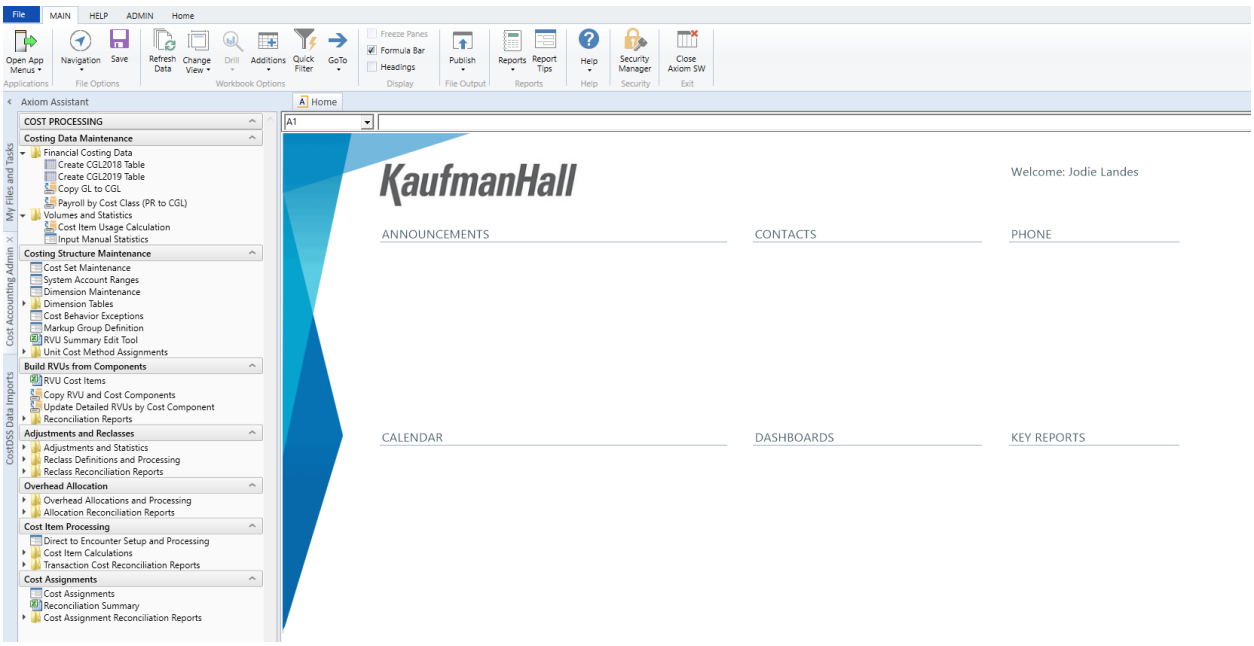


The Web Client interface also includes an Checklist View, which offers administrators an easy and convenient way to manage and track each the tasks required to set up the costing process. You can add, edit, clone, and delete processes as well as toggle to view different costing processes. The page also displays the high-level configuration parameters for the current costing process, including the active cost set as well as the method and versions being used.

NOTE: The Method section only displays those methods that have been selected in the System Configuration page to be used by your organization. The Active Cost Set version comes from the Method Definition version.



While you can perform most of the setup and configuration tasks from the Web Client interface, there are times when you may need to finer control and more details. The Windows or Excel Client provides all of the options provided by the Web Client interface as well as access to multiple reports. You can also manage security, processes, and other system administration tasks.



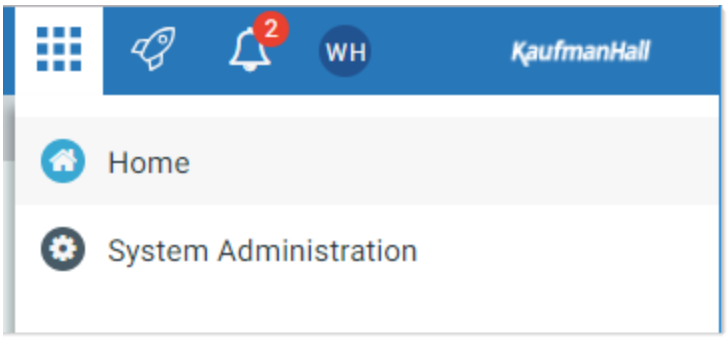
Home page

The home page displays automatically when you log into Axiom Cost Accounting. Depending on your system, this home page may be one of the following:

- A product-specific home page for Axiom Cost Accounting
- A custom home page created specifically for your organization

If you have any questions about your home page, please contact your system administrator.

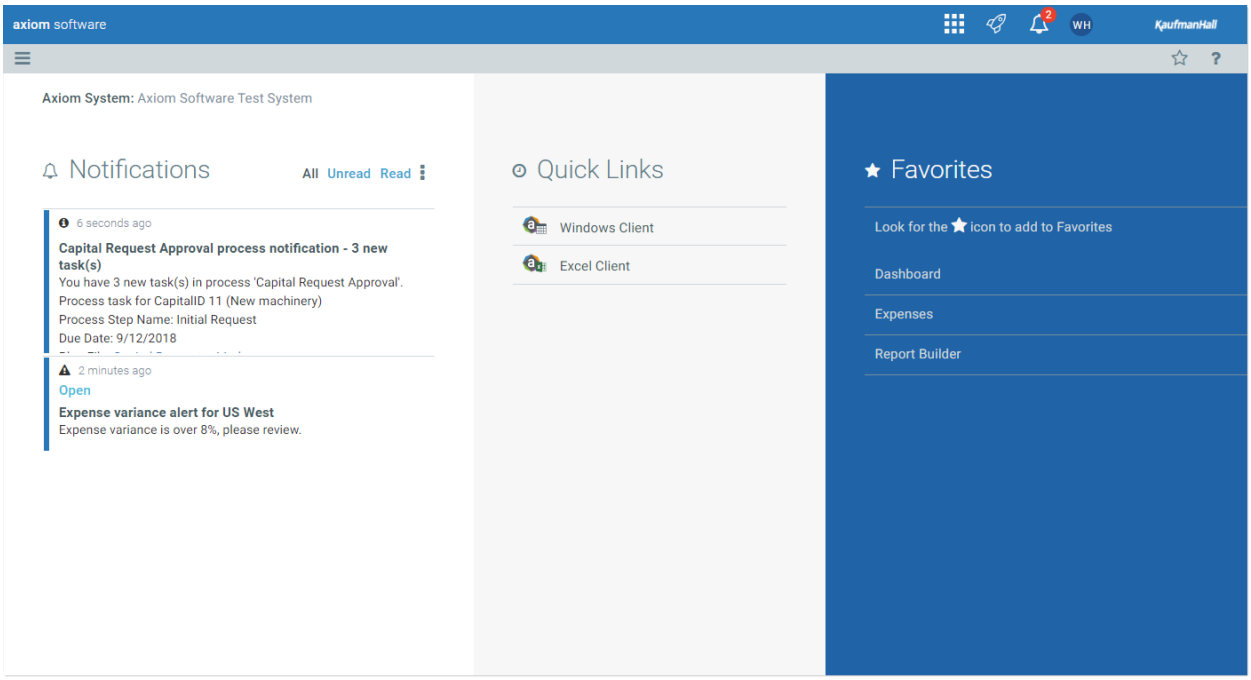
If you navigate away from the home page, you can return to it by using the Area menu in the Global Navigation Bar:



If you are in a system with installed products, this menu may contain product names instead of the **Home** item. In that case, you can select a product name to return to the home page for that product.

Default home page

If a user does not have an available web-enabled home page, then the default home page is used. The default home page displays notifications, favorites, and quick links.



This page has the following features:

- **Notifications**: You can read and delete notifications using the same features available in the Notifications panel.
- **Quick Links**: You can use a set of global quick links that are displayed here for easy access. These links are built-in to the page and cannot be customized. However, the link to the Excel Client may not be present if your system has been configured to hide it.
- **Favorites**: You can open and delete web favorites.

About the Web Client

The Web Client is the browser-based client for Axiom Cost Accounting. The Web Client supports cross-platform distribution of browser-based reports and plan files to end users. It also provides access to certain administration features for system administrators and other power users.

End users can use the Web Client to:

- Build and view reports
- Access pre-built reports and plan files

Administrators and power users can use the Web Client to:

- Perform certain table management activities
- View the audit log for the system

- Apply software updates and perform other administration activities for the Axiom Application Server
- Define custom help for browser-based files

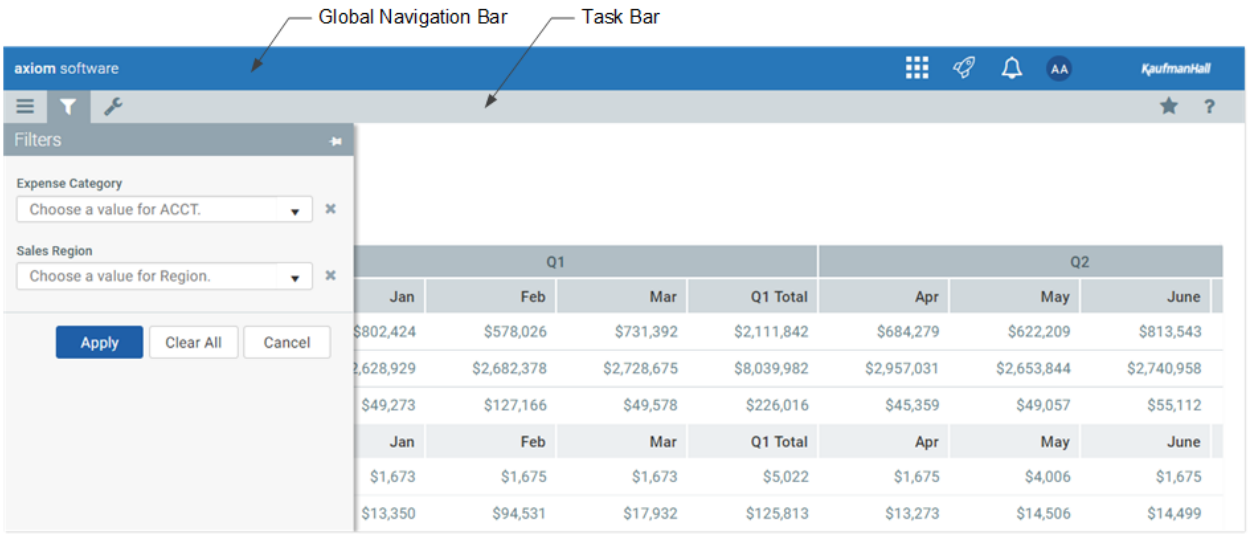
The Web Client does not require any software installation. The only requirement is a supported browser. See the separate *Technical Requirements* document for information on supported browsers for your version.

The Excel Client and Windows Client are the desktop client options for Axiom Cost Accounting. The desktop clients provide full support for system setup, administration, and file design. End users can also use the desktop clients to work with spreadsheet reports and plan files. Both clients can be launched from the Quick Launch menu of the Web Client. For more information on using the Excel Client and Windows Client, see the main Axiom Software Help.

Web Client overview

Most Web Client features and navigation can be accessed using the two bars across the top of each page:

- **Global Navigation Bar**: The blue bar at the top of the page provides access to system-level areas and features.
- **Task Bar**: The gray bar underneath it provides access to various features that are specific to the current area, page, or document.



The Global Navigation Bar and the Task Bar are available everywhere in the Web Client except as follows:

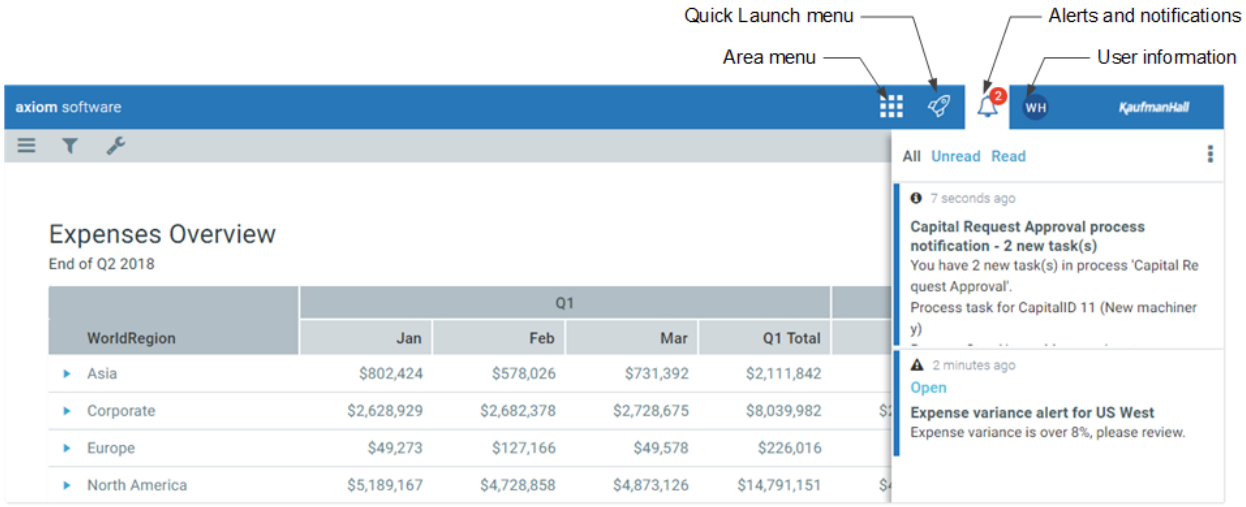
- All areas of the Data Explorer use an older web interface. The Data Explorer has been de-emphasized in favor of the Report Builder. Although you can still use the Data Explorer, it will not be further enhanced.

- Axiom forms that do not have the Web Client Container enabled. Generally speaking, this would only be the case for legacy forms that have not yet been migrated to use the newer web interface that was first introduced in version 2016.1.

Global Navigation Bar

The Web Client Global Navigation Bar provides access to various system-level areas and features. Using this bar, you can:

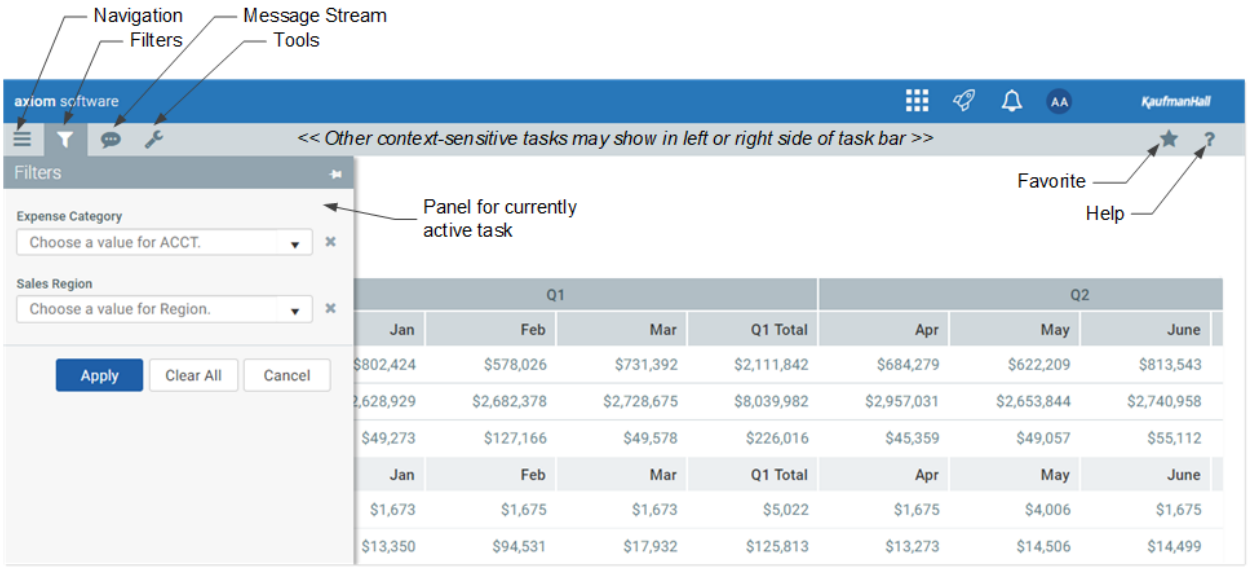
- Navigate to home, system administration, and various products (if applicable)
- Launch various client applications
- View alerts and notifications from various system processes and features
- View user information, configure session settings, and log out



Task Bar

The Web Client Task Bar provides access to various features that are specific to the current area, page, or document. Using this bar, you can:

- Navigate to your browser-based files and related areas of the Web Client
- Filter the data shown on the current page
- Comment on the current document and review comments from others
- Access tools relating to the current document or area
- Save the current page or document as a favorite
- View help for Axiom Cost Accounting or for the current document
- Perform other context-sensitive tasks such as managing attachments or working with the Report Builder



The left-hand side of the task bar contains a task toolbar. You can click on any icon in this toolbar to open the panel for the associated feature. For example, clicking the filter icon opens the Filters panel. Clicking the icon again closes the panel.

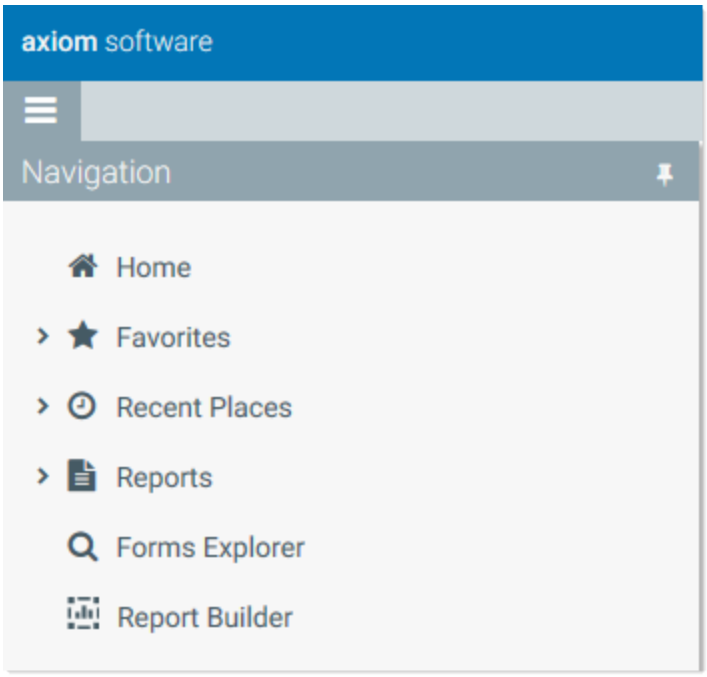
The panel can be pinned or unpinned using the pin icon in the top right of the panel. If the panel is unpinned, the panel overlays the current page contents, and clicking on the page closes the panel. If the panel is pinned open, then the form is pushed to the side so that the panel contents and the form can be viewed at the same time. When pinned, clicking on the page does not close the panel—you must unpin the panel or click the toolbar icon again to close the panel.

The contents of the task bar vary depending on the current page or document. For example, the Message Stream and the Filters panel are only available if they have been enabled for the current document. If a particular feature is not available for a particular document or area, then either it has not been enabled or it does not apply.

Navigation panel

Using the Navigation panel, you can navigate to your documents and to various areas of the Web Client.

To open the Navigation panel, click the menu icon in the left side of the gray task bar. To navigate to an area or document listed in the panel, click on the item.



Example Navigation panel

The Navigation panel updates dynamically to show the available navigation links for the currently active area of the Web Client. The following areas are available:

Area	Description
Default	Axiom Cost Accounting provides a set of standard navigation links that show by default when you are in the Web Client. The previous screenshot shows the standard navigation links. These links provide access to your favorites, recent places, web-enabled reports and forms, and the Report Builder.
Product-Specific	Systems with installed products may have product-specific web navigation links. When you select a product name from the Area menu in the Global Navigation Bar., the product-specific links display in the Navigation panel. For more information, see the product-specific documentation.

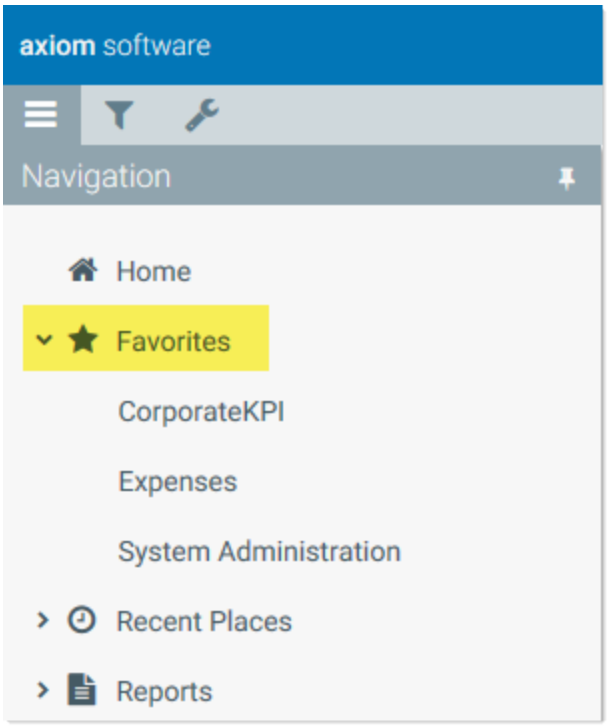
Additionally, when you open a report or other browser-based document, that document may be associated with a set of document-specific navigation links. These links are added to the Navigation panel while you are in that document.

Managing favorites

You can save Axiom files and Web Client pages as favorites, for quick access to commonly used items. Your favorites list is available in the following locations:

- The Navigation panel

- The default Web Client home page

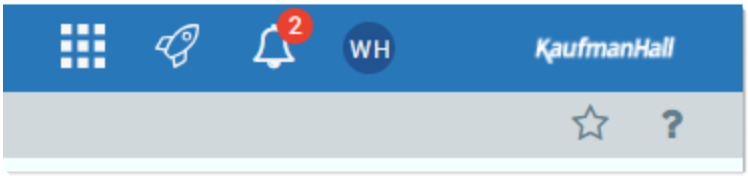


Example favorites in Navigation panel

Your favorites list displays any favorites that you have saved in the Web Client.

Saving favorites

To save the current document or page as a favorite in the Web Client, click the star icon in the right side of the Task Bar. The star icon toggles from outline (not a favorite) to filled (a favorite).



Favorite icon in Web Client task bar

Once a favorite has been saved, it displays in your favorites list in the Web Client. You can use the saved favorite to quickly open the document or page.

Web favorites are saved using the name shown in the browser tab. Web reportssupport the ability to define a title that displays in the browser tab, which means the title may be different than the file name. If the title is changed after the favorite is saved, the favorite does not update to show the changed title (however, the favorite still works to open the specified document).

Currently, the Web Client does not support the ability to rename or reorder web favorites, or to organize web favorites into folders. Web favorites display as a flat list, in alphabetical order.

NOTES:

- When favorites are saved in the Web Client, they are saved as URLs instead of as document shortcuts. This allows you to save any page in the Web Client as a favorite, not just documents.
- If a web favorite points to a document, and that document is later moved or renamed, the favorite will continue to open that document (but the favorite name is not updated).

Deleting favorites

To delete a favorite, hover your cursor over the favorite name (in either the Navigation panel or your home page), then click the delete icon . The favorite is deleted in the Web Client.

If the document or page for an existing favorite is deleted, the favorite is not automatically deleted. If you try to use the favorite, you are informed that the document or page cannot be found. In this case you must manually delete the favorite.

Launching Axiom Cost Accounting applications

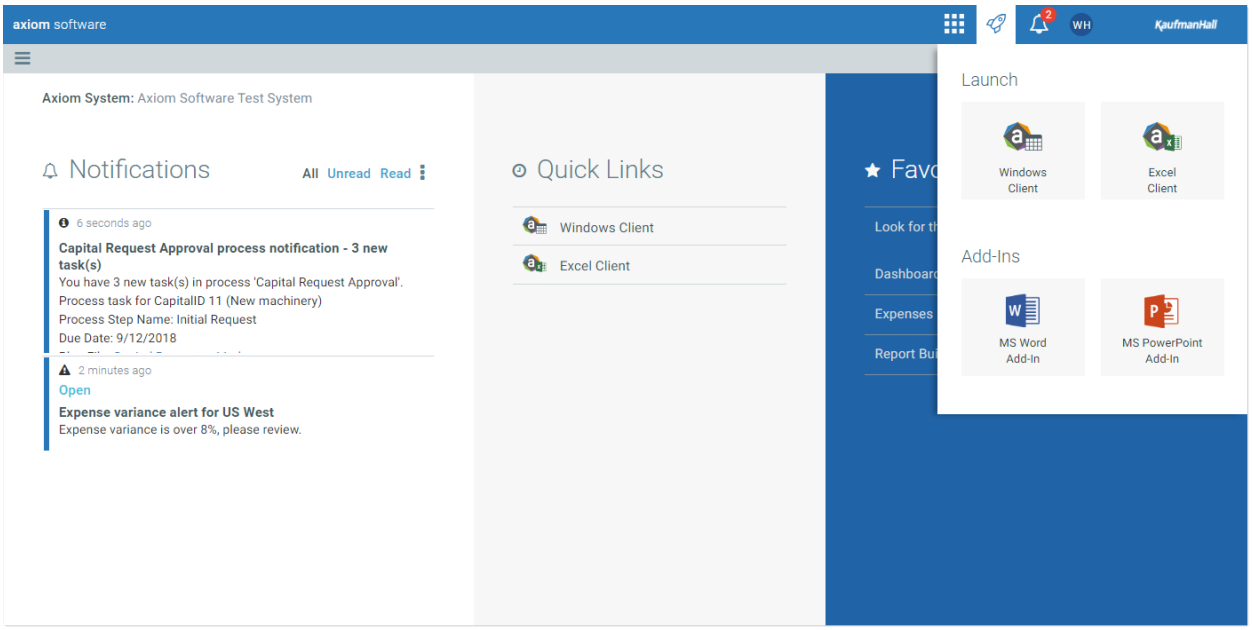
You can launch various Axiom Cost Accounting applications from the Web Client Quick Launch menu, including the Axiom Excel Client and Axiom Windows Client.

The Quick Launch menu serves the following purposes:

- Users can install applications from this area as needed. Afterward, they can continue to launch installed applications from this location, or they can use other options (such as a shortcut on their desktop).
- Users can install and launch add-ins such as the add-ins for Microsoft Office applications.

To open the Quick Launch menu:

- Click the Quick Launch icon in the Global Navigation Bar.



Launching the Axiom Desktop Client

Using the Quick Launch menu, you can launch the Axiom Desktop Client. Click on one of the following icons:

Item	Description
Windows Client	Launches the Axiom Windows Client on your desktop.
Excel Client	Launches the Axiom Excel Client on your desktop. Requires Microsoft Excel. **NOTE:** This option may not display in the menu, in which case you should use the Windows Client as your desktop client.

For more information, see About the Windows and Excel Client.

Launching add-ins

Using the Quick Launch menu, you can launch Axiom Cost Accounting add-ins. Click on one of the following icons:

Item	Description
MS Word Add-In	Launches the Axiom Cost Accounting Add-In for Microsoft Word.
MS PowerPoint Add-In	Launches the Axiom Cost Accounting Add-In for Microsoft PowerPoint.

NOTE: One or both add-ins may not display in the menu, depending on your organization's preferences.

The Word and PowerPoint Add-ins are optional applications to support document integration between Axiom Cost Accounting and Word or PowerPoint.

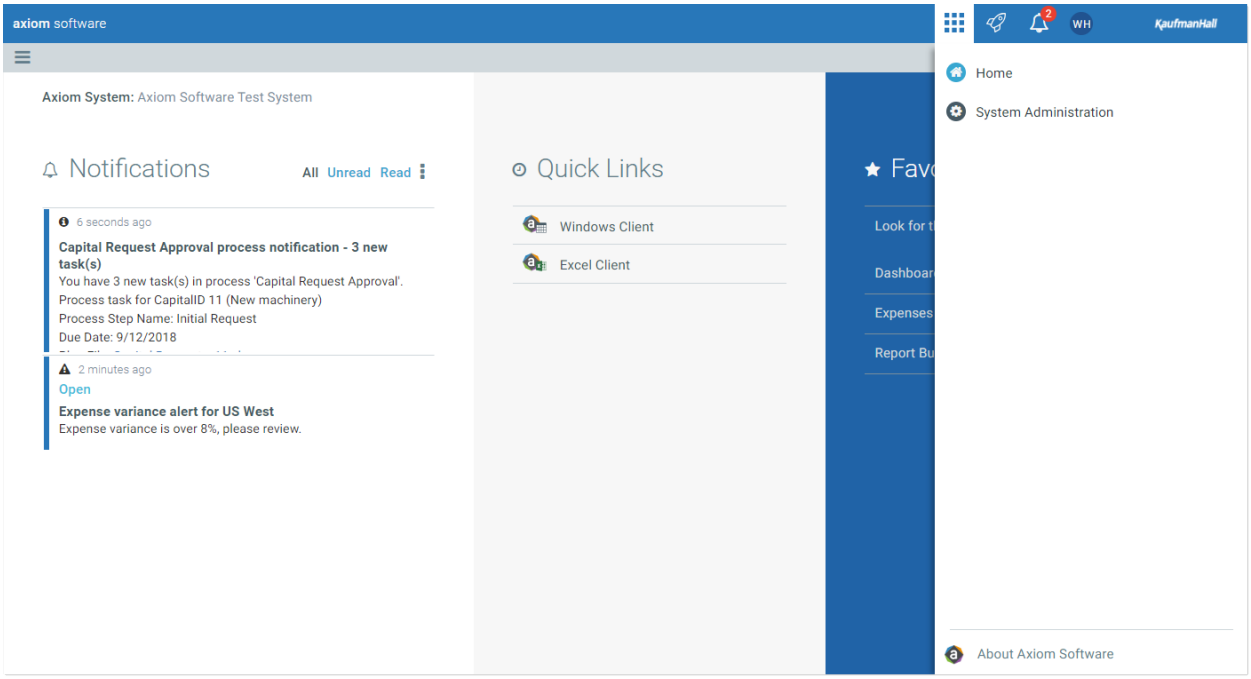
Viewing system information

You can view the Axiom Software About box to see information about your current system, such as:

- System name
- Version numbers for the Axiom Cost Accounting platform and any installed products
- Application server URL
- Web server name

To open the About box:

1. Click the menu icon in the Global Navigation Bar.
2. At the bottom of the Area menu, click **About Axiom Software**.



Using the Guide View

The Guide View includes all of the setup and configuration tasks for Axiom Cost Accounting.

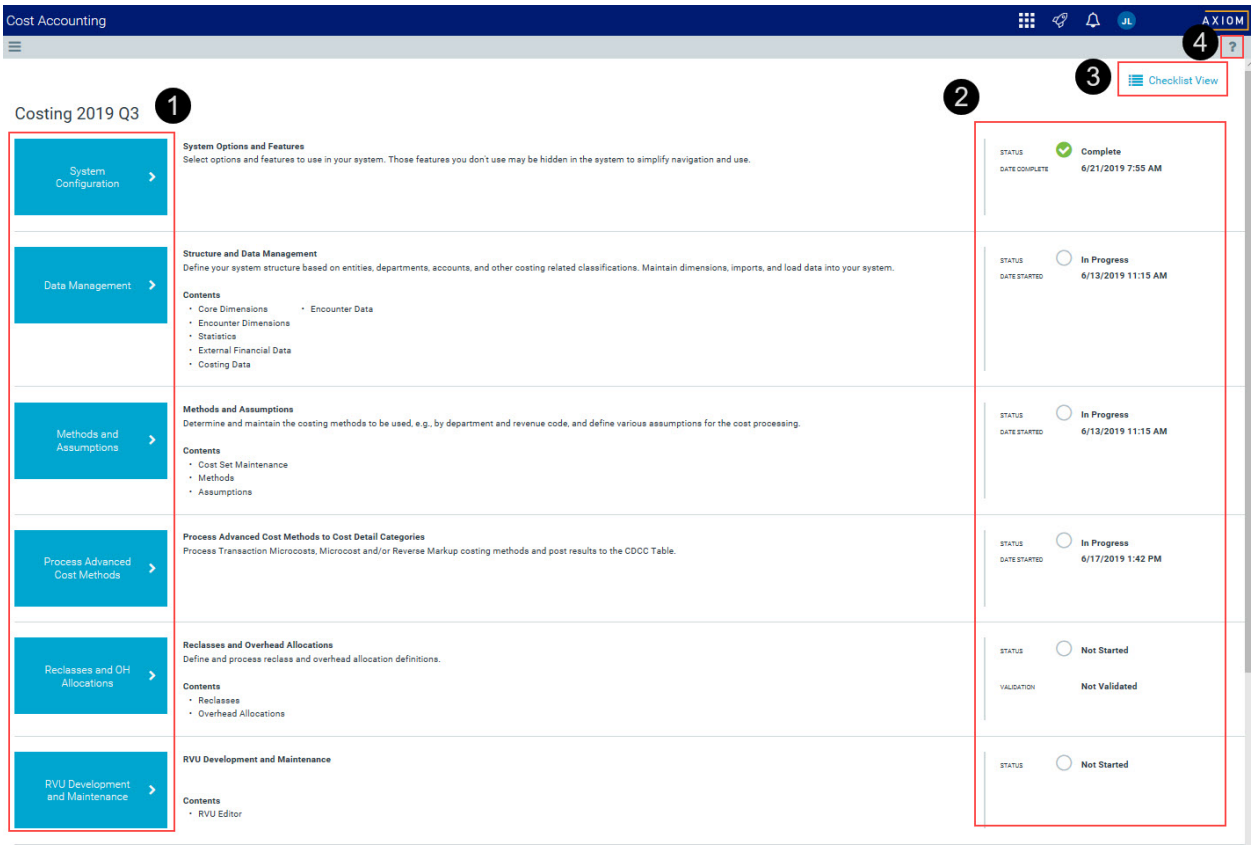
1. Setup and maintenance tasks are grouped together into similar areas and sub-areas. For example, you can find all of the tasks associated with setting up and managing methods and assumptions in the Method and Assumptions section. Next to the button, the page displays a description. Click the button to navigate to the task(s) for that area.
2. The status column on the right side of the page displays tasks as Completed, In Progress, or Not Started. You can click the circle to toggle the status from one status type to another. For example, if all of the tasks for Data Management are now complete, click the circle to toggle the status from In Progress to Complete.

   NOTE: All of the tasks in a specific area need to be marked as complete in order for the button above it to be marked as complete. For example, in Data Management area, all of the tasks in Data Management must be marked complete in order for the Status column for the Data Management button to be marked as complete.

3. The Checklist View provides a list of tasks you need to complete as part of the set up and configuration process.

   TIP: You can toggle back and forth between the Guide View and the Checklist View.

4. If you need help configuring a specific area, click the question mark in the upper right corner of each screen. A help panel displays conceptual information or contextual instructions for the page that displays. For more detailed help, some of the contextual instructions include links to fuller topics in the online help. To access the full online help system for Axiom Cost Accounting, click the question mark in the upper right corner of the page, and click **Open Help**. The online help will open in a separate browser window.

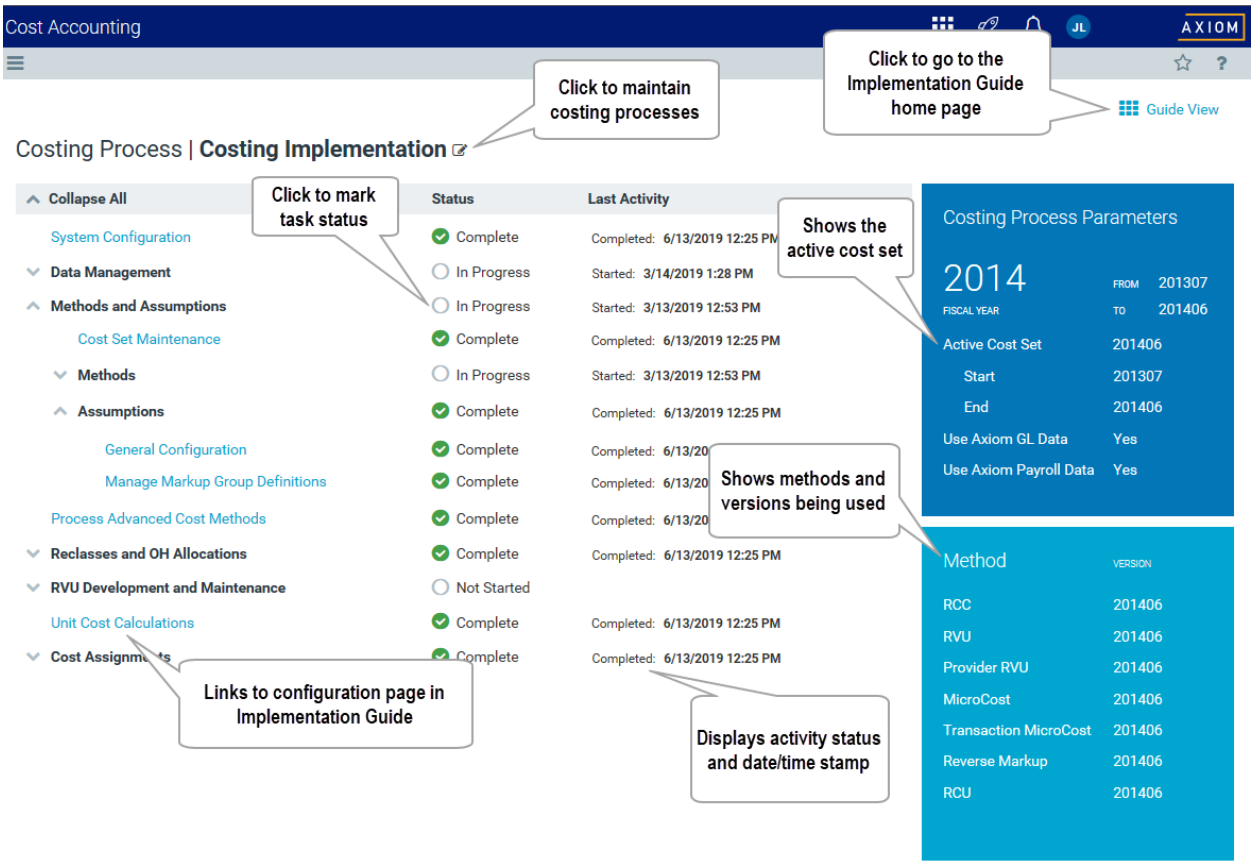


Using the Checklist View

Setting up and configuring Axiom Cost Accounting requires you to complete multiple tasks, many of which require considerable validation and review to ensure that they are completed before advancing to subsequent tasks.

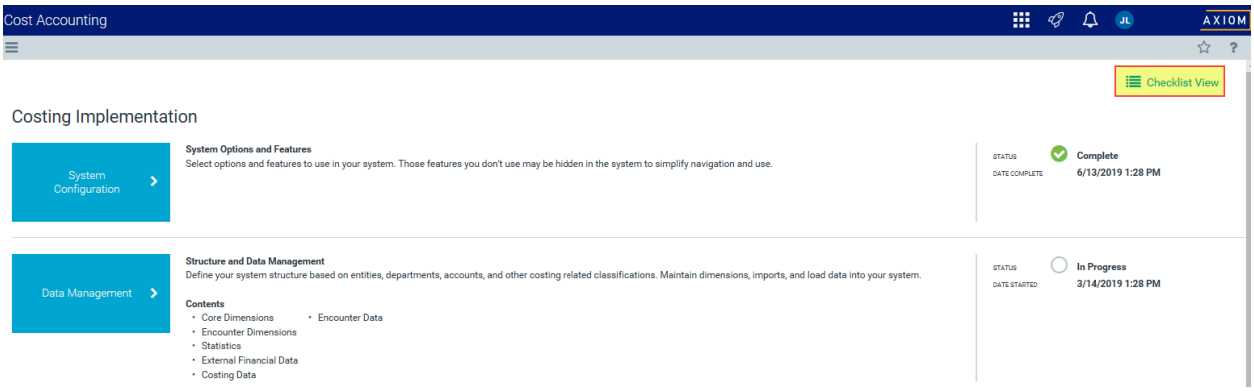
The Checklist View page provides an easy and convenient way for administrators to manage the tasks required for setting up the costing processes from one location, including:

- Manage and track each major task that is part of the costing setup process.
- View task status.
- Maintain different cost processes, such as rolling forward from one period to another.
- View current costing system parameters, such as the current active cost set and the methods and versions being used.



Open the Checklist View page

From the Guide View, click the **Checklist View** link in the top right corner of the page.

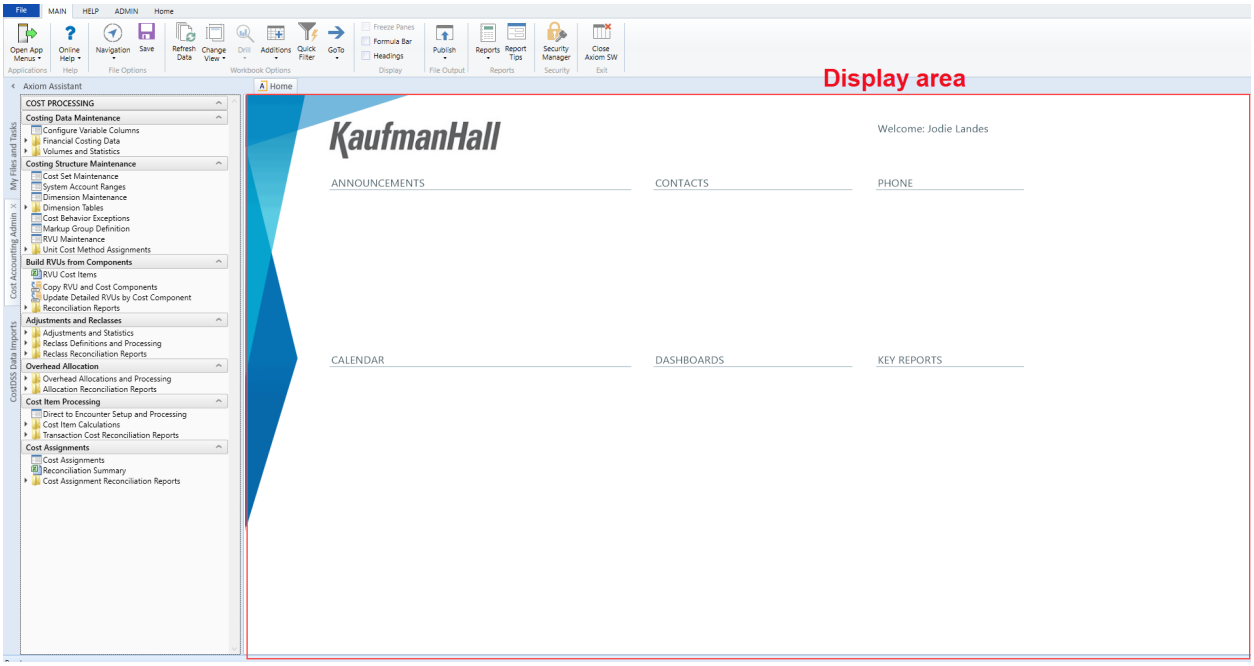


About the Windows and Excel Client

All Axiom Software products share a common Windows and Excel Client interface and make use of many of the same features. The interface includes several sections, including:

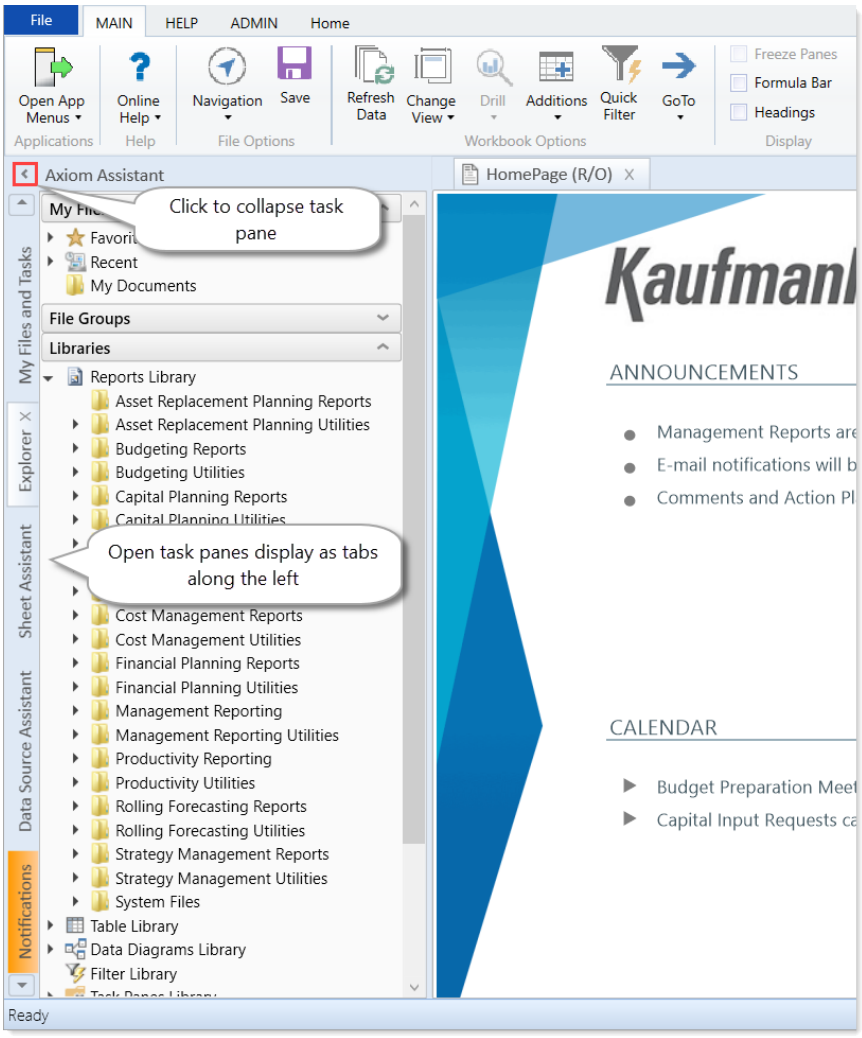
Display area

The main display area displays the open files. By default, it shows the Kaufman Hall Home dashboard, which displays announcements, assigned tasks, links to dashboards, and contact information for administrators. Your Axiom Software product administrator configures the information that displays on this screen.



Task panes

A task pane provides access to commands, utilities, reports, plan files, and so on for Axiom Cost Accounting, and displays on the left side of the main display area. To switch between task panes, click the tabs on the left side of the interface. To expand or collapse the task panes, click the arrow in the left-hand corner above the tabs.



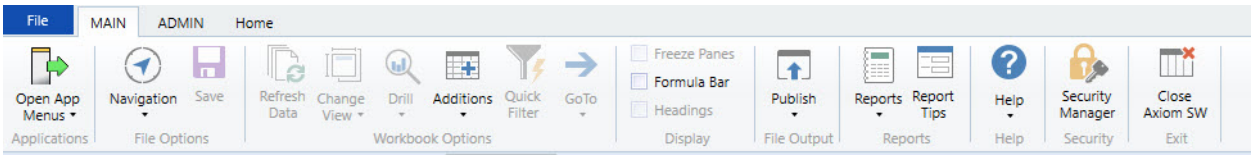
Ribbon tabs

Ribbon tabs provide access to commonly used features and shortcuts to frequently accessed files. They display above the task pane and main display areas. The role assigned to you determines the ribbon tabs that display. For example, the Admin ribbon tab only displays to those users assigned the Administrator role profile.

Main

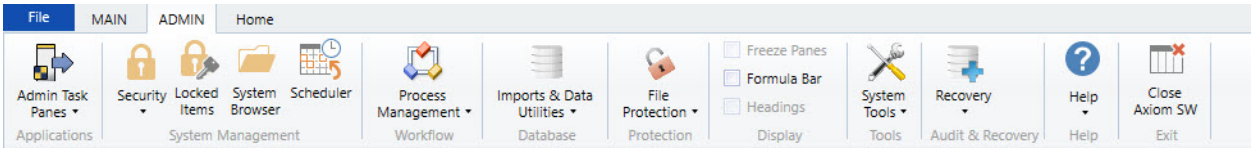
Includes commands for accomplishing most tasks in Axiom:

- Opening, closing, and saving files
- Viewing data in spreadsheets
- Printing or emailing files
- Accessing shortcuts to frequently accessed reports



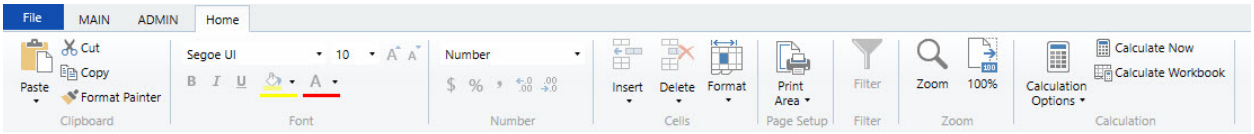
Admin

Includes commands for managing and configuring security, Scheduler jobs, processes, and data as well as other system-related tools used by administrators. This ribbon tab only displays to users with administrator privileges.



Home

Includes standard spreadsheet commands.

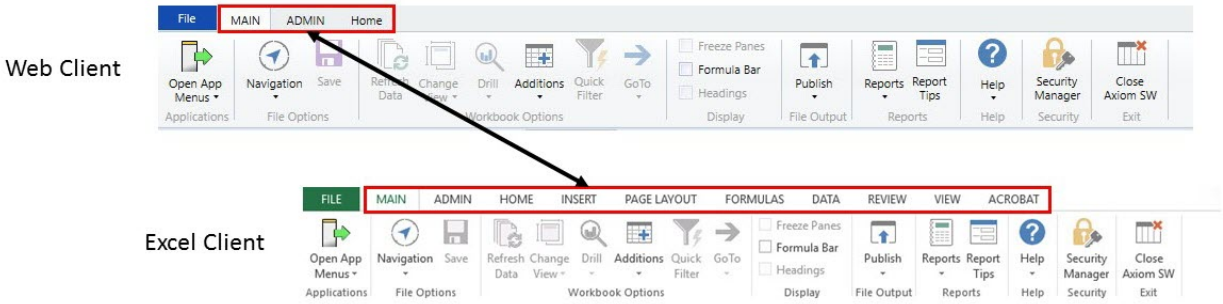


Some options on the ribbon tabs display grayed out unless certain types of files such as reports or plan files are currently open or if you do not have the necessary security permissions to use the feature.

Excel Client

The Excel Client displays all of the same ribbon tabs included in a normal Excel file. The Windows Client only includes a subset of the same ribbon tabs located in the Home ribbon tab.

TIP: When creating reports, we recommend that you use the Excel Client.



Windows or Excel Client Home page

The home page for the Windows or Excel Client is a designated file that automatically opens when you enter Axiom Cost Accounting. The home page that you see is determined by your system administrator. The home page may contain reporting data, plan deadlines, announcements, or other information. If you have any questions about the home page or its contents, please contact your system administrator.

The default label for the home page is **Home**. The name on the file tab may be different if the administrator has assigned an alternate home page.

The home page may be configured as non-closeable, which means it is always open while you are working in Axiom Cost Accounting. If the home page is closeable, you can close and open it as follows:

- To close the home page, click the **X** button in the file tab, or right-click the file tab and select **Close**.

  NOTE: The **Close All** and **Close All But This** options do not close the home page; it must be individually closed. If you are using the Axiom Excel Client and the home page is the last open file, then closing the home page will close the application.

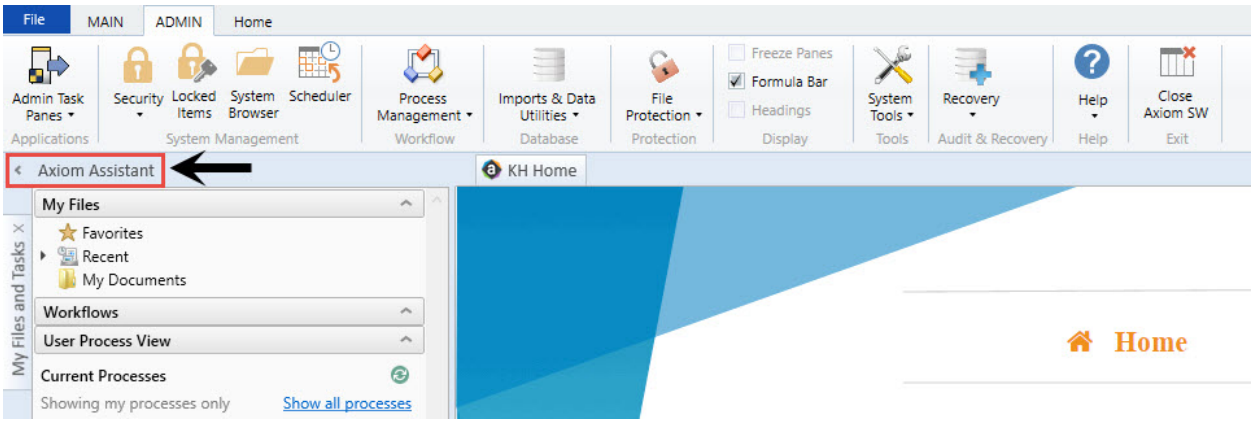
- To reopen the home page in the current session, click the **Show Home** button in the **Display** group on the **Axiom** tab. (In product systems, this button may be located on the **Main** tab.) This button can also be used to jump directly to the home page when multiple files are currently open.

System administrators can customize the default home page, or assign each user or role an alternate home page. Additional files may also be opened at startup. For more information, see the *System Administration Guide*.

Using the Axiom Assistant

The Axiom Assistant area provides quick and easy access to files and features as you work throughout Axiom Cost Accounting. A variety of task panes is available to help you perform general and context-sensitive tasks.

The Axiom Assistant area is located on the left side of the screen, below the ribbon and to the left of any opened files. By default, the area is expanded, and you can work with any of its available task panes by clicking the side-tabs along the left edge of the pane.



Axiom Assistant task panes

The task panes available to you in the Axiom Assistant area depend on your system configuration and your security permissions. The following task panes may be available:

Task pane	Description	Availability
My Files and Tasks	Bookmark and view favorites and recent files, utilities, and so on.	This task pane displays for all users. Use to bookmark favorite files as well as view recent files, utilities, reports, and so on that you have viewed. You can also view items in your My Documents folders.
Data Source Assistant	Helper tool to build data sources, such as Refresh Variables, DataLookup, and Grid.	This task pane is system-controlled and displays if you have the appropriate security permissions, and the file is an Axiom file.
Explorer	Open files and other items that you have access to, including favorites.	This task pane is included by default, but may be disabled in your system or restricted to only certain users.
File Processing	Configure and perform file processing for an Axiom file, such as to perform Multipass processing, file collect, or batch processing.	This task pane is system-controlled and displays if you have the appropriate security permissions, and the file is enabled for File Processing.
Form Assistant	Configure form settings for an Axiom file, and preview the form.	This task pane is system-controlled and displays if you have the appropriate security permissions, and the file is enabled for Axiom forms.
Messages	View comments about the current document, and add comments.	This task pane is system-controlled and displays for all eligible documents.

Task pane	Description	Availability
Notifications	View alert and system notifications, and open associated files.	This task pane is system-controlled and displays if you have any active notifications.
Process	View process information and complete process tasks. By default, this task pane only displays if it is relevant to you. For example, if you are the assigned owner of a process task.	This task pane is included by default, but may be disabled in your system.
Sheet Assistant	Configure workbook and worksheet settings for an Axiom file, including Axiom queries.	This task pane is system-controlled and displays if you have the appropriate security permissions, and the file is an Axiom file.
Table	View table details, set a filter, and refresh the currently opened table.	This task pane is system-controlled and displays when using Open Table in Spreadsheet.
Workflow	Work with currently assigned plan files and complete workflow tasks. By default, this task pane only displays if you have assigned tasks (current or completed) for an active workflow.	This task pane is included by default in older systems, but may be disabled in your system or may use different configuration settings to determine visibility. Newer systems do not have this task pane.
<Custom Task Panes>	Your organization may have defined one or more custom task panes for your system.	Custom task panes may open automatically when Axiom Cost Accounting is launched, or you may have access to the Task Panes Library to open certain task panes, as needed.

The order of task panes in the Axiom Assistant area cannot be manually changed. Your Axiom Software product administrator specifies an order for the task panes to open when you start Axiom Cost Accounting. System-controlled task panes display after these startup task panes.

Minimizing the Axiom Assistant

By default, the Axiom Assistant area is maximized when you first start Axiom Cost Accounting. If desired, you can minimize this area—for example, to gain more screen space while working on a file. When minimized, the area displays as a thin strip along the left side of the application, with one or more side-tabs for each task pane.

You can expand the Axiom Assistant area to perform a task, and then minimize it again when you are finished.

- To minimize the Axiom Assistant pane, click the button in the header.

- To expand the Axiom Assistant pane, click the button in the collapsed header, or click one of the task pane tabs.

Axiom Cost Accounting remembers the state of the Axiom Assistant (minimized or expanded) when you exit the application, and applies that state the next time you open it on the same machine.

TIP: It is not possible to completely hide the Axiom Assistant area when task panes are open, however, if no task panes are open, then the Axiom Assistant area is automatically hidden (and automatically displays again when you open a task pane).

Opening task panes

In some cases, task panes open automatically—you do not need to manually open them.

- Certain task panes are configured to open automatically when you start Axiom Cost Accounting. These task panes are considered to be global task panes that you may want to use at any time while you work in the system. For example, if you have administrator privileges, the Admin task pane may open for you automatically.
- Other context-sensitive task panes only open when using certain features. For example, the File Processing task pane only displays when you open a file that is enabled for File Processing. There is no need to manually open the task pane because it is always available when it is relevant (and assuming that you have security permissions to view it).

Closing task panes

To close a task pane, click the **X** icon on the side-tab for the task pane.

Using task panes in Excel 2013 or Excel 2016

When using Axiom Cost Accounting with Excel 2013 or 2016, each file opens within its own window, and each window maintains its own set of ribbon tabs and task panes. This means that, as you switch windows, the set of task panes available in each window may be different. For example:

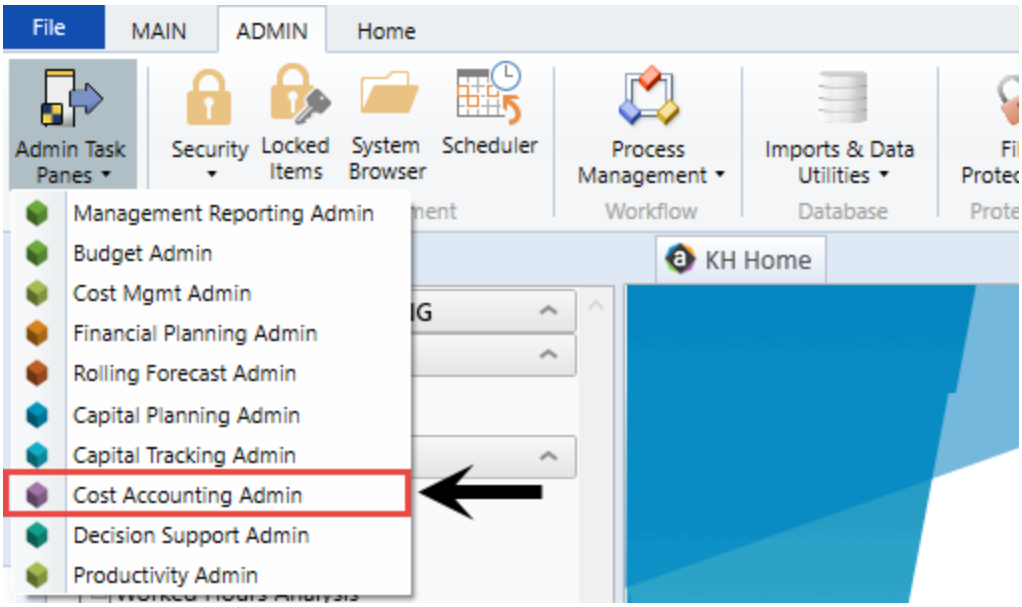
- If you manually opened a task pane in one window, that task pane will only be present in that window. It will not be present in other windows.
- The currently active task pane is managed independently for each window, so the active task pane may change as you change windows. This can also occur when using the Windows Client or Excel 2007 / 2010, if you switch between files that have different default task pane associations. However, in Windows 2013 / 2016, it may also happen when switching between files with the same default task pane associations.
- The current state of task panes such as the Explorer task pane is managed independently for each window. For example, if you expand the Reports Library in one window, that expansion is not present if you switch to a different window.

Opening the task panes

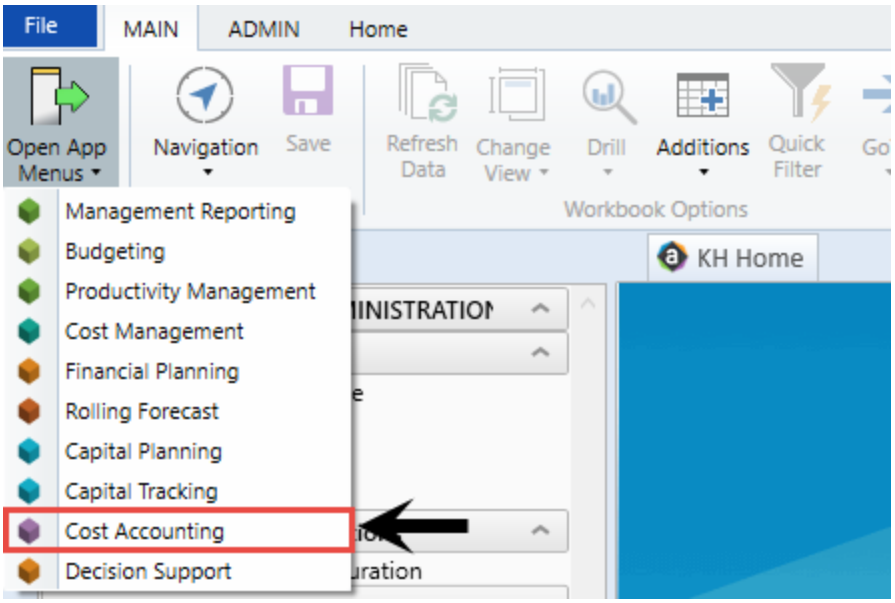
TIP: For Axiom Cost Accounting, the Admin and End User task panes are the same.

To open the Axiom Cost Accounting task panes:

- For administrators, in the **Admin** ribbon tab, click **Admin Task Panes**, and select **Cost Accounting Admin**.



- You can also open the task pane from the **Main** ribbon tab. Click **Open App Menus**, and then select **Cost Accounting**.



Opening the Explorer task pane

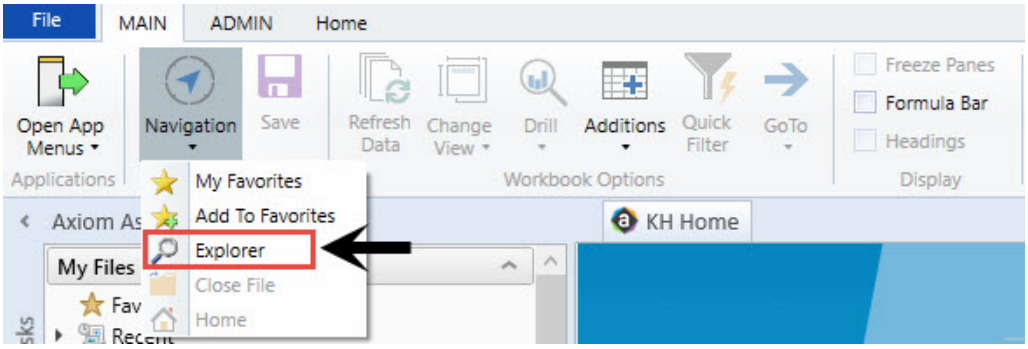
Axiom Cost Accounting provides a built-in Explorer task pane so that you can quickly access your favorites, recent items, and all the files that you have rights to access.

TIP: You can also access Favorites, Recent, and My Documents from the My Files and Tasks task pane.

By default, all users are given access to this task pane. If desired, administrators can disable use of this task pane entirely, or restrict access to certain sets of users.

To access the Explorer task pane:

- In the **Main** ribbon tab, click **Navigation**, and select **Explorer**.



Managing favorites

You can save files and other items as favorites for quick access to commonly used items. Your favorites list is available in the following locations:

- The Explorer task pane in the Axiom Assistant area
- The Axiom Explorer dialog (if you have permission to access this dialog)

NOTE: Your organization may choose not to use the Explorer task pane or to restrict it to certain users. In this case, you can access your favorites from the My Files and Tasks task pane.

When an item is saved to favorites, you can open the item by double-clicking it, or you can right-click it to access any other commands available on the item in its native area. For example, if you have rights to the Table Library and you save a table as a favorite, you can right-click the table favorite and perform actions such as editing the table structure.

If an item that a favorite points to is deleted, then the favorite becomes invalid and a red arrow icon displays next to it.

If you attempt to open an invalid favorite, a message box informs you that the item has been deleted, and asks whether you want to delete the favorite. If a file is moved or renamed within the Axiom file system but it retains the same document ID, then the shortcut is not broken.

Saving favorites

- In the Explorer task pane and the **Axiom Explorer** dialog, by right clicking an item and selecting **Add to Favorites**.
- By right clicking the file tab of an opened file and selecting **Add to Favorites**.

> **TIP:** If you open a table using **Open Table in Spreadsheet**, and save the open table as a favorite (using the file tabs), the settings you used are automatically saved as part of the favorite in the shortcut properties. You may want to rename the favorite to indicate the particular settings.

Organizing favorites

You can create sub-folders in the Favorites area to organize favorites by folder. To create a new folder, right-click **Favorites**, and select **New Folder**.

By default, favorites display in the order that they were added. New favorites are added to the bottom of the list. You can drag and drop individual favorites to change the order. You cannot reorder sub-folders—they always display in alphabetical order.

To rename a favorite, right-click the item, and select **Rename**. The name becomes editable, and you can type a new name.

Shortcut properties

You can edit the shortcut properties for a favorite. Right-click the favorite, and select **Shortcut Properties**. In this dialog, you can edit the shortcut name, change the shortcut target, and define certain shortcut properties.

The available shortcut properties vary by file type. For example, you can configure a report favorite to always open as read-only, or to automatically apply a Quick Filter when opening.

Deleting favorites

To delete a favorite, right-click the item, and select **Delete**.

Opening recent files

Axiom Cost Accounting maintains a list of your recently opened files. You can use this list for quick access to recent files.

The recent file list is located in the **My Files** section of the Explorer task pane and Axiom Explorer. You can double-click files to open them, or right-click to access the context menu for the file type.

The list displays the last 15 files that you recently opened. Note the following:

- If you want to clear the list, right-click **Recent** and select **Clear History**.
- If you want to continue to have quick access to a recent file, you can add it to your favorites. Right-click the file and select **Add to favorites**.
- If the icon next to a file name is a red arrow, this means that the file has been moved or deleted since you accessed it, so it can no longer be opened from the recent file list.

In the Axiom Windows Client only, recent files can also be accessed from the **File** menu. In the Axiom Excel Client, although your recent files are tracked in **File > Recent**, those links point to the temporary versions of the file stored on your local drive, not the source versions of the files stored in the Axiom Cost Accounting database. Therefore, Excel's recent file list cannot be used to open Axiom files.

Changing your Axiom Cost Accounting password

If your authentication method is Axiom Prompt, you can change your password as needed. This feature does not apply to users who are using any other authentication method (such as Windows User Authentication), because those passwords are controlled externally from Axiom Cost Accounting.

To change your password:

1. On the **Axiom** tab, in the **Help** group, click **Help > Change Password**.

   NOTE: In systems with installed products, this feature may be located on the **Main** or **Admin** tab.

   This command is only available to Axiom Prompt users.

2. In the **Set Password** dialog, enter your current password, then enter and confirm your new password.

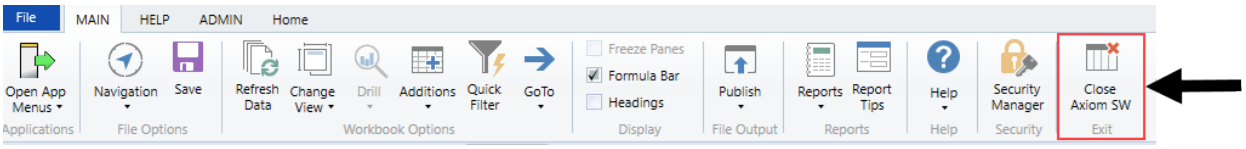
   If password rules are being enforced, your password must meet the rules. A validation message will inform you of the rules if necessary. Alternatively you can click **Generate Password** to auto-generate a password that meets the rules. If you do this, make sure to note the generated password because you will not have another opportunity to see it. If you do not note the password and cannot log in later, an administrator will need to reset your password.

3. Click **OK**.

Your password is now changed. You will need to use this new password the next time that you log in.

Closing Axiom Cost Accounting

To close Axiom Cost Accounting, in the **Main** ribbon tab, click the **Close Axiom Software** button in the **Exit** group.



TIP: You can also close the application by clicking the **X** button in the top right corner of the window. The system prompts you to save any changes to unsaved files.

Using the Filter Wizard

You can use or create your own filters to customize the data to view. The Filter Wizard walks you through the process of building complex limit query filters rather than having to construct them manually. You can create and save new filters for future use as well as use and edit existing filters.

Using an existing filter

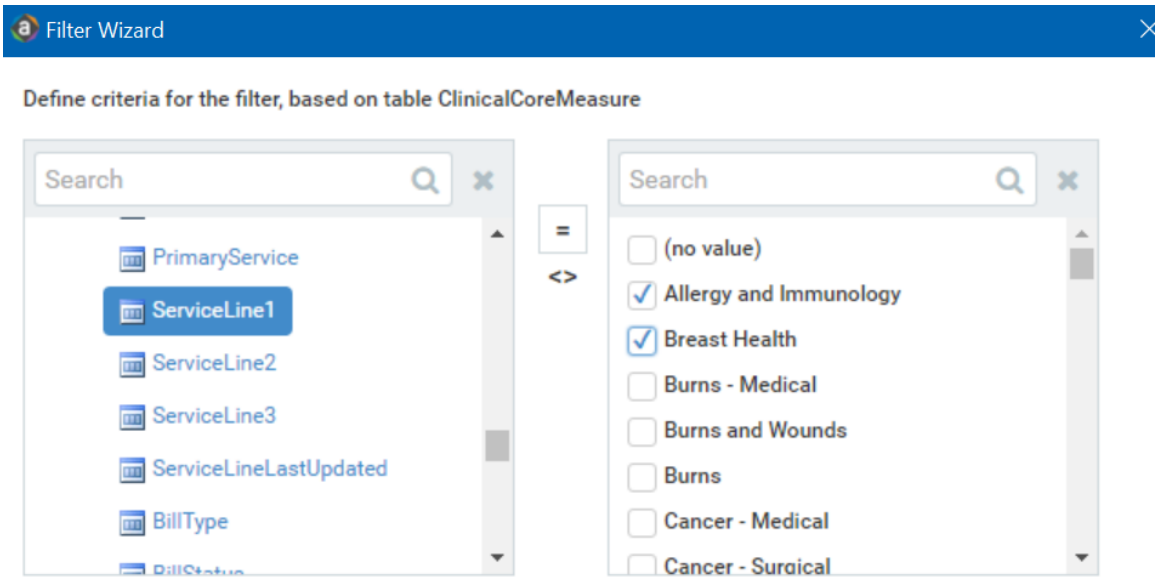
1. Next to the **Preview** field, click the folder icon.

2. In the **Filter Library** dialog, select the filter to use, and click **OK**.
3. In the **Filter Wizard** dialog, click **Apply**.
4. Click **OK**.

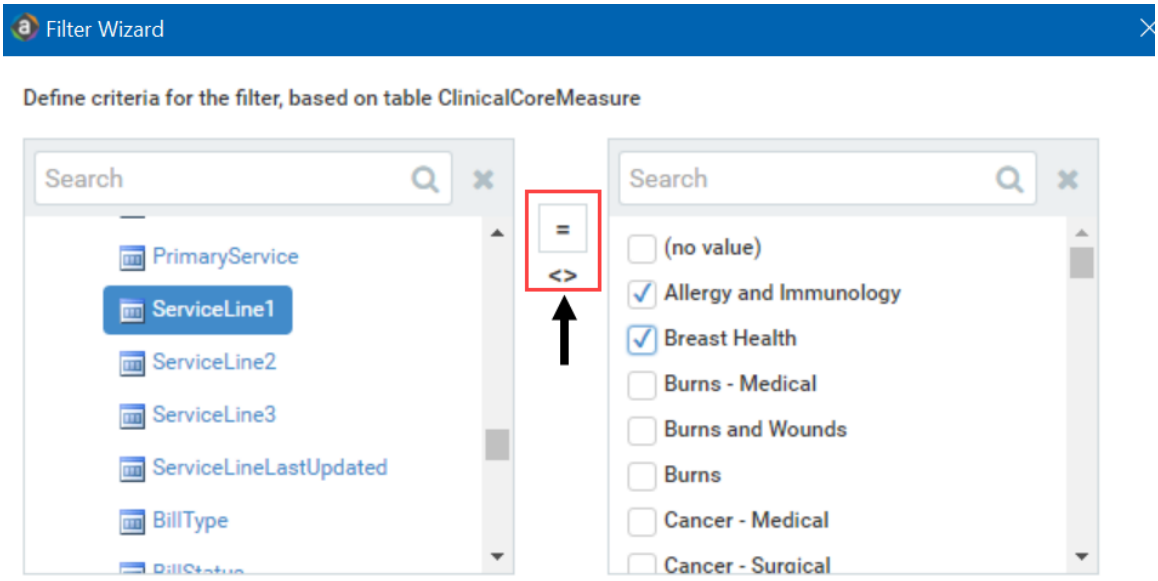
Creating a filter

TIP: You can create a new filter from an existing filter by selecting it from the folder icon in the **Preview** field, and then follow these steps to make the appropriate changes. Make sure to give the filter a new name so that you do not overwrite the existing filter.

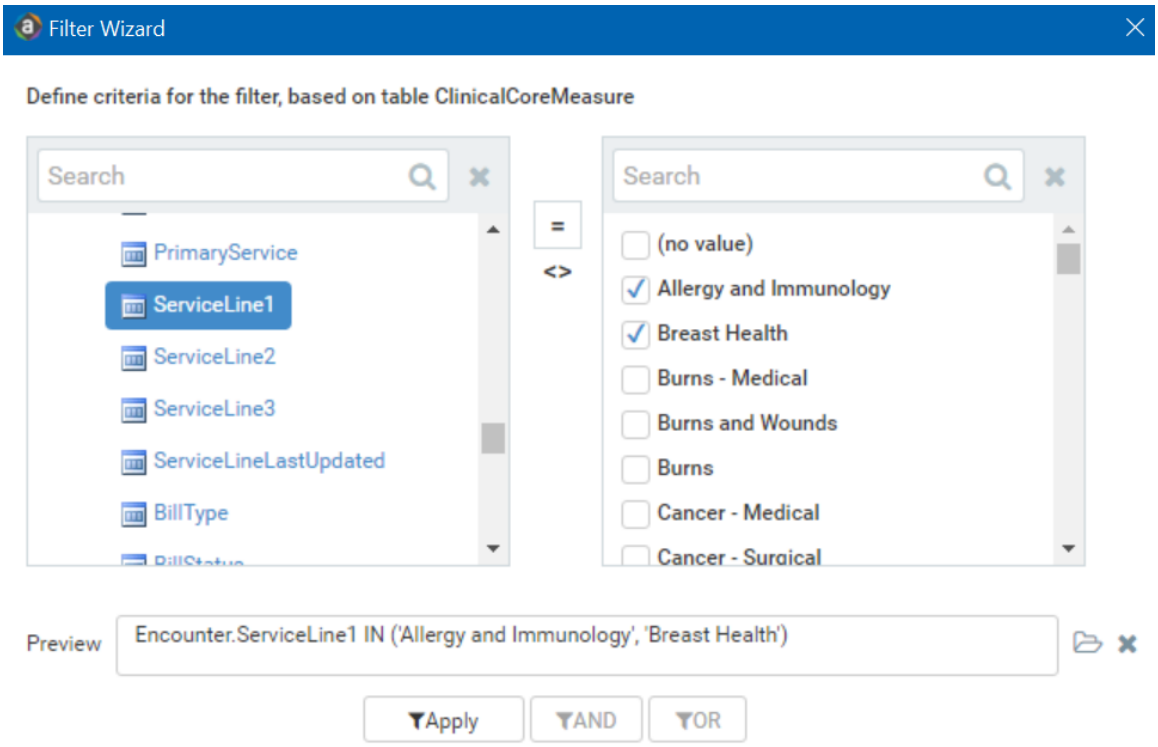
1. On the left side of the dialog, select the table column on which you want to base the filter. After you select a table column, the values in that column display in the right side of the dialog.



2. In the right side of the dialog, type or select the value on which to base the filter. You can type into the field above the list of values to filter the list or to specify a value. If one or more values are selected, then those items are used in the filter. Otherwise, whatever you type into the field is used by the filter.
3. In the space between the two selection boxes, select the operator to use for the filter criteria statement, such as equals, not equals, greater than, or less than.



4. Review the filter criteria statement in the **Preview** box to ensure that it is as intended. If you need to make changes, edit your selections made above.



5. Do one of the following:
   - If the filter criteria statement is finished, click **OK**. The Filter Wizard uses the statement in the Preview box (you do not have to click **Apply** in this case).
   - To create a compound filter, click **Apply** to move the current criteria statement into the **Filter** box. Then, repeat Steps a-d to create another criteria statement. When the next statement is complete, click **AND** or **OR** to join it to the prior statement.
6. In the **File name** field, type a name for the filter.
7. In the **Description** field, type a description of what the filter does.
8. Click **Save**.
9. In the Filter Wizard dialog, click **OK**.

2

Setting Up Axiom Cost Accounting

This chapter includes topics related to setting up and configuring Axiom Cost Accounting.

Using the Guide View

The Guide View includes all of the setup and configuration tasks for Axiom Cost Accounting.

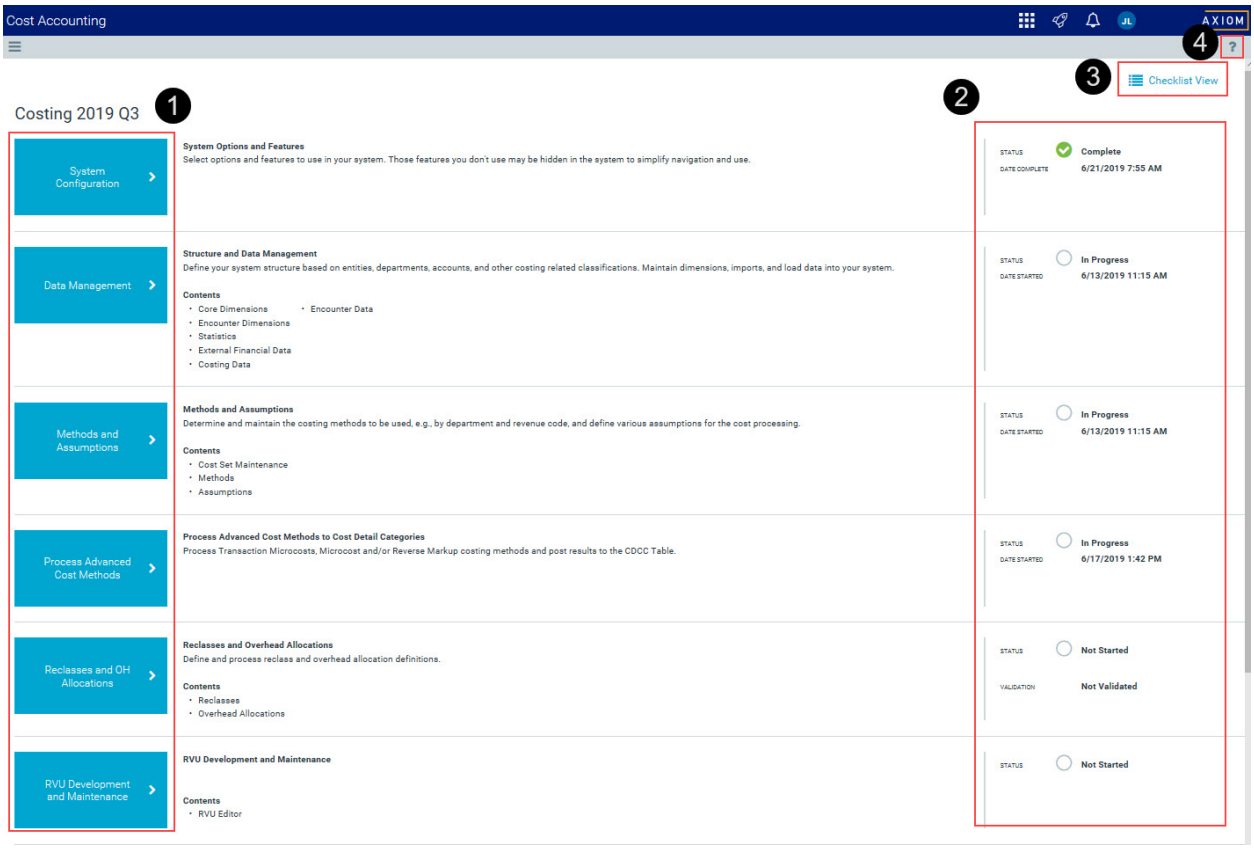
1. Setup and maintenance tasks are grouped together into similar areas and sub-areas. For example, you can find all of the tasks associated with setting up and managing methods and assumptions in the Method and Assumptions section. Next to the button, the page displays a description. Click the button to navigate to the task(s) for that area.
2. The status column on the right side of the page displays tasks as Completed, In Progress, or Not Started. You can click the circle to toggle the status from one status type to another. For example, if all of the tasks for Data Management are now complete, click the circle to toggle the status from In Progress to Complete.

   NOTE: All of the tasks in a specific area need to be marked as complete in order for the button above it to be marked as complete. For example, in Data Management area, all of the tasks in Data Management must be marked complete in order for the Status column for the Data Management button to be marked as complete.

3. The Checklist View provides a list of tasks you need to complete as part of the set up and configuration process.

   TIP: You can toggle back and forth between the Guide View and the Checklist View.

4. If you need help configuring a specific area, click the question mark in the upper right corner of each screen. A help panel displays conceptual information or contextual instructions for the page that displays. For more detailed help, some of the contextual instructions include links to fuller topics in the online help. To access the full online help system for Axiom Cost Accounting, click the question mark in the upper right corner of the page, and click **Open Help**. The online help will open in a separate browser window.

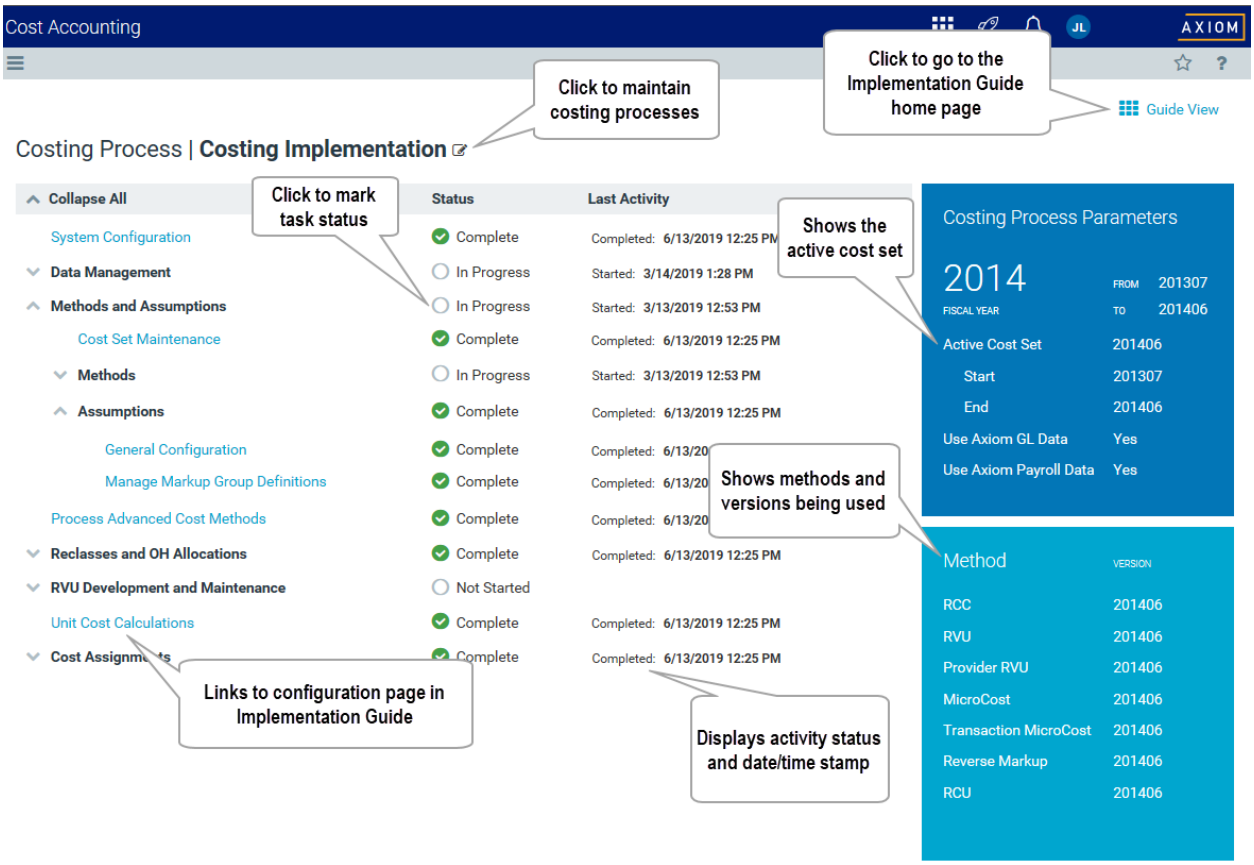


Using the Checklist View

Setting up and configuring Axiom Cost Accounting requires you to complete multiple tasks, many of which require considerable validation and review to ensure that they are completed before advancing to subsequent tasks.

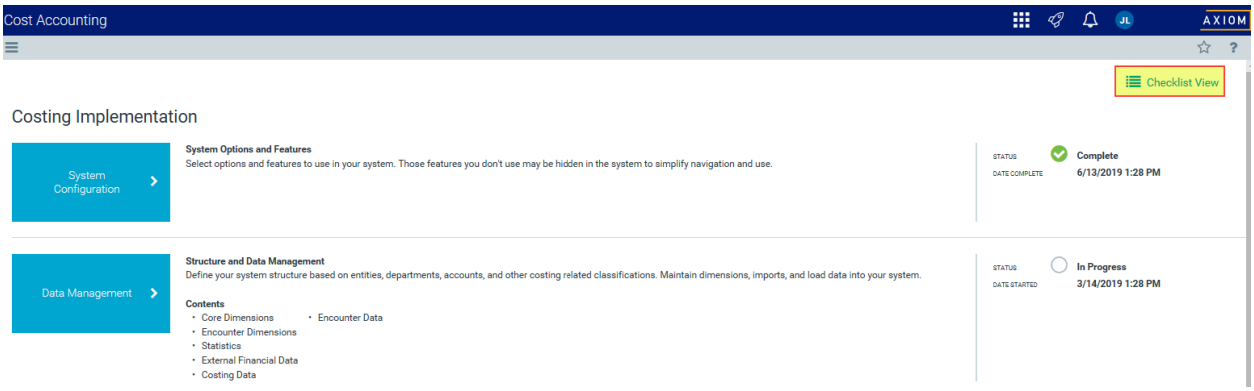
The Checklist View page provides an easy and convenient way for administrators to manage the tasks required for setting up the costing processes from one location, including:

- Manage and track each major task that is part of the costing setup process.
- View task status.
- Maintain different cost processes, such as rolling forward from one period to another.
- View current costing system parameters, such as the current active cost set and the methods and versions being used.



Open the Checklist View page

From the Guide View, click the **Checklist View** link in the top right corner of the page.



Marking the status of a task

Using the Costing Process Checklist page, you can do the following:

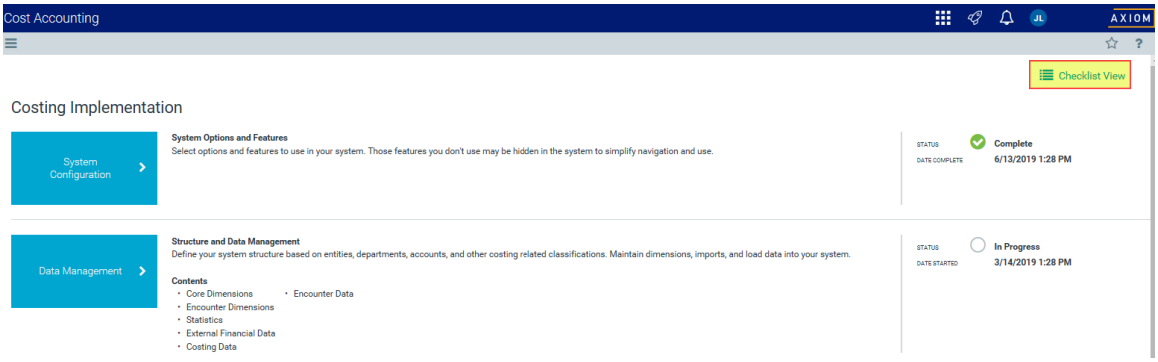
- **Expand and contract tasks -**All tasks and sub-tasks display in a tree structure format. You can expand or contract all of the tasks by clicking **Expand All/Collapse All** at the top of the list. For a specific task, click the down arrow to expand the task, and click the up arrow to contract it.
- **Navigate to task utilities or pages -** Each task name links to the corresponding utility or page in the system used for configuration. For example, if you click the first task, System Configuration, the link opens to the System Configuration page.
- **Mark task status -** After you complete each task, you can click the check mark next to it to indicate that it has been completed. After you select the check mark, the system displays **Completed** in the **Status** column. You can unselect the check mark at any time if it turns out that the task was not fully completed or you need to reprocess it.

The page displays the tasks in a table format with columns that include the following information:

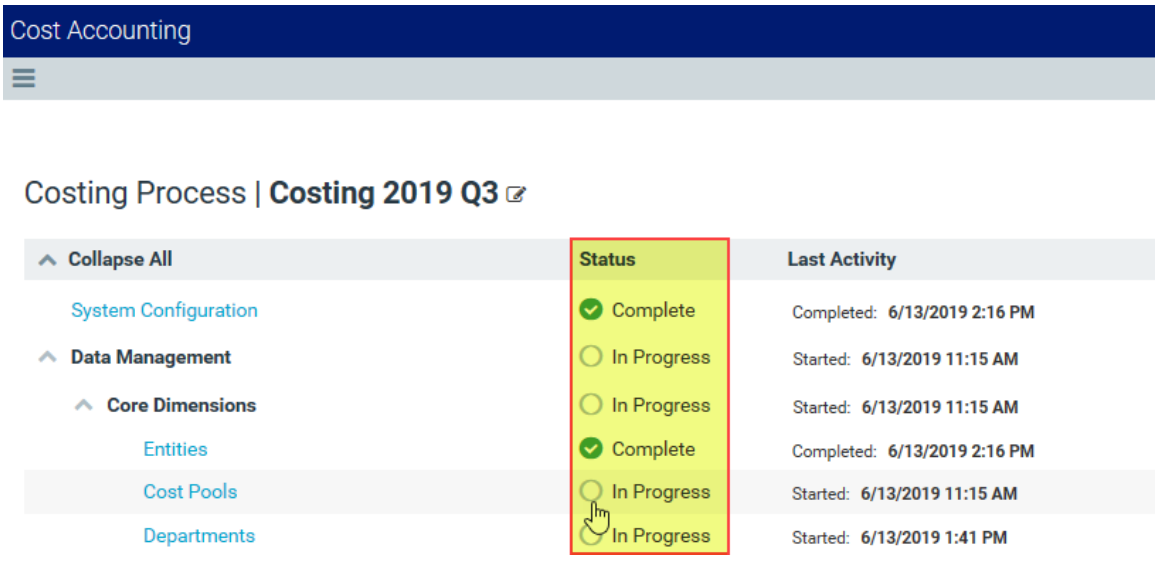
- **Status** - The status of the task. Status types include Not Started, In Progress, and Complete.
- **Last Activity** - The status of the last activity and the date and time when the activity occurred.

To mark the status of a task:

1. From the Guide View, click **Checklist View**.



2. In the **Status** column, click the status circle to toggle to set the status from **In Progress** to **Completed** or from **Completed** back to **In Progress**.



NOTE: You cannot mark a task as complete if it contains sub-tasks that are still in process.

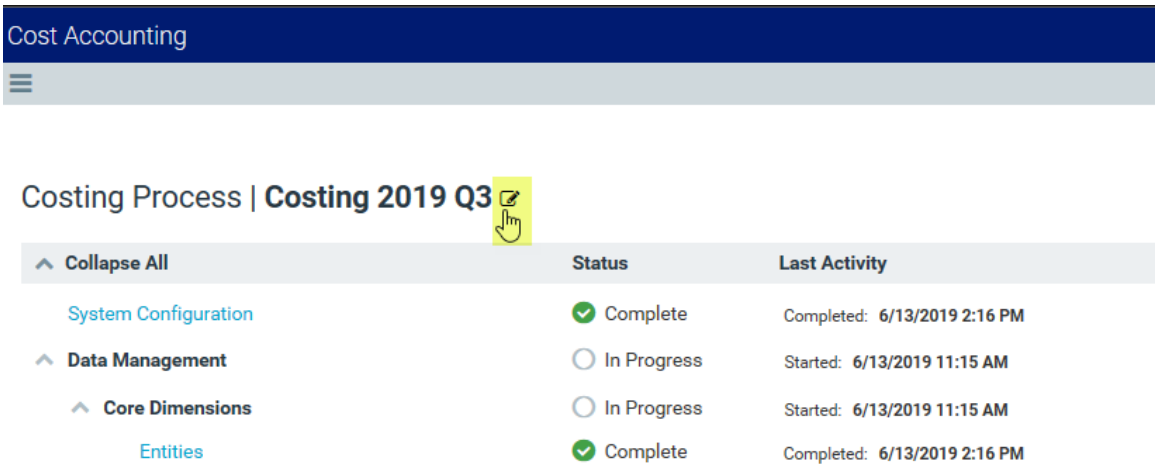
Viewing a costing process

From the Costing Process Checklist page, you can view different cost processes that have been created for your organization.

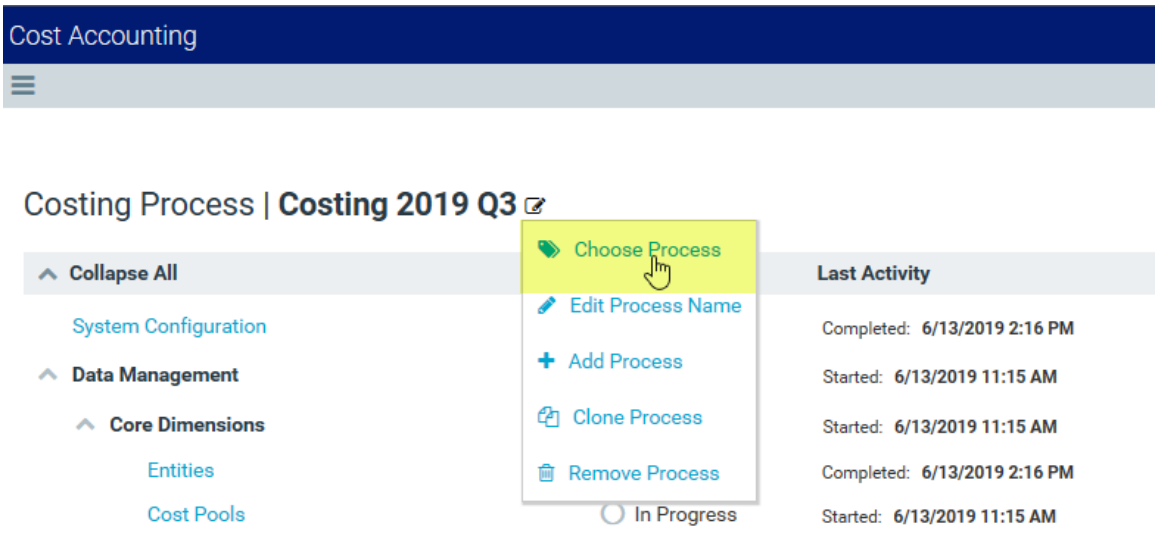
IMPORTANT: Any changes you make in the System Configuration page and Active Cost Set are only applied to the cost process in which they reside. **All other changes, including changes to dimensions, methods, assumptions, reclasses, overallocations, and so on will be applied at the global level across all cost processes.**

To view a costing process:

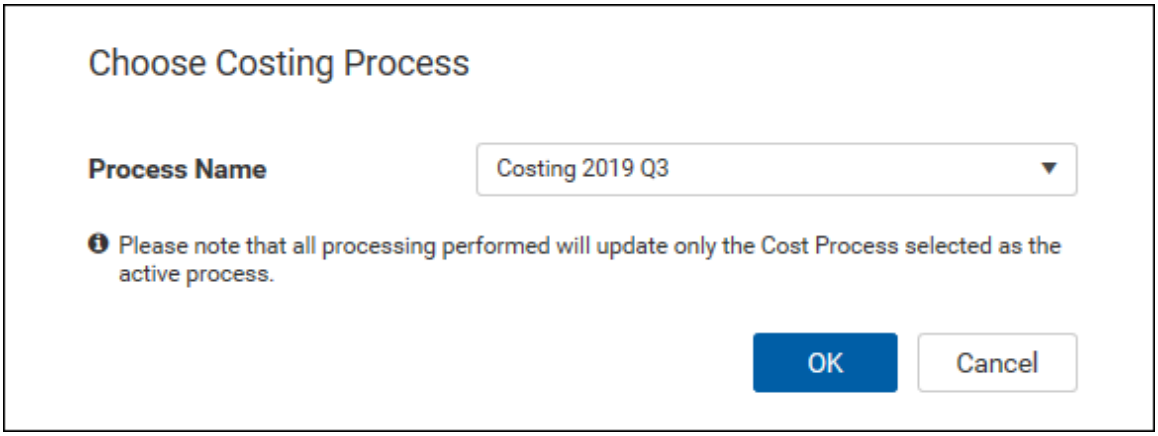
1. In the Checklist View, click the notepad icon.



2. Click **Choose Processes**.



3. From the **Process Name** drop-down, select the process to view.

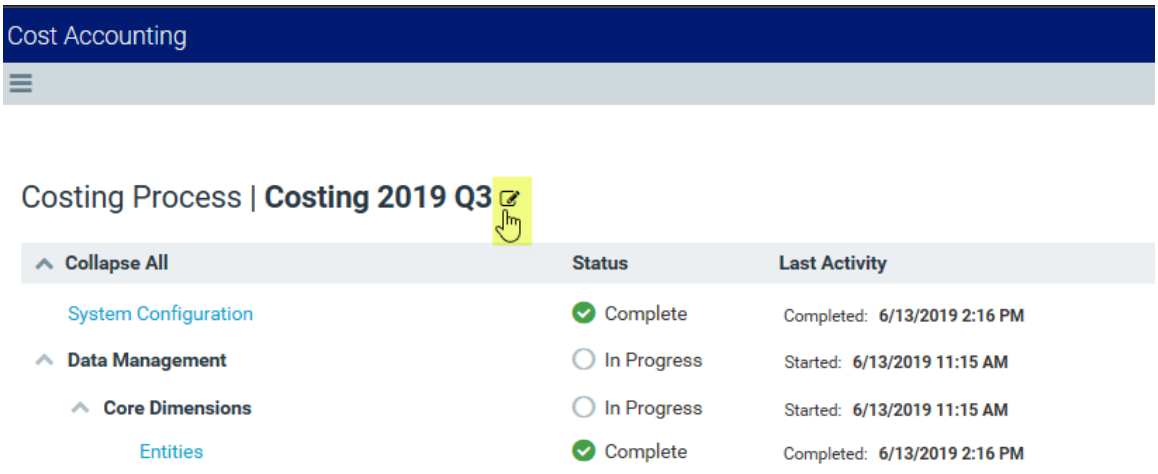


Adding a costing process

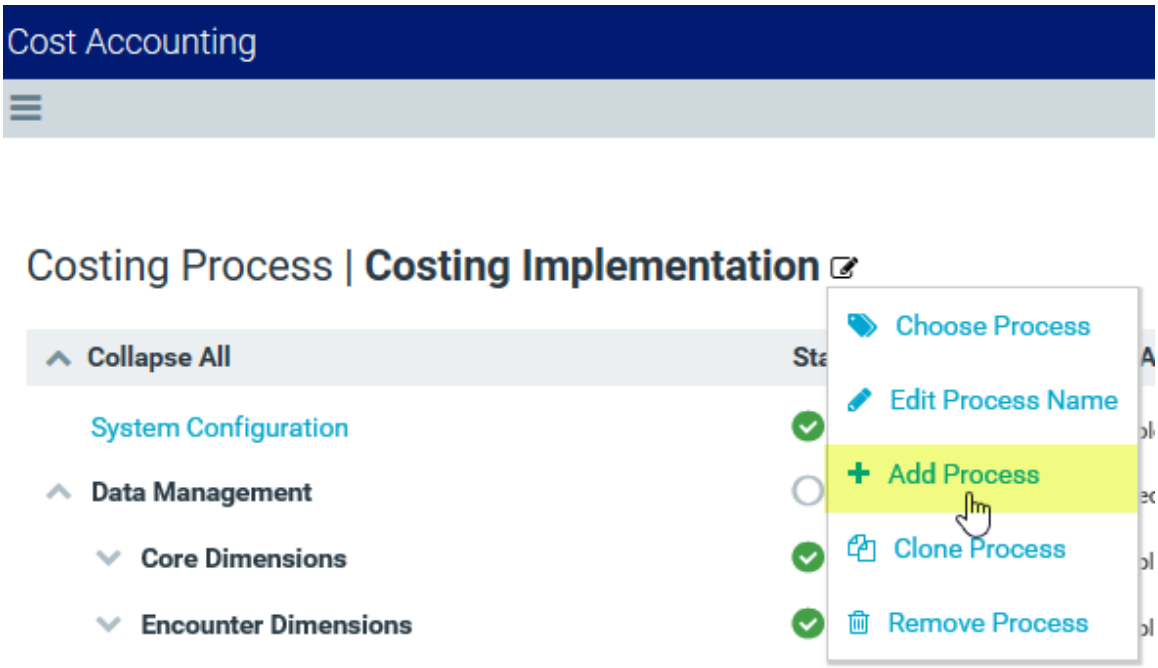
You can add a new costing process from scratch or clone the setup of an existing costing process as the basis for a new costing process.

To add a costing process:

1. In the Checklist View, click the notepad icon.



2. Click **Add Process**.



3. Do one of the following:

Option	Description
Create a new costing process from scratch	a. Click **Add Process**. b. In the **Process Name** field, type a name for the new process, c. Click **OK**.
Create a new costing processing by cloning an existing process	a. Click **Clone Process**. b. From the **Source Process** drop-down, select the process to copy. c. In the **New Process Name** field, type a name for the new process. d. Select the check box next to each configuration setting to copy for the new process. **NOTE:** System Configuration and Data Management are selected by default. e. Click **OK**.

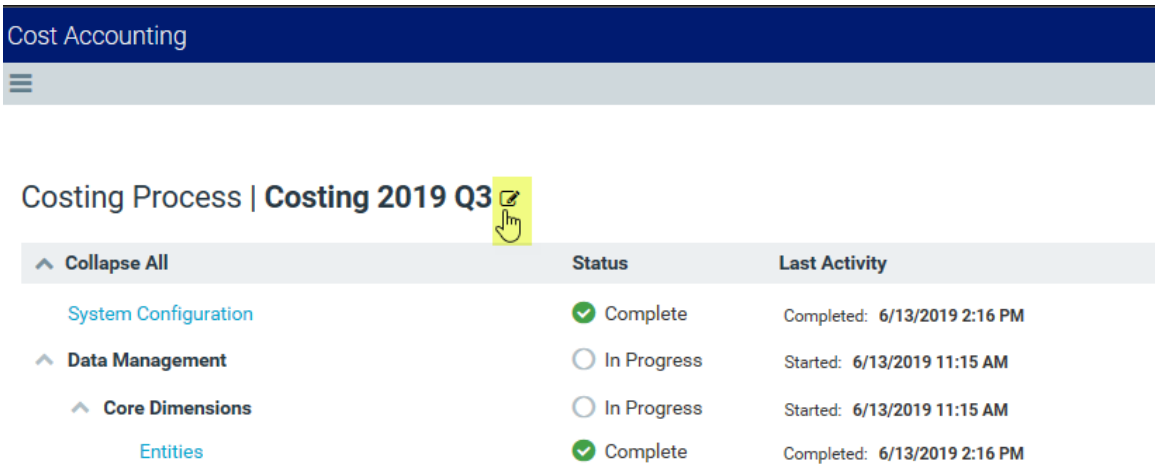
Editing the name of a costing process

You can title the costing process using a name that makes the most sense to your organization.

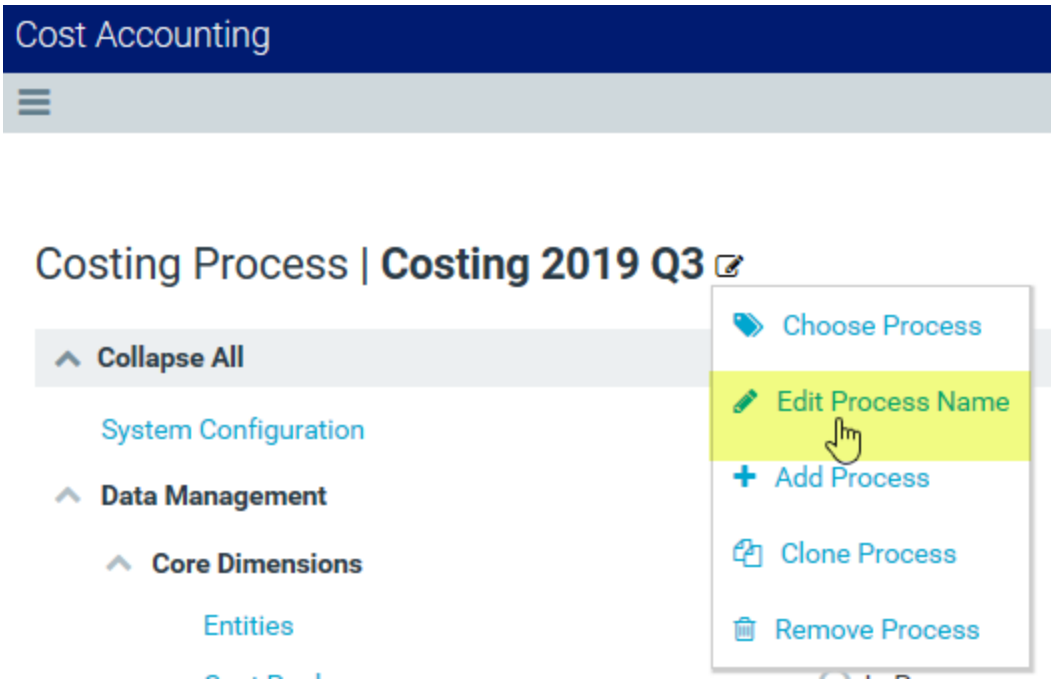
TIP: We recommend using a name that indicates the period in which the costing process takes place. For example, Costing 2019 or Costing 2019 Q1.

To edit the name of a costing process:

1. In the Checklist View, click the notepad icon.



2. Click **Edit Process Name**.



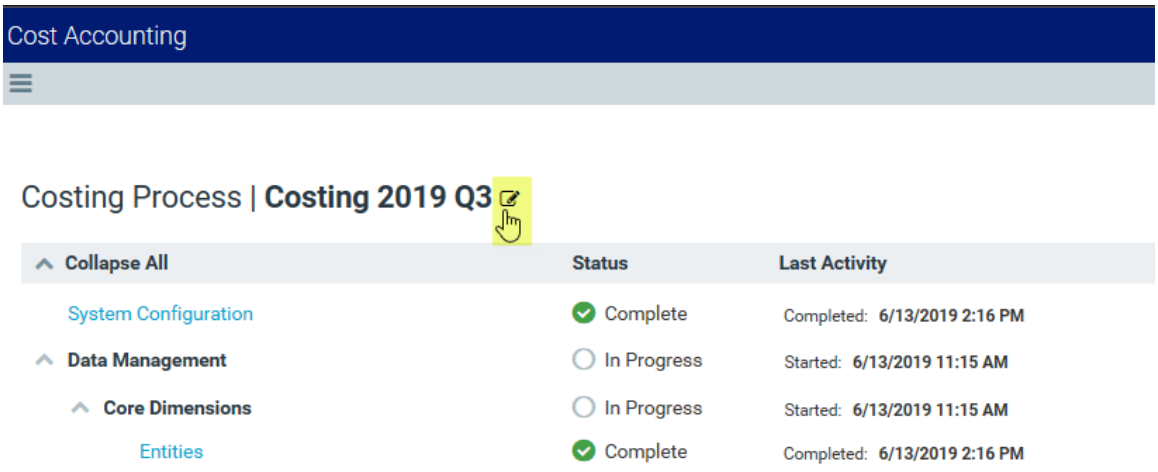
3. In the **Process Name** field, type the new name, and click **OK**.

Deleting a costing process

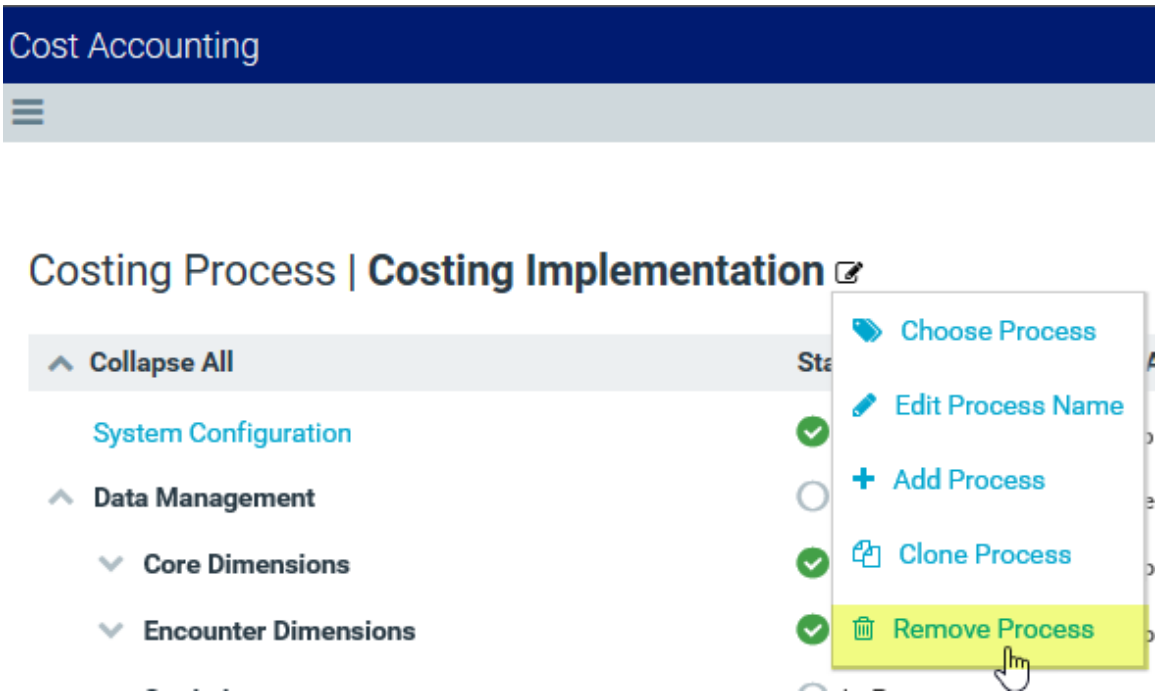
The system will only allow you to delete previous cost processes. You cannot delete the current cost process.

To delete a costing process:

1. In the Checklist View, click the notepad icon.



2. Click **Remove Process**.



3. From the **Process Name** drop-down, select the process to delete, and click **OK**.

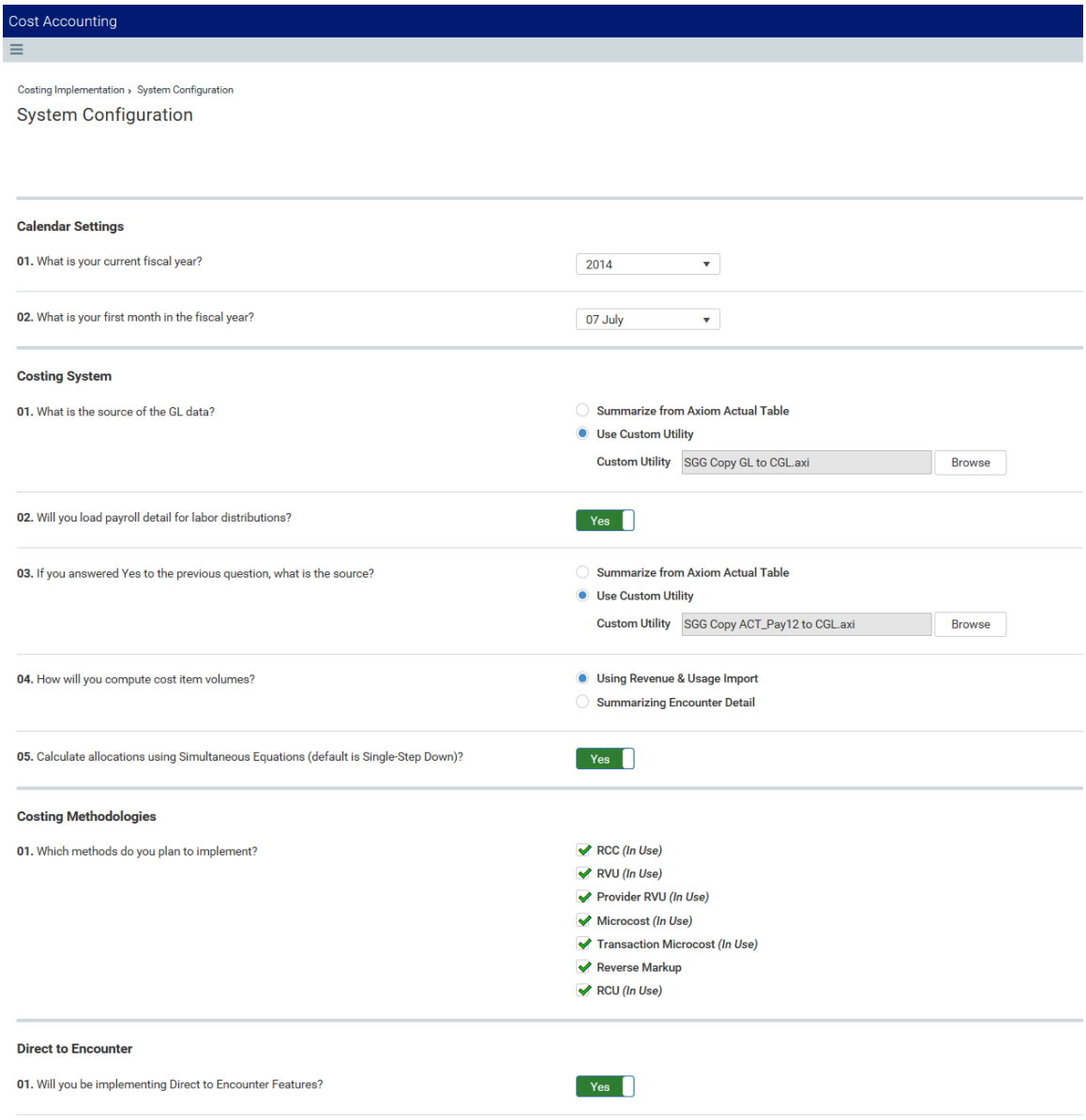
Configuring system options

After installation, use this page to select and specify options used to configure your system.

NOTE: Depending on the selections you make on this page, some features may be hidden from view in the system.

To configure system options:

1. In the Guide View, click **System Configuration**.



2. Complete the following questions:

Calendar Settings

Question	Options
01. What is the current fiscal year?	Select the current fiscal year for your organization.
02. What is your first month in the fiscal year?	Select the month in which your organization's fiscal year begins.

Costing System

Question	Options
01. What is the source of the GL data?	Select the source to use for your General Ledger (GL) data:
02. Will you load payroll detail for labor distributions?	If you plan on loading payroll detail to use for labor distributions, click the toggle to **Yes**; otherwise leave the toggle as **No**.
03. If you answered Yes to the previous question, what is the source?	Select the source for your payroll detail.
04. How will you compute cost item volumes?	Select how you want to compute cost item volumes.
05. Calculate allocations using Simultaneous Equations (default as Single-Step Down)?	**IMPORTANT:** We recommend that you first review the Understanding simultaneous equations section below before setting this option. If you choose to implement SE, please consult with one of our Axiom Cost Accounting consultants to ensure you understand the implications. Do one of the following: • To enable simultaneous equations, click the toggle to **Yes**. • To use single-step down, click the toggle to **No**.

Costing Methodologies

Question	Options
01. Which methods do you plan to implement?	Select the check box next to the methods your organization will use. **IMPORTANT:** You must select at least one methodology. Methodologies you do not select will not be included in the Unit Cost Calculations page or the Process Advanced Cost Methods page. They may also not display in other parts of the Guide View.

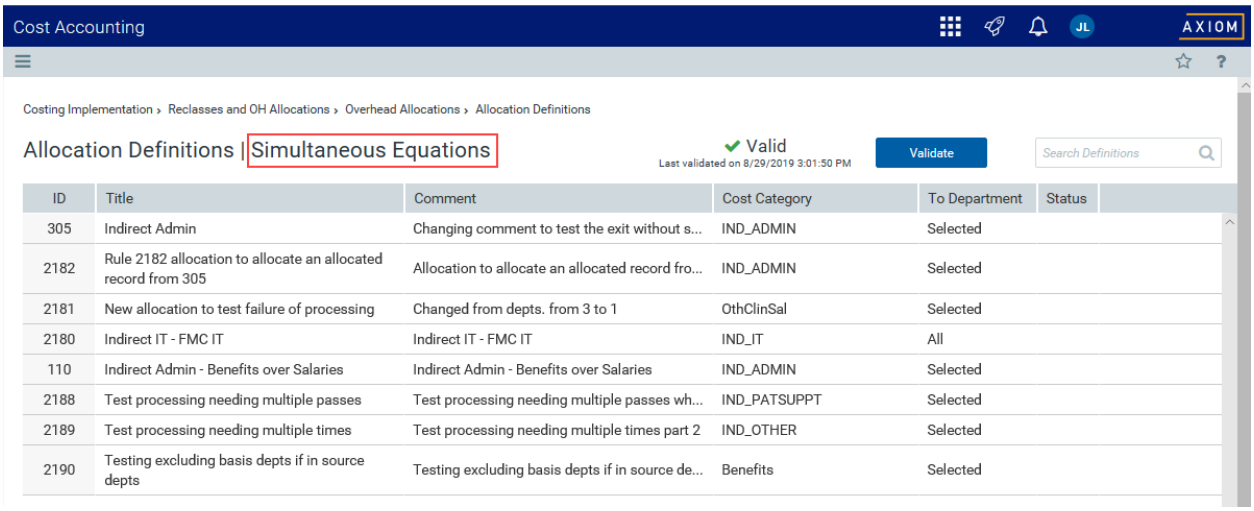
Direct to Encounter

Question	Options
01. Will you be implementing Direct to Encounter Features?	Direct to Encounter allows you to spread costs historically allocated as indirect overhead to specific encounters that use the services of that particular department or area. To use Direct to Encounter, click the toggle to **Yes**; otherwise leave the toggle as **No**.

3. After making your changes, click **Save**.

Understanding simultaneous equations

The simultaneous equation (SE) method of cost allocation provides a more accurate method of allocating department costs. When processing allocations, the system places the records and allocation rules into a matrix, and then system processes them together. If your organization decides to use SE, you need to define Axiom Cost Accounting allocation rules to take this into account. For this reason, we recommend that you do not switch back and forth between SE and single step down because it could result in inaccurate data. If you enable this feature, the Allocation Definitions page will display Simultaneous Equations at the top of the page.



ID	Title	Comment	Cost Category	To Department	Status
305	Indirect Admin	Changing comment to test the exit without s...	IND_ADMIN	Selected	
2182	Rule 2182 allocation to allocate an allocated record from 305	Allocation to allocate an allocated record fro...	IND_ADMIN	Selected	
2181	New allocation to test failure of processing	Changed from depts. from 3 to 1	OthClinSal	Selected	
2180	Indirect IT - FMC IT	Indirect IT - FMC IT	IND_IT	All	
110	Indirect Admin - Benefits over Salaries	Indirect Admin - Benefits over Salaries	IND_ADMIN	Selected	
2188	Test processing needing multiple passes	Test processing needing multiple passes wh...	IND_PATSUPPT	Selected	
2189	Test processing needing multiple times	Test processing needing multiple times part 2	IND_OTHER	Selected	
2190	Testing excluding basis depts if in source depts	Testing excluding basis depts if in source de...	Benefits	Selected	

Importing data

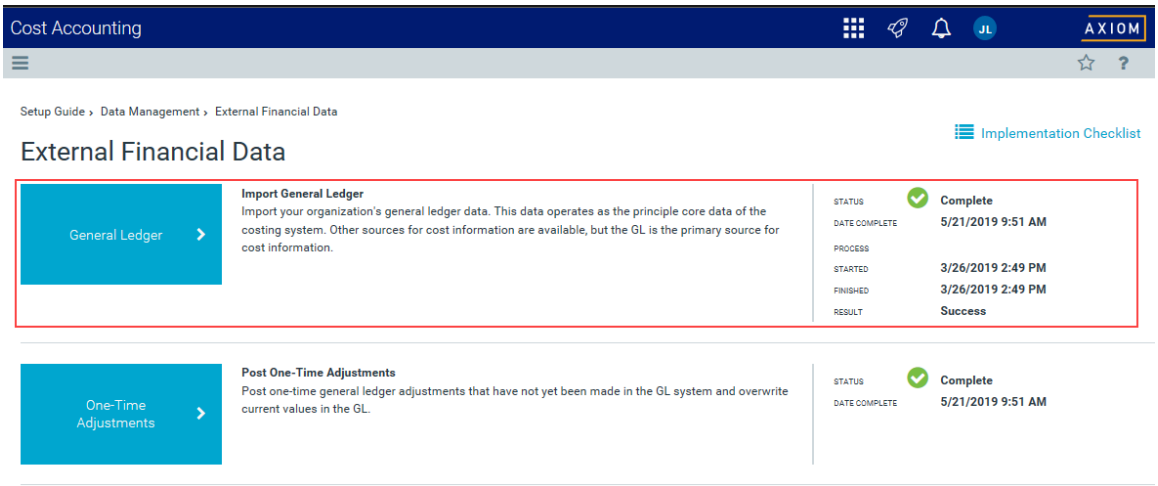
Before importing your data, we recommend you first review the file review checklist.

General Ledger

One of the first steps in the costing process is to generate a Costing General Ledger (CGL). The CGL is associated with a period of financial data and becomes the primary and only source of all costs, statistics, adjustments, reclasses, and allocations used in the cost accounting process.

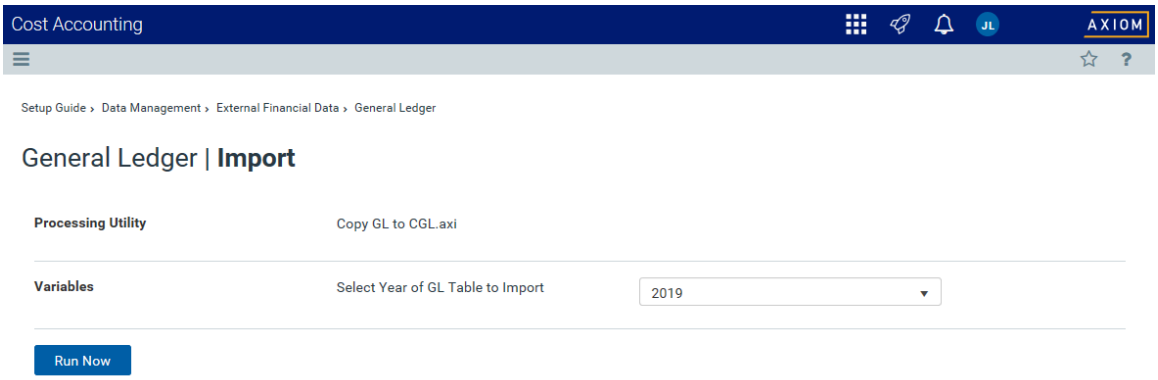
To import General Ledger data:

1. From the Setup Guide page, click **Data Management > External Financial Data > General Ledger**.



Click images to view full size

2. From the **Variables** drop-down, select the year to import.



3. Click **Run Now**.

File review checklist

Use the steps listed in the following table to prepare your files for import:

Process	Description
Perform basic file format checks	1. Verify that the file is plain text and pipe-delimited (uses the | character). 2. Verify that the first line contains a header listing all of the fields. **NOTE:** Consult the file specification document provided by your Kaufman Hall Implementation Consultant for a list of all fields to contain in each file.
Perform data-type checks	1. Verify that data types are correct. For example, integer or numeric fields should not contain text values. **NOTE:** Consult the file specification document for the data type of each field. 2. Verify that all date and time fields are formatted as “YYYY-MM-DD” and/or “YYYY-MM-DD hh24:mi:ss”. 3. Verify that the file does not contain numerous instances of the word “NULL”. Null values should be extracted as blanks. For example, integer or numeric fields should not contain text values. 4. Verify that amount (Numeric data type) fields are formatted correctly. Use a negative sign to indicate negative amounts (“-“ in front of the number, instead of parentheses). Amounts should not contain commas.
Verify key fields on each table	**NOTE:** Refer to the file specification document to determine the key fields, which are listed in **bold**. 1. Use the filter function in Excel to verify that all key fields are populated (no blanks). Keep in mind the following: • If there is only one key on the table, it must always be populated. • If there are multiple keys on the table and only some of them are blank, check with your Kaufman Hall Implementation Consultant or an Application Specialist for further guidance 2. For all files except Cost Detail, use the Remove Duplicates function in Excel on the key column(s) to verify that they do not contain duplicate values. In other words, there should be only one row for each unique combination of key values.

Validating imported data

Data validation is required during the implementation as well as ongoing for recurring data loads (imports) to the Axiom system. Data validation should be performed by both your organization and Kaufman Hall during the implementation process.

The following table lists the validation reports available:

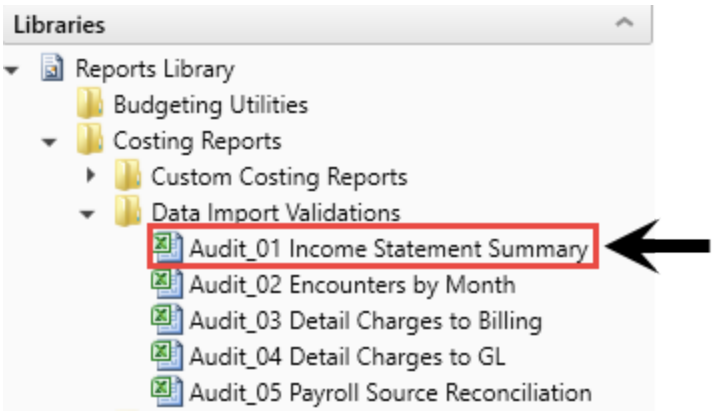
Report	Description
Audit_01 Income Statement Summary report	Provides a point of validation to ensure proper import of the General Ledger file into the Axiom system from the source system.
Audit_02 Encounters by Month report	Allows you to validate the Encounter data loaded to the Encounter table by summarizing encounter cases, charges (chargeable records), and charge-per-case by month.
Audit_03 Detail Charges to Billing report	Summarizes Cost Detail Volume and Charge totals (only chargeable items at this point) for monthly validation to the billing source system based on the posting date of Cost Items for a selected month and entity.
Audit_04 Detail Charges to GL report	Allows you to validate Cost Detail data by comparing the cost detail (chargeable items with a unit or total charge amount) by postdate to Patient Revenue on the General Ledger.
Audit_05 Payroll Source Reconciliation report	Allows you to evaluate and reconcile payroll related data (dollars and hours) by month.

Running the Audit_01 Income Statement Summary report

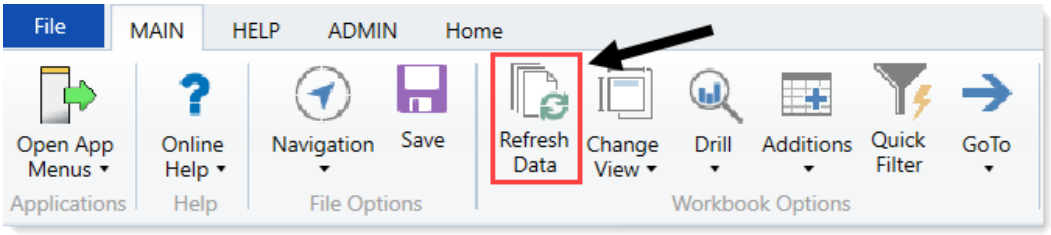
The Income Statement Summary report provides a point of validation to ensure proper import of the General Ledger file into the Axiom system from the source system. You need to generate a similar report from the source system to validate against this standard Costing Income Statement Summary. The report populates based on your defined fiscal period configured at implementation as well as the costing period you define in the Key Dates driver file.

To run the Audit_01 Income Statement Summary report:

1. In the Explorer task pane, in the **Libraries** section, click **Costing Reports > Data Import Validations**, and double-click **Audit_01 Income Statement Summary**.



2. Refresh the variables by doing one of the following:
   - In the **Main** tab, in the **Workbook Options** section, click **Refresh Data**.



   - Press **F9**.
3. In the **Refresh Variables** dialog, select the variables to include in the report, and click **OK**.

When compared to the generated source system report:

Audit 01 - Income Statement Summary
KH COSTING
For The Period Ending March 2014
Consolidated

	YTD FY2014	Total FY2014	July 2013	August 2013	September 2013	October 2013	November 2013	December 2013	January 2014	February 2014	March 2014	April 2014	May 2014	June 2014
Patient Revenue														
Inpatient	663,522,941	889,579,894	74,821,032	70,897,017	71,294,627	74,063,391	70,014,604	72,441,677	81,440,985	71,003,560	77,546,047	73,895,430	75,235,076	76,926,446
Outpatient	425,143,480	577,895,509	48,967,503	51,198,976	47,405,238	48,302,427	43,137,143	46,260,850	48,702,955	45,651,808	45,516,581	50,764,507	51,228,721	50,758,801
Other Patient	63,859,136	87,214,641	7,183,972	6,559,837	6,672,842	8,372,411	6,316,211	6,457,768	7,461,478	7,047,513	7,787,103	7,225,982	7,791,020	8,338,503
Total Patient Revenue	**1,152,525,557**	**1,554,690,043**	**130,972,508**	**128,655,830**	**125,372,707**	**130,738,229**	**119,467,958**	**125,160,294**	**137,605,419**	**123,702,882**	**130,849,731**	**131,885,919**	**134,254,817**	**136,023,750**
Deductions From Revenue														
Charity Services	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Deductions From Revenue	603,009,968	832,942,802	67,545,694	67,626,048	67,503,265	70,263,666	62,782,501	65,993,597	77,406,134	69,770,986	54,118,077	69,253,924	80,711,192	79,967,718
Other Discounts	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bad Debt	84,454,711	101,737,311	13,286,135	9,588,043	7,490,403	8,957,320	11,107,156	11,960,555	7,561,026	6,569,488	7,934,585	12,719,447	5,481,316	(918,163)
Total Deductions From Revenue	**687,464,679**	**934,680,113**	**80,831,828**	**77,214,091**	**74,993,668**	**79,220,986**	**73,889,656**	**77,954,152**	**84,967,161**	**76,340,474**	**62,052,662**	**81,973,371**	**86,192,508**	**79,049,555**
Net Patient Revenue	**465,060,878**	**620,009,930**	**50,140,679**	**51,441,739**	**50,379,038**	**51,517,244**	**45,578,301**	**47,206,142**	**52,638,258**	**47,362,408**	**68,797,068**	**49,912,548**	**48,062,309**	**56,974,195**
Other Operating Revenue	9,174,507	12,453,789	1,209,914	900,819	967,896	1,140,959	992,321	983,486	1,154,314	836,894	987,904	1,244,596	1,026,216	1,008,470
Total Operating Revenue	**474,235,385**	**632,463,719**	**51,350,593**	**52,342,558**	**51,346,934**	**52,658,203**	**46,570,622**	**48,189,628**	**53,792,572**	**48,199,302**	**69,784,972**	**51,157,144**	**49,088,524**	**57,982,665**
Operating Expenses														
Salaries & Wages	170,124,344	230,015,330	18,591,837	18,698,635	18,629,535	19,199,741	19,033,930	18,888,224	19,316,139	18,320,365	19,445,938	19,033,820	19,775,979	21,081,187
Benefits	44,902,004	57,883,803	4,627,461	5,041,482	5,089,094	4,607,135	4,789,371	4,317,051	5,668,699	4,498,303	6,263,408	2,471,393	5,129,592	5,380,814

   - This report should equal or tie out completely in total and ideally by line items.
   - Line item variances are likely due to classification at the FSDetail level in the ACCT dimension table and the definition of the financial statements and/or reports used as the comparison.

- Variances in total are likely due to filters applied on either side of the reporting, e.g., defined Entities.

NOTE: You need to update any new accounts or departments added during an import in in the ACCT and DEPT dimension tables for the reconciliation report to tie out completely.

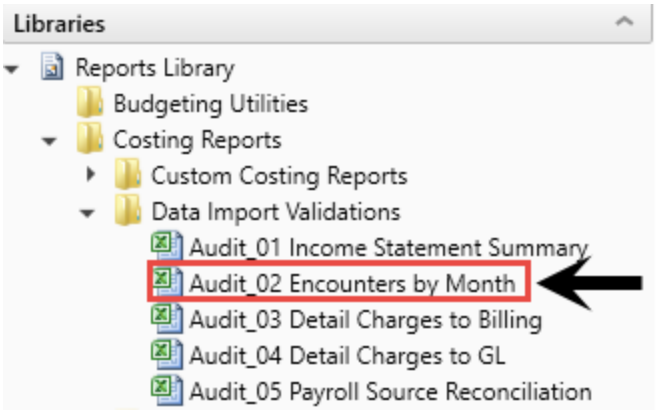
Running the Audit_02 Encounters by Month report

The Encounters by Month report allows for validation of Encounter data loaded to the Encounter table. This report summarizes encounter cases, charges (chargeable records), and charge-per-case by month for validation to the source system for a selected entity and date range. It ensures that the encounters in the Axiom system are the same as what the external system is reporting.

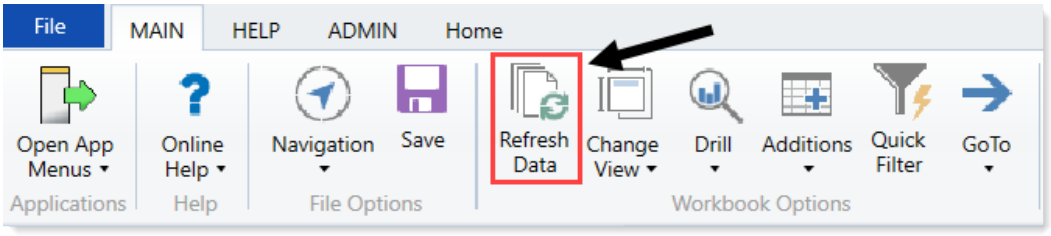
You can run this report admission or discharge, and compares the selected refresh variable to the appropriate date to the YRMO defined date in the Refresh Variables dialog. You can also run this report by Entity.

To run the Audit_02 Encounters by Month report:

1. In the Explorer task pane, in the **Libraries** section, click **Costing Reports > Data Import Validations**, and double-click **Audit_02 Encounters by Month**.



2. Refresh variables by doing one of the following:
   - In the **Main** tab, in the **Workbook Options** section, click **Refresh Data**.



   - Press **F9**.
3. In the **Refresh Variables** dialog, do the following, and click **OK**:

Option	Description
Select Admits or Discharges	Select to populate the report with admits or charges.
Entity	Select one or more entities.
Beginning of Calendar Period	Select a beginning date to include in the report.
End of Calendar Period	Select an end date to include in the report.

The report populates inpatient and outpatient encounters separately, with IP grouped for inpatient and OP/ER grouped for outpatient based on how the Patient Types are mapped in the Patient Type dimension table to the DSSPtType IP, OP, or PB.

Audit 02 - Encounters by Month

KH COSTING

As of June, 2014

Consolidated

Admission Date | Year Month	ALL INPATIENTS (DSSPtType = 'IP')			ALL OUTPATIENTS (DSSPtType = 'OP or 'PB')		
	Admissions	Charges	Charges/PC	Visits	Charges	Charges/PC
201307 (July)	1,059	1,059,000	1,000	3,625	3,625,000	1,000
201308 (August)	861	861,000	1,000	4,008	4,008,000	1,000
201309 (September)	829	829,000	1,000	3,629	3,629,000	1,000
201310 (October)	885	885,000	1,000	4,246	4,246,000	1,000
201311 (November)	797	797,000	1,000	3,488	3,488,000	1,000
201312 (December)	804	804,000	1,000	3,753	3,753,000	1,000
201401 (January)	918	918,000	1,000	4,347	4,347,000	1,000
201402 (February)	832	832,000	1,000	4,942	4,942,000	1,000
201403 (March)	864	864,000	1,000	4,894	4,894,000	1,000
201404 (April)	970	970,000	1,000	4,908	4,908,000	1,000
201405 (May)	997	997,000	1,000	4,459	4,459,000	1,000
201406 (June)	900	900,000	1,000	4,263	4,263,000	1,000
Totals	**10,716**	**10,716,000**	**1,000**	**50,562**	**50,562,000**	**1,000**

To validate the data imported to the encounter table, you need to generate a report from the source system, validating between the Source and Encounter table.

When comparing the encounter-level data to the Costing General Ledger:

- This data should tie out completely in terms of Total Charges by month.
- Differences could be due to filtering issues with source system extract creation.

  If the extracts are not matching the reporting from source system, you may need to revisit and update the extracts.

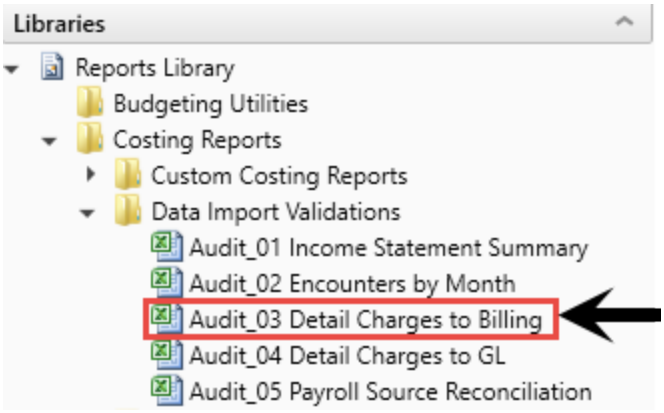
Running the Audit_03 Detail Charges to Billing report

This report summarizes Cost Detail Volume and Charge totals (only chargeable items at this point) for monthly validation to the billing source system based on the posting date of Cost Items for a selected month and entity.

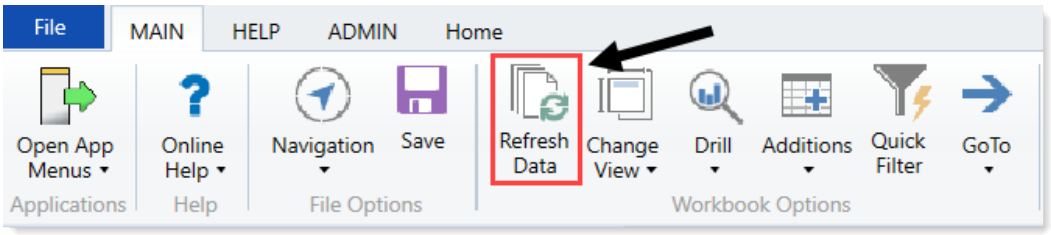
The Detail Charges to Billing report allows for validation of Cost Detail data (chargeable items with a Unit Charge value) through comparison of summed volume and charges by department.

To run the Audit_03 Detail Charged to Billing report:

1. In the Explorer task pane, in the **Libraries** section, click **Costing Reports > Data Import Validations**, and double-click **Audit_03 Detail Charged to Billing report**.



2. Refresh variables by doing one of the following:
   - In the **Main** tab, in the **Workbook Options** section, click **Refresh Data**.



   - Press **F9**.

3. In the **Refresh Variables** dialog, do the following, and click **OK**:

Option	Description
Select Entity (leave blank for all) (optional)	Select the one or more entities.
Select Calendar Year and Month	Select the year and month.

Audit 03 - Detail Charges to Billing By Department

Portland Health Care

For April, 2017

Consolidated

Dept	Description	Quantity	Charges
200060302	Family Practice Clinic	1,317	$246,602
200061101	Neuroscience Center	562	$177,980
200064900	Distribution Willamette Memorial Hospital	537	$175,690
200065100	Emergency Department Willamette Memorial	8,714	$4,353,752
200065120	Emergency Department Tigard	1,733	$844,910
200066100	Laboratory Willamette Memorial Hospital	108,409	$8,756,450
200066120	Laboratory Tigard	20	$513
200066140	Laboratory Prescott	6,647	$459,438
200066200	Cardiovascular Willamette Memorial Hospital	3,707	$2,730,236
200066220	Cardiovascular Tigard	130	$243,433
200066230	Cardiology Dundee	49	$87,143
200066240	Cardiovascular Prescott	105	$165,281
200066600	Respiratory Therapy Willamette Memorial Hosp	9,259	$1,628,904
200066601	Sleep Lab Center	148	$213,956
200066620	Respiratory Therapy Tigard	158	$28,949
200067000	Radiology Diagnostic Willamette Memorial Ho	3,363	$924,833
200067001	Interventional Radiology Willamette Memorial	1,032	$1,537,536
200067020	Radiology Diagnostic Tigard	460	$125,408
200067040	Radiology Diagnostic Prescott	125	$41,632
200067120	Medical Oncology Tigard	1,333	$395,731
200067140	Medical Oncology Prescott	4,472	$1,293,767
200067201	CT Willamette Memorial Hospital	1,509	$5,515,167
200067202	MRI Willamette Memorial Hospital	292	$1,283,411

After you select variables, the report populates total volume and charges by department for the selected calendar year and month.

To validate the data pulled into the Cost Detail, generate a report from the source system, validating between the source and Cost Detail table. When you compare this data to the data of the billing source system:

- This should tie-out completely.
- Differences could be due to filtering issues with source system extract creation.

NOTE: If these extracts are not matching the reporting from source system, you may need to update the extracts.

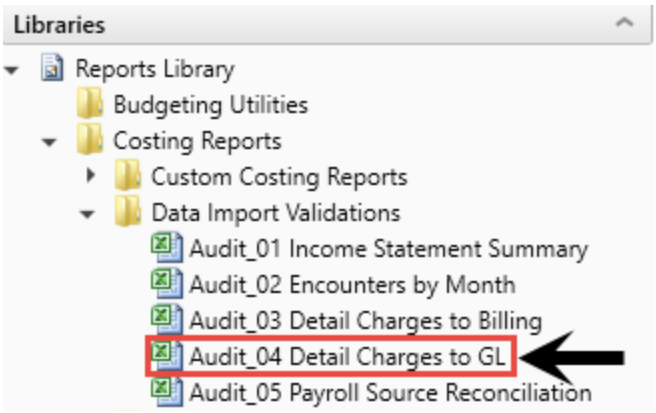
- There could also be timing differences in the billing system versus the encounter source system.

Running the Audit_04 Detail Charges to GL report

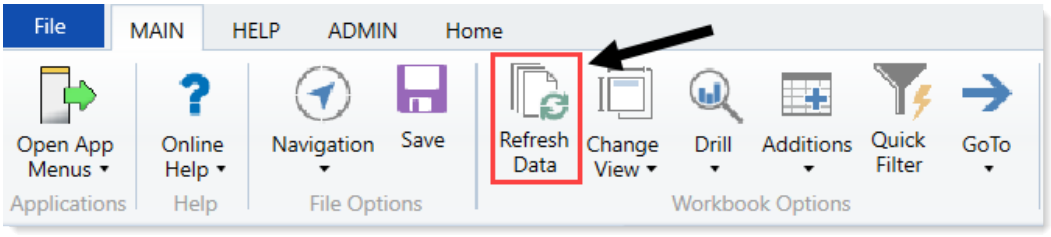
The Detail Charges to GL report allows for validation of Cost Detail data by comparing the cost detail (chargeable items with a unit or total charge amount) by postdate to Patient Revenue on the General Ledger. This report is a department level report showing monthly charges and variances.

To run the Audit_04 Detail Charges to GL report:

1. In the Explorer task pane, in the **Libraries** section, click **Costing Reports > Data Import Validations** and double-click **Audit_04 Detail Charges to GL**.



2. Refresh variables by doing one of the following:
   - In the **Main** tab, in the **Workbook Options** section, click **Refresh Data**.



   - Press **F9**.

3. In the **Refresh Variables** dialog, do the following, and press **OK**:

Option	Description
Select Entity (leave blank for all)	Select one or more entities.
Select Calendar Year and Month	Select the year and month.

Audit 04 - Detail Charges to GL

Portland Health Care
For February, 2016
Consolidated

Dept	Description	ChargeDetail Gross Charges	Financial (GL) Gross Charges	Detail to GL Difference	Percentage Variance
200060302	Family Practice Clinic	264,125	(1,042)	265,167	100.4%
200061101	Neuroscience Center	126,099	123,698	2,402	1.9%
200064900	Distribution Willamette Memorial Hospital	192,042	192,042	0	0.0%
200065100	Emergency Department Willamette Memorial	4,142,241	4,145,288	(3,048)	(0.1%)
200065120	Emergency Department Tigard	770,336	768,950	1,385	0.2%
200066100	Laboratory Willamette Memorial Hospital	7,631,202	7,991,355	(360,153)	(4.7%)
200066120	Laboratory Tigard	196	112	84	42.8%
200066140	Laboratory Prescott	370,629	0	370,629	100.0%
200066200	Cardiovascular Willamette Memorial Hospital	2,642,882	2,642,731	151	0.0%
200066220	Cardiovascular Tigard	189,249	189,249	0	0.0%
200066230	Cardiology Dundee	90,718	90,718	0	0.0%
200066240	Cardiovascular Prescott	93,991	93,991	0	0.0%
200066400	Respiratory Therapy Willamette Memorial Hosp	830	830	0	0.0%
200066600	Sleep Lab Center	1,791,750	1,792,504	(754)	(0.0%)
200066601	Respiratory Therapy Tigard	339,158	339,158	0	0.0%
200066620	Radiology Diagnostic Willamette Memorial Hos	29,166	29,166	0	0.0%
200067000	Interventional Radiology Willamette Memorial	865,834	867,889	(2,055)	(0.2%)
200067001	Radiology Diagnostic Tigard	1,740,339	1,762,971	(22,632)	(1.3%)
200067020	Radiology Diagnostic Prescott	128,855	128,625	230	0.2%
200067040	Medical Oncology Tigard	44,114	44,114	0	0.0%
200067120	Medical Oncology Prescott	309,527	309,345	183	0.1%
200067140	CT Willamette Memorial Hospital	1,100,239	1,100,861	(623)	(0.1%)
200067201	MRI Willamette Memorial Hospital	5,224,452	5,221,732	2,720	0.1%
200067202	MRI Willamette Memorial Hospital	1,826,447	1,830,446	(3,999)	(0.2%)

The report populates Cost Detail Gross Charges for comparison to Financial Gross Charges (Costing GL) while calculating any variance value and percent.

You need to review and resolve variances between the cost detail and cost GL, and then re-import and rerun the validation reports.

When this data is compared to the data of the billing source system:

- This should tie-out completely.
- Differences could be due to filtering issues with source system extract creation.

NOTE: If these extracts do not match, you may need to update the extracts for Cost Detail.

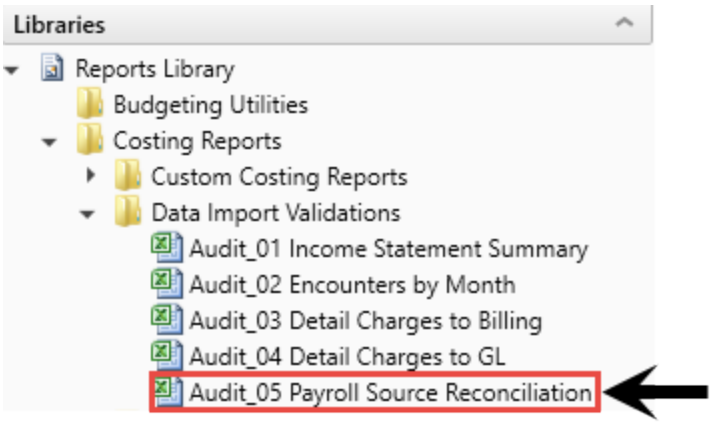
- There could also be timing differences in the financial billing system versus the encounter source system.

Running the Audit_05 Payroll Source Reconciliation report

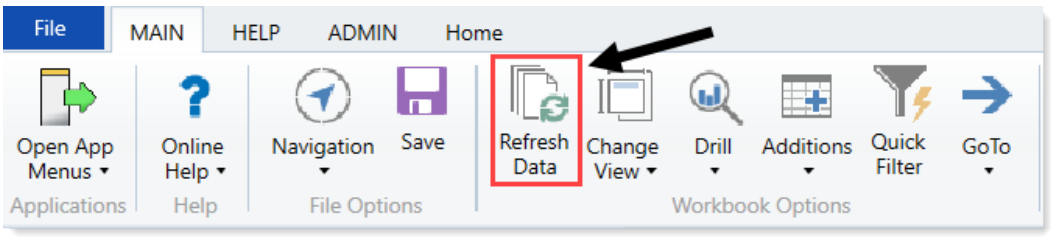
Use this report to evaluate and reconcile payroll related data (dollars and hours) by month.

To run the Audit_05 Payroll Source Reconciliation report:

1. In the Explorer task pane, in the **Libraries** section, click **Costing Reports > Data Import Validations**, and double-click **Audit_05 Payroll Source Reconciliation**.



2. Refresh variables by doing one of the following:
   - In the **Main** tab, in the **Workbook Options** section, click **Refresh Data**.



   - Press **F9**.

3. In the **Refresh Variables** dialog, do the following:

Option	Description
Select Entity	a. Click **Choose Value**. b. In the **Choose Value** dialog, select an entity to include in the report. c. Click **OK**.
Select Payroll Fiscal Year	Select the payroll fiscal year to include in the report.

4. Click **OK**.

The following is an example of this report:

Audit_05 Payroll Source Reconciliation

PKG
Reconciliation for ACT_PAY12_2014
DEPT.ENTITY.Entity='1'

DEPT	DESCRIPTION	Dollars P1	Dollars P2	Dollars P3	Dollars P4	Dollars P5	Dollars P6	Dollars P7	Dollars P8	Dollars P9
17840	EHS Sports Medicine	20,431.96	17,116.41	22,370.20	17,000.43	16,038.02	16,389.29	16,389.29	15,354.94	549.01
19000	EHS Administration	223,567.25	221,000.36	250,414.03	224,065.18	208,488.10	212,976.44	208,617.85	46,825.43	1,485.27
19050	EHS Trust	13,506.35	13,448.14	17,856.65	13,399.61	13,082.87	14,457.50	14,722.01	12,312.75	438.10
19060	EHS Corporate Communications	30,108.99	28,542.03	39,237.82	29,247.73	27,430.64	31,272.86	28,828.28	26,043.28	930.08
19080	EHS Teleservices	19,986.22	22,110.95	29,622.56	21,821.34	20,875.94	22,201.09	22,365.87	19,871.16	710.41
19100	EHS Accounting Operations (Employee)	30,995.70	30,747.78	41,312.32	30,788.55	30,030.39	30,969.71	31,023.19	28,571.71	970.48
19105	EHS Payroll (Alternate Employee)	11,576.02	11,048.12	19,011.85	12,776.56	10,944.30	11,255.56	12,178.74	10,631.88	377.70
19110	EHS Administrative Finance	14,041.63	18,486.83	27,208.30	15,832.58	15,010.14	15,753.36	17,430.55	15,170.93	538.73
19150	EHS Information Services	115,587.84	118,662.00	155,859.37	117,763.63	113,592.21	122,540.77	106,137.89	75,680.98	2,688.15
19160	EHS Audit Services	5,183.19	5,183.21	9,904.33	5,783.55	5,190.86	5,363.90	5,363.90	4,847.50	173.19
19170	EHS Medical Information Network	55,024.86	60,494.17	70,302.94	54,893.61	53,055.89	55,025.51	67,590.62	78,682.93	2,810.70
19185	EHS Corporate Health Services	16,468.33	15,764.92	19,470.84	15,032.87	14,101.07	15,479.28	15,489.67	13,162.87	469.99
19220	EHS Human Resources	42,338.92	41,143.56	53,890.70	42,586.86	40,958.53	42,314.36	42,461.84	28,437.59	1,002.33
19250	EHS Performance Improvement	7,675.07	7,103.44	10,334.88	6,976.91	6,678.55	7,245.16	7,245.17	6,547.65	233.93
19370	EHS Risk Management And Safety	14,594.06	13,384.73	19,167.20	13,880.33	13,658.91	14,263.74	14,503.90	12,752.27	455.29
	Total	**621,086.40**	**624,236.65**	**785,963.98**	**621,849.76**	**589,136.42**	**617,508.52**	**610,348.77**	**394,893.88**	**13,833.36**
	Entry for reconciliation source values:									
		621,086.40	624,236.65	785,963.98	621,849.76	589,136.42	617,508.52	610,348.77	394,893.88	13,833.36

Managing Cost Sets

A cost set includes the attributes for each cost item in terms of the range of service dates, the costing period, the method definition version, and RVUs used when calculating costs. This simplifies the costing process as the cost set information can then be used across unit cost calculations.

A cost set defines:

1. The expenses from your GL to spread
2. The service dates that cover the cost items
3. The definition set to use.
4. The set of RVU values to use for those items marked as RVUs

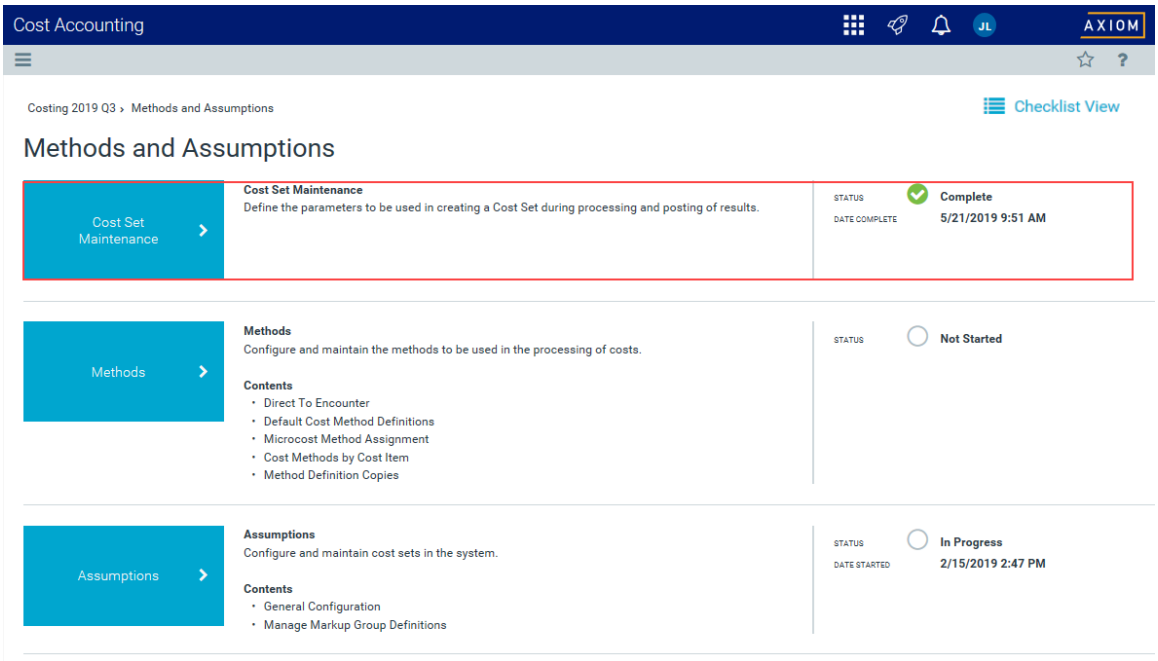
All of these generate parameters generate a specific set of unit costs, and if you change any of the parameters above, the system will generate a different unit cost. For example, if you add a month to your service dates, your costs could change dramatically. However, if you change the method definition, your unit costs may change more subtly because you're changing the method in which your organization receives costs. While most costs will remain the same, some will change. So for the same time period, the total cost will stay the same for the organization, but which cost items get how much cost will change. The same idea applies to RVUs. If you pick a different RVU to apply to the cost set, then different cost items will get a different proportion of the cost relative to the other RVU items.

You can create different variations of costs, which you can then choose when processing the unit costs to assign to the patients. Let's say at the beginning of each year, you define a cost set for each quarter, for example 2018QTR1, 2018QRT2, and so on. Then, as needed, you can create multiple cost set iterations for the same time period but using different parameters. For example, 2018QTR1A, 2018QTR1B, and so on. When you calculate and assign the unit cost to patients, you can then select the cost set you want to use.

Adding or editing a cost set

To add or edit a cost set:

1. In the Guide View, click **Methods and Assumptions > Cost Set Maintenance**.



2. On the **Cost Set Maintenance** page, do any of the following:
   - To add, click **+ Add Cost Set**.
   - To edit, click the cost set to highlight it, and click the notepad icon  .

3. In the **Add/Edit Allocation Rule** dialog, complete the following:

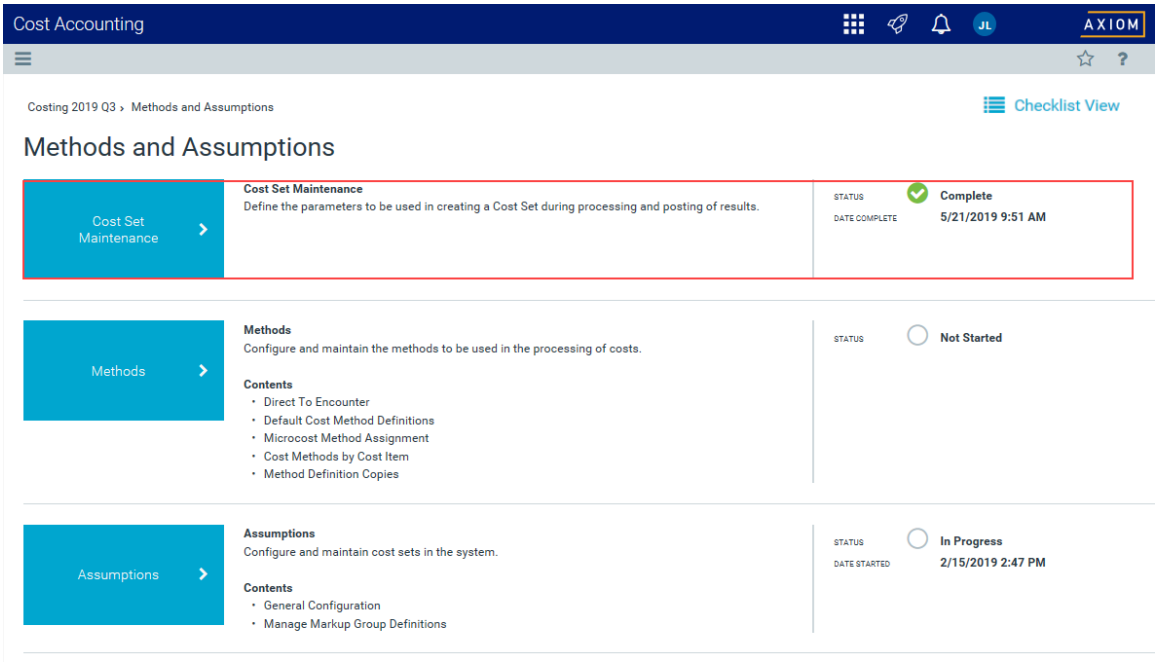
Field	Description
Name	A name for the cost set. **TIP:** Use a naming convention that is meaningful to your organization, such as "2018QTR1".
Description	A longer description for the cost set. **TIP:** An example description would be "2018QTR1, Version A. Using method definitions from 2019".
Fiscal Year	Select the fiscal year in which to designate the cost items you want to spread.
Start Period	Select the start date of the cost items to include in the cost set.
End Period	Select the end date of the cost items to include in the cost set.
General Ledger Table	Displays the General Ledger table in which the cost items are derived.
Beginning Service Date	Displays the beginning service date in which the costs are derived.
Ending Service Date	Displays the ending service date in which the costs are derived.
Version of Method Definitions to Use	Select the version method definition to use for the cost set.
Version of RVUs to Use	Select the RVU version to use for the cost set.

4. After you finish making changes, click **Save**.

Deleting a cost set

To delete a cost set:

1. In the Guide View, click **Methods and Assumptions > Cost Set Maintenance**.



2. On the **Cost Set Maintenance** page, hover your mouse over the definition to highlight it, and click the trash bin icon.

3. At the **Confirm Delete Cost Set** prompt, click **OK**.

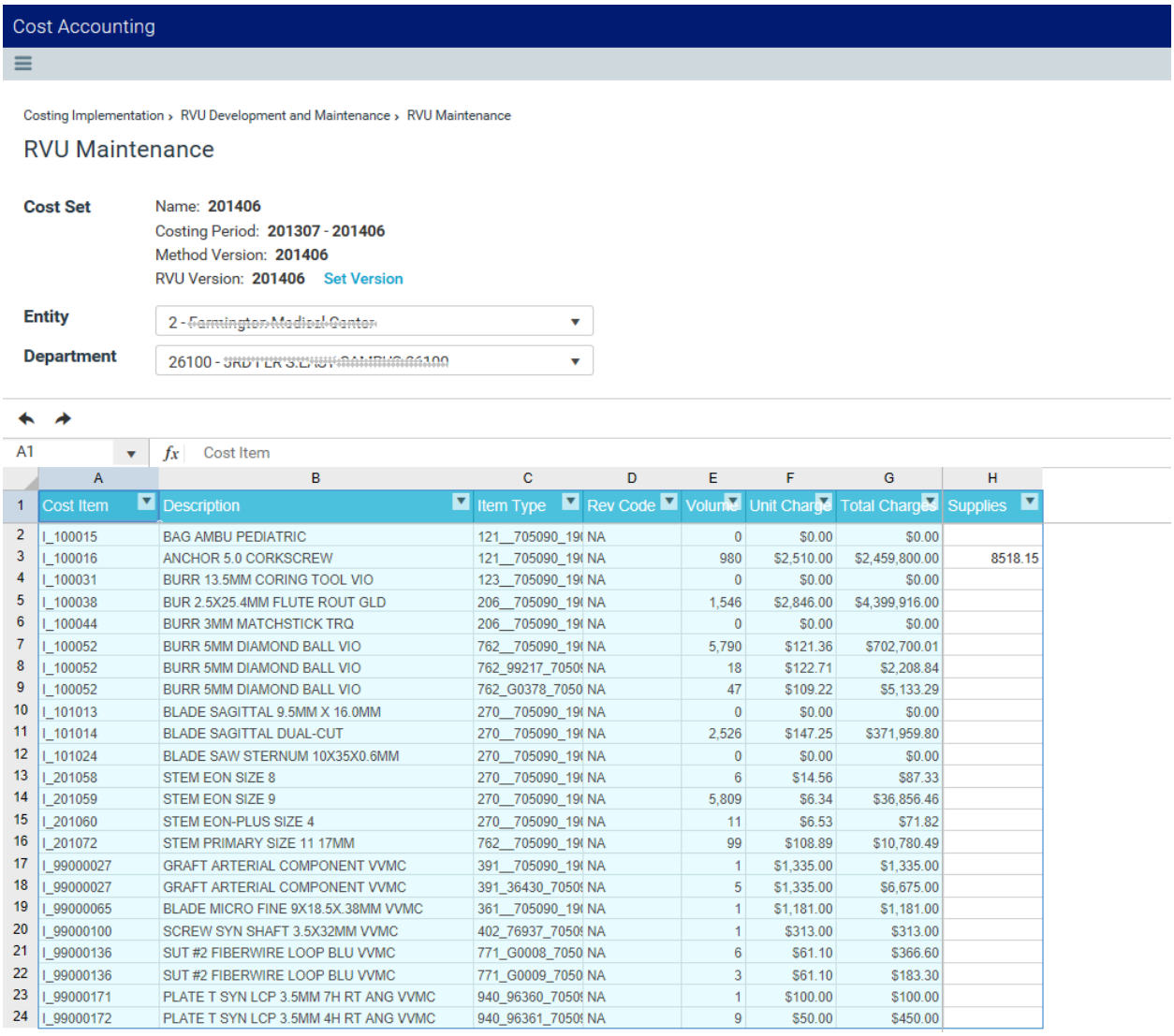
Creating or updating RVU versions

The RVU Maintenance page allows you to create or update an RVU version for a cost set. An RVU version determines the cost impact as costs are shifted across department items.

Prerequisite: The system assumes that you set up method definitions and cost sets (including assigning it a method definition and activating it) before you continue using this screen. If you do not have a cost set activated, the system will automatically open the Cost Set Maintenance screen. Activate a cost set by clicking **mark active** in the **Active Cost Set** column, then navigate back to the RVU Maintenance screen (step 1 below).

When creating or updating an RVU version, the RVU Maintenance page displays a table with a row for each cost item for the department. The table also includes a column for item type, so if there are two or more of the same cost item, you can enter RVU values for each. Columns A-G (blue cells) shows the cost item usage for the specified time period (from the **Costing Period** field in the Cost Set section of the page). Starting with column H, the system shows the cost pools that apply based on the method definition version assigned to the cost set. You can add RVUs to these columns and save them to the database.

NOTE: The RVU Maintenance page does not include provider information.



	A	B	C	D	E	F	G	H
1	Cost Item	Description	Item Type	Rev Code	Volume	Unit Charge	Total Charges	Supplies
2	I_100015	BAG AMBU PEDIATRIC	121__705090_19(	NA	0	$0.00	$0.00	
3	I_100016	ANCHOR 5.0 CORKSCREW	121__705090_19(	NA	980	$2,510.00	$2,459,800.00	8518.15
4	I_100031	BURR 13.5MM CORING TOOL VIO	123__705090_19(	NA	0	$0.00	$0.00	
5	I_100038	BUR 2.5X25.4MM FLUTE ROUT GLD	206__705090_19(	NA	1,546	$2,846.00	$4,399,916.00	
6	I_100044	BURR 3MM MATCHSTICK TRQ	206__705090_19(	NA	0	$0.00	$0.00	
7	I_100052	BURR 5MM DIAMOND BALL VIO	762__705090_19(	NA	5,790	$121.36	$702,700.01	
8	I_100052	BURR 5MM DIAMOND BALL VIO	762_99217_7050(	NA	18	$122.71	$2,208.84	
9	I_100052	BURR 5MM DIAMOND BALL VIO	762_G0378_7050	NA	47	$109.22	$5,133.29	
10	I_101013	BLADE SAGITTAL 9.5MM X 16.0MM	270__705090_19(	NA	0	$0.00	$0.00	
11	I_101014	BLADE SAGITTAL DUAL-CUT	270__705090_19(	NA	2,526	$147.25	$371,959.80	
12	I_101024	BLADE SAW STERNUM 10X35X0.6MM	270__705090_19(	NA	0	$0.00	$0.00	
13	I_201058	STEM EON SIZE 8	270__705090_19(	NA	6	$14.56	$87.33	
14	I_201059	STEM EON SIZE 9	270__705090_19(	NA	5,809	$6.34	$36,856.46	
15	I_201060	STEM EON-PLUS SIZE 4	270__705090_19(	NA	11	$6.53	$71.82	
16	I_201072	STEM PRIMARY SIZE 11 17MM	762__705090_19(	NA	99	$108.89	$10,780.49	
17	I_99000027	GRAFT ARTERIAL COMPONENT VVMC	391__705090_19(	NA	1	$1,335.00	$1,335.00	
18	I_99000027	GRAFT ARTERIAL COMPONENT VVMC	391_36430_7050(	NA	5	$1,335.00	$6,675.00	
19	I_99000065	BLADE MICRO FINE 9X18.5X.38MM VVMC	361__705090_19(	NA	1	$1,181.00	$1,181.00	
20	I_99000100	SCREW SYN SHAFT 3.5X32MM VVMC	402_76937_7050(	NA	1	$313.00	$313.00	
21	I_99000136	SUT #2 FIBERWIRE LOOP BLU VVMC	771_G0008_7050	NA	6	$61.10	$366.60	
22	I_99000136	SUT #2 FIBERWIRE LOOP BLU VVMC	771_G0009_7050	NA	3	$61.10	$183.30	
23	I_99000171	PLATE T SYN LCP 3.5MM 7H RT ANG VVMC	940_96360_7050(	NA	1	$100.00	$100.00	
24	I_99000172	PLATE T SYN LCP 3.5MM 4H RT ANG VVMC	940_96361_7050(	NA	9	$50.00	$450.00	

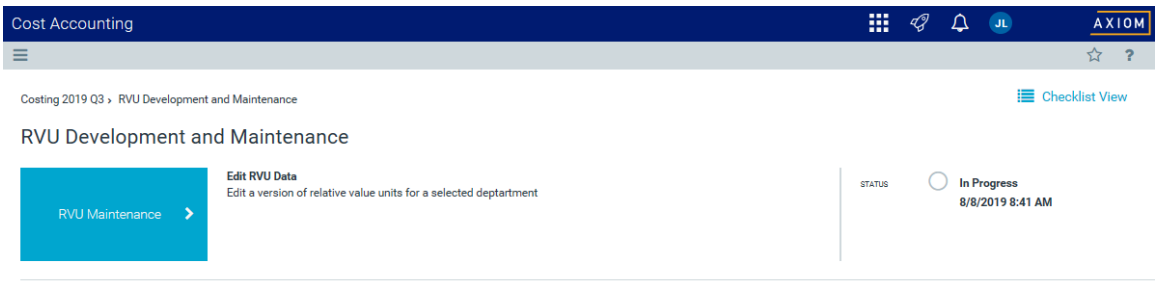
TIP: If the table does not show cost pools, it means that the department has not set up RVU as a version for the cost items. It can also mean that the RevCodes that display are not set up as RVU for whichever cost pools that are not shown. Keep in mind that the page does not show Provider RVU method type.

NOTE: To copy an existing RVU version and use it as the basis for a new RVU version, see Copying RVU versions and cost components.

To create or update RVU versions:

1. In the Guide View, click **RVU Development and Maintenance > RVU Maintenance**.

NOTE: For this utility to display in the Guide View, your organization must have RVU selected as a costing methodology on the System Configuration page.



2. To set the RVU version, click **Set Version**.
3. From the **Set RVU Version** dialog, do one of the following:

To...	Then...
Create a new RVU version	a. From the **Create New RVU version** drop-down, select the new RVU version. b. Click **Continue**. c. Review the **Update Pending** prompt, and click **OK**.
Update an existing RVU version	a. From the **Select existing RVU version** drop-down, select the RVU version to update. b. Click **Save and Continue**.

4. From the **Entity** drop-down, select the entity in which to filter the department list.

   TIP: To search for an entity, type the entity name into the search field. The list automatically filters the list of entity names.

5. From the **Department** drop-down, select department in which to add or edit the RVUs.
6. In the table, starting with column H, enter the values in the cost pool columns for the appropriate cost items, as needed.
7. After you make your changes, click **Save**.
8. Review the save to database prompt, and click **OK**.
9. Run the RVU Method Assignment process to update the method to be RVU in the method definition table for the cost items under the cost pools that have RVU values.

Working with Markup Groups

Markups are generally applied to supply items that have a variable cost to them based on the time and type of purchase. For example, all pacemakers may use the same cost item number, but the prices can vary by tens of thousands of dollars based on type and manufacturer as well as any purchasing agreements in place. Instead of a fixed charge, your organization uses a markup from the base cost to price the item in a way that ensures that they do not lose money on a consumable item.

The amount or percentage an item is marked up is determined using a markup table (referred to as a markup group in Axiom Cost Accounting). There are two methods you can use to apply markups: percentage or multiplier.

NOTE: Refer to your organization to determine which one to use when defining markups.

In Axiom Cost Accounting, a markup group consists of multiple pricing tiers, with each tier encompassing a price range and a markup percentage or multiplier that is added to the items in that price range. In the following example, a Supply markup group includes ten tiers that uses a percentage markup type, so items from $.01 to $100 are charged a 20% markup, $100.01 to $200 are charged a 30% markup and so on.

Tier Level	Range Minimum	Range Maximum	Markup Factor	+ Fixed Amount
1	0.01	100.00	20%	
2	100.01	200.00	30%	
3	200.01	300.00	40%	
4	300.01	400.00	20%	
5	400.01	500.00	30%	
6	500.01	600.00	50%	
7	600.01	700.00	60%	
8	700.01	800.00	54%	
9	800.01	900.00	55%	
10	900.01	1000.00	66%	

Reverse Markup method and unit costs

When using the Reverse Markup method, unit costs are calculated by taking the price of an item and marking it down based on the original markup percentage or multiplier defined in the markup group in which the item falls. Basically, you are reverse engineering the current price to determine the unit cost.

To illustrate the math, consider the following example:

- A $1,000 item falls into a tier that carries a 4.0 multiplier (some refer to this a 400% markup, please verify for your specific organization) from the base cost.
- The markdown rate would be: 1 / 400% → 1 / 4.00 → 1/4 → .25
- The original cost of the item would then be computed as: $1,000 * .25 = $250
- You can check this by reapplying the markup rate: $250 * Multiplier → $250 * 4.0 = $1,000

NOTE: Please check with your Kaufman Hall Implementation Consultant or with Kaufman Hall Customer Success for any questions about the computation of markup percentages or the differences between a markup percentage and a markup multiplier.

The Reverse Markup assignment results in either a remainder or an overage of dollars (or negative dollars) that is applied during the next methods based on methods assigned to other cost items. If no other methods are assigned or no other cost items are remaining, the balance is left on the GL as a variance. Each Cost Category could have its own markup table, which you should assign to the corresponding departments and cost categories.

To maintain markup groups for departments, do the following:

- Identify the cost items, cost pools, or entity/department combinations that you will assign to use the Reverse Markup costing method.
- Determine with department leaders and the Supply/Materials Management department the most appropriate costing method for medical supplies, implants, and pharmaceuticals.
- Obtain the markup tables from the CDM department. Departments that would commonly use a markup table would be Surgery, Cardiac Cath Lab, Ambulatory Surgery Centers, and the Pharmacy. Also consider Cost Items within departments that use large amounts of medical supplies, implants, or pharmaceuticals.

Markup group versions

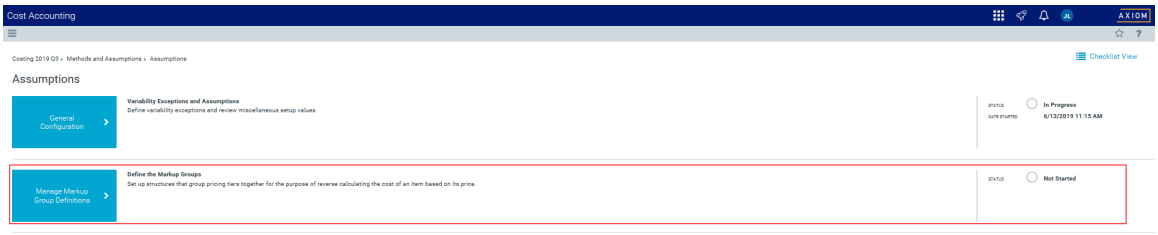
Axiom Cost Accounting allows you to create a version of your markup groups as market conditions change. Each version includes all markup groups. You can then keep your markup tiers current without losing your historical settings should you ever need to rerun costing for a prior period of time. This allows you to update your tier structures without needing to update your Method Definition table version.

Adding or editing a markup group definition

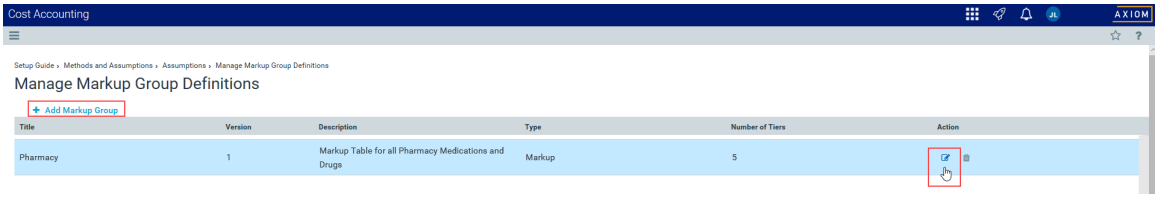
The Markup Group Definition page provides a centralized location to add, edit, and delete markup groups (previously referred to as markup tables) that are used to reverse engineer the original cost of an item based on the markup percentages or multiplier applied by your organization's purchasing department.

To add or edit a markup group definition:

1. In the Guide View, click **Methods and Assumptions > Assumptions > Manage Markup Group Definitions**.



2. Do one of the following:
   - To add, click **+ Add Markup Group** in the top right corner of the page.
   - To edit, click the definition to highlight it, and click the notepad icon  .

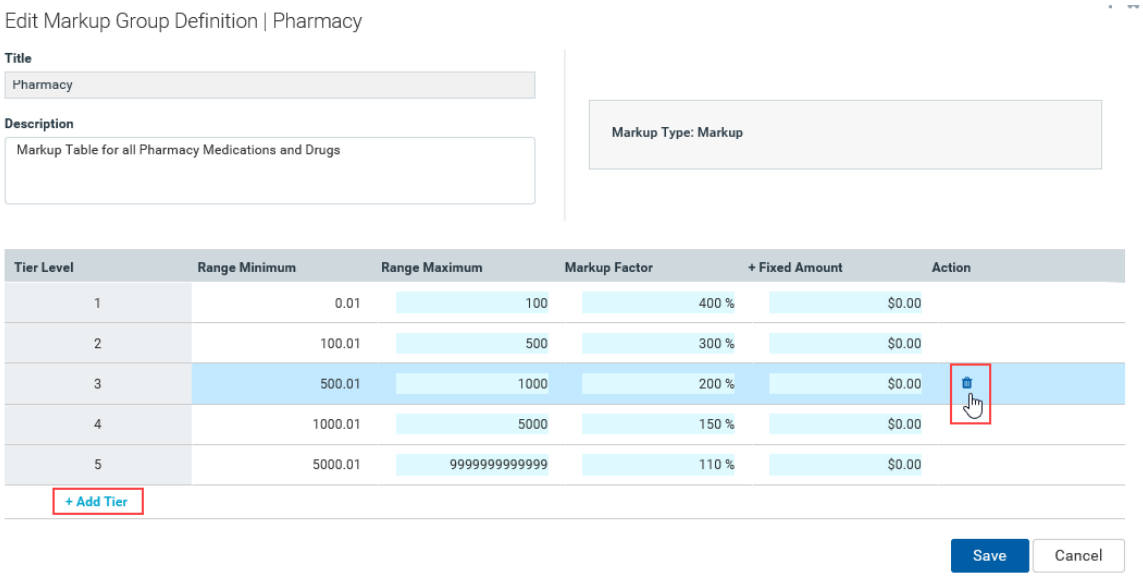


3. In the **Add/Edit Markup Group Definition** dialog, complete the following:

Field	Description
Title	Type the title for the definition.
Description	Type the details for the definition.
Choose Markup Type	Select one of the following: • **Markup** - Apply markup amounts based on percentage and/or a fixed amount. • **Multiplier** - Apply markup amounts using a multiplying factor. **NOTE:** This option only displays when you create a new markup group. When you edit an existing markup group, the window displays the markup type.
Tier Level	Displays the tier level number.

Field	Description
Range Minimum	Displays the minimum amount the item must meet to qualify for the tier level. **TIP:** This amount is determined by the amount entered in the **Range Maximum** column from the preceding tier row. For example, if you enter 299.99 in Tier 2, the Range Minimum would display 300 for Tier 3.
Range Maximum	Type the maximum amount to define the tier price range.
Markup Factor	Type the percentage or multiplier markup to apply to the items that fall within the tier price range.
+ Fixed Amount	Type an amount to add in addition to the percentage or multiplier markup. This is an optional step.

4. Do any of the following, as needed:
   - To add more tiers, click **+ Add Tier** at the bottom of the list.
   - To delete a tier row, click the row to highlight it, and then click the trash bin icon in the **Action** column. At the **Delete Markup Tier** prompt, click **OK**.



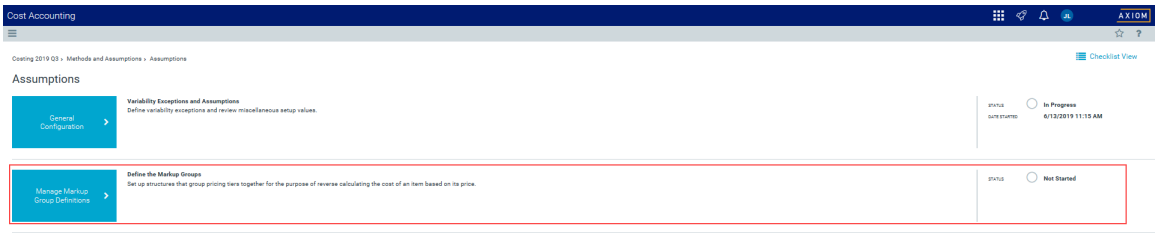
5. After making your changes, click **Save**.

Deleting a markup group

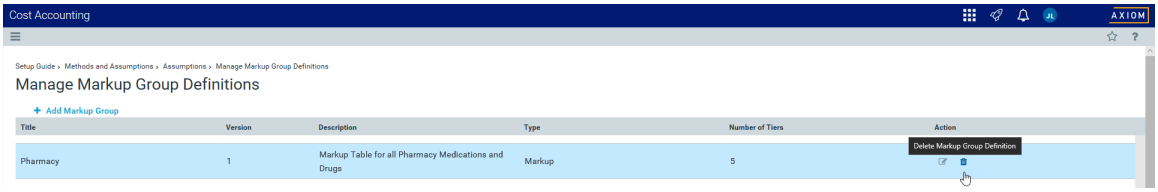
IMPORTANT: When deleting a markup group definition, the system deletes all of its versions. Once deleted, it cannot be retrieved.

To delete a markup group:

1. In the Guide View, click **Methods and Assumptions > Assumptions > Manage Markup Group Definitions**.



2. Click the markup group to highlight it, and click the trash bin icon .



3. At the **Delete this Definition?** prompt, click **OK**.

Configuring cost behavior exceptions

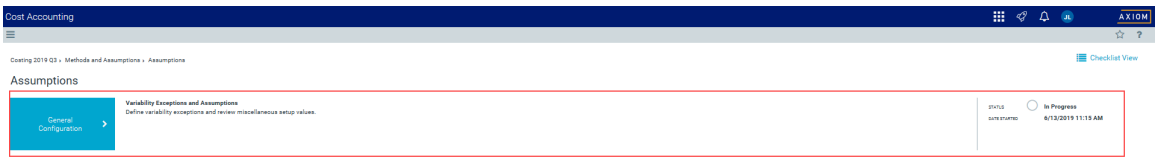
By default, Axiom Cost Accounting calculates the fixed versus variable percentages for a cost category based on whether its component costs have been defined as fixed or variable at the account level.

You can, however, override this percentage for a specific department or account, for a range of departments or accounts, or by entity. There are three different types of exceptions that you can define:

- **Account exceptions by entity** - Overrides the variability of accounts within an entity
- **Cost category exceptions by departments** - Overrides the variability of a cost category by departments
- **Account exceptions by department** - Overrides the variability of accounts with a department.

To configure cost behavior exceptions:

1. In the Guide View, click **Methods and Assumptions > Assumptions > General Configuration**.



2. Click the **Cost Behavior Exceptions** link.
3. To add exceptions, click **+ Add Exception** under the appropriate section.

4. Complete any of the following:

Exception Type	Options
Account Exceptions by Entity	**Account** - Select the account to override. **Entity** - Select the entity in which to make an exception. **Cost Variability %** - Type the override for the calculated cost variance percentage to apply.
Cost Behavior Exceptions	**Cost Category**- Select the cost category to override. **Department**- Select the department in which to make an exception. **Cost Variability %** - Type the override for the calculated cost variance percentage to apply.
Account Exceptions by Department	**Account** - Select the account to override. **Department**- Select the department in which to make an exception. **Cost Variability %** - Type the override for the calculated cost variance percentage to apply.

5. To delete a exception, hover your cursor next to the **Cost Variability %** field, and click the trash can icon

6. To save your changes, click the disk icon in the upper right corner of the page.

Managing Dimensions

Dimensions are the key index fields for the tables in the Axiom Cost Accounting database. There are three types of dimensions: Core, Encounter, and Cost Item. The Core dimensions store generic data and options used throughout most Axiom products. The Encounter dimensions store information specific to the services provided by your organization. The Cost Item dimensions are specific to Axiom Cost Accounting.

Core dimensions

- Accounts - Stores records for various pools to which values (dollars, days, and so on) can be assigned—Patient Days, Construction Costs, Medicaid discounts—quite literally anything to which a dollar amount or statistic can be assigned. This includes accounts that can be found on the balance sheet, income statement, hours, and statistics.
- Calendar Dates - Ensures referential integrity for core data tables that are period based or other data driven attributes. It is also used as a means of managing the relationship between a calendar date and the fiscal equivalent.

- Cost Categories - Defines the cost category and represents a grouping of accounts in the General Ledger used to perform the costing process. The cost category is the lowest level of detail at which costs are calculated for unit costs. They are stored for the calculated variable and fixed amounts.
- Cost Pools - Defines the level at which the cost method are defined and assigned for the cost categories. For example if an entity is using the RCC method for all departments and all items, then only one cost pool is necessary. It is also used to define the level at which an RVU is used. For example, if three labor Cost Categories are using the same RVU to allocate labor costs, one cost pool can be used for the three Cost Categories. Cost Pools are a group of cost categories using the same method or RVU.
- Departments - Includes records for each department within an organization (e.g., radiology, emergency, finance, etc.).
- Entities - Provides basic information about the entities supported by the software and can determine for some products, e.g. Cost Accounting, which entities to include in processing of data.
- Job Codes - Stores records for all of the job codes within your organization. Each job code represents a job position or role within the organization.
- Pay Types - Stores records for all of the possible categories of compensation that an employee might receive. For example, regular pay, paid time off, sick pay, incentive pay, and so on.
- YRMO Dates - A simpler version of the Cal Date dimension table, which helps processing and performance speed of the system.

Encounter Dimensions

- Age - The age of the patient during the loaded encounter. Age is a reference field for the Enc_ Patient.Age, Encounter.AgeAtAdmission, and Encounter.AgeAtDischarge.
- APR DRGs - The APR DRGs for your organization, which are commonly implemented as part of the coding and billing process.
- Bill Types - The bill type for the primary insurance claim upon final bill drop for the encounter.
- Discharge Status - The discharge disposition of a patient admission and/or how the patient left the provider facility for the loaded encounter.
- Financial Classes - Use to group insurance plans into financial classes for the primary insurance claim.
- ICD Diagnosis Codes - The ICD Diagnostic information, which is referred to by a number of tables in the system.
- ICD Procedure Codes - The clinical procedures performed for the patient in the course of care for the encounter being loaded.
- Insurance Plans - The insurance plan of the subscriber or guarantor for the loaded patient encounter.
- Locations - The physical locations that have been billed within your organization. This information is used for monthly reporting and provider-level budgeting.
- MDC Codes - Use to place a DRG into a higher level category.

- Modifiers - The additional standard codes used to further identify services or supplies used in the course of patient care.
- MS DRGs - The MS DRGs for hospital acute care providers.
- Patient Types - The type of patient for the loaded encounter.
- Place of Service Codes - The Place of Service (POS) codes, which are standard industry accepted codes that indicate where the services were rendered.
- Point of Origin - The nature of a diagnosis coded for a patient during the IP encounter being loaded.
- Present On Admission - The nature of a diagnosis coded for a patient during the IP encounter being loaded.
- Providers - The providers within your organization. This information is used for monthly reporting and provider-level budgeting.
- Reporting DRGs - Use to combine or determine the primary DRGs used for reporting purposes.
- Services - The services of the patient during the encounter course of care.
- Sex - The sex of the patient during the loaded encounter. Sex is a reference field for the Enc_ Patient.Sex.
- Stations - The nursing station of a patient when first admitted to a facility as well as the station from which the discharge occurred for the loaded encounter.
- Transaction Codes - The transaction codes for payments and adjustments stored in the Enc_ Payments table for the loaded encounter.

Cost Item Dimensions

- CDM Codes - The charge codes within your organization. The charge codes are used to track gross revenue and statistics at an inpatient (IP) and outpatient (OP) level.
- Cost Items - Defines the cost object to which costs are allocated during the unit cost calculation processes for all methods.
- CPT Codes - The CPT Codes that have been billed within your organization. This information is used for monthly reporting and provider-level budgeting.
- HCPCS Codes - The HCPCS codes within your organization used as "level 3" CPT codes, which provide further detail as to the services, procedures, or supplies that were used in the course of care.
- Revenue Codes - The revenue codes used within your organization.

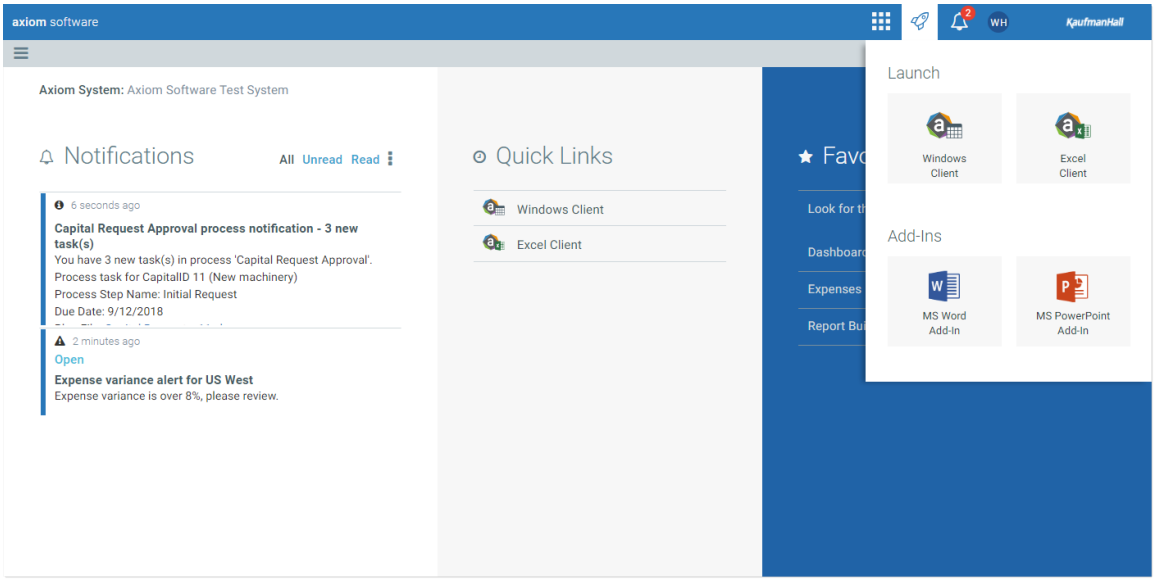
Opening dimension tables in spreadsheet mode

You can access and manage all dimensions directly from the Windows or Excel Client editions using the Open Table in Spreadsheet (OTIS) mode.

NOTE: On users with the Cost Accounting administrator role can access and manage the dimensions tables using this method.

To open dimension tables in spreadsheet mode:

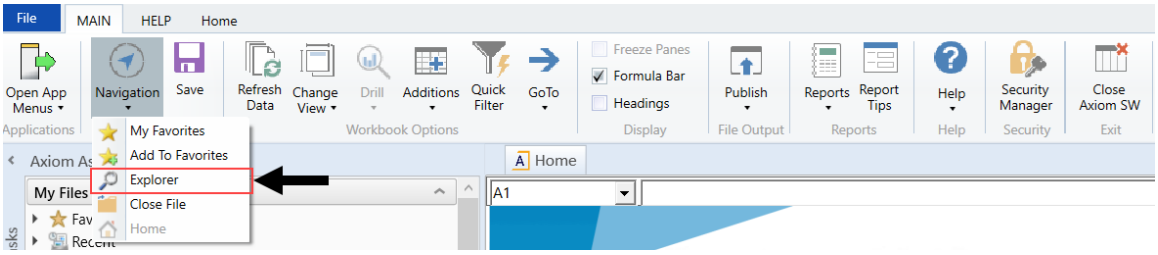
1. Click the Quick Launch icon in the Global Navigation Bar.



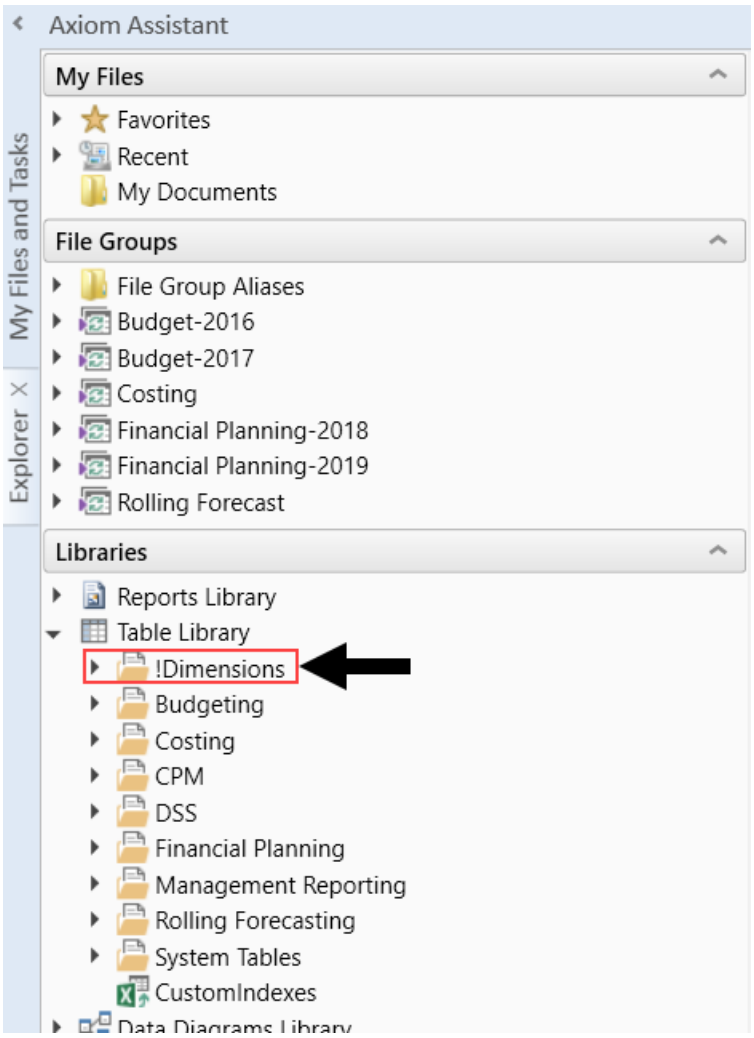
2. Click either **Windows Client** or **Excel Client**.

> **NOTE:** The only difference between the clients is that the Excel Client includes Excel-based features.

3. In the **Main** ribbon tab, click **Navigation > Explorer**.



4. In the **Libraries** section, click **Table Library > !Dimensions**.



5. Double-click the dimension table to edit.
6. In the **Open Table in Spreadsheet** dialog, click **OK**.
7. Make the appropriate changes in the table.

   IMPORTANT: We recommend that you work closely with your Implementation Consultant or Kaufman Hall Support before making significant changes to any dimension tables.

8. After you finish making your changes, in the **Main** ribbon tab, click **Save**.

Creating or modifying custom columns in dimensions

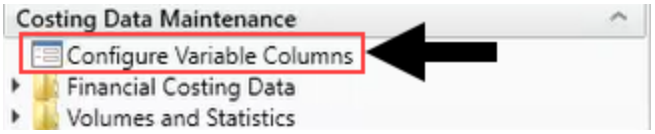
Some dimension tables allow you to add additional custom columns. These "grouping" columns allow you to customize the data you want to query into reports. You can add up to five grouping columns to the following dimensions:

- Accounts
- Age
- Cost Categories
- CPT Codes
- Departments
- Revenue Codes

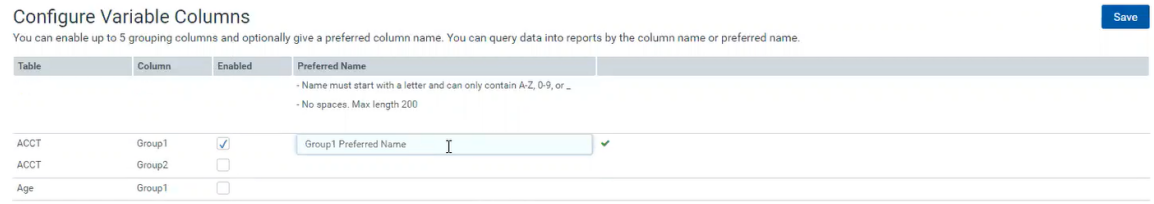
NOTE: At this time, this utility is only available from the DSS Admin task pane, accessible from the Windows or Excel Client. Only users assigned the DSS Admin role can access this task pane (assuming your organization has a license for Axiom Decision Support).

To create or modify custom columns in dimensions:

1. In the Cost Accounting Admin task pane, in the **Costing Data Maintenance** section, double-click **Configure Variable Columns**.



2. In the **Configure Variable Columns** page, in the **Enabled** column, click the check box next to the column to use.



3. In the **Preferred Name** field, type a name for the column that makes sense for reporting purposes.

   NOTE: The column name must start with a letter. The name can only include letters A-Z, 0-9, and/or an underscore (_), and can only include up to 200 characters. The system displays a check mark next to the name if it is allowed by the system; otherwise, it displays an **x**. The system will not allow you to save your changes until the check mark displays.

4. When you are done making changes, click **Save**.

After you save the changes, the system updates the appropriate dimension tables with the new columns. You then update the columns with the appropriate records.

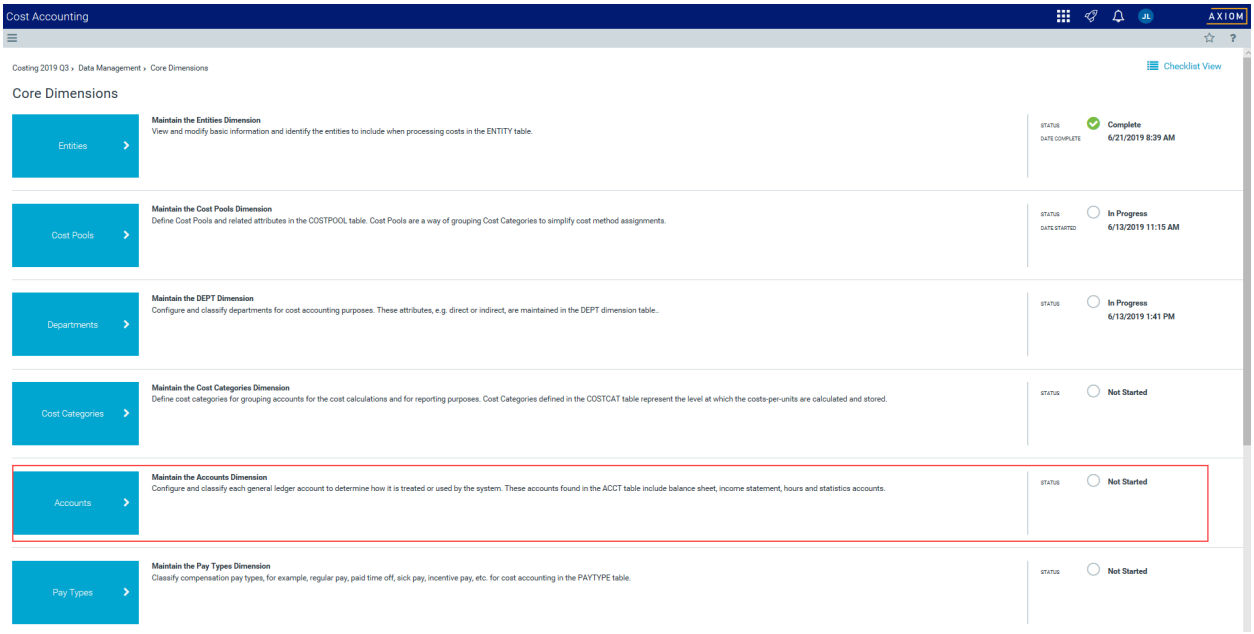
CORE DIMENSIONS

Accounts dimension

The Accounts dimension contains records for each account in the GL of your organization. This includes accounts that can be found on the balance sheet, income statement, hours, and statistics.

Accessing the Account dimension

In the Guide View, click **Data Management > Core Dimensions > Accounts**.



The page can only display up to a maximum of 10,000 records.

Filtering records

To filter records:

1. Click the funnel icon in the upper left corner of the page.

2. In the **Filter** box, you can narrow down the records to display by selecting or creating a filter using the Filter Wizard. To access the Filter Wizard, click **Edit**. If you are familiar with writing filter statements, you can type the statement syntax directly in the Filter box.
3. Click **Apply**.

Adding or editing an account

Due to the large number of records that this table may contain, you need to use the Filter panel to identify the records to display.

To add or edit an account:

1. In the table, do any of the following:
    - To add an account, click **Add Row**. The new row displays at the bottom of the table. Enter information in each column. After you save, the table will display the new row in order by the **ACCT** column.

      IMPORTANT: If you add a new record that already exists in the table, the system will overwrite the original column values with your new entries when you save your changes. We recommend that you review your entries before saving any changes.

    - To edit an account, click in the cell(s) to make your changes.

      NOTE: Columns that are grayed out cannot be edited.

    - To undo your changes, click the left arrow icon .
    - To redo your changes, click the right arrow icon .
2. When you finish making changes, click **Save**.

Deleting an account

Due to the large number of records that this table may contain, you need to use the Filter panel to identify the records to display.

To delete an account:

1. In the table, select the row to highlight it, and then click **Delete Row**.
2. At the **Continue?** prompt, click **OK**.
3. When you finish making changes, click **Save**.

Column descriptions

This section provides descriptions for each column in the Accounts dimension table:

NOTE: The table may display some columns that are related to other Kaufman Hall products or have been created specifically for your organization. Contact your Kaufman Hall Implementation Consultant or Kaufman Hall Support if you need help with these columns.

TIP: In this dimension, you can add custom "grouping" columns to customize the data you want to query into reports. For more information, see Creating or modifying custom columns in dimensions.

Keys

Every table in the database must have at least one key column. Key columns define unique records of data in the table. If a table has one key column, then each value in that key column must be unique and defines a unique record in the table. If a table has multiple key columns, then each combination of values in those key columns defines a unique record in the table.

ACCT - The Axiom Software account number. This can be the combination of the prime account and sub account, if that is how your GL system is set up.

Description - The account description from the GL.

TIP: To help make reports more readable, we recommend that you do not use all capital letters in the description content.

Cost

These columns are specific to the set up and maintenance of Axiom Cost Accounting.

COSTCAT - Represents the cost category mapping of accounts, which is used to assign cost categories to incoming data when the GL data is imported into a CGL format table.

CostMethod - Identifies the cost calculation offset accounts used for writing offsets to the GL-oriented tables and matches them to the method that they represent.

NOTE: This options in this column are system generated. We highly recommend that you not make changes to this column.

CostVarPct - The percent variable for costing; 0 = Fixed, 1=Variable. A value between 0 and 1 represent a percentage of variability.

CostDSSSummary - An FSSummary clone, but owned by Axiom Cost Accounting and Axiom Decision Support so that cost accounts can be categorized differently to facilitate costing and DSS needs without impacting Axiom Financial Reporting.

CostProvider - Identifies the salary accounts of providers for the Provider RVU method of cost calculation.

ReclassType - Defines the type reclass that was used to calculate the values in the account. This information is important for post-reclass reporting.

AllocType - Defines the type of allocation account for indirect allocation in Axiom Cost Accounting.

CostAdjustmentID - Used in Axiom Cost Accounting to tie allocation and reclass step IDs to account numbers for easier referencing in downstream reports. This number represents the ReclassID (reclasses) or the StepID (overhead allocations) accounts that are not reclass or allocation accounts that have a value of zero in this column.

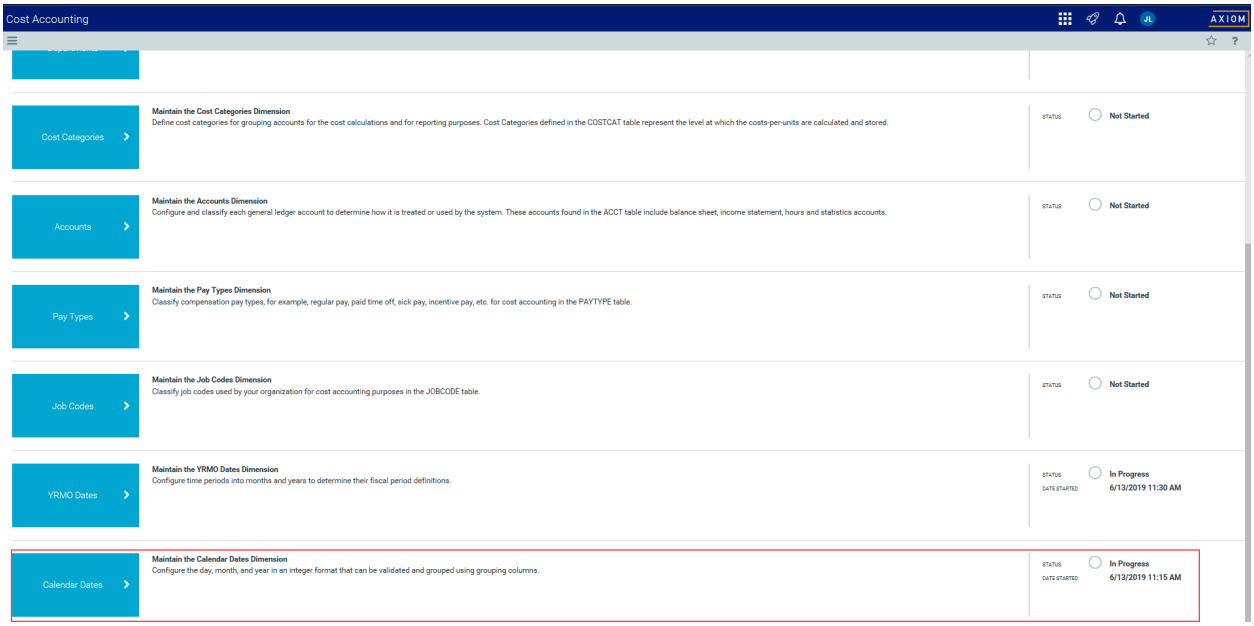
Calendar Dates dimension

The Calendar Dates dimension ensures referential integrity for core data tables that are period based or other data driven attributes, e.g., admission date for a patient in Axiom Decision Support. This forces valid dates in an integer format are loaded into the system and can be cross referenced across the various tables and processes.

It is also used as a means of managing the relationship between a calendar date and the fiscal equivalent. The fiscal equivalent of the calendar date can used by data processing and also be presented back to the user in reporting.

Accessing the Calendar Dates dimension

In the Guide View, click **Data Management > Core Dimensions > Calendar Dates**.



The page can only display up to a maximum of 10,000 records.

NOTE: At this time, you can only add records in this dimension table directly through **Axiom Explorer > Table Library > !Dimensions > CALDATE** in the Windows or Excel Client. For more information, see Opening dimension tables in spreadsheet mode.

Editing a date

Due to the large number of records that this table may contain, you need to use the Filter panel to identify the records to display.

To edit a date:

1. In the table, click in the cell(s) to edit, make your changes.

   NOTE: Columns that are grayed out cannot be edited.

2. Click **Save**.

Deleting a date

Due to the large number of records that this table may contain, you need to use the Filter panel to identify the records to display.

To delete a date:

1. In the table, select the row to highlight it, and then click **Delete Row**.
2. At the **Continue?** prompt, click **OK**.
3. When you finish making changes, click **Save**.

Column descriptions

This section provides descriptions for each column in the Calendar Dates dimension table:

NOTE: The table may display some columns that are related to other Kaufman Hall products or have been created specifically for your organization. Contact your Kaufman Hall Implementation Consultant or Kaufman Hall Support if you need help with these columns.

Keys

Every table in the database must have at least one key column. Key columns define unique records of data in the table. If a table has one key column, then each value in that key column must be unique and defines a unique record in the table. If a table has multiple key columns, then each combination of values in those key columns defines a unique record in the table.

CALDATE - The day of the year used for each record in the Daily Productivity table. The values must be an Integer and created as YYYYMMDD (ex. 20171231).

Description - The description can be the long form of the date such as December 31, 2017.

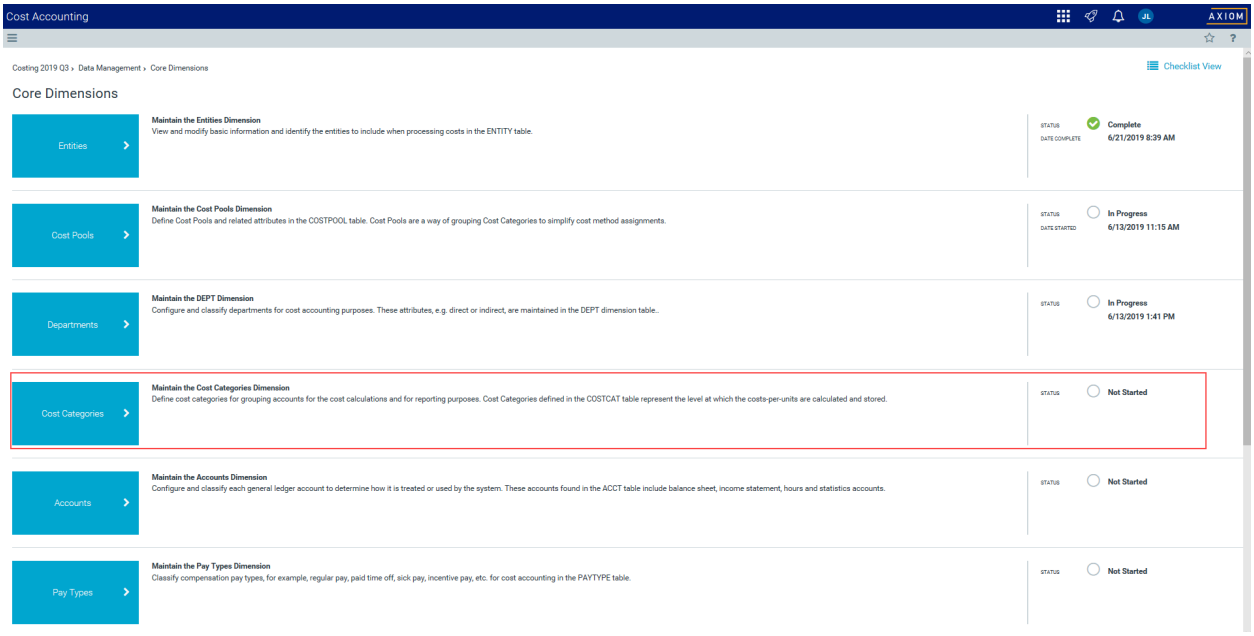
TIP: To help make reports more readable, we recommend that you do not use all capital letters in the description content.

Cost Categories dimension

The Cost Categories dimension defines the cost category and represents a grouping of accounts in the general ledger used to perform the costing process. The cost category is the lowest level of detail at which costs are calculated for unit costs. They are stored for the calculated variable and fixed amounts.

Accessing the Cost Categories dimension

In the Guide View, click **Data Management > Core Dimensions > Cost Categories**.



Filtering records

To filter records:

1. Click the funnel icon in the upper left corner of the page.

2. In the **Filter** box, you can narrow down the records to display by selecting or creating a filter using the Filter Wizard. To access the Filter Wizard, click **Edit**. If you are familiar with writing filter statements, you can type the statement syntax directly in the Filter box.
3. Click **Apply**.

Adding or editing a cost category

Due to the large number of records that this table may contain, the page can only display a maximum of 10,000 records.

To edit a cost category:

1. In the table, do any of the following:
    - To add a cost category, click **Add Row**. The new row displays at the bottom of the table. Enter information in each column. After you save, the table will display the new row in order by the COSTCAT column.

      IMPORTANT: If you add a new record that already exists in the table, the system will overwrite the original column values with your new entries when you save your changes. We recommend that you review your entries before saving any changes.

    - To edit a cost category, click in the cell(s) to make your changes.

      NOTE: Columns that are grayed out cannot be edited.

    - To undo your changes, click the left arrow icon .
    - To redo your changes, click the right arrow icon .
2. When you finish making changes, click **Save**.

Deleting a cost category

Due to the large number of records that this table may contain, you need to use the Filter panel to identify the records to display.

To delete a cost category:

1. In the table, select the row to highlight it, and then click **Delete Row**.
2. At the **Continue?** prompt, click **OK**.
3. When you finish making changes, click **Save**.

Column descriptions

This section provides descriptions for each column in the Cost Categories dimension table:

NOTE: The table may display some columns that are related to other Kaufman Hall products or have been created specifically for your organization. Contact your Kaufman Hall Implementation Consultant or Kaufman Hall Support if you need help with these columns.

TIP: In this dimension, you can add custom "grouping" columns to customize the data you want to query into reports. For more information, see Creating or modifying custom columns in dimensions.

Keys

Every table in the database must have at least one key column. Key columns define unique records of data in the table. If a table has one key column, then each value in that key column must be unique and defines a unique record in the table. If a table has multiple key columns, then each combination of values in those key columns defines a unique record in the table.

COSTCAT - An abbreviated definition of the cost category description. Keeping this short, yet intuitive, is best.

Description - A full description of the cost category.

Cost

These columns are specific to the set up and maintenance of Axiom Cost Accounting.

ShortDescription - A shortened description to use for reporting purposes to save space.

DisplayOrder - Determines the order in which cost category data displays in the workbook utilities and can be used to order them in reports.

COSTPOOL - A key attribute of a cost category and determines the cost method to use in calculating the cost category cost information. In some instances, a one to one relationship may need to exist between a cost category and a cost pool. For example: Supplies, where the reverse markup is used as calculating the cost using such a method applies to only one cost and would not be applicable to more than on cost category.

DirectFlag - Determines the definition of costs contained and calculated for each cost category as a direct cost or an indirect cost. Used primarily for reporting cost results and is separate from the Direct Flag at the department level used to drive other costing processes.

AccountNum - The base account number to use for cost method account numbers in the CGL table.

IMPORTANT: DO NOT CHANGE after the accounts are created and used in the Accounts dimension.

ReportGroup - The grouping of cost categories for Axiom Decision Support reporting purposes.

ReportDetail - The detail expense assignment for Axiom Decision Support reporting. This should either be at the FSDetail level or highly correlated. Some FSDetail accounts can be grouped for costing purposes and may not have a corresponding cost category, e.g., EX_Utilities may be grouped into OtherExpenses.

ReportDetailOrder - The order of the report detail definitions used in reporting.

RCUDEF1-5 - RCU definitions #1-5 or Relative Cost Unit definition. One of five fields that provides the ability to define the cost category as part of a RVU cost calculation. Valid options are include the following: Variable, Fixed, or Total, which defines which measures to use for this cost category within the definition. See related information in the Cost Pools dimension.

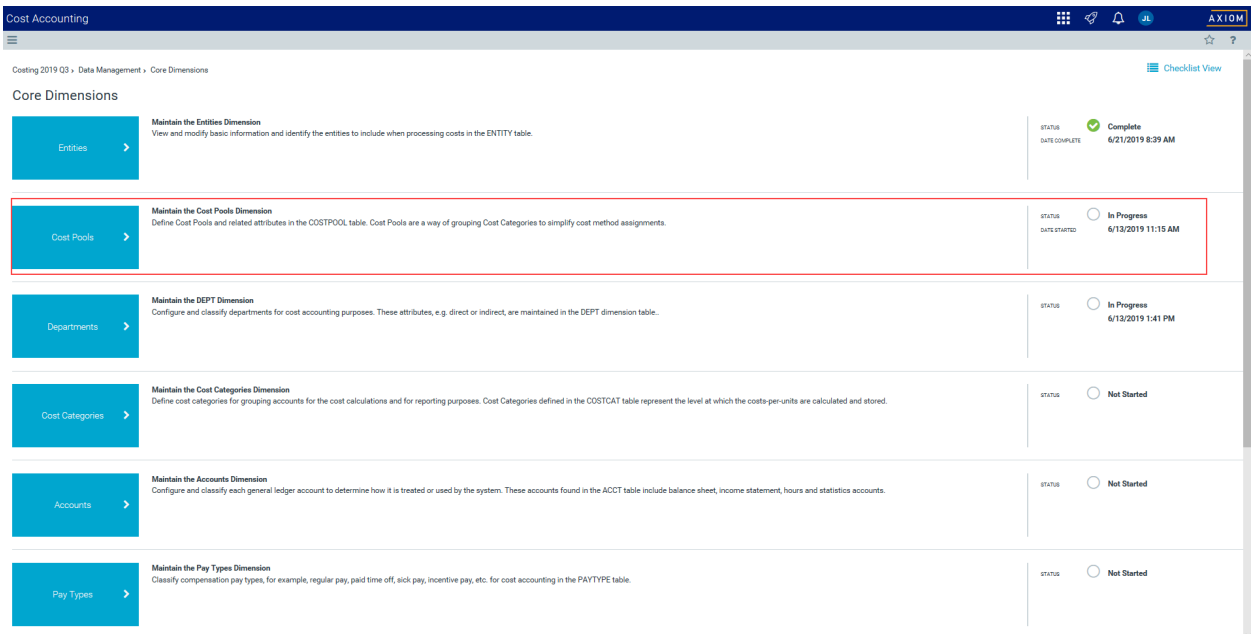
Cost Pools dimension

The Cost Pools dimension defines the level at which the cost methods are defined and assigned for the cost categories. For example if an entity is using the RCC Method for all departments and all items, then only one cost pool is necessary. It is also used to define the level at which an RVU is used. For example, if three labor cost categories are using the same RVU to allocate labor costs, one cost pool can be used for the three cost categories. Cost pools are a group of cost categories, using the same method or RVU.

NOTE: In some cases the cost pool and the cost category need to be the same, e.g., when the Reverse Markup method is assigned, the calculated costs is always assigned to only one cost category based on the markup table.

Accessing the Cost Pools dimension

In the Guide View, click **Data Management > Core Dimensions > Cost Pools**.



NOTE: The page can only display up to a maximum of 10,000 records.

Adding or editing a cost pool

Due to the large number of records that this table may contain, you need to use the Filter panel to identify the records to display.

To add or edit a cost pool:

1. In the table, do any of the following:

- To add a cost pool, click **Add Row**. The new row displays at the bottom of the table. Enter information in each column. After you save, the table will display the new row in order by the CostPool column.

  IMPORTANT: If you add a new record that already exists in the table, the system will overwrite the original column values with your new entries when you save your changes.

- To edit a cost pool, click in the cell(s) to make your changes.

  NOTE: Columns that are grayed out cannot be edited.

- To undo your changes, click the left arrow icon .
- To redo your changes, click the right arrow icon .

2. When you finish making changes, click **Save**.

Deleting a cost pool

Due to the large number of records that this table may contain, you need to use the Filter panel to identify the records to display.

To delete an account:

1. In the table, select the row to highlight it, and then click **Delete Row**.
2. At the **Continue?** prompt, click **OK**.
3. When you finish making changes, click **Save**.

Column descriptions

This section provides descriptions for each column in the Cost Pools dimension table:

NOTE: The table may display some columns that are related to other Kaufman Hall products or have been created specifically for your organization. Contact your Kaufman Hall Implementation Consultant or Kaufman Hall Support if you need help with these columns.

Keys

Every table in the database must have at least one key column. Key columns define unique records of data in the table. If a table has one key column, then each value in that key column must be unique and defines a unique record in the table. If a table has multiple key columns, then each combination of values in those key columns defines a unique record in the table.

CostPool - The primary key for the Cost Pools dimension table. We recommend using short, intuitive abbreviations.

Description - A longer, full description for the cost pool.

TIP: To help make reports more readable, we recommend that you do not use all capital letters in the description content.

Cost

These columns are specific to the set up and maintenance of Axiom Cost Accounting.

DefaultCostMethod - The cost method to use for the pool of cost categories.

DisplayOrder - The order in which to display column elements on reports and in utilities.

RCUdef - The RCU definition number.

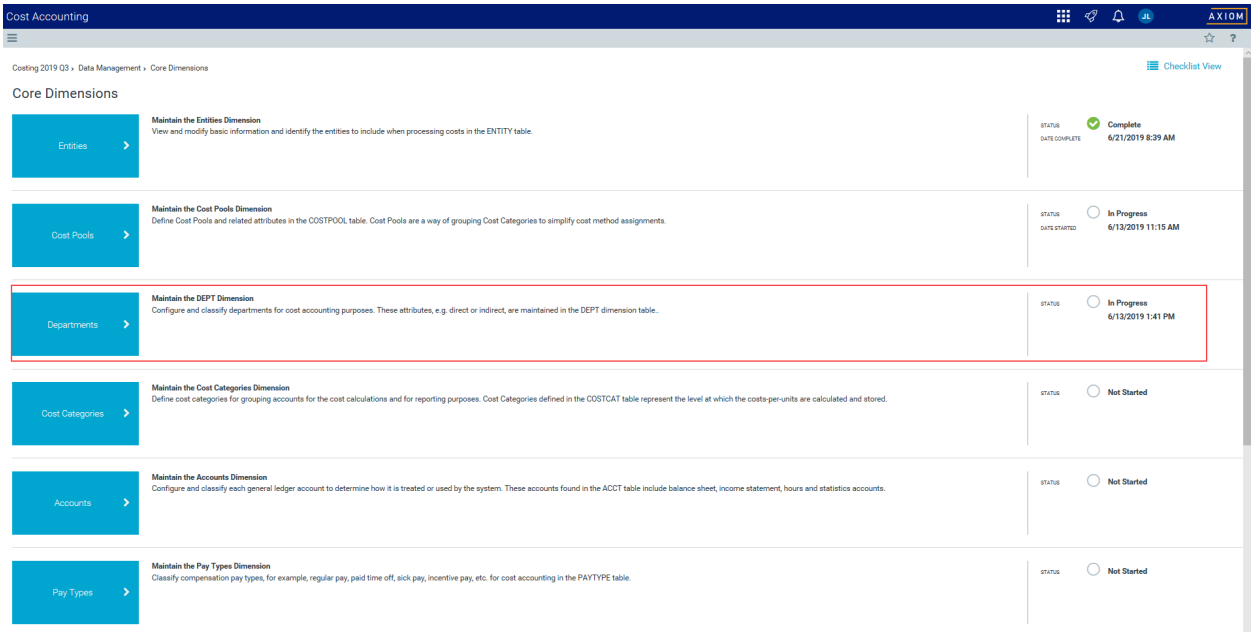
ResourceClass - Reserved for future use.

Departments dimension

The Departments dimension contains records for each department within an organization. For example, radiology, emergency, finance, and so on.

Accessing the Department dimension

In the Guide View, click **Data Management > Core Dimensions > Departments > Edit DEPT Dimension**.



NOTE: At this time, you can only add or delete records in this dimension table directly through **Axiom Explorer > Table Library > !Dimensions > DEPT** in the Windows or Excel Client. For more information, see Opening dimension tables in spreadsheet mode.

Filtering records

To filter records:

1. Click the funnel icon in the upper left corner of the page.

2. In the **Filter** box, you can narrow down the records to display by selecting or creating a filter using the Filter Wizard. To access the Filter Wizard, click **Edit**. If you are familiar with writing filter statements, you can type the statement syntax directly in the Filter box.
3. Click **Apply**.

Editing a department

Due to the large number of records that this table may contain, you need to use the Filter panel to identify the records to display.

To edit a department:

1. Click in the cell(s) to edit, and make your changes.

   NOTE: Columns that are grayed out cannot be edited.

2. After you finish making changes, click **Save**.

Column descriptions

This section provides descriptions for each column in the Departments dimension table:

NOTE: The table may display some columns that are related to other Kaufman Hall products or have been created specifically for your organization. Contact your Kaufman Hall Implementation Consultant or Kaufman Hall Support if you need help with these columns.

TIP: In this dimension, you can add custom "grouping" columns to customize the data you want to query into reports. For more information, see Creating or modifying custom columns in dimensions.

Keys

Every table in the database must have at least one key column. Key columns define unique records of data in the table. If a table has one key column, then each value in that key column must be unique and defines a unique record in the table. If a table has multiple key columns, then each combination of values in those key columns defines a unique record in the table.

DEPT - The Axiom Software department number, which is formed by combining the entity and cost center.

Description - The department description. The naming convention is entity abbreviation with department description. For example, Operating Room.

NOTE: For closed departments, add three asterisks to the beginning of the description. For example, *** Operating Room. Descriptions should not be in all capital letters.

TIP: To help make reports more readable, we recommend that you do not use all capital letters in the description content.

Cost

These columns are specific to the set up and maintenance of Axiom Cost Accounting.

ActivityGroup - Reserved for future use.

CostMap - Allows departments to process as a group in the unit cost processing phase of cost accounting. All costs for the group are combined and allocated to all of the cost items within the group. In most cases, the first or largest department of the groups becomes the target CostMap definition to which the other members are mapped.

DeptType - Determines the direct or indirect department category. Direct departments are those that generally provide patient care services and generate revenue, while indirect departments are involved in support services and do not generate patient care related revenue.

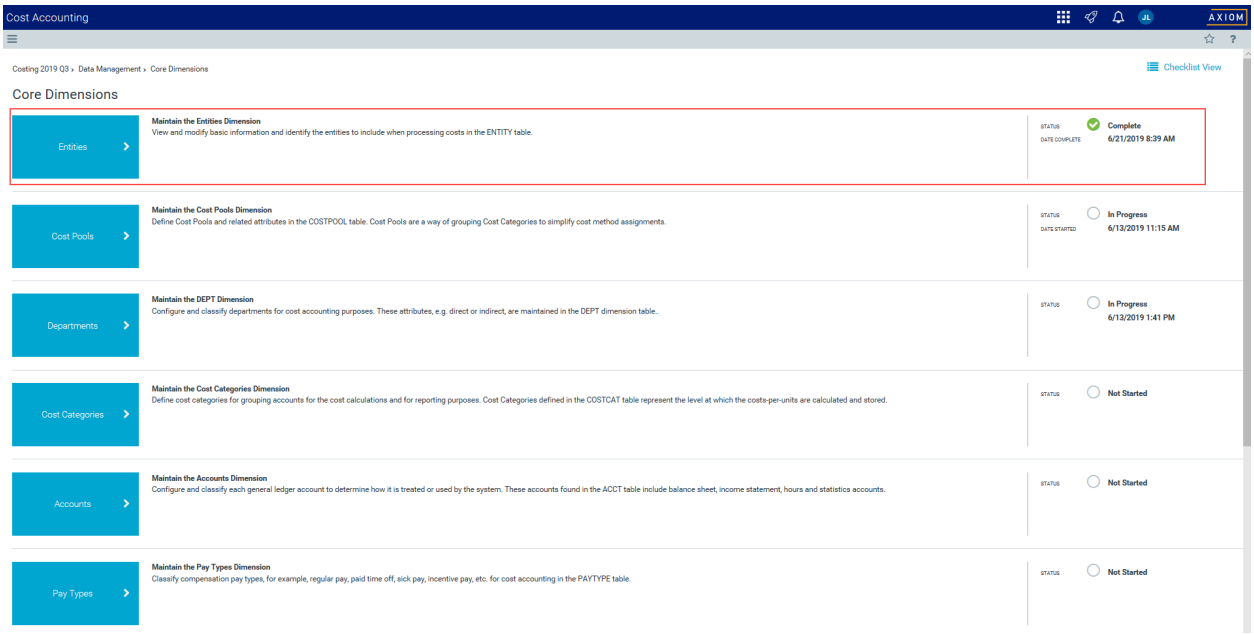
MarkupName - The specified markup table to use when processing unit costs using the Reverse Markup method.

Entities dimension

The Entities dimension provides basic information about the entities supported by the software and can determine for some products which entities to include in processing of data.

Accessing the Entity dimension

In the Guide View, click **Data Management > Core Dimensions > Entities > Edit Entities**.



The page can only display up to a maximum of 10,000 records.

Filtering records

To filter records:

1. Click the funnel icon in the upper left corner of the page.

2. In the **Filter** box, you can narrow down the records to display by selecting or creating a filter using the Filter Wizard. To access the Filter Wizard, click **Edit**. If you are familiar with writing filter statements, you can type the statement syntax directly in the Filter box.
3. Click **Apply**.

Adding or editing an entity

To add or edit an entity:

1. In the table, do any of the following:
   - To add an entity, click **Add Row**. The new row displays at the bottom of the table. Enter information in each column. After you save, the table will display the new row in order by Entity number.

IMPORTANT: If you add a new record that already exists in the table, the system will overwrite the original column values with your new entries when you save your changes. We recommend that you review your entries before saving any changes.

- To edit an entity, click in the cell(s) to make your changes.

  NOTE: Columns that are grayed out cannot be edited.

- To undo your changes, click the left arrow icon .
- To redo your changes, click the right arrow icon .

2. When you finish making changes, click **Save**.

Deleting an entity

Due to the large number of records that this table may contain, you need to use the Filter panel to identify the records to display.

To delete an entity:

1. In the table, select the row to highlight it, and then click **Delete Row**.
2. At the **Continue?** prompt, click **OK**.
3. When you finish making changes, click **Save**.

Column descriptions

This section provides description for each column in the Entities dimension table:

NOTE: The table may display some columns that are related to other Kaufman Hall products or have been created specifically for your organization. Contact your Kaufman Hall Implementation Consultant or Kaufman Hall Support if you need help with these columns.

Keys

Every table in the database must have at least one key column. Key columns define unique records of data in the table. If a table has one key column, then each value in that key column must be unique and defines a unique record in the table. If a table has multiple key columns, then each combination of values in those key columns defines a unique record in the table.

ENTITY - The primary key for the table using an integer data format.

Description - The long entry description for the entity.

TIP: To help make reports more readable, we recommend that you do not use all capital letters in the description content.

Cost

These columns are specific to the set up and maintenance of Axiom Cost Accounting.

Abbrev - The standard abbreviation for the entity.

Costing - Do one of the following:

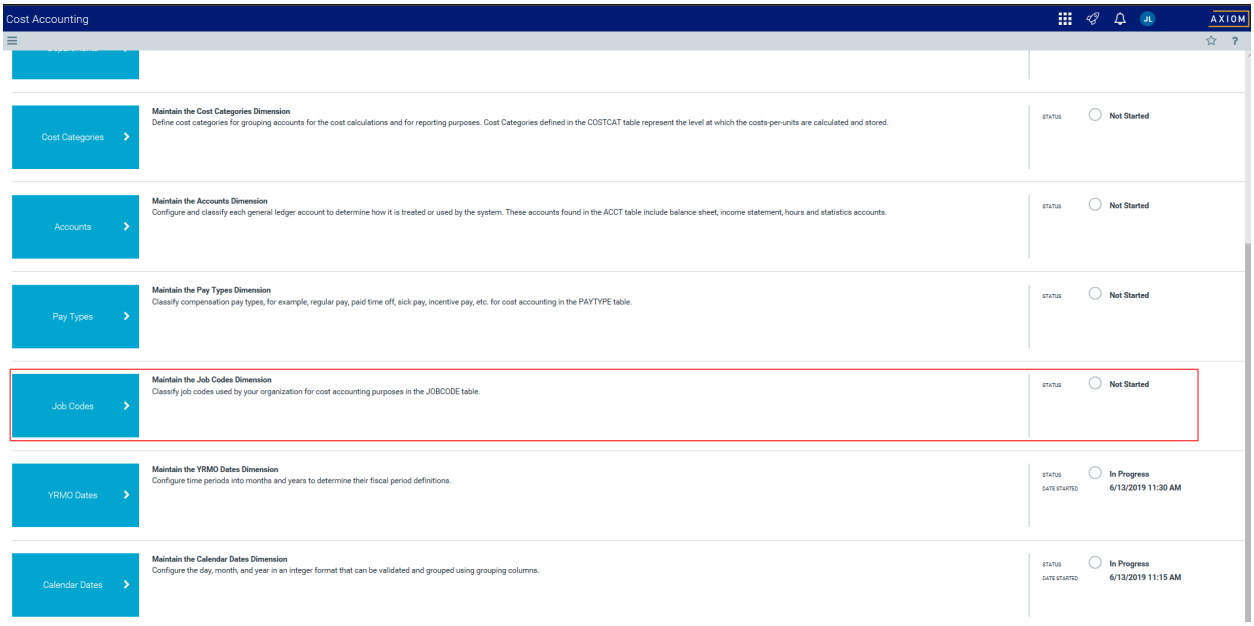
- If the entity is used in Axiom Cost Accounting, select **True**.
- If the entity is not used in Axiom Cost Accounting, select **False**.

Job Codes dimension

The Job Codes dimension includes records for all of the job codes within your organization. Each job code represents a job position or role within the organization.

Accessing the Jobcode dimension

In the Guide View, click **Data Management > Core Dimensions > Job Codes**.



The page can only display up to a maximum of 10,000 records.

Filtering records

To filter records:

1. Click the funnel icon in the upper left corner of the page.

2. In the **Filter** box, you can narrow down the records to display by selecting or creating a filter using the Filter Wizard. To access the Filter Wizard, click **Edit**. If you are familiar with writing filter statements, you can type the statement syntax directly in the Filter box.
3. Click **Apply**.

Modifying the Job Codes dimension

To modify the Job Codes dimension:

1. In the **Filter** panel, type the number of records to display in the **Maximum Records** field. The default is 1000.

   NOTE: Due to the large number of records that this table may contain, the page can only display a maximum of 10,000 records.

2. In the **Filter** box, you can narrow down the records to display by selecting or creating a filter using the Filter Wizard. To access the Filter Wizard, click **Edit**. If you are familiar with writing filter statements, you can type the statement syntax directly in the Filter box.
3. Click **Apply**.
4. In the table, do any of the following:
   - To add a job code, click **Add Row**. The new row displays at the bottom of the table. Enter information in each column. After you save, the table will display the new row in order by the JOBCODE column.

     IMPORTANT: If you add a new record that already exists in the table, the system will overwrite the original column values with your new entries when you save your changes. We recommend that you review your entries before saving any changes.

   - To edit a job code, click in the cell(s) to make your changes.

     NOTE: Columns that are grayed out cannot be edited.

   - To delete a job code, select the row to highlight it, and then click **Delete Row**. At the **Continue?** prompt, click **OK**.
   - To undo your changes, click the left arrow icon .
   - To redo your changes, click the right arrow icon .
5. When you finish making changes, click **Save**.

Column descriptions

The following section describes the areas and columns in the Job Codes dimension table:

NOTE: The table may display some columns that are related to other Kaufman Hall products or have been created specifically for your organization. Contact your Kaufman Hall Implementation Consultant or Kaufman Hall Support if you need help with these columns.

Keys

Every table in the database must have at least one key column. Key columns define unique records of data in the table. If a table has one key column, then each value in that key column must be unique and defines a unique record in the table. If a table has multiple key columns, then each combination of values in those key columns defines a unique record in the table.

JOBCODE - The Axiom Software job code. This entry must be an alpha-numeric field so that during the import process a J is prepended to all job codes to ensure they are alpha numeric.

Description - The job code description from the payroll system.

TIP: To help make reports more readable, we recommend that you do not use all capital letters in the description content.

Cost

These columns are specific to the set up and maintenance of Axiom Cost Accounting.

CostHr - The Prod Hours Account Definitions for Costing.

ResourceJobClass - Used in the RVU developer process by the mapping of job codes to a Resource Job Class, which determines the level of detailed RVU development for labor resources. This attribute is also used in the mapping of payroll hour and dollar into an average wage rate in the resource table that then drives the calculation of the RVU.

CostGL - The Prod Dollars Account Definitions for Costing.

CostClass - An alternative grouping column used in the costing process that is invoked during the loading of payroll information into the CGL as statistics to support a payroll related reclassification of GL dollars or hours.

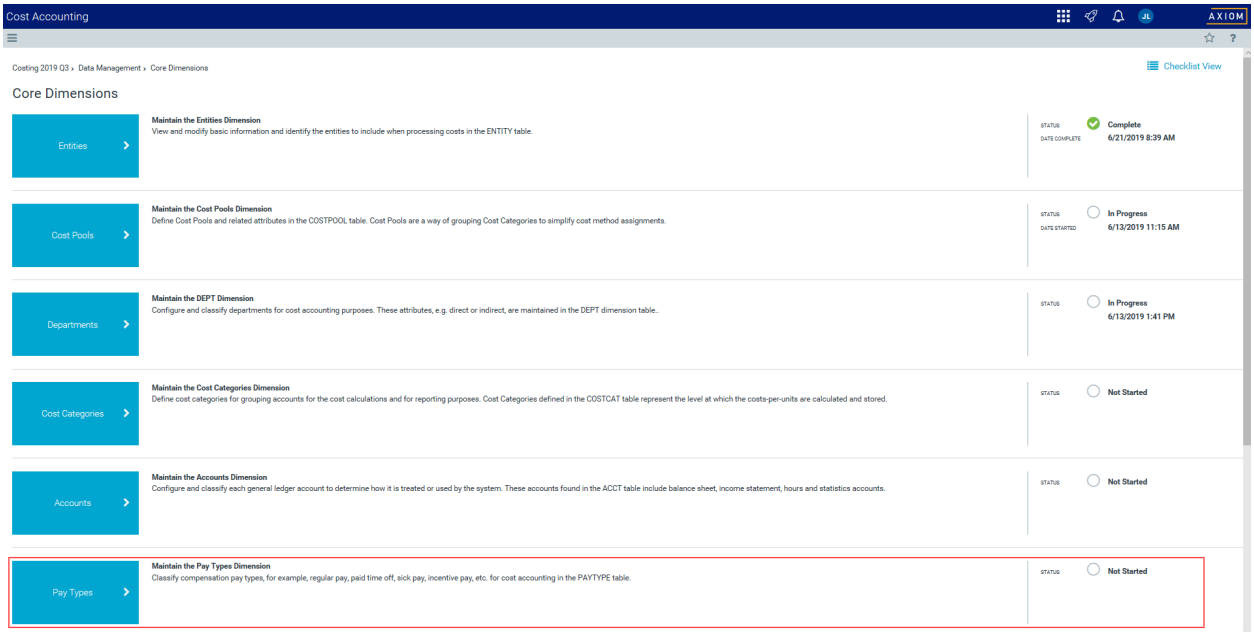
CostVariable - Determines whether the job code is a fixed or variable cost.

Pay Types dimension

The Pay Types dimension includes records for all of the possible categories of compensation that an employee might receive. For example, regular pay, paid time off, sick pay, incentive pay, and so on.

Accessing the Pay Type dimension

In the Guide View, click **Data Management > Core Dimensions > Pay Types**.



The page can only display up to a maximum of 10,000 records.

Filtering records

To filter records:

1. Click the funnel icon in the upper left corner of the page.

2. In the **Filter** box, you can narrow down the records to display by selecting or creating a filter using the Filter Wizard. To access the Filter Wizard, click **Edit**. If you are familiar with writing filter statements, you can type the statement syntax directly in the Filter box.
3. Click **Apply**.

Adding or editing a pay type

Due to the large number of records that this table may contain, you need to use the Filter panel to identify the records to display.

To modify the Pay Types dimension:

1. In the table, do any of the following:

- To add a pay type, click **Add Row**. The new row displays at the bottom of the table. Enter information in each column. After you save, the table will display the new row in order by the PAYTYPE column.

  IMPORTANT: If you add a new record that already exists in the table, the system will overwrite the original column values with your new entries when you save your changes. We recommend that you review your entries before saving any changes.

- To edit a pay type, click in the cell(s) to make your changes.

  NOTE: Columns that are grayed out cannot be edited.

- To undo your changes, click the left arrow icon .
- To redo your changes, click the right arrow icon .

2. When you finish making changes, click **Save**.

Deleting an pay type

Due to the large number of records that this table may contain, you need to use the Filter panel to identify the records to display.

To delete a pay type:

1. In the table, select the row to highlight it, and then click **Delete Row**.
2. At the **Continue?** prompt, click **OK**.
3. When you finish making changes, click **Save**.

Column descriptions

This section provides descriptions for each column in the Pay Types dimension table:

NOTE: The table may display some columns that are related to other Kaufman Hall products or have been created specifically for your organization. Contact your Kaufman Hall Implementation Consultant or Kaufman Hall Support if you need help with these columns.

Keys

Every table in the database must have at least one key column. Key columns define unique records of data in the table. If a table has one key column, then each value in that key column must be unique and defines a unique record in the table. If a table has multiple key columns, then each combination of values in those key columns defines a unique record in the table.

PAYTYPE - The Axiom Software pay type. This must be an alpha-numeric field, so that during the import process, a P is prepended to all pay types to ensure they are alpha numeric.

Description - Identifies the pay type description from the payroll system. Be as explicit as possible, avoid abbreviations, and use layman's terms.

> **TIP:** To help make reports more readable, we recommend that you do not use all capital letters in the description content.

Cost

These columns are specific to the set up and maintenance of Axiom Cost Accounting.

ResourcesCalculation - Determines the calculation behavior for the hours or dollars within the pay type when using the payroll information within the RVU development process. When labor rates are calculated for the Resource Table, the designation here determines if the Hours, Dollars, or Both are to be used in the numerator and denominator in the average.

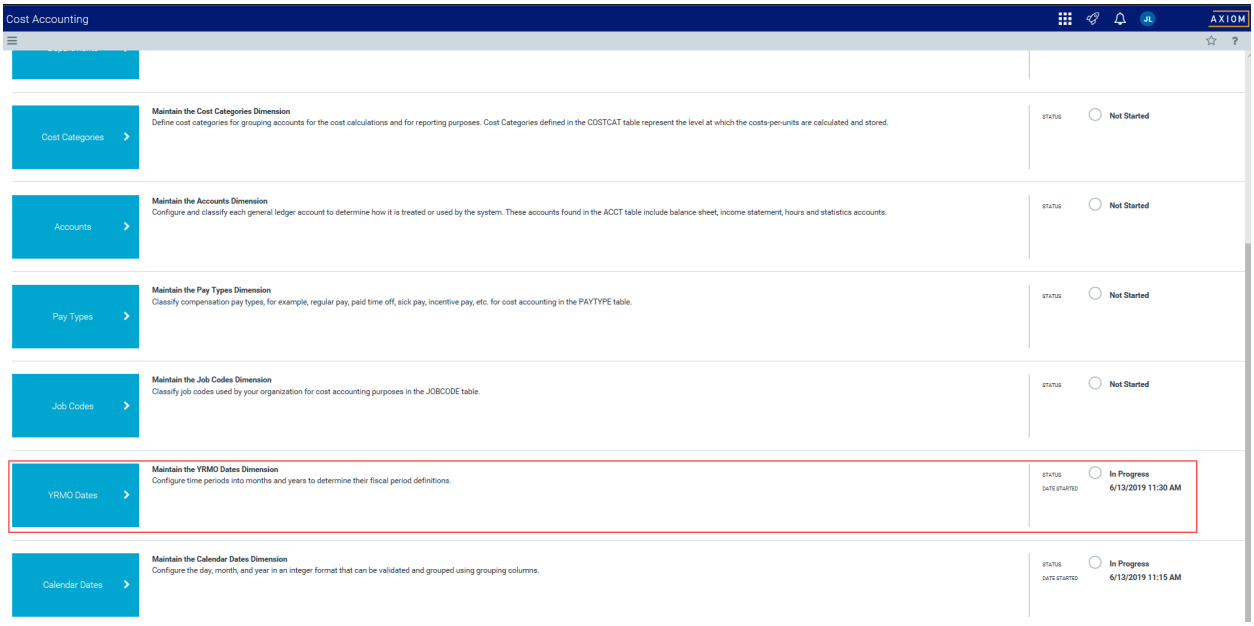
CostVariable - Determines whether the pay type is a fixed or variable cost.

YRMO Dates dimension

The YRMO Dates dimension is a simpler version of the Cal Dates dimension table, which helps processing and performance speed of the system.

Accessing the YRMO Dates dimension

In the Guide View, click **Data Management > Core Dimensions > YRMO Dates**.



The page can only display up to a maximum of 10,000 records.

NOTE: At this time, you can only add, edit, or delete records in this dimension table directly through **Axiom Explorer > Table Library > !Dimensions > YRMO** in the Windows or Excel Client. For more information, see Opening dimension tables in spreadsheet mode.

Filtering records

To filter records:

1. Click the funnel icon in the upper left corner of the page.

2. In the **Filter** box, you can narrow down the records to display by selecting or creating a filter using the Filter Wizard. To access the Filter Wizard, click **Edit**. If you are familiar with writing filter statements, you can type the statement syntax directly in the Filter box.
3. Click **Apply**.

Column descriptions

This section provides descriptions for each column in the YRMO Dates dimension table:

NOTE: The table may display some columns that are related to other Kaufman Hall products or have been created specifically for your organization. Contact your Kaufman Hall Implementation Consultant or Kaufman Hall Support if you need help with these columns.

Keys

Every table in the database must have at least one key column. Key columns define unique records of data in the table. If a table has one key column, then each value in that key column must be unique and defines a unique record in the table. If a table has multiple key columns, then each combination of values in those key columns defines a unique record in the table.

YRMO - Zero (0) is a default value, 999999 is used in costing to denote a current effective date range (To /From).

Cost

These columns are specific to the set up and maintenance of Axiom Cost Accounting.

CQtr - The calendar quarter.

CQtrCount - The month counter within a quarter period.

FYear - The fiscal year.

FMonth - The fiscal month. It is the same as the GL Period associated with YRMO to link patient centric tables with the CGL tables.

FQtr - The fiscal quarter.

FQtrCount - The month counter within a quarter period.

DaysInMth - The number of days in a month.

CopyPass - Reserved for future use.

MonthName - The name of the month.

LongName - Month, yyyy

ShortName - mmm-yyyy

FLongName - Month, Fiscal yyyy

FShortName - mmm-Fiscal yyyy

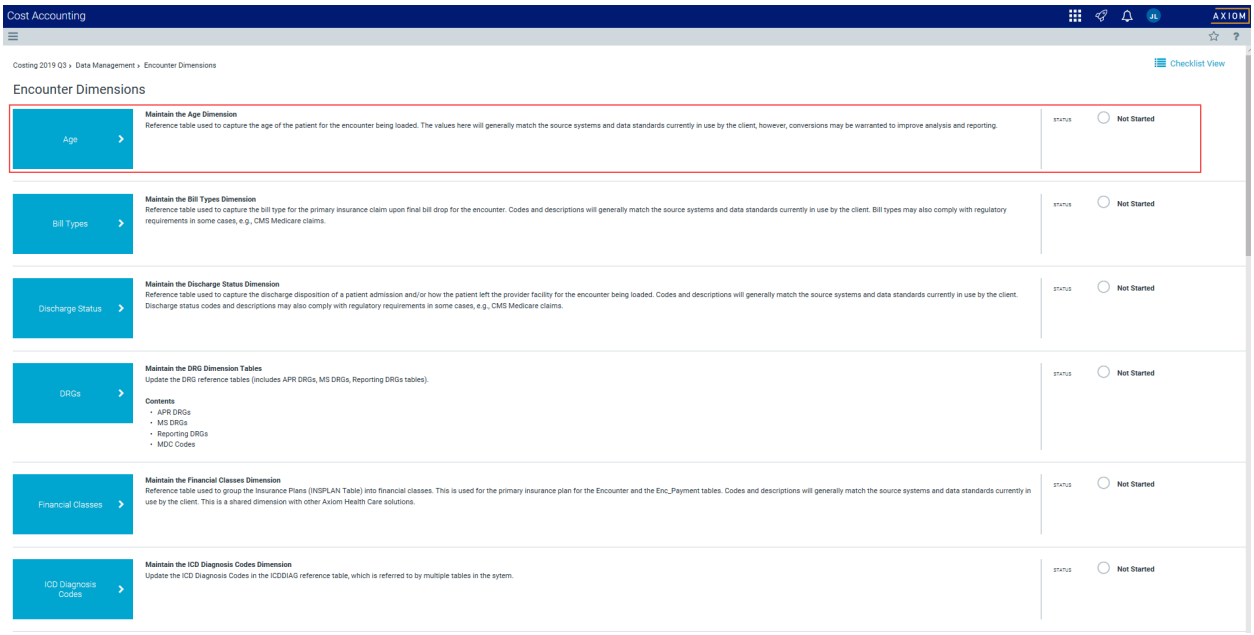
ENCOUNTER DIMENSIONS

Age dimension

The Age dimension is a reference table used to capture the age of the patient during the loaded encounter. Age is a reference field for the Enc_Patient.Age, Encounter.AgeAtAdmission, and Encounter.AgeAtDischarge. The codes and descriptions used here will generally match your organization's source systems and data standards, however, conversions may be warranted to improve analysis and reporting.

Accessing the Age dimension

In the Guide View, click **Data Management > Encounter Dimensions > Age**.



The page can only display up to a maximum of 10,000 records.

NOTE: At this time, you can only add, edit, or delete records in this dimension table directly through **Axiom Explorer > Table Library > DSS > Reference > Age** in the Windows or Excel Client. For more information, see Opening dimension tables in spreadsheet mode.

Filtering records

To filter records:

1. Click the funnel icon in the upper left corner of the page.

2. In the **Filter** box, you can narrow down the records to display by selecting or creating a filter using the Filter Wizard. To access the Filter Wizard, click **Edit**. If you are familiar with writing filter statements, you can type the statement syntax directly in the Filter box.
3. Click **Apply**.

Column descriptions

This section provides descriptions for each column in the Age dimension table: department

NOTE: The table may display some columns that are related to other Kaufman Hall products or have been created specifically for your organization. Contact your Kaufman Hall Implementation Consultant or Kaufman Hall Support if you need help with these columns.

TIP: In this dimension, you can add custom "grouping" columns to customize the data you want to query into reports. For more information, see Creating or modifying custom columns in dimensions.

Keys

Every table in the database must have at least one key column. Key columns define unique records of data in the table. If a table has one key column, then each value in that key column must be unique and defines a unique record in the table. If a table has multiple key columns, then each combination of values in those key columns defines a unique record in the table.

AGE - A five-character string value entered as an abbreviation. Examples include the following:

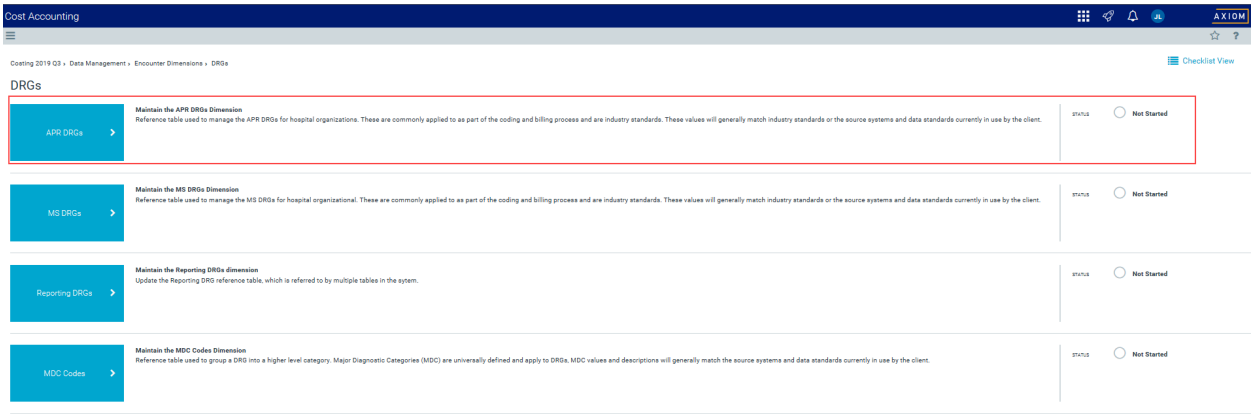
- N for newborn, delivered on-premise
- 3_H, for a newborn delivered and admitted
- 1_D for one day old
- 4_M for a four month old
- 25 for a twenty five year old

APR DRGs dimension

The APR DRGs dimension is a reference table used to manage the APR DRGs for your organization, which are commonly implemented as part of the coding and billing process. These values will generally match industry standards or your organization's source systems and data standards.

Accessing the APR DRGs dimension

In the Guide View, click **Data Management > Encounter Dimensions DRGs > APR DRGs**.



The page can only display up to a maximum of 10,000 records.

NOTE: At this time, you can only add or delete records in this dimension table directly through **Axiom Explorer > Table Library > DSS > Reference > APRDRG** in the Windows or Excel Client. For more information, see Opening dimension tables in spreadsheet mode.

Filtering records

To filter records:

1. Click the funnel icon in the upper left corner of the page.

2. In the **Filter** box, you can narrow down the records to display by selecting or creating a filter using the Filter Wizard. To access the Filter Wizard, click **Edit**. If you are familiar with writing filter statements, you can type the statement syntax directly in the Filter box.
3. Click **Apply**.

Editing an APR DRG code

To edit an APR DRGs dimension:

1. In the table, do any of the following:
   - To edit an APR DRG, click in the cell(s) to make your changes.

     NOTE: Columns that are grayed out cannot be edited.

   - To undo your changes, click the left arrow icon .
   - To redo your changes, click the right arrow icon .
2. When you finish making changes, click **Save**.

Column descriptions

This section provides descriptions for each column in the APR DRGs dimension table:

NOTE: The table may display some columns that are related to other Kaufman Hall products or have been created specifically for your organization. Contact your Kaufman Hall Implementation Consultant or Kaufman Hall Support if you need help with these columns.

Keys

Every table in the database must have at least one key column. Key columns define unique records of data in the table. If a table has one key column, then each value in that key column must be unique and defines a unique record in the table. If a table has multiple key columns, then each combination of values in those key columns defines a unique record in the table.

APRDRG - The value for the All Patient Refined DRG.

Description - The description for the value.

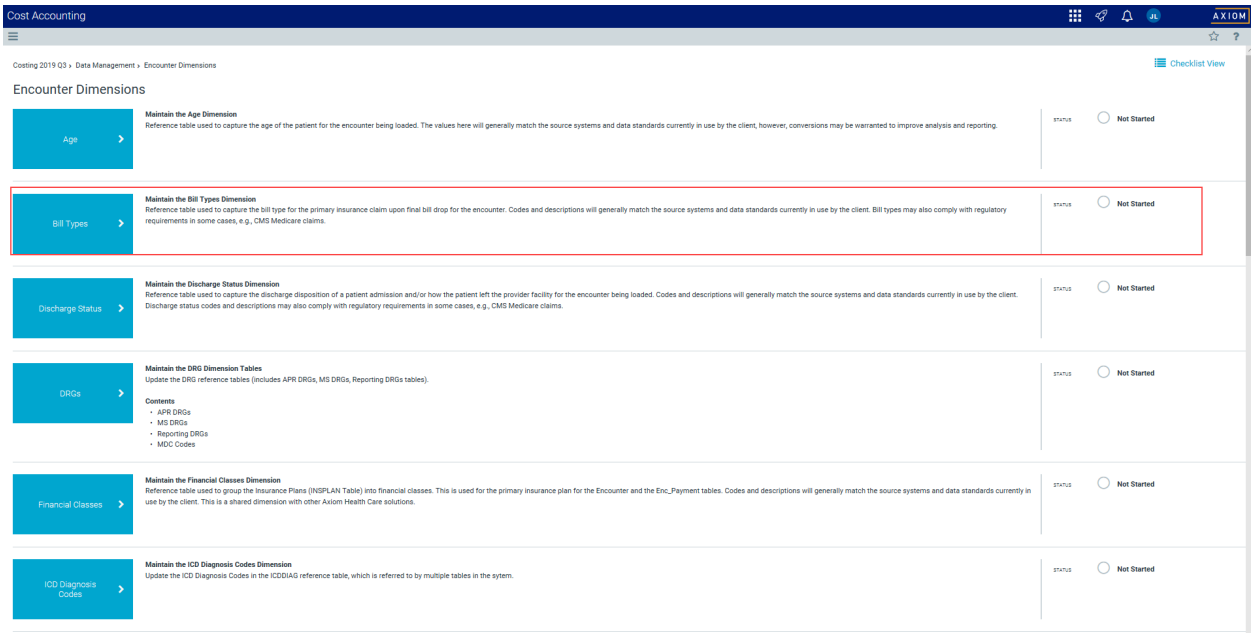
> **TIP:** To help make reports more readable, we recommend that you do not use all capital letters in the description content.

Bill Types dimension

The Bill Types dimension is a reference table used to capture the bill type for the primary insurance claim upon final bill drop for the encounter. Codes and descriptions will generally match your organization's source systems and data standards. Bill types may also comply with regulatory requirements in some cases, e.g., CMS Medicare claims.

Accessing the Bill Type dimension

In the Guide View, click **Data Management > Encounter Dimensions > Bill Types**.



The page can only display up to a maximum of 10,000 records.

> **NOTE:** At this time, you can only add or edit records in this dimension table directly through **Axiom Explorer > Table Library > DSS > Reference > BillType** in the Windows or Excel Client. For more information, see Opening dimension tables in spreadsheet mode.

Filtering records

To filter records:

1. Click the funnel icon in the upper left corner of the page.

2. In the **Filter** box, you can narrow down the records to display by selecting or creating a filter using the Filter Wizard. To access the Filter Wizard, click **Edit**. If you are familiar with writing filter statements, you can type the statement syntax directly in the Filter box.
3. Click **Apply**.

Editing a bill type

Due to the large number of records that this table may contain, you need to use the Filter panel to identify the records to display.

To edit a bill type:

1. Click in the cell(s) to edit, and make your changes.

   NOTE: Columns that are grayed out cannot be edited.

2. After you finish making changes, click **Save**.

Column descriptions

This section provides descriptions for each column in the Bill Types dimension table:

NOTE: The table may display some columns that are related to other Kaufman Hall products or have been created specifically for your organization. Contact your Kaufman Hall Implementation Consultant or Kaufman Hall Support if you need help with these columns.

Keys

Every table in the database must have at least one key column. Key columns define unique records of data in the table. If a table has one key column, then each value in that key column must be unique and defines a unique record in the table. If a table has multiple key columns, then each combination of values in those key columns defines a unique record in the table.

BillType - The bill type code that represents the primary insurance claim for the encounter.

Description - The description for the bill type.

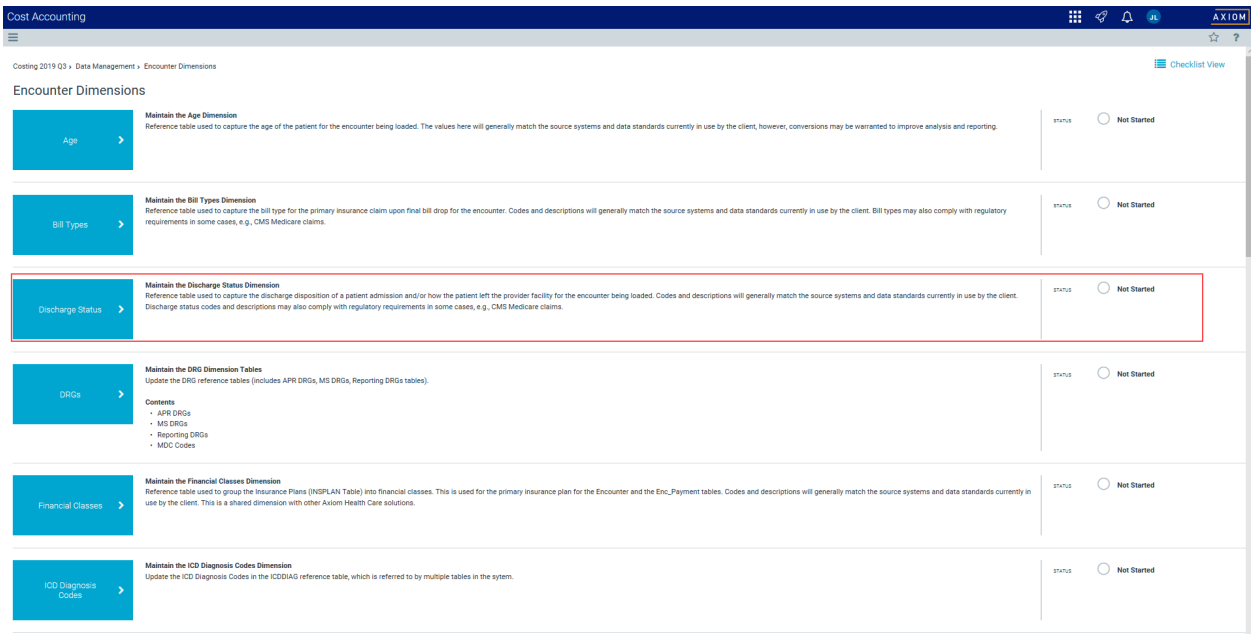
TIP: To help make reports more readable, we recommend that you do not use all capital letters in the description content.

Discharge Status dimension

The Discharge Status dimension is a reference table used to capture the discharge disposition of a patient admission and/or how the patient left the provider facility for the loaded encounter. Codes and descriptions generally match your organization's source systems and data standards. Discharge status codes and descriptions may also comply with regulatory requirements in some cases, e.g., CMS Medicare claim.

Accessing the Discharge Status dimension

In the Guide View, click **Data Management > Encounter Dimensions > Discharge Status**.



The page can only display up to a maximum of 10,000 records.

NOTE: At this time, you can only add or delete records in this dimension table directly through **Axiom Explorer > Table Library > DSS > Reference > DischargeStatus** in the Windows or Excel Client. For more information, see Opening dimension tables in spreadsheet mode.

Filtering records

To filter records:

1. Click the funnel icon in the upper left corner of the page.

2. In the **Filter** box, you can narrow down the records to display by selecting or creating a filter using the Filter Wizard. To access the Filter Wizard, click **Edit**. If you are familiar with writing filter statements, you can type the statement syntax directly in the Filter box.
3. Click **Apply**.

Editing a discharge status

Due to the large number of records that this table may contain, you need to use the Filter panel to identify the records to display.

To edit a bill type:

1. Click in the cell(s) to edit, and make your changes.

   NOTE: Columns that are grayed out cannot be edited.

2. After you finish making changes, click **Save**.

Column descriptions

This section provides descriptions for each column in the Discharge Status dimension table:

NOTE: The table may display some columns that are related to other Kaufman Hall products or have been created specifically for your organization. Contact your Kaufman Hall Implementation Consultant or Kaufman Hall Support if you need help with these columns.

Keys

Every table in the database must have at least one key column. Key columns define unique records of data in the table. If a table has one key column, then each value in that key column must be unique and defines a unique record in the table. If a table has multiple key columns, then each combination of values in those key columns defines a unique record in the table.

DischargeStatus - The code used to identify the discharge disposition status of a patient.

Description - The description for the code.

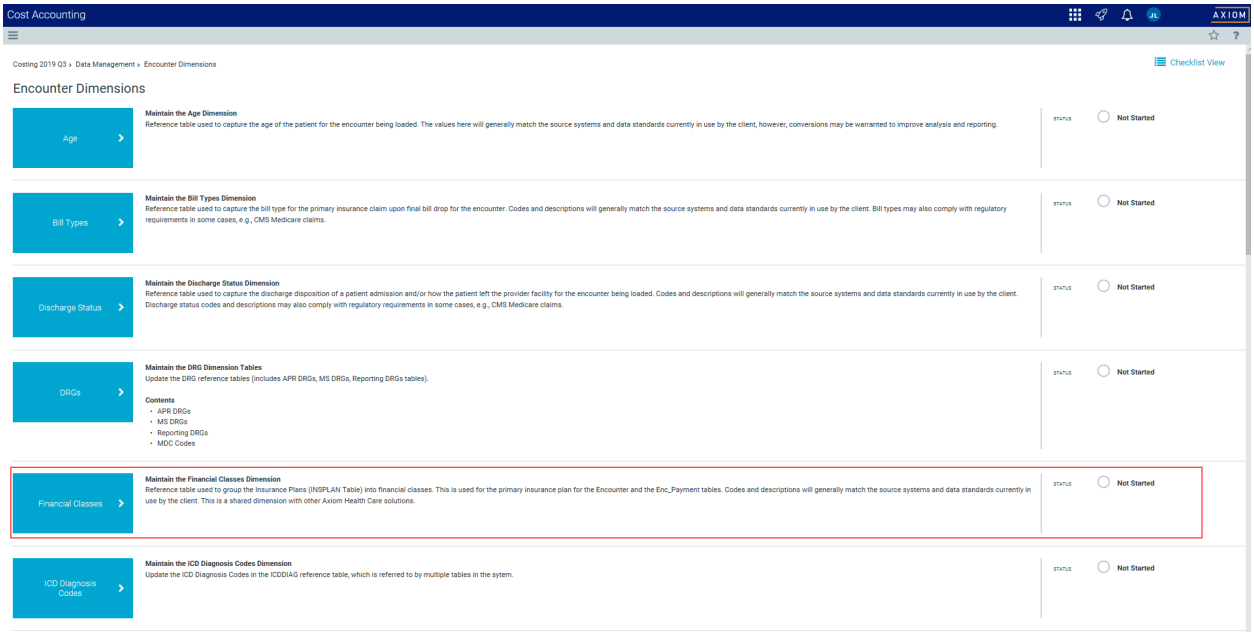
TIP: To help make reports more readable, we recommend that you do not use all capital letters in the description content.

Financial Classes dimension

The Financial Class dimension is a reference table used to group insurance plans into financial classes for the primary insurance claim. Codes and descriptions will generally match the your organization's source systems and data standards. This dimension is shared with other Axiom Healthcare solutions.

Accessing the Financial Classes dimension

In the Guide View, click **Data Management > Encounter Dimensions > Financial Classes**.



Filtering records

To filter records:

1. Click the funnel icon in the upper left corner of the page.

2. In the **Filter** box, you can narrow down the records to display by selecting or creating a filter using the Filter Wizard. To access the Filter Wizard, click **Edit**. If you are familiar with writing filter statements, you can type the statement syntax directly in the Filter box.
3. Click **Apply**.

Adding or editing a financial class

Due to the large number of records that this table may contain, you need to use the Filter panel to identify the records to display.

To add or edit financial classes:

1. In the table, do any of the following:
    - To add a financial class, click **Add Row**. The new row displays at the bottom of the table. Enter information in each column. After you save, the table will display the new row in order by the FinClass column.

      IMPORTANT: If you add a new record that already exists in the table, the system will overwrite the original column values with your new entries when you save your changes. We recommend that you review your entries before saving any changes.

    - To edit a financial class, click in the cell(s) to make your changes.

      NOTE: Columns that are grayed out cannot be edited.

    - To undo your changes, click the left arrow icon .
    - To redo your changes, click the right arrow icon .
2. When you finish making changes, click **Save**.

Deleting an financial class

Due to the large number of records that this table may contain, you need to use the Filter panel to identify the records to display.

To delete a financial class:

1. In the table, select the row to highlight it, and then click **Delete Row**.
2. At the **Continue?** prompt, click **OK**.
3. When you finish making changes, click **Save**.

Column descriptions

This section provides descriptions for each column in the Financial Classes dimension table:

NOTE: The table may display some columns that are related to other Kaufman Hall products or have been created specifically for your organization. Contact your Kaufman Hall Implementation Consultant or Kaufman Hall Support if you need help with these columns.

Keys

Every table in the database must have at least one key column. Key columns define unique records of data in the table. If a table has one key column, then each value in that key column must be unique and defines a unique record in the table. If a table has multiple key columns, then each combination of values in those key columns defines a unique record in the table.

FinClass - The financial class code. This must be an alpha code so that an F is prefixed during the import process.

Description - The description for the code.

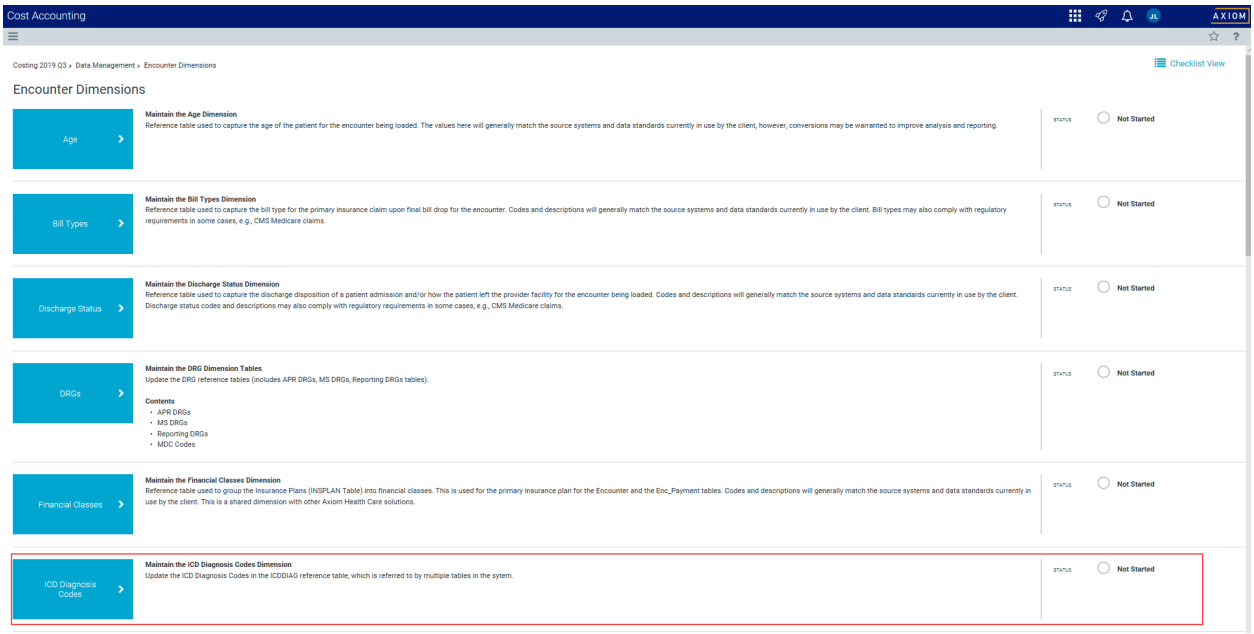
> **TIP:** To help make reports more readable, we recommend that you do not use all capital letters in the description content.

ICD Diagnosis Codes dimension

The ICD Diagnosis Codes dimension includes the ICD diagnosis information, which is referred to by a number of tables in the system. This information is used primarily used with cost detail, which my refer to up to five standard ICDDIAG fields and more if needed in COSTDETAIL.Custom.

Accessing the ICD Diagnosis Code dimension

In the Guide View, click **Data Management > Encounter Dimensions > ICD Diagnosis Codes**.



The page can only display up to a maximum of 10,000 records.

Filtering records

To filter records:

1. Click the funnel icon in the upper left corner of the page.

2. In the **Filter** box, you can narrow down the records to display by selecting or creating a filter using the Filter Wizard. To access the Filter Wizard, click **Edit**. If you are familiar with writing filter statements, you can type the statement syntax directly in the Filter box.
3. Click **Apply**.

Adding or editing an ICD diagnosis code

Due to the large number of records that this table may contain, you need to use the Filter panel to identify the records to display.

To add or edit an ICD diagnosis code:

1. In the table, do any of the following:
   - To add an account, click **Add Row**. The new row displays at the bottom of the table. Enter information in each column. After you save, the table will display the new row in order by the **ICDDIAGID**column.

     IMPORTANT: If you add a new record that already exists in the table, the system will overwrite the original column values with your new entries when you save your changes. We recommend that you review your entries before saving any changes.

   - To edit a code, click in the cell(s) to make your changes.

     NOTE: Columns that are grayed out cannot be edited.

   - To undo your changes, click the left arrow icon .
   - To redo your changes, click the right arrow icon .
2. When you finish making changes, click **Save**.

Deleting an ICD diagnosis code

Due to the large number of records that this table may contain, you need to use the Filter panel to identify the records to display.

To delete an ICD diagnosis code:

1. In the table, select the row to highlight it, and then click **Delete Row**.

2. At the **Continue?** prompt, click **OK**.
3. When you finish making changes, click **Save**.

Column descriptions

This section provides descriptions for each column in the ICD Diagnosis Codes dimension table:

NOTE: The table may display some columns that are related to other Kaufman Hall products or have been created specifically for your organization. Contact your Kaufman Hall Implementation Consultant or Kaufman Hall Support if you need help with these columns.

Keys

Every table in the database must have at least one key column. Key columns define unique records of data in the table. If a table has one key column, then each value in that key column must be unique and defines a unique record in the table. If a table has multiple key columns, then each combination of values in those key columns defines a unique record in the table.

ICDDIAGID - The code for the ICD diagnosis identification.

Description - A description for the ICD diagnosis code (20 character limit)

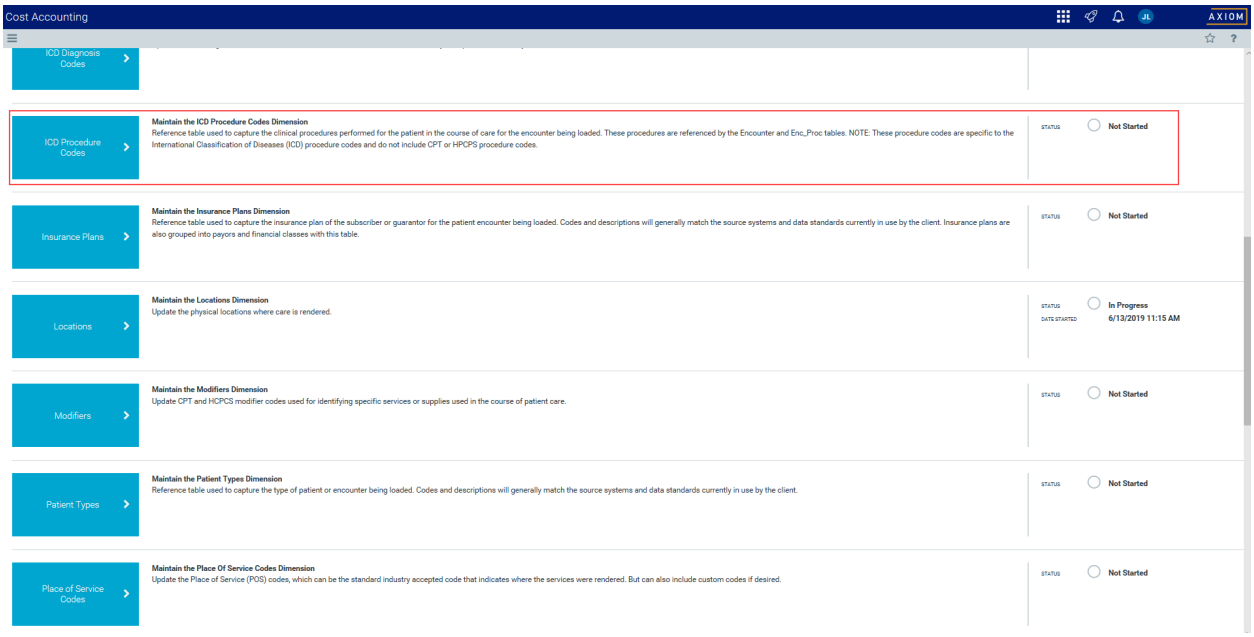
ICD Procedure Codes dimension

The ICD Procedure Codes dimension is a reference table used to capture the clinical procedures performed for the patient in the course of care for the encounter being loaded. These procedures are referenced by the Encounter and Enc_Proc tables.

NOTE: These procedure codes are specific to the International Classification of Diseases (ICD) procedure codes and do not include CPT or HPCPS procedure codes.

Accessing the Account dimension

In the Guide View, click **Data Management > Encounter Dimensions > ICD Procedure Codes**.



The page can only display up to a maximum of 10,000 records.

NOTE: At this time, you can only add or delete records in this dimension table directly through **Axiom Explorer > Table Library > DSS > Reference > ICDPROC** in the Windows or Excel Client. For more information, see Opening dimension tables in spreadsheet mode.

Filtering records

To filter records:

1. Click the funnel icon in the upper left corner of the page.

2. In the **Filter** box, you can narrow down the records to display by selecting or creating a filter using the Filter Wizard. To access the Filter Wizard, click **Edit**. If you are familiar with writing filter statements, you can type the statement syntax directly in the Filter box.
3. Click **Apply**.

Editing an ICD procedure code

Due to the large number of records that this table may contain, you need to use the Filter panel to identify the records to display.

To edit an ICD procedure code:

1. Click in the cell(s) to edit, and make your changes.

NOTE: Columns that are grayed out cannot be edited.

2. After you finish making changes, click **Save**.

Column descriptions

This section provides descriptions for each column in the ICD Procedure Codes dimension table:

NOTE: The table may display some columns that are related to other Kaufman Hall products or have been created specifically for your organization. Contact your Kaufman Hall Implementation Consultant or Kaufman Hall Support if you need help with these columns.

Keys

Every table in the database must have at least one key column. Key columns define unique records of data in the table. If a table has one key column, then each value in that key column must be unique and defines a unique record in the table. If a table has multiple key columns, then each combination of values in those key columns defines a unique record in the table.

ICDPROCID - The code used for the ICD Procedure.

Description - The long entry description for the ICD Procedure code.

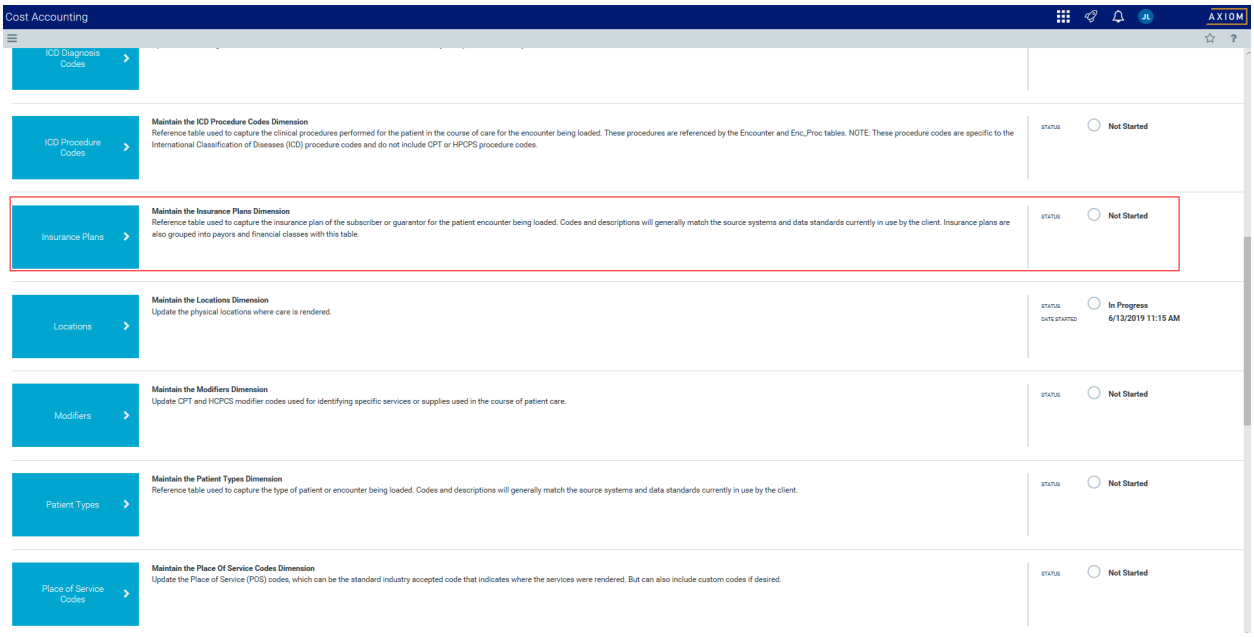
TIP: To help make reports more readable, we recommend that you do not use all capital letters in the description content.

Insurance Plans dimension

The Insurance Plans dimension is a reference table used to capture the insurance plan of the subscriber or guarantor for the loaded patient encounter. Codes and descriptions will generally match your organization's source systems and data standards. This table also includes insurance plans grouped into payors and financial classes.

Accessing the Insurance Plans dimension

In the Guide View, click **Data Management > Encounter Dimensions Insurance Plans**.



The page can only display up to a maximum of 10,000 records.

Filtering records

To filter records:

1. Click the funnel icon in the upper left corner of the page.

2. In the **Filter** box, you can narrow down the records to display by selecting or creating a filter using the Filter Wizard. To access the Filter Wizard, click **Edit**. If you are familiar with writing filter statements, you can type the statement syntax directly in the Filter box.
3. Click **Apply**.

Adding or editing an insurance plan

Due to the large number of records that this table may contain, you need to use the Filter panel to identify the records to display.

To add or edit an insurance plan code:

1. In the table, do any of the following:
    - To add an insurance plan, click **Add Row**. The new row displays at the bottom of the table. Enter information in each column.

IMPORTANT: If you add a new record that already exists in the table, the system will overwrite the original column values with your new entries when you save your changes.

- To edit an insurance plan, click in the cell(s) to make your changes.

  NOTE: Columns that are grayed out cannot be edited.

- To undo your changes, click the left arrow icon .
- To redo your changes, click the right arrow icon .

2. When you finish making changes, click **Save**.

Deleting an insurance plan

Due to the large number of records that this table may contain, you need to use the Filter panel to identify the records to display.

To delete an insurance plan:

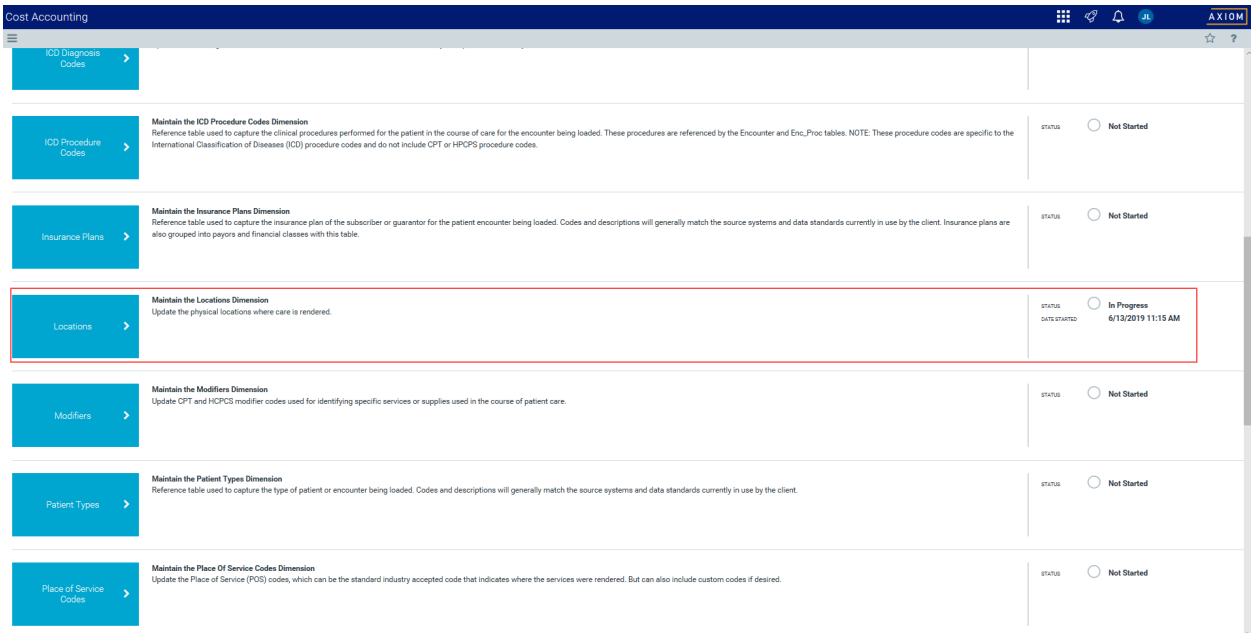
1. In the table, select the row to highlight it, and then click **Delete Row**.
2. At the **Continue?** prompt, click **OK**.
3. When you finish making changes, click **Save**.

Locations dimension

The Locations dimension contains all of the physical locations that have been billed within the organization and is used for monthly reporting and provider-level budgeting.

Accessing the Locations dimension

In the Guide View, click **Data Management > Encounter Dimensions > Locations**.



The page can only display up to a maximum of 10,000 records.

Filtering records

To filter records:

1. Click the funnel icon in the upper left corner of the page.

2. In the **Filter** box, you can narrow down the records to display by selecting or creating a filter using the Filter Wizard. To access the Filter Wizard, click **Edit**. If you are familiar with writing filter statements, you can type the statement syntax directly in the Filter box.
3. Click **Apply**.

Adding or editing locations

Due to the large number of records that this table may contain, you need to use the Filter panel to identify the records to display.

To add or edit locations:

1. In the table, do any of the following:
    - To add a location, click **Add Row**. The new row displays at the bottom of the table. Enter information in each column. After you save, the table will display the new row in order by the LOCATION column.

IMPORTANT: If you add a new record that already exists in the table, the system will overwrite the original column values with your new entries when you save your changes. We recommend that you review your entries before saving any changes.

- To edit a location, click in the cell(s) to make your changes.

  NOTE: Columns that are grayed out cannot be edited.

- To undo your changes, click the left arrow icon .
- redo your changes, click the right arrow icon .

2. When you finish making changes, click **Save**.

Deleting a location

Due to the large number of records that this table may contain, you need to use the Filter panel to identify the records to display.

To delete a location:

1. In the table, select the row to highlight it, and then click **Delete Row**.
2. At the **Continue?** prompt, click **OK**.
3. When you finish making changes, click **Save**.

Column descriptions

This section provides descriptions for each column in the Locations dimension table:

NOTE: The table may display some columns that are related to other Kaufman Hall products or have been created specifically for your organization. Contact your Kaufman Hall Implementation Consultant or Kaufman Hall Support if you need help with these columns.

Keys

Every table in the database must have at least one key column. Key columns define unique records of data in the table. If a table has one key column, then each value in that key column must be unique and defines a unique record in the table. If a table has multiple key columns, then each combination of values in those key columns defines a unique record in the table.

LOCATION - The code used to represent the location. This must be an alpha code, so an L is prefixed during the import process. Default should be used as the Location code if this dimension is not being used.

Description - Describes the location associated with the code.

TIP: To help make reports more readable, we recommend that you do not use all capital letters in the description content.

DSS

These columns are used for the future development of Axiom Decision Support.

LocationEntity - The entity location code used to identify the physical location of the department (entity).

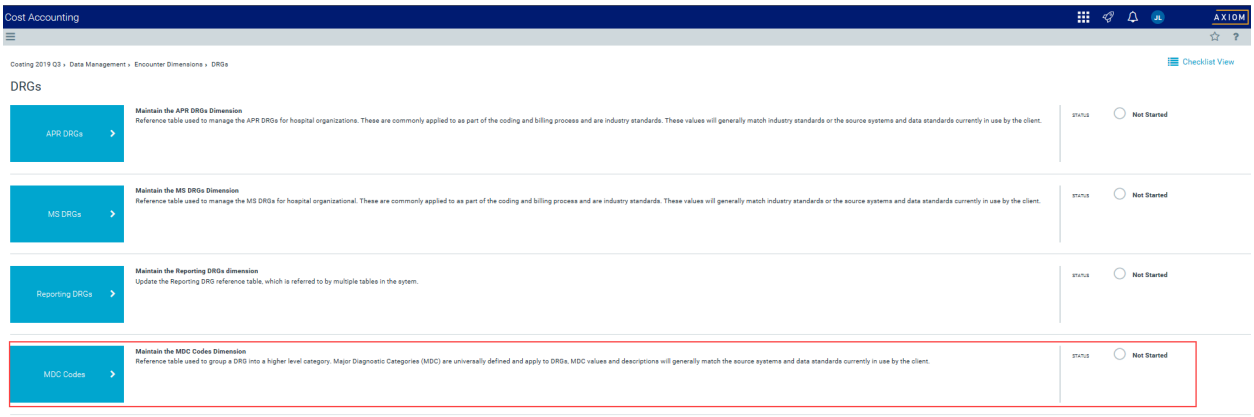
TIP: The entity location code is different from the entity code, which is associated with a financial department. For example, departments on a hospital campus may have different entity codes but share the same entity location code because they reside in the same physical area.

MDC Codes dimension

The MDC Codes dimension is a reference table used to place a DRG into a higher level category. Major Diagnostic Categories (MDC) are universally defined and apply to DRGs, MDC values, and descriptions, which will generally match your organization's source systems and data standards.

Accessing the MDC Codes dimension

In the Guide View, click **Data Management > Encounter Dimensions > DRGs > MDC Codes**.



The page can only display up to a maximum of 10,000 records.

NOTE: At this time, you can only add or edit records in this dimension table directly through **Axiom Explorer > Table Library > DSS > Reference > MDC** in the Windows or Excel Client. For more information, see Opening dimension tables in spreadsheet mode.

Filtering records

To filter records:

1. Click the funnel icon in the upper left corner of the page.

2. In the **Filter** box, you can narrow down the records to display by selecting or creating a filter using the Filter Wizard. To access the Filter Wizard, click **Edit**. If you are familiar with writing filter statements, you can type the statement syntax directly in the Filter box.
3. Click **Apply**.

Editing an MDC code

Due to the large number of records that this table may contain, you need to use the Filter panel to identify the records to display.

To edit an MDC code:

1. Click in the cell(s) to edit, and make your changes.

   NOTE: Columns that are grayed out cannot be edited.

2. After you finish making changes, click **Save**.

Column descriptions

This section provides descriptions for each column in the MDC Codes dimension table:

NOTE: The table may display some columns that are related to other Kaufman Hall products or have been created specifically for your organization. Contact your Kaufman Hall Implementation Consultant or Kaufman Hall Support if you need help with these columns.

Keys

Every table in the database must have at least one key column. Key columns define unique records of data in the table. If a table has one key column, then each value in that key column must be unique and defines a unique record in the table. If a table has multiple key columns, then each combination of values in those key columns defines a unique record in the table.

MDC - The code for the MDC.

Description - The description for the MDC code. You can enter up to 50 descriptions in this field.

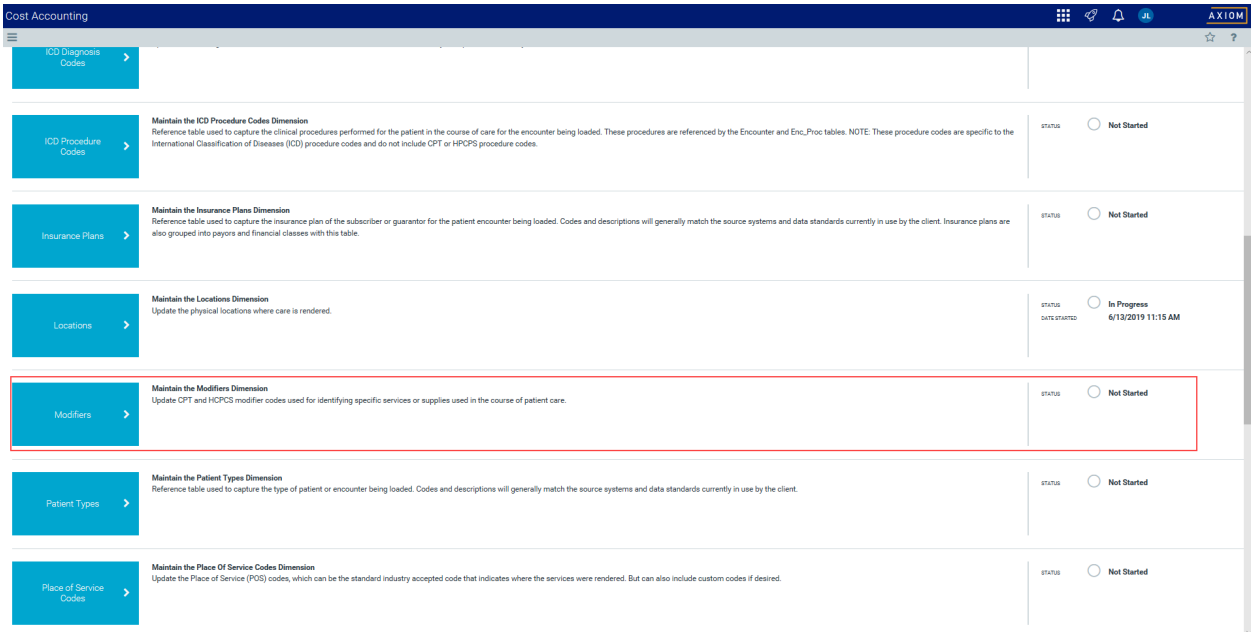
TIP: To help make reports more readable, we recommend that you do not use all capital letters in the description content.

Modifiers dimension

The Modifiers dimension includes the additional standard codes used to further identify services or supplies used in the course of patient care. They can modify the CPT or the HCPCS. For example a procedure done multiple times, will have a modifier of 51. This may mean that there is a discount in reimbursement, but also perhaps a reduction in the cost of the item.

Accessing the Modifiers dimension

In the Guide View, click **Data Management > Encounter Dimensions > Modifiers**.



Filtering records

To filter records:

1. Click the funnel icon in the upper left corner of the page.

2. In the **Filter** box, you can narrow down the records to display by selecting or creating a filter using the Filter Wizard. To access the Filter Wizard, click **Edit**. If you are familiar with writing filter statements, you can type the statement syntax directly in the Filter box.
3. Click **Apply**.

Adding or editing a modifier

Due to the large number of records that this table may contain, you need to use the Filter panel to identify the records to display.

To add or edit a modifier:

1. In the table, do any of the following:
    - To add a modifier, click **Add Row**. The new row displays at the bottom of the table. Enter information in each column. After you save, the table will display the new row in order by the MODIFIER column.

      IMPORTANT: If you add a new record that already exists in the table, the system will overwrite the original column values with your new entries when you save your changes. We recommend that you review your entries before saving any changes.

    - To edit a modifier, click in the cell(s) to make your changes.

      NOTE: Columns that are grayed out cannot be edited.

    - To undo your changes, click the left arrow icon .
    - To redo your changes, click the right arrow icon .
2. When you finish making changes, click **Save**.

Deleting a modifier

Due to the large number of records that this table may contain, you need to use the Filter panel to identify the records to display.

To delete a modifier:

1. In the table, select the row to highlight it, and then click **Delete Row**.
2. At the **Continue?** prompt, click **OK**.
3. When you finish making changes, click **Save**.

Column descriptions

This section provides descriptions for each column in the Modifiers dimension table:

NOTE: The table may display some columns that are related to other Kaufman Hall products or have been created specifically for your organization. Contact your Kaufman Hall Implementation Consultant or Kaufman Hall Support if you need help with these columns.

Keys

Every table in the database must have at least one key column. Key columns define unique records of data in the table. If a table has one key column, then each value in that key column must be unique and defines a unique record in the table. If a table has multiple key columns, then each combination of values in those key columns defines a unique record in the table.

MODIFIER - The additional status codes used to identify services and supplies.

Description - The long form description of the code.

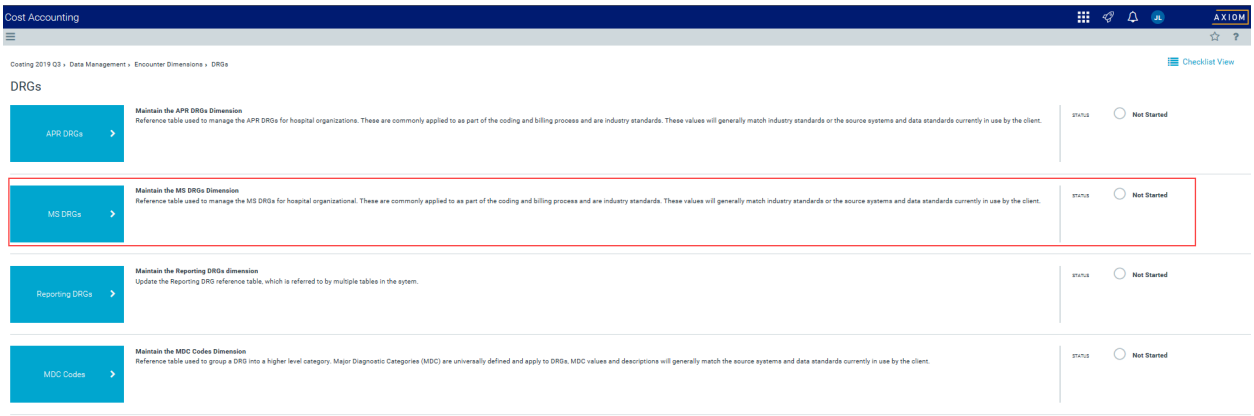
TIP: To help make reports more readable, we recommend that you do not use all capital letters in the description content.

MS DRGs dimension

The MS DRGs dimension is a reference table used to manage the MS DRGs for hospital acute care providers. Codes and descriptions will generally match industry standards or your organization's source systems and data standards.

Accessing the MS DRGs dimension

In the Guide View, click **Data Management > Encounter Dimensions DRGs > MS DRGs**.



The page can only display up to a maximum of 10,000 records.

NOTE: At this time, you can only add or delete records in this dimension table directly through **Axiom Explorer > Table Library > DSS > Reference > MSDRG** in the Windows or Excel Client. For more information, see Opening dimension tables in spreadsheet mode.

Filtering records

To filter records:

1. Click the funnel icon in the upper left corner of the page.

2. In the **Filter** box, you can narrow down the records to display by selecting or creating a filter using the Filter Wizard. To access the Filter Wizard, click **Edit**. If you are familiar with writing filter statements, you can type the statement syntax directly in the Filter box.
3. Click **Apply**.

Editing an MS DRG code

Due to the large number of records that this table may contain, you need to use the Filter panel to identify the records to display.

To edit an MS DRG code:

1. In the table, do any of the following:
   - To edit an MS DRG code, click in the cell(s) to make your changes.

     NOTE: Columns that are grayed out cannot be edited.

   - To undo your changes, click the left arrow icon .
   - To redo your changes, click the right arrow icon .
2. When you finish making changes, click **Save**.

Column descriptions

This section provides descriptions for each column in the MS DRGs dimension table:

NOTE: The table may display some columns that are related to other Kaufman Hall products or have been created specifically for your organization. Contact your Kaufman Hall Implementation Consultant or Kaufman Hall Support if you need help with these columns.

Keys

Every table in the database must have at least one key column. Key columns define unique records of data in the table. If a table has one key column, then each value in that key column must be unique and defines a unique record in the table. If a table has multiple key columns, then each combination of values in those key columns defines a unique record in the table.

MSDRGID - The value for the MS DRG.

Description - The description for the value.

TIP: To help make reports more readable, we recommend that you do not use all capital letters in the description content.

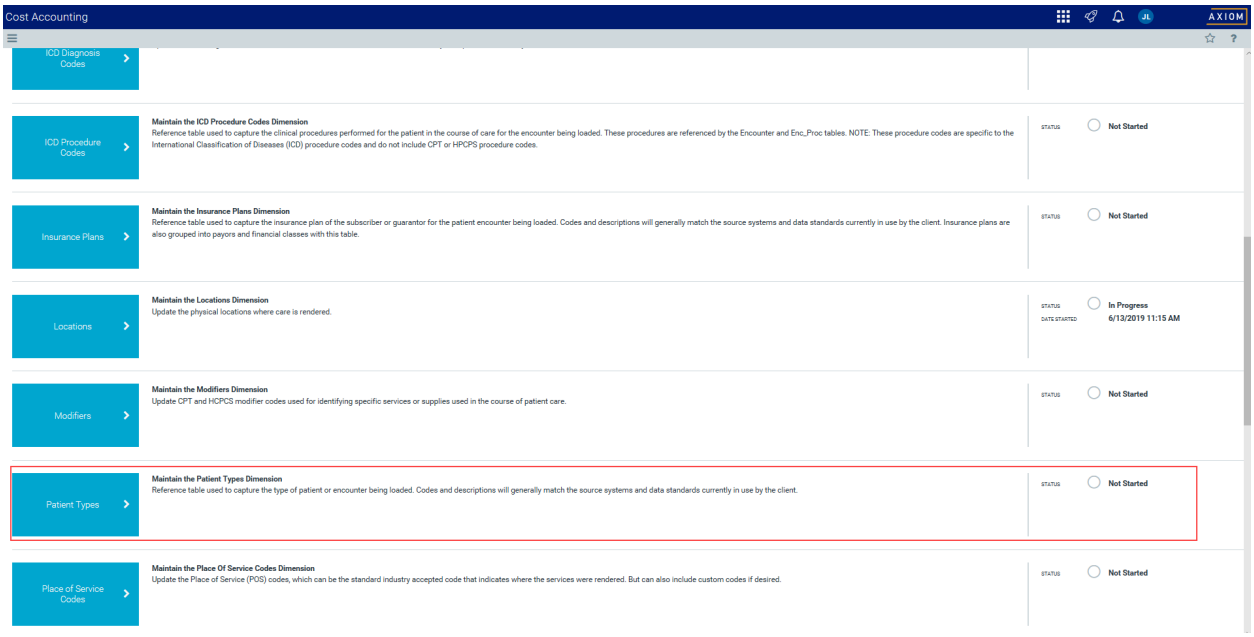
Patient Types dimension

The Patient Types dimension is a reference table used to capture the type of patient for the loaded encounter. Codes and descriptions will generally match the your organization's source systems and data standards.

NOTE: At this time, you can only edit records in this dimension table directly through **Axiom Explorer > Table Library > DSS > Reference > PTTYPE** in the Windows or Excel Client. For more information, see Opening dimension tables in spreadsheet mode.

Accessing the Patient Types dimension

In the Guide View, click **Data Management > Encounter Dimensions > Patient Types**.



The page can only display up to a maximum of 10,000 records.

Filtering records

To filter records:

1. Click the funnel icon in the upper left corner of the page.

2. In the **Filter** box, you can narrow down the records to display by selecting or creating a filter using the Filter Wizard. To access the Filter Wizard, click **Edit**. If you are familiar with writing filter statements, you can type the statement syntax directly in the Filter box.
3. Click **Apply**.

Adding a patient type

Due to the large number of records that this table may contain, you need to use the Filter panel to identify the records to display.

To add a patient type:

1. In the table, do any of the following:
   - To add a patient type, click **Add Row**. The new row displays at the bottom of the table. Enter information in each column. After you save, the table will display the new row in order by the PtType column.

     IMPORTANT: If you add a new record that already exists in the table, the system will overwrite the original column values with your new entries when you save your changes. We recommend that you review your entries before saving any changes.

   - To undo your changes, click the left arrow icon .
   - To redo your changes, click the right arrow icon .
2. When you finish making changes, click **Save**.

Deleting a patient type

Due to the large number of records that this table may contain, you need to use the Filter panel to identify the records to display.

To delete a patient type:

1. In the table, select the row to highlight it, and then click **Delete Row**.
2. At the **Continue?** prompt, click **OK**.
3. When you finish making changes, click **Save**.

Column descriptions

This section provides descriptions for each column in the Patient Types dimension table:

NOTE: The table may display some columns that are related to other Kaufman Hall products or have been created specifically for your organization. Contact your Kaufman Hall Implementation Consultant or Kaufman Hall Support if you need help with these columns.

Keys

Every table in the database must have at least one key column. Key columns define unique records of data in the table. If a table has one key column, then each value in that key column must be unique and defines a unique record in the table. If a table has multiple key columns, then each combination of values in those key columns defines a unique record in the table.

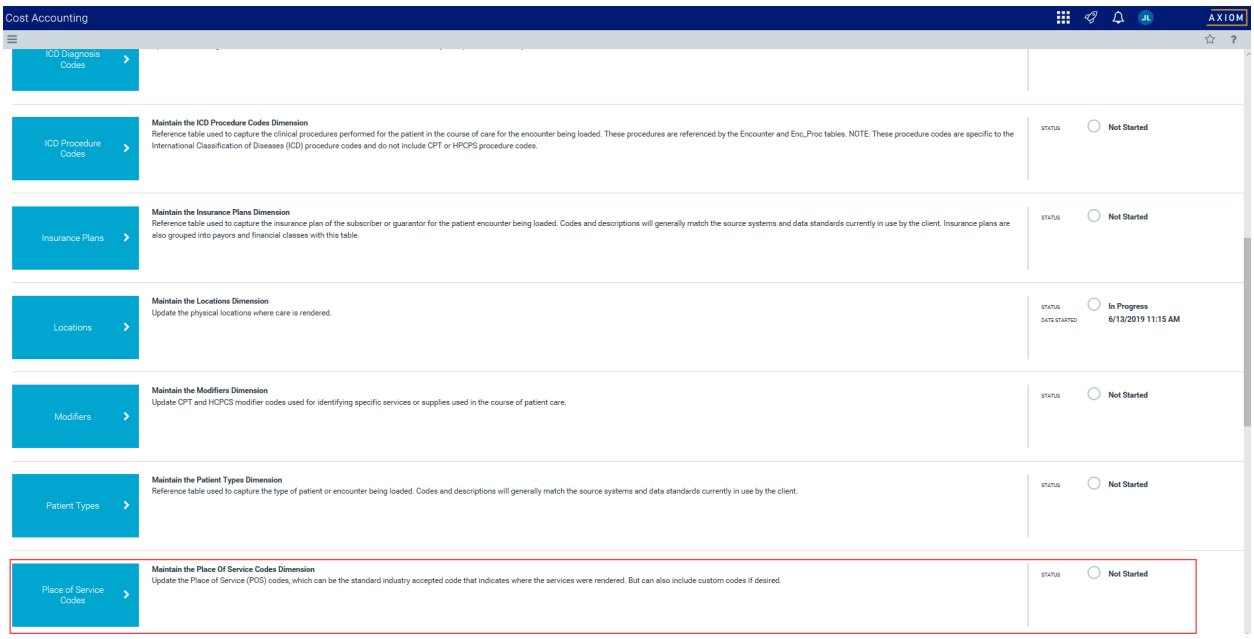
PtType - The code for the patient type.

Place of Service Codes dimension

The Place of Service Codes dimension stores the place of service (POS) codes, which are standard industry accepted codes that indicate where the services were rendered.

Accessing the Place of Service Codes dimension

In the Guide View, click **Data Management > Encounter Dimensions >Place of Service Codes**.



The page can only display up to a maximum of 10,000 records.

Filtering records

To filter records:

1. Click the funnel icon in the upper left corner of the page.

2. In the **Filter** box, you can narrow down the records to display by selecting or creating a filter using the Filter Wizard. To access the Filter Wizard, click **Edit**. If you are familiar with writing filter statements, you can type the statement syntax directly in the Filter box.
3. Click **Apply**.

Adding or editing a Place of Service code

Due to the large number of records that this table may contain, you need to use the Filter panel to identify the records to display.

To add or edit a Place of Service code:

1. Review and/or make selections for the following columns:
    - To add a code, click **Add Row**. The new row displays at the bottom of the table. Enter information in each column. After you save, the table will display the new row in order by the PlaceOfService column.

      IMPORTANT: If you add a new record that already exists in the table, the system will overwrite the original column values with your new entries when you save your changes. We recommend that you review your entries before saving any changes.

    - To edit a code, click in the cell(s) to make your changes.

      NOTE: Columns that are grayed out cannot be edited.

    - To undo your changes, click the left arrow icon .
    - To redo your changes, click the right arrow icon .
2. When you finish making changes, click **Save**.

Deleting a Place of Service code

Due to the large number of records that this table may contain, you need to use the Filter panel to identify the records to display.

To delete a Place of Service code:

1. In the table, select the row to highlight it, and then click **Delete Row**.

2. At the **Continue?** prompt, click **OK**.
3. When you finish making changes, click **Save**.

Column descriptions

This section provides descriptions for each column in the Place of Service Codes dimension table:

NOTE: The table may display some columns that are related to other Kaufman Hall products or have been created specifically for your organization. Contact your Kaufman Hall Implementation Consultant or Kaufman Hall Support if you need help with these columns.

Keys

Every table in the database must have at least one key column. Key columns define unique records of data in the table. If a table has one key column, then each value in that key column must be unique and defines a unique record in the table. If a table has multiple key columns, then each combination of values in those key columns defines a unique record in the table.

PlaceOfService - The code used to indicate where the service was rendered.

Description - A long form description of where the service took place.

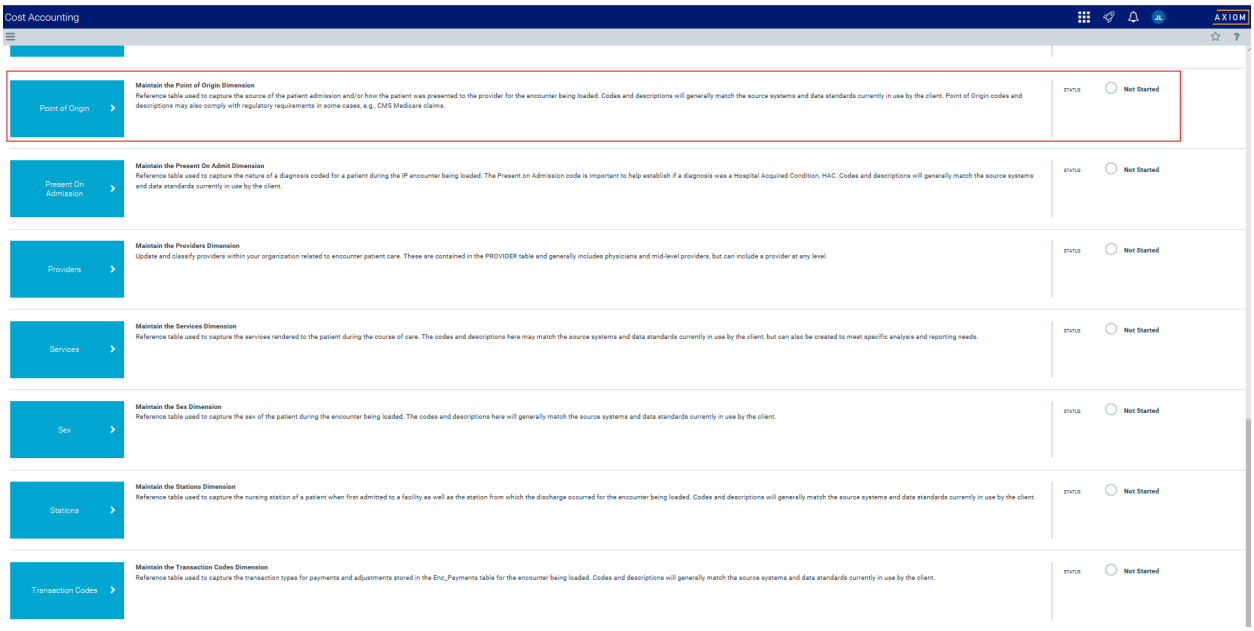
TIP: To help make reports more readable, we recommend that you do not use all capital letters in the description content.

Point of Origin dimension

The Point of Origin dimension is a reference table used to capture the source of the patient admission and/or how the patient was presented to the provider for the loaded encounter. Codes and descriptions will generally match your organization's source systems and data standards. Point of Origin codes and descriptions may also comply with regulatory requirements in some cases, e.g., CMS Medicare claims.

Accessing the Point of Origin dimension

In the Guide View, click **Data Management > Encounter Dimensions > Point of Origin**.



The page can only display up to a maximum of 10,000 records.

NOTE: At this time, you can only add or delete records in this dimension table directly through **Axiom Explorer > Table Library > DSS > Reference > PointOfOrigin** in the Windows or Excel Client. For more information, see Opening dimension tables in spreadsheet mode.

Filtering records

To filter records:

1. Click the funnel icon in the upper left corner of the page.

2. In the **Filter** box, you can narrow down the records to display by selecting or creating a filter using the Filter Wizard. To access the Filter Wizard, click **Edit**. If you are familiar with writing filter statements, you can type the statement syntax directly in the Filter box.
3. Click **Apply**.

Editing a Point of Origin

Due to the large number of records that this table may contain, you need to use the Filter panel to identify the records to display.

To edit a Point of Origin:

1. Click in the cell(s) to edit, and make your changes.

NOTE: Columns that are grayed out cannot be edited.

2. After you finish making changes, click **Save**.

Column descriptions

This section provides descriptions for each column in the Point of Origin dimension table:

NOTE: The table may display some columns that are related to other Kaufman Hall products or have been created specifically for your organization. Contact your Kaufman Hall Implementation Consultant or Kaufman Hall Support if you need help with these columns.

Keys

Every table in the database must have at least one key column. Key columns define unique records of data in the table. If a table has one key column, then each value in that key column must be unique and defines a unique record in the table. If a table has multiple key columns, then each combination of values in those key columns defines a unique record in the table.

PointOfOrigin - The code for the source of the patient admission.

Description - The description for the Point of Origin.

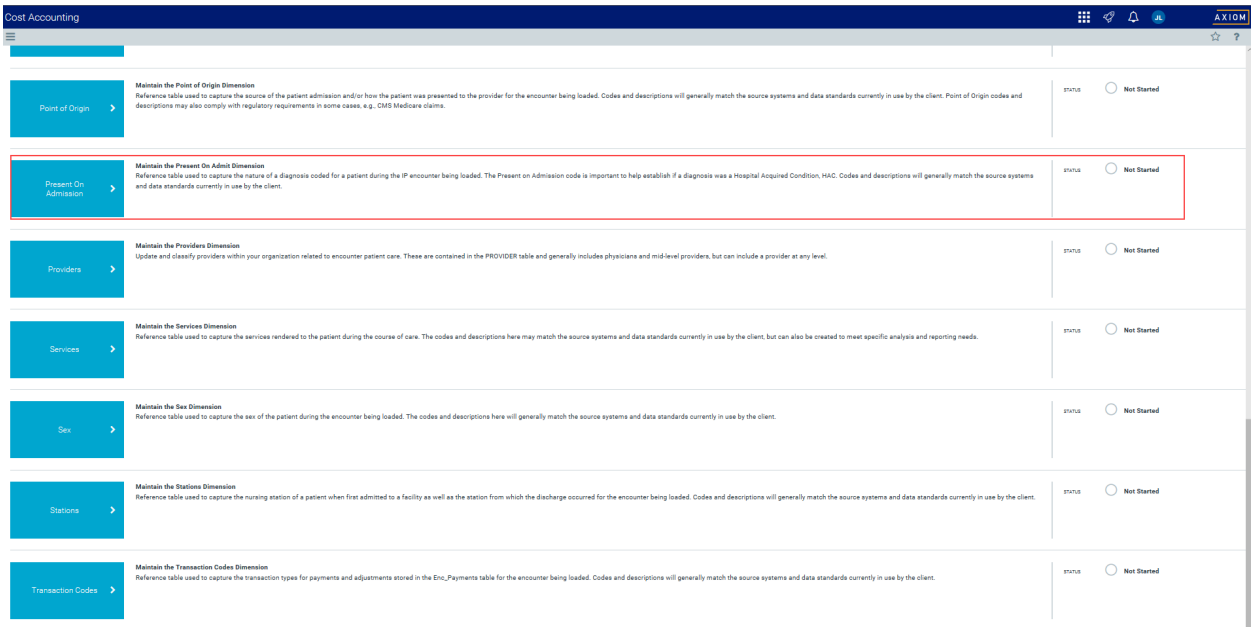
TIP: To help make reports more readable

Present On Admission dimension

The Present On Admission dimension is a reference table used to capture the nature of a diagnosis coded for a patient during the IP encounter being loaded. The Present On Admission code helps establish if a diagnosis was a Hospital Acquired Condition (HAC). Codes and descriptions will generally match your organization's source systems and data standards. This is a reference to the Enc_Diag.PresentOnAdmit.

Accessing the Present on Admission dimension

In the Guide View, click **Data Management > Encounter Dimensions > Present On Admission**.



The page can only display up to a maximum of 10,000 records.

Filtering records

To filter records:

1. Click the funnel icon in the upper left corner of the page.

2. In the **Filter** box, you can narrow down the records to display by selecting or creating a filter using the Filter Wizard. To access the Filter Wizard, click **Edit**. If you are familiar with writing filter statements, you can type the statement syntax directly in the Filter box.
3. Click **Apply**.

Adding or editing a Present On Admission code

Due to the large number of records that this table may contain, you need to use the Filter panel to identify the records to display.

To add or edit a Present On Admission code:

1. In the table, do any of the following:
   - To add a code, click **Add Row**. The new row displays at the bottom of the table. Enter information in each column. After you save, the table will display the new row in order by the PresentOnAdmit column.

IMPORTANT: If you add a new record that already exists in the table, the system will overwrite the original column values with your new entries when you save your changes. We recommend that you review your entries before saving any changes.

- To edit a code, click in the cell(s) to make your changes.

  NOTE: Columns that are grayed out cannot be edited.

- To undo your changes, click the left arrow icon .
- To redo your changes, click the right arrow icon .

2. When you finish making changes, click **Save**.

Deleting a Present on Admission code

Due to the large number of records that this table may contain, you need to use the Filter panel to identify the records to display.

To delete a Present on Admission code:

1. In the table, select the row to highlight it, and then click **Delete Row**.
2. At the **Continue?** prompt, click **OK**.
3. When you finish making changes, click **Save**.

Column descriptions

This section provides descriptions for each column in the Present On Admission dimension table:

NOTE: The table may display some columns that are related to other Kaufman Hall products or have been created specifically for your organization. Contact your Kaufman Hall Implementation Consultant or Kaufman Hall Support if you need help with these columns.

Keys

Every table in the database must have at least one key column. Key columns define unique records of data in the table. If a table has one key column, then each value in that key column must be unique and defines a unique record in the table. If a table has multiple key columns, then each combination of values in those key columns defines a unique record in the table.

PresentOnAdmit - The code that describes the nature of a diagnosis for a patient during the IP encounter.

Desc - The description for the code.

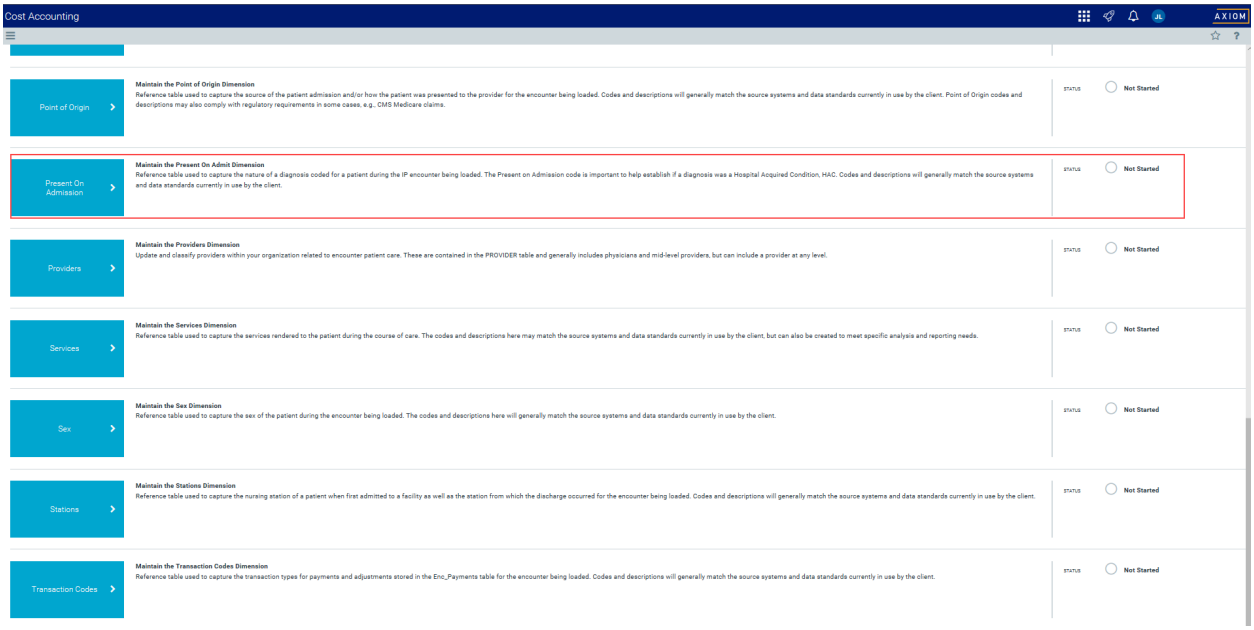
TIP: To help make reports more readable, we recommend that you do not use all capital letters in the description content.

Providers dimension

The Providers dimension contains all of the providers within the organization and is used for monthly reporting and provider-level budgeting.

Accessing the Providers dimension

In the Guide View, click **Data Management > Encounter Dimensions > Providers**.



The page can only display up to a maximum of 10,000 records.

Filtering records

To filter records:

1. Click the funnel icon in the upper left corner of the page.

2. In the **Filter** box, you can narrow down the records to display by selecting or creating a filter using the Filter Wizard. To access the Filter Wizard, click **Edit**. If you are familiar with writing filter statements, you can type the statement syntax directly in the Filter box.
3. Click **Apply**.

Adding or editing a provider

Due to the large number of records that this table may contain, you need to use the Filter panel to identify the records to display.

To add or edit a provider:

1. In the table, do any of the following:
    - To add an account, click **Add Row**. The new row displays at the bottom of the table. Enter information in each column. After you save, the table will display the new row in order by the **Provider**column.

      IMPORTANT: If you add a new record that already exists in the table, the system will overwrite the original column values with your new entries when you save your changes. We recommend that you review your entries before saving any changes.

    - To edit a provider, click in the cell(s) to make your changes.

      NOTE: Columns that are grayed out cannot be edited.

    - To undo your changes, click the left arrow icon .
    - To redo your changes, click the right arrow icon .
2. When you finish making changes, click **Save**.

Deleting a provider

Due to the large number of records that this table may contain, you need to use the Filter panel to identify the records to display.

To delete a provider:

1. In the table, select the row to highlight it, and then click **Delete Row**.
2. At the **Continue?** prompt, click **OK**.
3. When you finish making changes, click **Save**.

Column descriptions

This section provides descriptions for each column in the Providers dimension table:

NOTE: The table may display some columns that are related to other Kaufman Hall products or have been created specifically for your organization. Contact your Kaufman Hall Implementation Consultant or Kaufman Hall Support if you need help with these columns.

Keys

Every table in the database must have at least one key column. Key columns define unique records of data in the table. If a table has one key column, then each value in that key column must be unique and defines a unique record in the table. If a table has multiple key columns, then each combination of values in those key columns defines a unique record in the table.

Provider - The Provider ID used in Axiom Budgeting and Performance Reporting. Must be an alpha code, so a D is prefixed during the import process.

Description - Identifies the provider description to use for budgeting and reporting.

> **TIP:** To help make reports more readable, we recommend that you do not use all capital letters in the description content.

Cost

These columns are specific to the set up and maintenance of Axiom Cost Accounting.

KAINT - Used to identify which tab an account should be interfaced during the plan file create process in Axiom Budgeting.

DSS

These columns are reserved for future use with Axiom Decision Support.

CostProvider - The provider to use for costing purposes when using the Provider RVU method. This allows providers to be grouped into a generic group for costing purposes.

MedicalGroup - The primary medical gGroup the provider is associated with for grouping and reporting purposes.

City - The city where the provider resides.

State - The state where the provider resides.

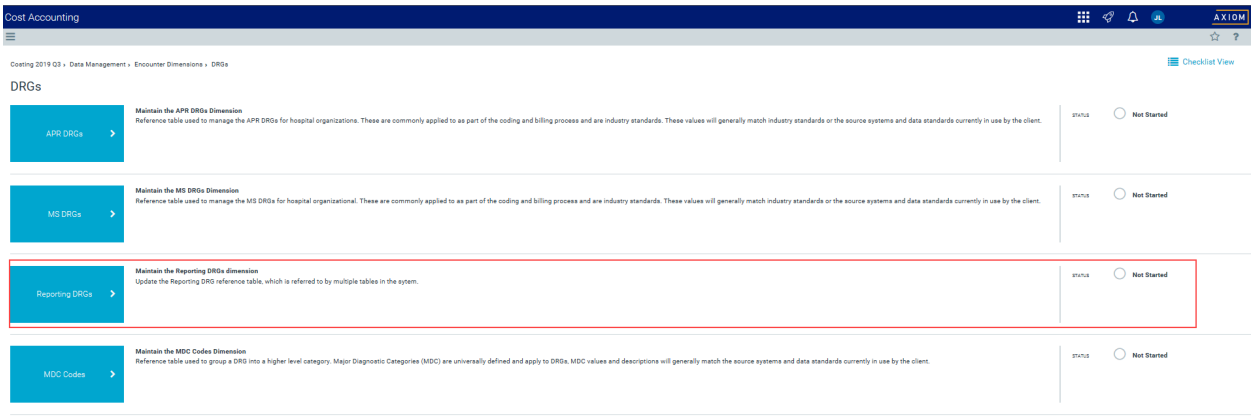
SecondarySpecialty2 - The secondary specialty offered by the provider.

Reporting DRGs dimension

The Reporting DRGs dimension is a reference table used to combine or determine the primary DRGs used for reporting purposes. In some cases, multiple DRGs may be assigned to an inpatient or in others only certain DRGs may be assigned, e.g., MS DRGs are assigned to Medicare encounters and APR DRGs are assigned to Medicaid encounters. This reference table allows you to combine or determine which DRG to use within a single reference table. These values will generally match one of the DRG reference values.

Accessing the Reporting DRGs dimension

In the Guide View, click **Data Management > Encounter Dimensions DRGs > Reporting DRGs**.



The page can only display up to a maximum of 10,000 records.

NOTE: At this time, you can only add or delete records in this dimension table directly through **Axiom Explorer > Table Library > DSS > Reference > REPORTINGDRG** in the Windows or Excel Client. For more information, see Opening dimension tables in spreadsheet mode.

Filtering records

To filter records:

1. Click the funnel icon in the upper left corner of the page.

2. In the **Filter** box, you can narrow down the records to display by selecting or creating a filter using the Filter Wizard. To access the Filter Wizard, click **Edit**. If you are familiar with writing filter statements, you can type the statement syntax directly in the Filter box.
3. Click **Apply**.

Editing a Reporting DRG code

Due to the large number of records that this table may contain, you need to use the Filter panel to identify the records to display.

To edit a Reporting DRG code:

1. In the table, do any of the following:
   - To edit a Reporting DRG code, click in the cell(s) to make your changes.

     NOTE: Columns that are grayed out cannot be edited.

   - To undo your changes, click the left arrow icon .

- To redo your changes, click the right arrow icon .

2. When you finish making changes, click **Save**.

Column descriptions

This section provides descriptions for each column in the Reporting DRGs dimension table:

NOTE: The table may display some columns that are related to other Kaufman Hall products or have been created specifically for your organization. Contact your Kaufman Hall Implementation Consultant or Kaufman Hall Support if you need help with these columns.

Keys

Every table in the database must have at least one key column. Key columns define unique records of data in the table. If a table has one key column, then each value in that key column must be unique and defines a unique record in the table. If a table has multiple key columns, then each combination of values in those key columns defines a unique record in the table.

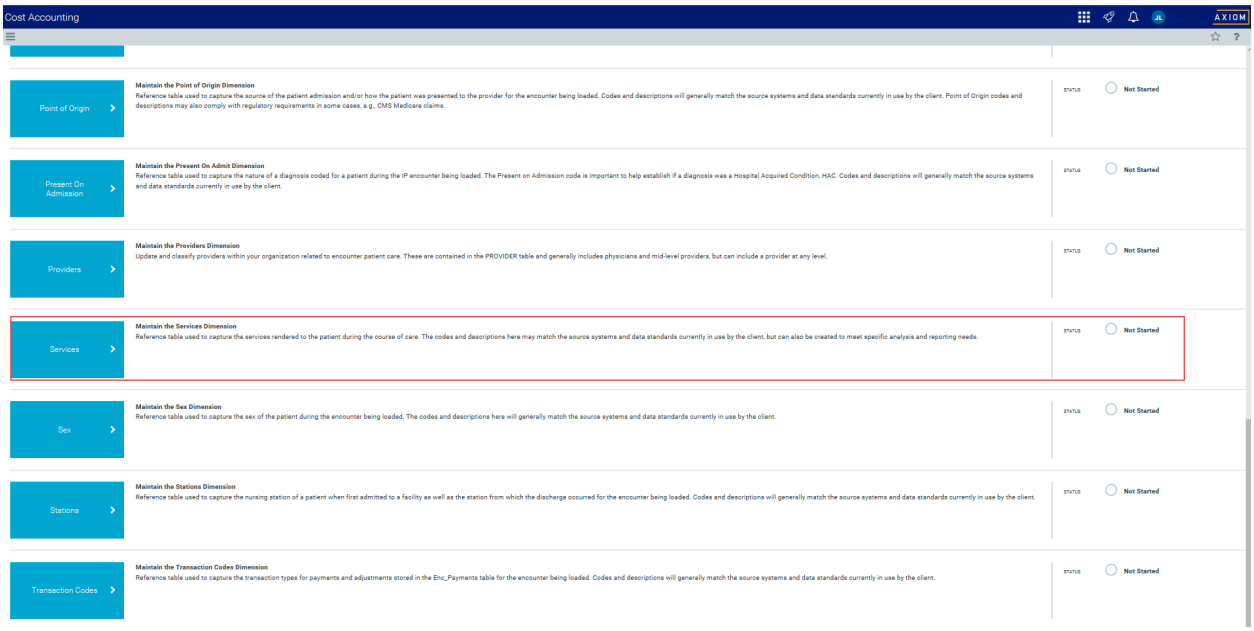
ReportingDRG - The value for the Reporting DRG.

Services dimension

The Services dimension is a reference table used to capture the services of the patient during the encounter course of care. Services is a reference field for the Encounter.PrimaryService. The codes and descriptions here may match your organization's source systems and data standards, but can also be created to meet specific analysis and reporting needs.

Accessing the Services dimension

In the Guide View, click **Data Management > Encounter Dimensions > Services**.



The page can only display up to a maximum of 10,000 records.

Filtering records

To filter records:

1. Click the funnel icon in the upper left corner of the page.

2. In the **Filter** box, you can narrow down the records to display by selecting or creating a filter using the Filter Wizard. To access the Filter Wizard, click **Edit**. If you are familiar with writing filter statements, you can type the statement syntax directly in the Filter box.
3. Click **Apply**.

Adding or editing a service

To add or edit a service:

1. In the table, do any of the following:
   - To add a service, click **Add Row**. The new row displays at the bottom of the table. Enter information in each column. After you save, the table will display the new row in order by the **Services** column.

IMPORTANT: If you add a new record that already exists in the table, the system will overwrite the original column values with your new entries when you save your changes. We recommend that you review your entries before saving any changes.

- To edit a service, click in the cell(s) to make your changes.

  NOTE: Columns that are grayed out cannot be edited.

- To undo your changes, click the left arrow icon .
- To redo your changes, click the right arrow icon .

2. When you finish making changes, click **Save**.

Deleting a service

Due to the large number of records that this table may contain, you need to use the Filter panel to identify the records to display.

To delete a service:

1. In the table, select the row to highlight it, and then click **Delete Row**.
2. At the **Continue?** prompt, click **OK**.
3. When you finish making changes, click **Save**.

Column descriptions

This section provides descriptions for each column in the Services dimension table:

NOTE: The table may display some columns that are related to other Kaufman Hall products or have been created specifically for your organization. Contact your Kaufman Hall Implementation Consultant or Kaufman Hall Support if you need help with these columns.

Keys

Every table in the database must have at least one key column. Key columns define unique records of data in the table. If a table has one key column, then each value in that key column must be unique and defines a unique record in the table. If a table has multiple key columns, then each combination of values in those key columns defines a unique record in the table.

Services - The code the represents the service for the patient.

Description - The description for the service.

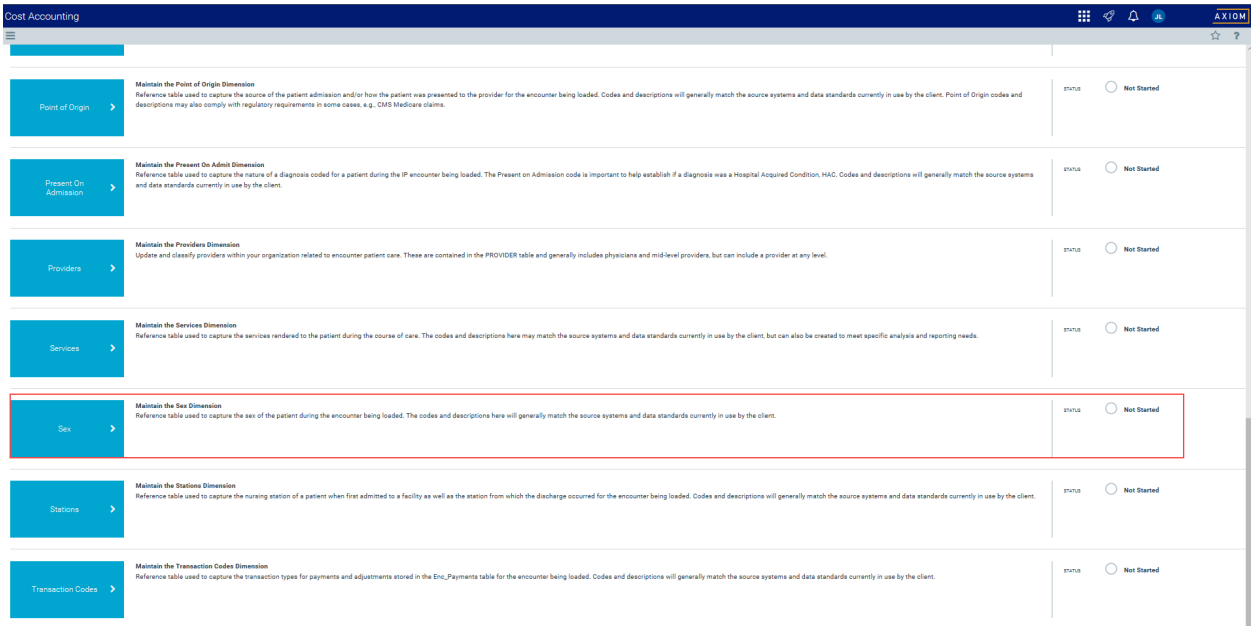
TIP: To help make reports more readable, we recommend that you do not use all capital letters in the description content.

Sex dimension

The Sex dimension is a reference table used to capture the sex of the patient during the loaded encounter. Sex is a reference field for the Enc_Patient.Sex. The codes and descriptions will generally match your organization's source systems and data standards.

Accessing the Sex dimension

In the Guide View, click **Data Management > Encounter Dimensions > Sex**.



The page can only display up to a maximum of 10,000 records.

NOTE: At this time, you can only edit records in this dimension table directly through **Axiom Explorer > Table Library > DSS > Reference > Sex** in the Windows or Excel Client. For more information, see Opening dimension tables in spreadsheet mode.

Filtering records

To filter records:

1. Click the funnel icon in the upper left corner of the page.

2. In the **Filter** box, you can narrow down the records to display by selecting or creating a filter using the Filter Wizard. To access the Filter Wizard, click **Edit**. If you are familiar with writing filter statements, you can type the statement syntax directly in the Filter box.

3. Click **Apply**.

Adding the sex code

To add the sex code:

1. In the table, do any of the following:
    - To add a sex, click **Add Row**. The new row displays at the bottom of the table. Enter information in each column. After you save, the table will display the new row in order by the **SEX** column.

      IMPORTANT: If you add a new record that already exists in the table, the system will overwrite the original column values with your new entries when you save your changes. We recommend that you review your entries before saving any changes.

    - To undo your changes, click the left arrow icon .
    - To redo your changes, click the right arrow icon .
2. When you finish making changes, click **Save**.

Deleting a sex code

Due to the large number of records that this table may contain, you need to use the Filter panel to identify the records to display.

To delete a sex code:

1. In the table, select the row to highlight it, and then click **Delete Row**.
2. At the **Continue?** prompt, click **OK**.
3. When you finish making changes, click **Save**.

Column descriptions

This section provides descriptions for each column in the Sex dimension table:

NOTE: The table may display some columns that are related to other Kaufman Hall products or have been created specifically for your organization. Contact your Kaufman Hall Implementation Consultant or Kaufman Hall Support if you need help with these columns.

Keys

Every table in the database must have at least one key column. Key columns define unique records of data in the table. If a table has one key column, then each value in that key column must be unique and defines a unique record in the table. If a table has multiple key columns, then each combination of values in those key columns defines a unique record in the table.

SEX - The code for the sex of the patient.

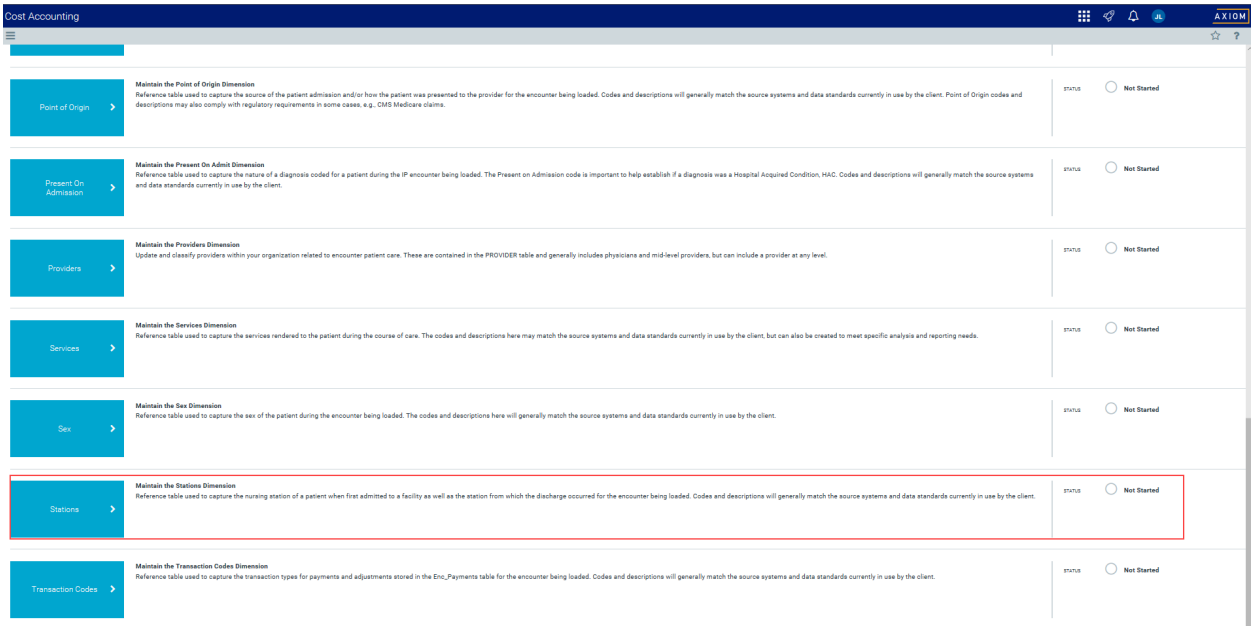
TIP: To help make reports more readable, we recommend that you do not use all capital letters in the description content.

Stations dimension

The Stations dimension is a reference table used to capture the nursing station of a patient when first admitted to a facility as well as the station from which the discharge occurred for the loaded encounter. Codes and descriptions will generally match the your organization's source systems and data standards.

Accessing the Stations dimension

In the Guide View, click **Data Management > Encounter Dimensions > Stations**.



The page can only display up to a maximum of 10,000 records.

NOTE: At this time, you can only add or delete records in this dimension table directly through **Axiom Explorer > Table Library > DSS > Reference > Station** in the Windows or Excel Client. For more information, see Opening dimension tables in spreadsheet mode.

Filtering records

To filter records:

1. Click the funnel icon in the upper left corner of the page.

2. In the **Filter** box, you can narrow down the records to display by selecting or creating a filter using the Filter Wizard. To access the Filter Wizard, click **Edit**. If you are familiar with writing filter statements, you can type the statement syntax directly in the Filter box.
3. Click **Apply**.

Editing a station

Due to the large number of records that this table may contain, you need to use the Filter panel to identify the records to display.

To edit a station:

1. Click in the cell(s) to edit, and make your changes.

   NOTE: Columns that are grayed out cannot be edited.

2. After you finish making changes, click **Save**.

Column descriptions

This section provides descriptions for each column in the Stations dimension table:

NOTE: The table may display some columns that are related to other Kaufman Hall products or have been created specifically for your organization. Contact your Kaufman Hall Implementation Consultant or Kaufman Hall Support if you need help with these columns.

Keys

Every table in the database must have at least one key column. Key columns define unique records of data in the table. If a table has one key column, then each value in that key column must be unique and defines a unique record in the table. If a table has multiple key columns, then each combination of values in those key columns defines a unique record in the table.

Station - The code assigned to the nursing station.

Description - The description for the code.

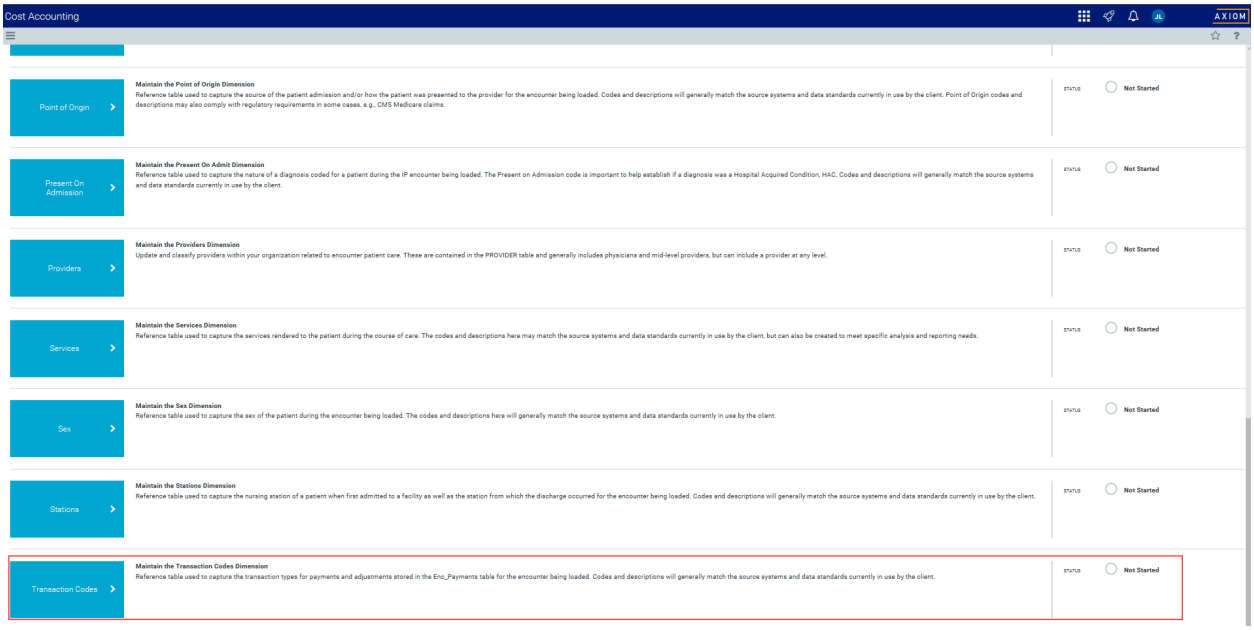
TIP: To help make reports more readable, we recommend that you do not use all capital letters in the description content.

Transaction Codes dimension

The Transaction Codes dimension is a reference table used to capture the transaction codes for payments and adjustments stored in the Enc_Payments table for the loaded encounter. Codes and descriptions will generally match your organization's source systems and data standards. You can also use this table to group transaction codes into transaction types.

Accessing the Transaction Code dimension

In the Guide View, click **Data Management > Encounter Dimensions > Transaction Codes**.



The page can only display up to a maximum of 10,000 records.

NOTE: At this time, you can only add or delete records in this dimension table directly through **Axiom Explorer > Table Library > DSS > Reference > TransactionCode** in the Windows or Excel Client. For more information, see Opening dimension tables in spreadsheet mode.

Filtering records

To filter records:

1. Click the funnel icon in the upper left corner of the page.

2. In the **Filter** box, you can narrow down the records to display by selecting or creating a filter using the Filter Wizard. To access the Filter Wizard, click **Edit**. If you are familiar with writing filter

statements, you can type the statement syntax directly in the Filter box.

3. Click **Apply**.

Editing a transaction code

Due to the large number of records that this table may contain, you need to use the Filter panel to identify the records to display.

To edit a transaction code:

1. Click in the cell(s) to edit, and make your changes.

   NOTE: Columns that are grayed out cannot be edited.

2. After you finish making changes, click **Save**.

Column descriptions

This section provides descriptions for each column in the Transaction Codes dimension table:

NOTE: The table may display some columns that are related to other Kaufman Hall products or have been created specifically for your organization. Contact your Kaufman Hall Implementation Consultant or Kaufman Hall Support if you need help with these columns.

Keys

Every table in the database must have at least one key column. Key columns define unique records of data in the table. If a table has one key column, then each value in that key column must be unique and defines a unique record in the table. If a table has multiple key columns, then each combination of values in those key columns defines a unique record in the table.

TransactionCode - The financial class code. This must be an alpha code so that an F is prefixed during the import process.

Description - The description for the code.

TIP: To help make reports more readable, we recommend that you do not use all capital letters in the description content.

LongDescription - A longer description or comments about the transaction code.

TransactionType - Type of transaction code. Allows you to group individual transaction codes into types.

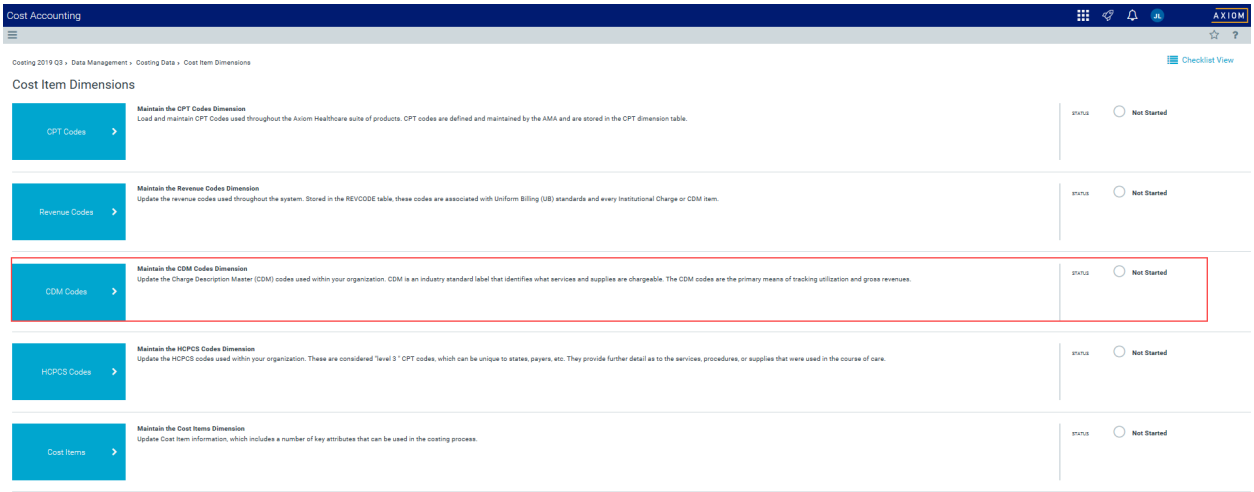
COST ITEM DIMENSIONS

CDM Codes dimension

The CDM Codes dimension includes all the charge codes within an organization. The charge codes are used to track gross revenue and statistics at an inpatient (IP) and outpatient (OP) level.

Accessing the CDM Codes dimension

In the Guide View, click **Data Management > Costing Data > Cost Item Dimensions > CDM Codes**.



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Filtering records

To filter records:

1. Click the funnel icon in the upper left corner of the page.

2. In the **Filter** box, you can narrow down the records to display by selecting or creating a filter using the Filter Wizard. To access the Filter Wizard, click **Edit**. If you are familiar with writing filter statements, you can type the statement syntax directly in the Filter box.
3. Click **Apply**.

Editing a CDM code

Due to the large number of records that this table may contain, you need to use the Filter panel to identify the records to display.

To edit a CDM code:

1. In the table, click in the cell(s) to edit, make your changes.

   NOTE: Columns that are grayed out cannot be edited.

2. Click **Save**.

Column descriptions

This section provides descriptions for each column in the CDM Codes dimension table:

NOTE: The table may display some columns that are related to other Kaufman Hall products or have been created specifically for your organization. Contact your Kaufman Hall Implementation Consultant or Kaufman Hall Support if you need help with these columns.

Keys

Every table in the database must have at least one key column. Key columns define unique records of data in the table. If a table has one key column, then each value in that key column must be unique and defines a unique record in the table. If a table has multiple key columns, then each combination of values in those key columns defines a unique record in the table.

CDMCODE - The charge codes used within your organization. This must be an alpha numeric field so that during the import process, a C is appended to all CDM codes to ensure they are alpha numeric.

Description - Identifies the CDM code description. Try to be as explicit as possible, avoid abbreviations, and use layman's terms.

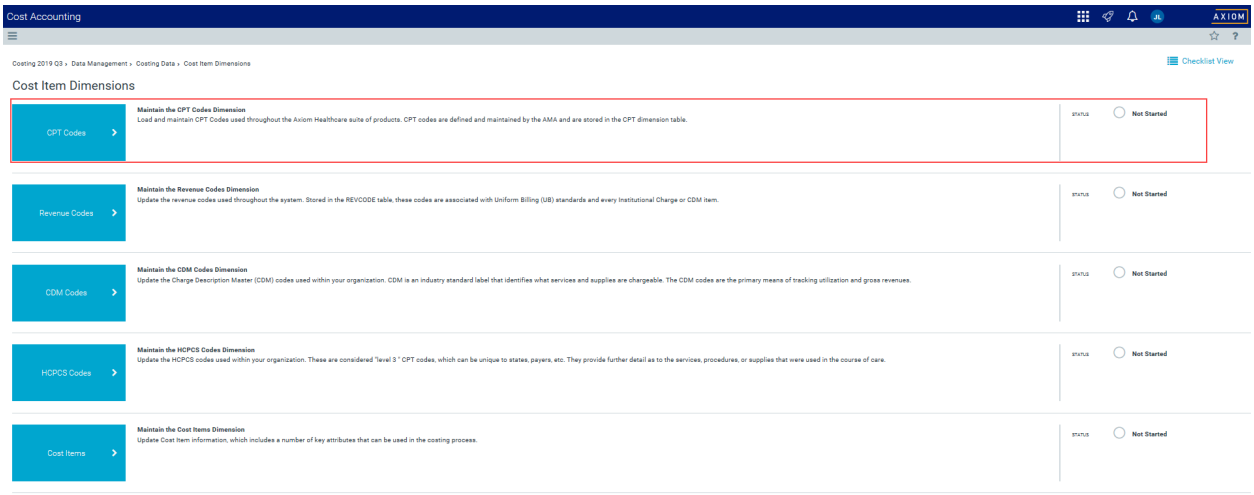
TIP: To help make reports more readable, we recommend that you do not use all capital letters in the description content.

CPT Codes dimension

The CPT Codes dimension contains all of the CPT codes that have been billed within the organization and is used for monthly reporting and provider-level budgeting.

Accessing the CPT Codes dimension

In the Guide View, click **Data Management > Costing Data > Cost Item Dimensions > CPT Codes**.



The page can only display up to a maximum of 10,000 records.

Filtering records

To filter records:

1. Click the funnel icon in the upper left corner of the page.

2. In the **Filter** box, you can narrow down the records to display by selecting or creating a filter using the Filter Wizard. To access the Filter Wizard, click **Edit**. If you are familiar with writing filter statements, you can type the statement syntax directly in the Filter box.
3. Click **Apply**.

Adding or editing a CPT code

To add or edit a CPT code:

1. In the table, do any of the following:
   - To add a code, click **Add Row**. The new row displays at the bottom of the table. Enter information in each column. After you save, the table will display the new row in order by the CPT column.

     IMPORTANT: If you add a new record that already exists in the table, the system will overwrite the original column values with your new entries when you save your changes. We recommend that you review your entries before saving any changes.

   - To edit a code, click in the cell(s) to make your changes.

NOTE: Columns that are grayed out cannot be edited.

- To delete a code, select the row to highlight it, and then click **Delete Row**. At the **Continue?** prompt, click **OK**.
- To undo your changes, click the left arrow icon .
- To redo your changes, click the right arrow icon .

2. When you finish making changes, click **Save**.

Column descriptions

This section provides descriptions for each column in the CPT Codes dimension table:

NOTE: The table may display some columns that are related to other Kaufman Hall products or have been created specifically for your organization. Contact your Kaufman Hall Implementation Consultant or Kaufman Hall Support if you need help with these columns.

TIP: In this dimension, you can add custom "grouping" columns to customize the data you want to query into reports. For more information, see Creating or modifying custom columns in dimensions.

Keys

Every table in the database must have at least one key column. Key columns define unique records of data in the table. If a table has one key column, then each value in that key column must be unique and defines a unique record in the table. If a table has multiple key columns, then each combination of values in those key columns defines a unique record in the table.

CPT - The CPT code used in Axiom Budgeting and Performance Reporting. This must be an alpha code, so a C is prefixed during the import process.

Description - Identifies the CPT description to use for budgeting and reporting.

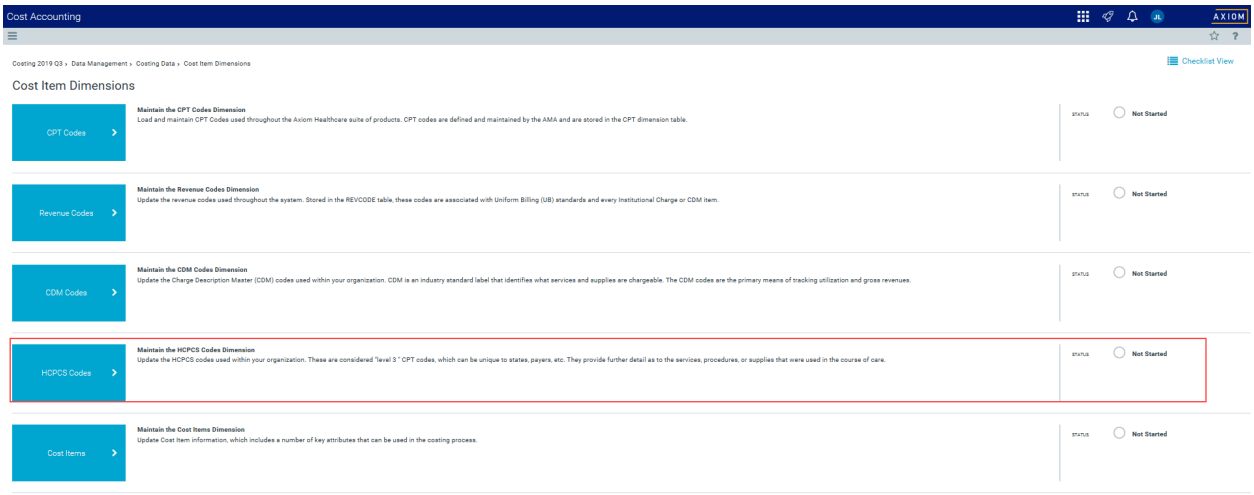
TIP: To help make reports more readable, we recommend that you do not use all capital letters in the description content.

HCPCS Codes dimension

The HCPCS Codes dimension includes HCPCS codes used within your organization as level 3 CPT codes that provide further detail as to the services, procedures, or supplies that were used in the course of care.

Accessing the HCPCS Codes dimension

In the Guide View, click **Data Management > Costing Data > Cost Item Dimensions > HCPCS Codes**.



The page can only display up to a maximum of 10,000 records.

Filtering records

To filter records:

1. Click the funnel icon in the upper left corner of the page.

2. In the **Filter** box, you can narrow down the records to display by selecting or creating a filter using the Filter Wizard. To access the Filter Wizard, click **Edit**. If you are familiar with writing filter statements, you can type the statement syntax directly in the Filter box.
3. Click **Apply**.

Adding or editing an HCPCS code

To add or edit an HCPCS code:

1. In the table, do any of the following:
   - To add a code, click **Add Row**. The new row displays at the bottom of the table. Enter information in each column. After you save, the table will display the new row in order by the HCPCS column.

     IMPORTANT: If you add a new record that already exists in the table, the system will overwrite the original column values with your new entries when you save your changes. We recommend that you review your entries before saving any changes.

   - To edit a code, click in the cell(s) to make your changes.

NOTE: Columns that are grayed out cannot be edited.

- To delete a code, select the row to highlight it, and then click **Delete Row**. At the **Continue?** prompt, click **OK**.
- To undo your changes, click the left arrow icon .
- To redo your changes, click the right arrow icon .

2. When you finish making changes, click **Save**.

Column descriptions

This section provides descriptions for each column in the HCPCS Codes dimension table:

NOTE: The table may display some columns that are related to other Kaufman Hall products or have been created specifically for your organization. Contact your Kaufman Hall Implementation Consultant or Kaufman Hall Support if you need help with these columns.

Keys

Every table in the database must have at least one key column. Key columns define unique records of data in the table. If a table has one key column, then each value in that key column must be unique and defines a unique record in the table. If a table has multiple key columns, then each combination of values in those key columns defines a unique record in the table.

HCPCS - The HCPCS codes, which can be unique to states, payors, etc.

Description - A long form description of the code.

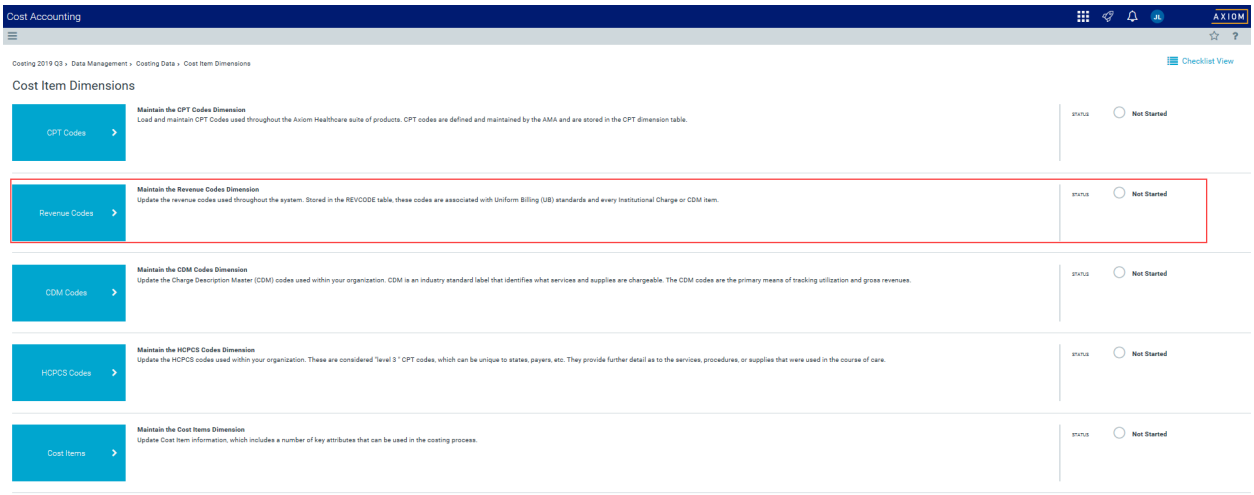
TIP: To help make reports more readable, we recommend that you do not use all capital letters in the description content.

Revenue Codes dimension

The Revenue Codes dimension lists all of the revenue codes.

Accessing the Revenue Codes dimension

In the Guide View, click **Data Management > Costing Data > Cost Item Dimensions > Revenue Codes**.



The page can only display up to a maximum of 10,000 records.

Filtering records

To filter records:

1. Click the funnel icon in the upper left corner of the page.

2. In the **Filter** box, you can narrow down the records to display by selecting or creating a filter using the Filter Wizard. To access the Filter Wizard, click **Edit**. If you are familiar with writing filter statements, you can type the statement syntax directly in the Filter box.
3. Click **Apply**.

Adding or editing a revenue code

Due to the large number of records that this table may contain, you need to use the Filter panel to identify the records to display.

To add or edit a revenue code:

1. In the table, do any of the following:
    - To add a revenue code, click **Add Row**. The new row displays at the bottom of the table. Enter information in each column. After you save, the table will display the new row in order by the REVCODE column.

      IMPORTANT: If you add a new revenue code that already exists in the table, the system will overwrite the original column values with your new entries when you save your changes.

- To edit a revenue code, click in the cell(s) to make your changes.

  NOTE: Columns that are grayed out cannot be edited.

- To undo your changes, click the left arrow icon .
- To redo your changes, click the right arrow icon .

2. When you finish making changes, click **Save**.

Deleting a revenue code

Due to the large number of records that this table may contain, you need to use the Filter panel to identify the records to display.

To delete a revenue code:

1. In the table, select the row to highlight it, and then click **Delete Row**.
2. At the **Continue?** prompt, click **OK**.
3. When you finish making changes, click **Save**.

Column descriptions

This section provides descriptions for each column in the Revenue Codes dimension table:

NOTE: The table may display some columns that are related to other Kaufman Hall products or have been created specifically for your organization. Contact your Kaufman Hall Implementation Consultant or Kaufman Hall Support if you need help with these columns.

TIP: In this dimension, you can add custom "grouping" columns to customize the data you want to query into reports. For more information, see Creating or modifying custom columns in dimensions.

Keys

Every table in the database must have at least one key column. Key columns define unique records of data in the table. If a table has one key column, then each value in that key column must be unique and defines a unique record in the table. If a table has multiple key columns, then each combination of values in those key columns defines a unique record in the table.

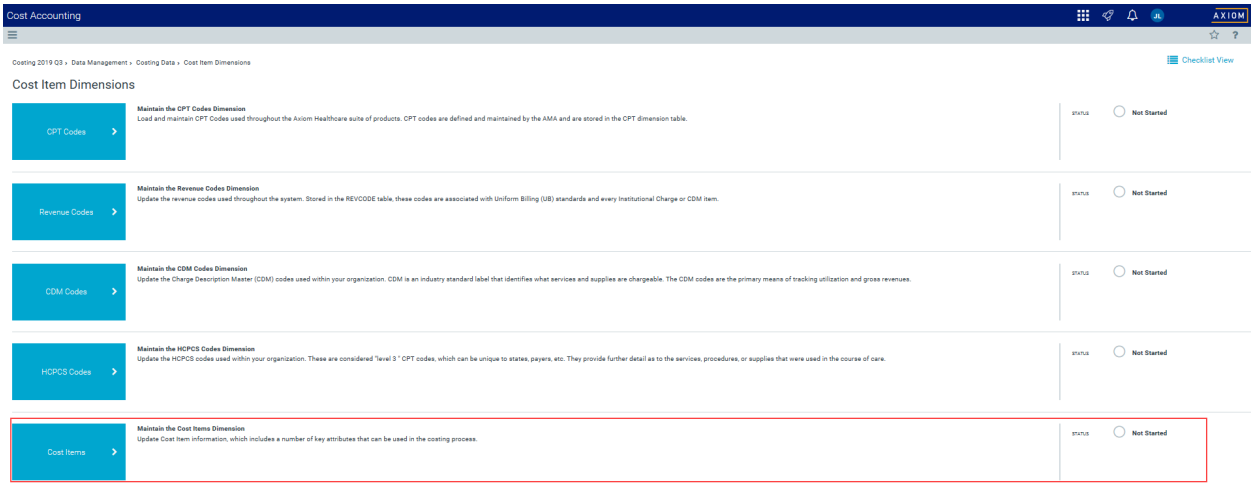
REVCODE - The UB revenue code associated with a chargeable cost item in an institutional setting where UB billing is supported.

Cost Items dimension

The Cost Items dimension defines the cost object to which costs are allocated during the unit cost calculation processes for all methods. It can be a chargeable activity or item, thus the foreign key reference to CDM codes, but it can also be a non-chargeable item. The cost item can also be created during a Direct to Encounter costing process, whereby the encounters can be assigned cost items based on business rules.

Accessing the Cost Items dimension

In the Guide View, click **Data Management > Costing Data > Cost Item Dimensions > Cost Items**.



The page can only display up to a maximum of 10,000 records.

Filtering records

To filter records:

1. Click the funnel icon in the upper left corner of the page.

2. In the **Filter** box, you can narrow down the records to display by selecting or creating a filter using the Filter Wizard. To access the Filter Wizard, click **Edit**. If you are familiar with writing filter statements, you can type the statement syntax directly in the Filter box.
3. Click **Apply**.

Editing cost items

To edit cost items:

1. In the table, do any of the following:

- To edit a cost item, click in the cell(s) to make your changes.

  NOTE: Columns that are grayed out cannot be edited.

- To delete a cost item, select the row to highlight it, and then click **Delete Row**. At the **Continue?** prompt, click **OK**.
- To undo your changes, click the left arrow icon .
- To redo your changes, click the right arrow icon .

2. When you finish making changes, click **Save**.

Column descriptions

This section provides descriptions for each column in the Cost Items dimension table:

NOTE: The table may display some columns that are related to other Kaufman Hall products or have been created specifically for your organization. Contact your Kaufman Hall Implementation Consultant or Kaufman Hall Support if you need help with these columns.

Keys

Every table in the database must have at least one key column. Key columns define unique records of data in the table. If a table has one key column, then each value in that key column must be unique and defines a unique record in the table. If a table has multiple key columns, then each combination of values in those key columns defines a unique record in the table.

CostItem - The primary key for the table and uniquely identifies the cost item.

Cost

These columns are specific to the set up and maintenance of Axiom Cost Accounting.

DEPT - The default department for the cost item. Many chargeable items are used in multiple departments.

CDMCODE - The reference to the CDM code potentially associated to the cost item, if not set to the default.

REVCODE - The UB revenue code associated with a chargeable cost item in an institutional setting where UB billing is supported.

CPT - The CPT code associated with a chargeable cost item in an institutional or professional setting.

TYPE - A client-controlled Type indicator helpful in filtering cost items of particular nature or category. This can be used to indicate different cost treatment in the costing process.

HCPCS - The HCPCS code associated with a chargeable cost item in an institutional or professional setting.

CreateDate - Reserved for future use.

Configuring system account ranges

In the cost accounting process, you can apply costs incurred by one department to other departments using the reclass, allocation, or adjustment processes. For example, applying costs for inpatient transportation, building maintenance, or marketing to a clinical department.

To reflect these transactions, Axiom Cost Accounting creates pseudo-accounts within departments to offset costs in source departments and write costs to receiving departments. These accounts are created and stored in the System Account Ranges driver file.

For example, when applying inpatient transportation costs to a clinical department, a pseudo-offset is created in the transportation department with a negative balance, and a correlating pseudo-account is created in the clinical department reflecting the dollars allocated.

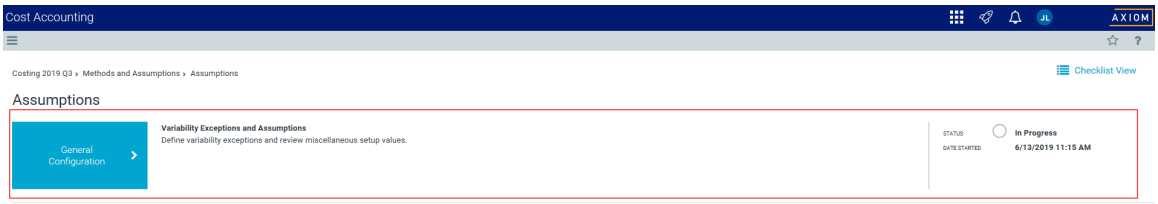
The driver displays the following range sections:

- **Reclass Account Ranges** - Typically, the reclass process involves reclassifying dollars that you want to appear as direct costs in the receiving department, regardless of whether the departments involved are direct or indirect.
- **Allocation Account Ranges** - The allocation account ranges allow for allocation of overhead and other account/department combinations based on a driver statistic.
- **Cost Item Calculation Offsets** - As expenses are applied to cost items, offset accounts will balance them out. For example, as labor dollars are applied to a cost item, fixed and variable offset accounts will be created in the source department to offset dollars transferred to these cost items.
- **Statistic Account Ranges** - These account ranges define statistics created within the system. These may include payroll variability statistics or any other statistic that might factor into cost calculations.

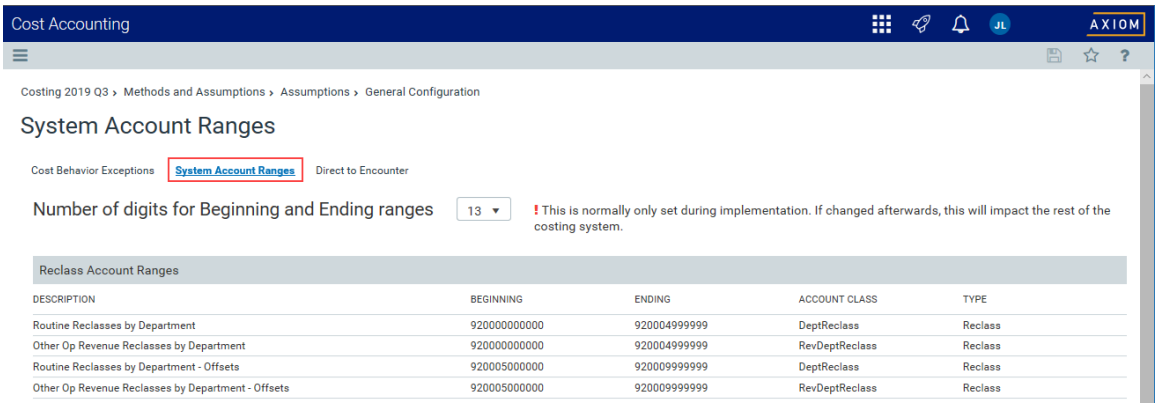
IMPORTANT: We recommend that you only set this during the implementation of Axiom Cost Accounting. If you change this after implementation, it will impact the entire system.

To configure account ranges:

1. In the Guide View, click **Methods and Assumptions > Assumptions > General Configuration**.



2. Click the **System Account Ranges** link.



3. From the **Number of digits for Beginning and End ranges** drop-down, select the number of digits in the account ranges.

4. To save your changes, click the disk icon in the upper right corner of the page.

3

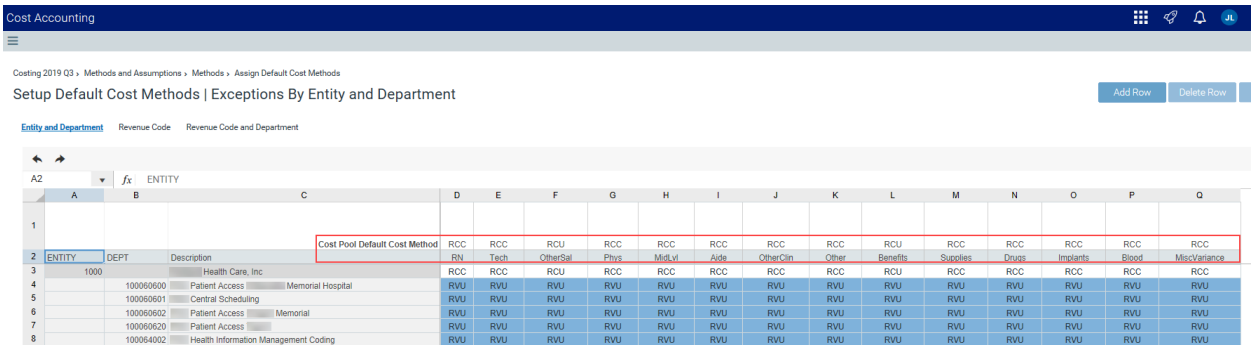
Managing Unit Cost Method Assignments

This chapter includes topics related to configuring and maintaining method assignments.

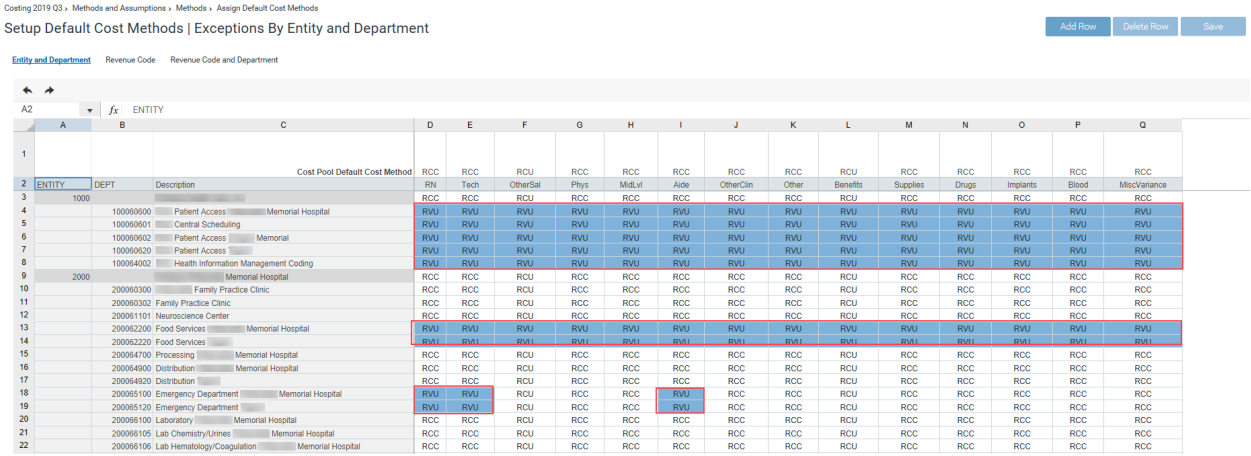
Managing default cost methods exceptions

After the Cost Pool table is set up by your Kaufman Hall Implementation consultant, you can configure any default cost method exceptions for any entities, departments, or revenue codes from the Setup Default Cost Methods page.

When you click the Entity and Department link at the top of the page, the exception departments display by entity on the left side of the page. The first row shows the default cost method for each cost pool listed in the second row. The columns then display the default cost methods for each cost pool column.



From this page, you can add or edit a cost method exception for an entity or department. Any changes are treated as an exception to the Default Cost Pool Method assignment set up in prior steps in the costing process. Blue cells indicate that the cost method has changed from the original value so that you can easily track what cost methods have changed for which departments or entities.



The entity row displays in the line above the list of departments and shows the default cost pool assignment. The departments under that entity are assigned that default method assignment. If you make a change at the entity level, that exception will propagate down to the department level.

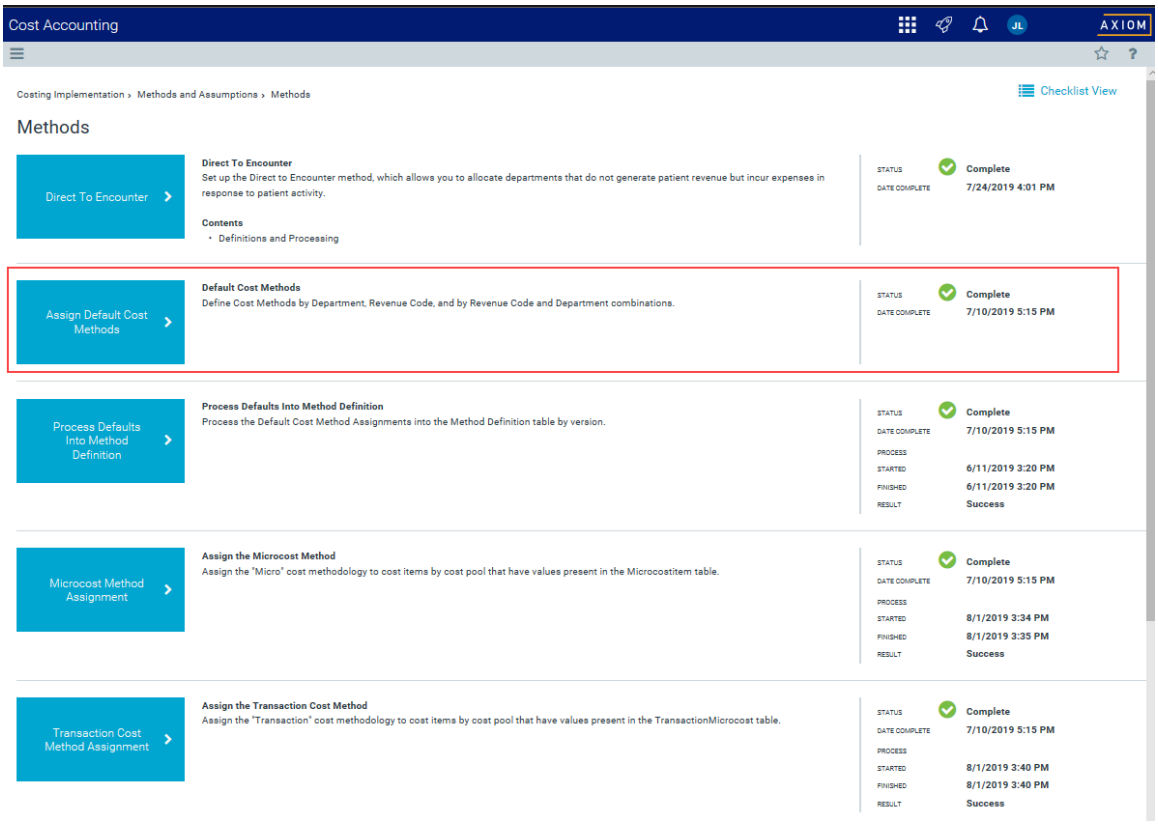
NOTE: If the values in the department is already defined, then changes made at the entity level will not be made at the department level. You will need to make any default method changes manually.

You can also perform these same actions for revenue codes and/or revenue codes for departments. They are accessible through the Setup Default Cost Methods page from the following links at the top of the page:

- **Revenue Code** - Manage the default cost method exceptions for revenue codes only.
- **Revenue Code and Department** - Manage the default cost method exceptions for revenue codes across departments.

To manage default cost methods exceptions:

1. In the Guide View, click **Methods and Assumptions > Methods > Assign Default Cost Methods**.

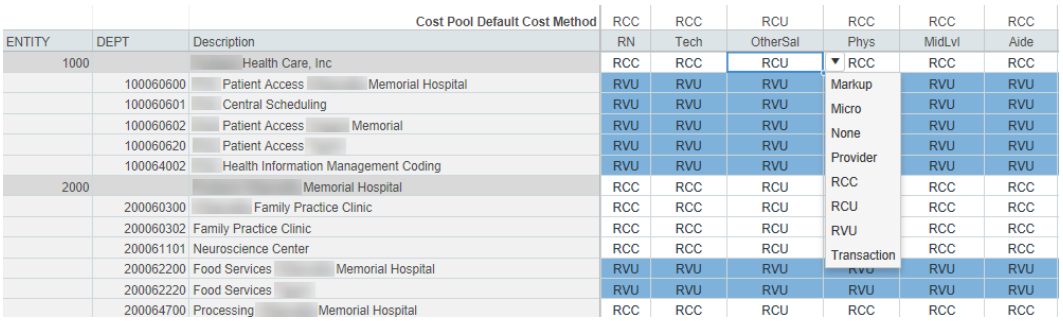


2. At the top of the page, click one of the following links, depending on the exceptions to manage:
   - Entity and Department
   - Revenue Code
   - Revenue Code and Department

2. Do one of the following:

   - **Edit a department or revenue exception** - Navigate to the department or revenue code in which to make an exception, from the drop-down list in the cost pool column, select the cost method.

     TIP: Any cell changes you make display in italics until you save your changes, at which point they will change to a blue cell.



NOTE: The drop-down list of methods only displays those set up by your organization in the System Configuration page.

- **Add a department or revenue code to the list of exceptions** - Click **Add Row** at the top of the page. In the dialog, select the entity and then the department. Click **OK**. From the department or revenue code drop-down list in the cost pool column, select the cost method to assign as the exception.
- **Delete a department or revenue code from the list of exceptions** - Click **Delete Row** at the top of the page. At the conformation prompt, click **OK**.

3. After making your changes, in the upper right corner of the page, click **Save**.

Using the Relative Value Units (RVU) method

Relative Value Units allocation method is the most commonly chosen methodology to calculate cost at the cost item level. RVU allocations allow you to comparatively evaluate cost items in a department so that you can allocate cost according to the resources that you use (labor, supply, capital, etc.).

RVUs are assigned to cost items for each cost pool within a department. This allows codes to receive only the related expenses, such as labor for time charges and supply expense for implant items. The RVU basis should reflect the department structure and data available.

You should update RVUs, as needed. For example, when minutes are used for procedures, you should check in once a year with the department managers to verify whether or not anything has changed. Have they made processes changes that have made some procedures quicker, or is there no longer a need to have an RN present for certain procedures? Have any procedures been added? Setting up an annual review of RVUs is best practice to assure that you are allocating costs properly.

TIP: The most basic rule of RVU costing is that any item that does not consume resources in a particular cost pool should receive an RVU value of 0 (zero) so that no cost is assigned for that cost pool to that cost item.

The following table lists the types of RVUs available:

Type	Description
Variable Labor	The RVU for variable labor is often time required for the activity. You can express this in minutes or hours, as long as it is consistent within the department. The cost data becomes more flexible, and you can perform additional analysis if the RVU reflects estimated time by resource group (For example, RN, Tech).
Supply Expense	The RVU for variable supplies can be the acquisition cost for all chargeable items and an estimate of non-chargeable costs for the other codes in a department (For example, Room and Board). As noted earlier in this document, chargeable and non-chargeable items will ideally not be in the same GL account. If that tenet holds true, use separate cost pools for each category.

Depreciation	Allocating depreciation provides both opportunities and challenges. Areas such as the OR often have major equipment that is specific to a procedure, such as a YAG laser. However, the depreciation is typically in an account along with all equipment, both patient care and non-patient care (For example, office furniture). Invoke the following strategies to provide a more accurate assignment of cost:
	• Costing reclass – You can shift patient care equipment depreciation into pseudo-accounts set up for costing. This allows you to isolate and assign the expense to the appropriate cost items. This requires access to the asset cost information in the Fixed Asset System.
	• Spread general equipment by one of the following methods:
	  ◦ Allocating evenly across all cost items
	  ◦ Allocating to procedure or room charges only
	  ◦ Allocating only to set up or initial time charge (assuming that is the charge structure, such as in an OR)

Other Cost Pools	RVUs for other types of cost pools should reflect the cost structure of those pools. For example, if Purchased Services is a cost pool, the RVU could be the actual cost per unit (or average cost) for the purchased service (lithotripsy, nuclear scans, neuro monitoring, and so on).

Type	Description
Alternative RVU Structures	For some departments, developing detailed RVUs is not feasible. The Clinical Lab is an example where the level of detail required to calculate the RVU for each test can be greater than the benefit. You can use a scale method (1-20 scale of resource utilization) to assign costs. This approach is easier to maintain and can be just as accurate if the department has a knowledgeable manager who can assign the scale for each cost pool.

Collecting RVUs

The following list describes a general procedure to gather the information you need to determine RVUs.

1. Determine the department(s) in which to collect RVUs.
2. Set up meetings with department managers to discuss the process and the benefits of using RVUs in costing. It is likely that you will need to have more than one meeting. If possible, have a meeting with all of the department leaders of a particular service line at the same time. For example, all radiology or pharmacy. If you are a multi-facility organization, plan to bring together someone from each facility to participate.
3. Collect revenue and usage data on each department that is relative to the time period that is being costed. Revenue and usage data contains a list of cost items (charges, procedures, etc.) along with volume and unit charge that are captured within that department.
4. Set up a spreadsheet for each department that lists the cost items vertically, with the volume, revenue, unit charge, and all cost categories used in that department in columns.
5. Discuss departmental operations.
    a. Discuss the staff and their roles within the department: RN, Tech, Managers/Supervisors, etc.
    b. Walk through the process of servicing an average patient who has a visit in this department:
        - How does the patient arrive to the department? Are they transported by the transport department, or does someone from this department retrieve the patient from their room or other area? Is this an outpatient department where the patient arrives without assistance?
        - Is registration involved? Who registers the patient?
        - Is pre-procedure work completed? Who performs this work? Is it performed prior to arriving to this department?

- Who performs each function and how long does it take? How many procedures are charged to the patients in this department? Does an RN take 10 minutes, 20, or not involved at all with specific procedures? How about the tech or aide? Or perhaps all are involved but for different lengths of time.

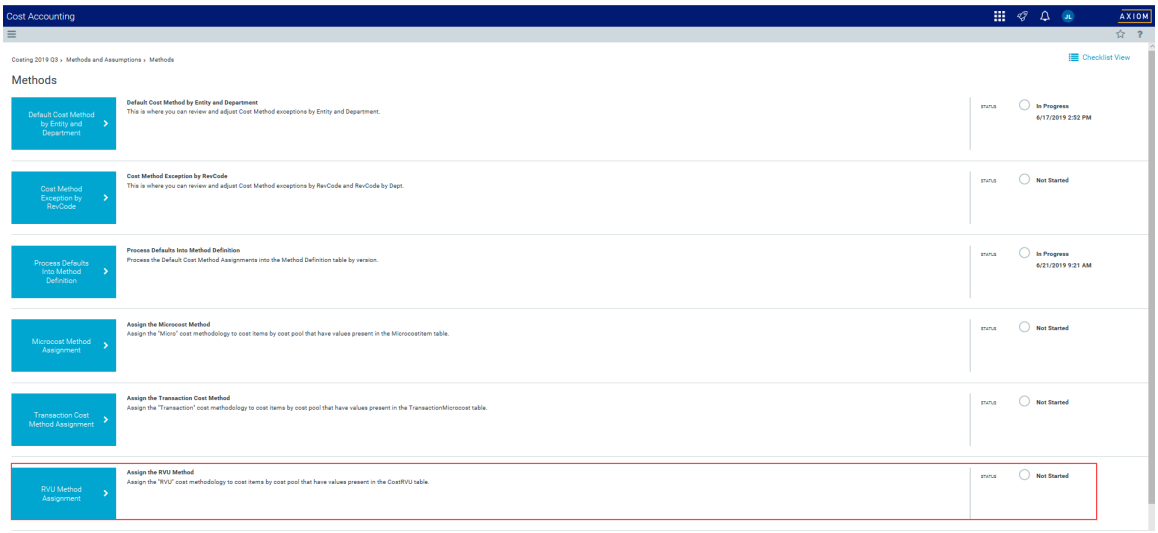
NOTE: For multi-facility organizations, there will be nuances that will dictate differences in RVU collection. For example, a larger hospital may have a transport department that moves patients around to where their next test is located, but the small hospital has to send staff to retrieve the patient from their room. The time it takes to perform a task in the hospital with the transport department will be less than the hospital who has to get the patient. There may be small hospitals, however, who bring the equipment to the bedside and may actually take less time than the larger hospital. The goal is to understand the process involved within each department for an average case and to determine the skill mix and time needed to perform procedures.

c. Collect supply, pharmacy, depreciation, and other RVUs based on various measures, which may or may not involve a measure of time. Supplies are typically acquisition cost (Microcosted), as is pharmacy. Depreciation is typically fixed asset information, all of which are a separate function from the traditional RVU process in Axiom Cost Accounting.

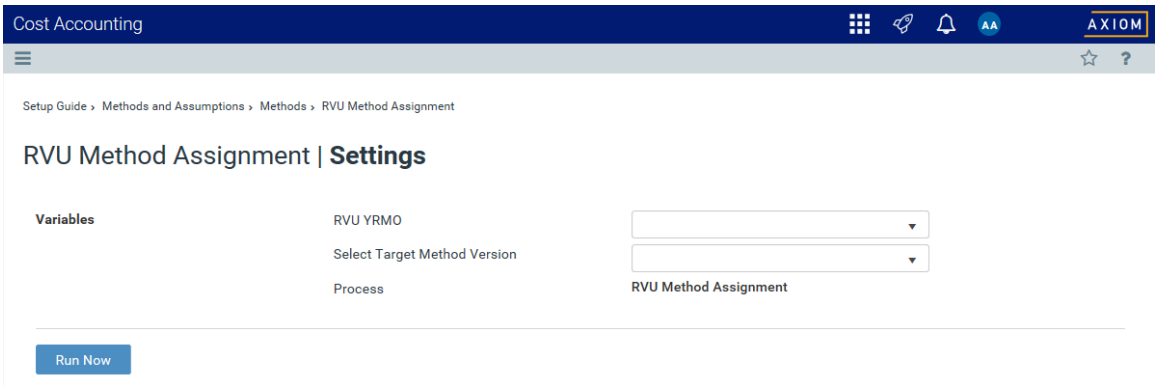
Assigning the RVU method

To assign the RVU Method:

1. In the Guide View, click **Methods and Assumptions > Methods > RVU Method Assignment**.



2. From the **RVU YRMO** drop-down, select the year and month.



3. From the **Select Target Method Version** drop-down, select the version number to use for the method definition table.
4. Click **Run Now**.

   The system schedules a job to run the import.

TIP: After you run the method assignment, the system displays a separate tab that displays the status of the assignment tasks, including the result, the time the job was started, how long it lasted, and the user that ran the job. For more information, see Viewing scheduled job results.

Setting up RVU users

Many times, managing department RVUs is handled by people outside of the costing department. In Axiom Cost Accounting, you can set up these individuals to manage and review RVUs for their department without the need to access the entire system. To do this, administrators need to complete two main steps:

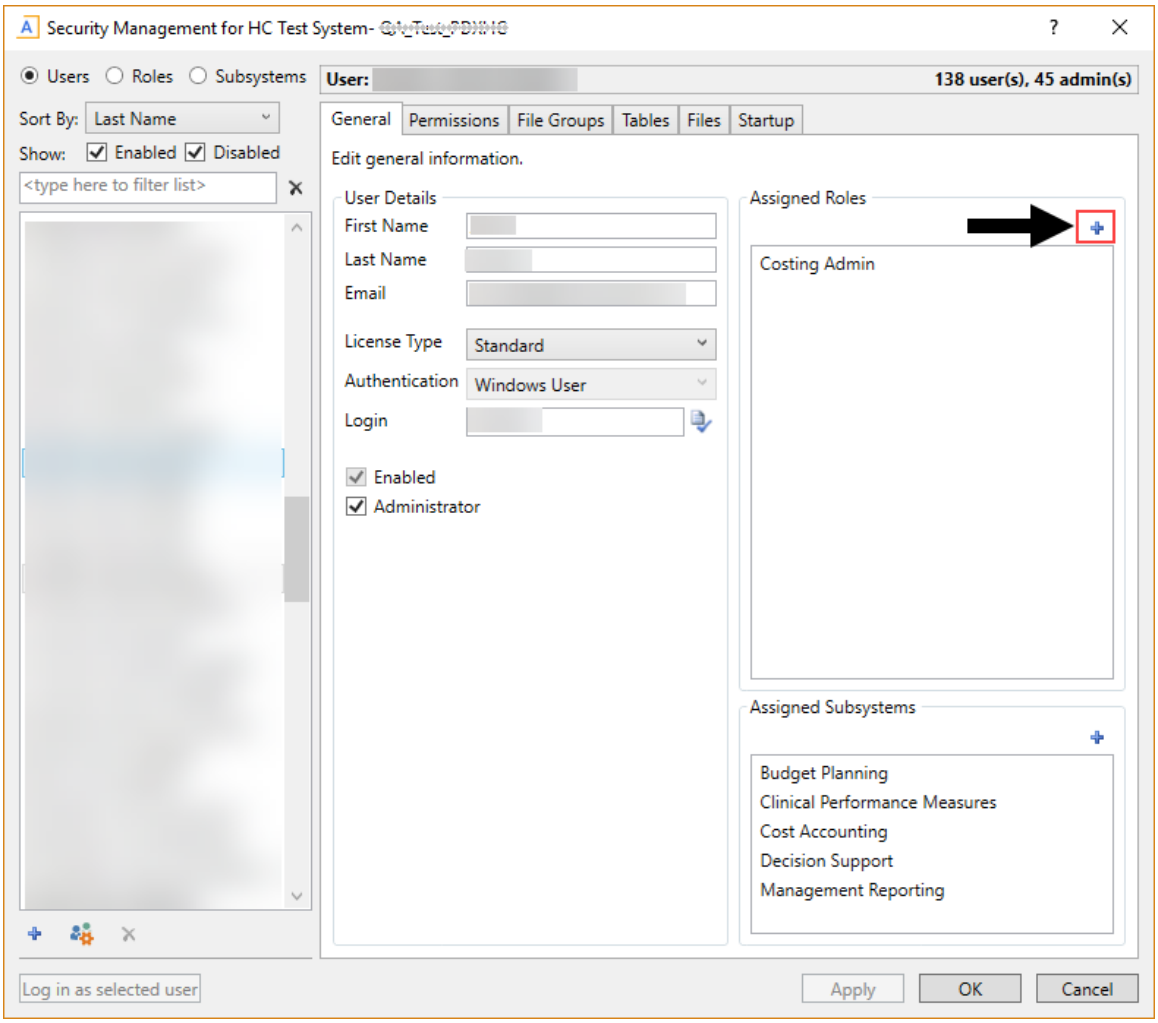
1. Assign the RVU user role profile.
2. Designate RVU owners and reviewers.

Assigning the RVU User role profile

The first step to setting up an RVU user is for the administrators to assign the RVU User role profile. For these users, the system only displays RVUs specific to the user's defined department. For administrators, the system displays all department RVUs.

To assign the RVU User role profile:

1. Open the Windows Client.
2. Open the Security Manager.
3. Add a new user or select an existing user.
4. Above the **Assigned Roles** box, click **+**.



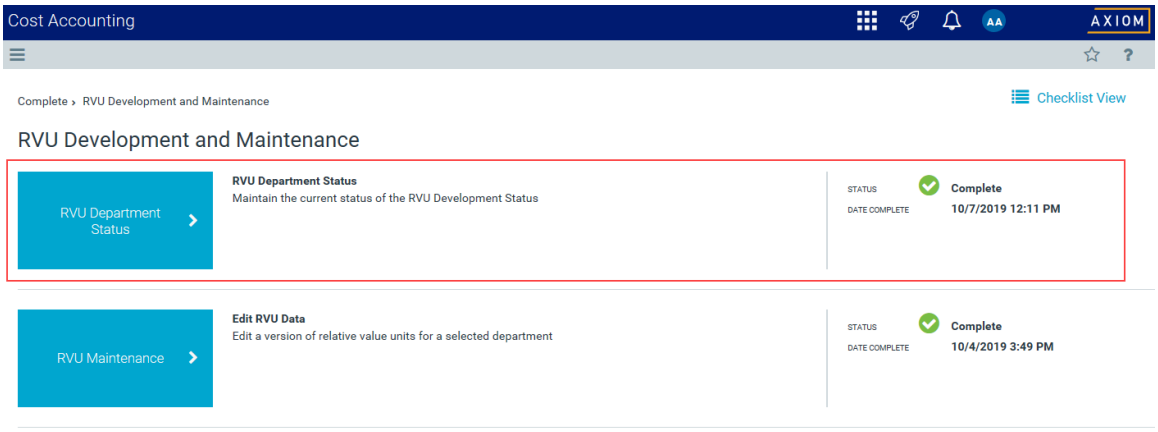
5. In the **Assign Roles** dialog, select **RVU User**, and click **Add**.
6. Above the **Assigned Subsystems** box, click **+**.
7. In the **Assign Subsystems** dialog, click **Cost Accounting**.
8. After making your changes, click **Apply**, and then click **OK**.

Designating RVU owners and reviewers

After the administrator assigns the RVU User role profile, they need to designate an RVU owner and reviewer for each department. Administrators can also be an owner and/or reviewer, but they must also be assigned the RVU user role.

To assign RVU owners and reviewers:

1. In the Guide View, click **RVU Development and Maintenance > RVU Department Status**.



2. For each department, do the following:
    a. In the **Owner** column, select an RVU user from the drop-down
    b. In the **Reviewer** column, select an RVU user from the drop-down.

NOTE: Both an owner and reviewer must be assigned before status updates can be saved.

3. After making your changes, click **Save** in the upper right corner of the page.

For instructions on maintaining and reviewing RVUs, see Managing department RVU status.

Managing department RVU status

The RVU Department Status page allows you to track the status of the RVU review process for your departments. Users of this page are set up by the administrator as a department owner and/or reviewer. Owners and reviewers can set the status for each department's RVU for the RVU version, view the department's RVU values, and view a change history for each department. The system only displays departments assigned to you.

NOTE: The actions taken in the RVU Department Status page do not affect any processes done in Axiom Cost Accounting at this time. This page simply provides an easy way to manage the review process for your organization.

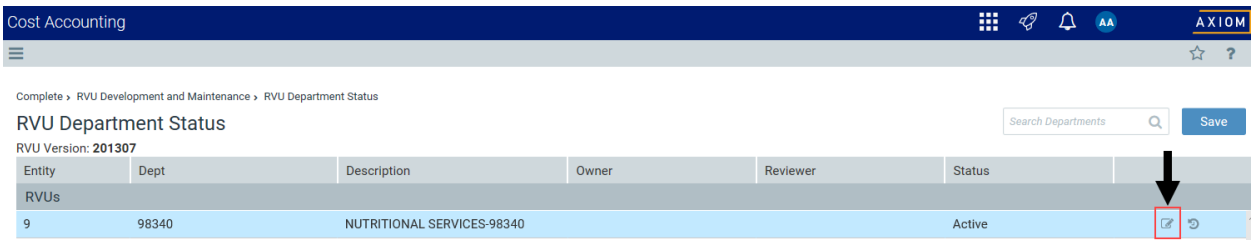
Administrators - You can set up people outside of the costing organization to manage and review RVUs for their department by assigning them the RVU User role profile and assigning them as a owner and/or reviewing. For instructions, see Setting up RVU users.

Accessing the RVU Department Status page

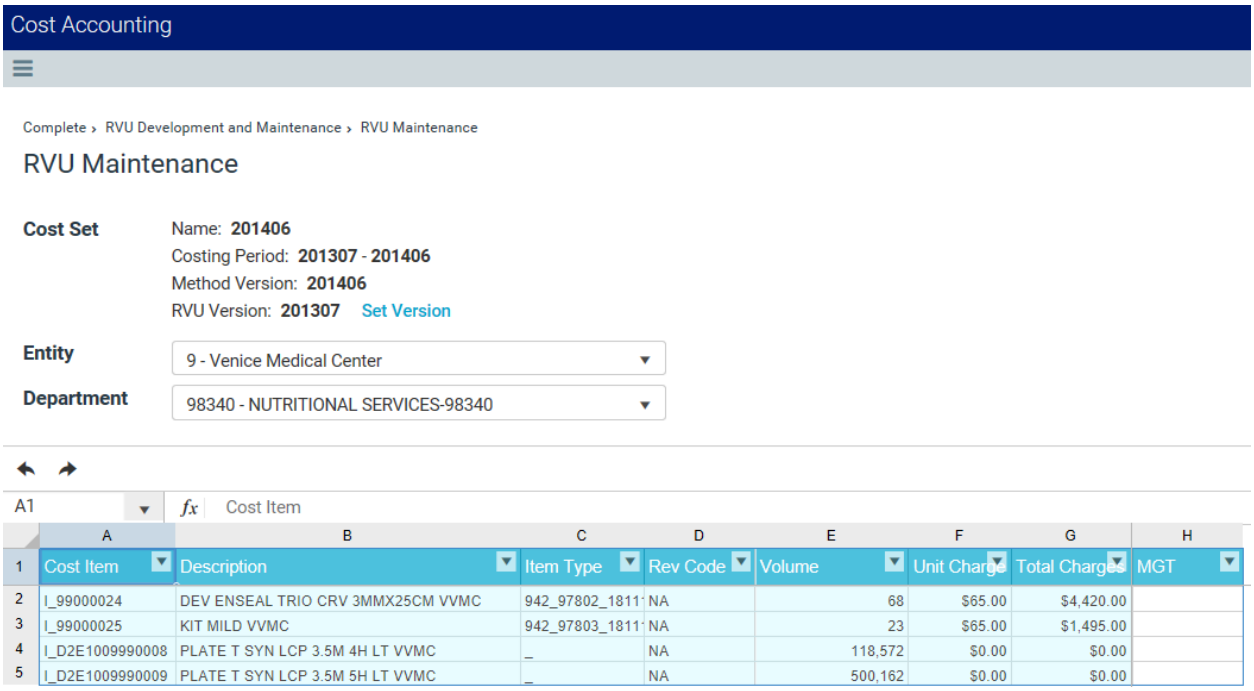
In the Guide View, click **RVU Development and Maintenance > RVU Department Status**.

Editing department RVU values

You can view or update an RVU version by moving your cursor to the right of the **Status** column, and then clicking the notepad icon.



The RVU Maintenance page displays. For more information, see Creating or updating RVU versions.



Setting department RVU status

From the **Status** column, select one of the following status descriptions:

Status	Description
Inactive	The department does not have any RVU methods, by default. This state can also be used to skip the department from being worked on.
Active	The department has RVU methods associated with it. This state can also be used to indicate it needs to be worked on.
Pending	The department is being worked on.
Review	The department is completed and ready for review and/or accepted as Done.
Done	The department is updated and completed for this version (only the person assigned to the reviewer or administrator role can move to this state).

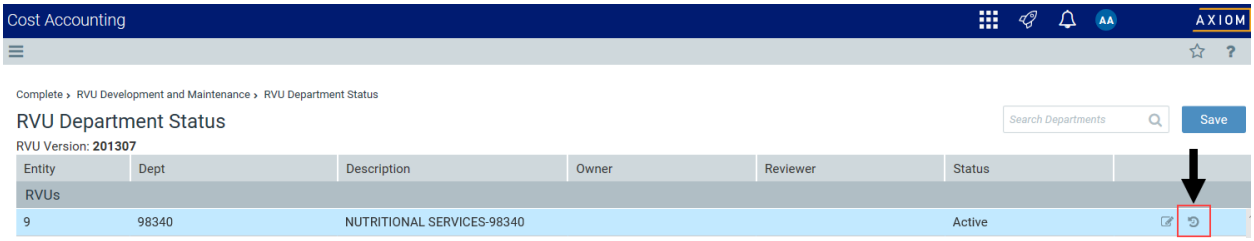
NOTE: The available status descriptions listed above depends on whether the user is designated as an owner or reviewer.

After making your changes, click **Save** in the upper right corner of the page.

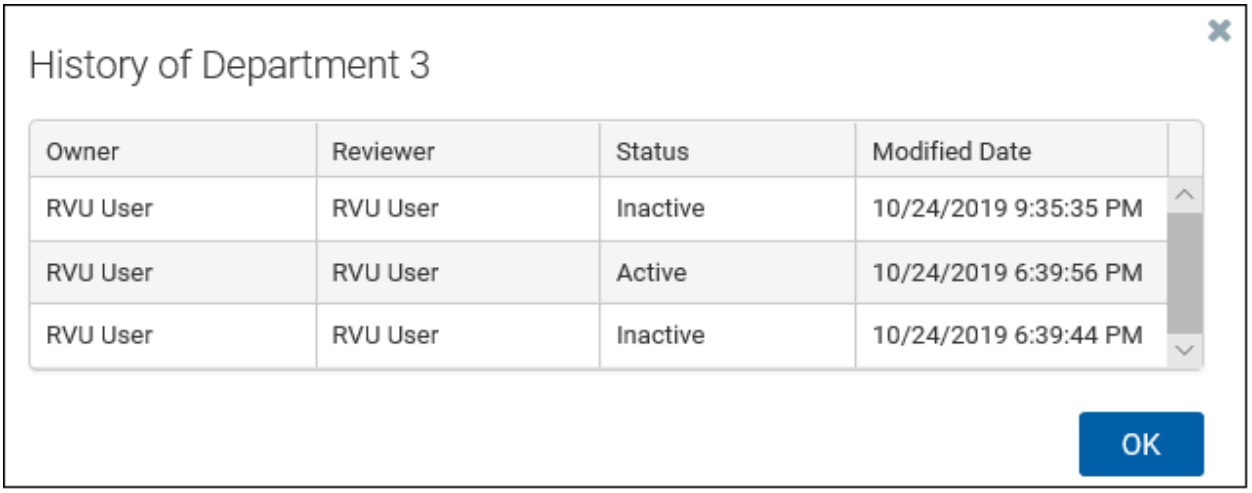
IMPORTANT: Both an owner and reviewer must be assigned for status changes to save in the system. The owner and reviewer can be the same user.

Viewing department RVU status history

In the RVU line item, move your cursor to the right of the **Status** column, and then click the clock icon.



The history dialog displays a history of the assigned owners, reviewers, status, and date the changes were made. To close the dialog, click **OK**.



Assigning the Microcost method

Microcost is a costing method applied to cost items for selected cost categories where the vendor acquisition cost per unit is used as the unit cost. This costing method is used in situations where a supply item has a known cost that can be assigned, such as when using a single vendor and a contract price is negotiated for an extended period of time. Cost items that belong to the following cost categories are likely candidates to assign as Microcost:

- Medical supplies
- Implants

- Pharmaceuticals

Update the acquisition cost of cost items, as needed. As fiscal months close (or quarters, depending on how often you process costs), review the new cost items used during that month's or quarter's service date range. You will need to evaluate new cost items to determine the most appropriate costing method assignment that reflects the information available (RVU, RCC, Microcost, and Reverse Markup).

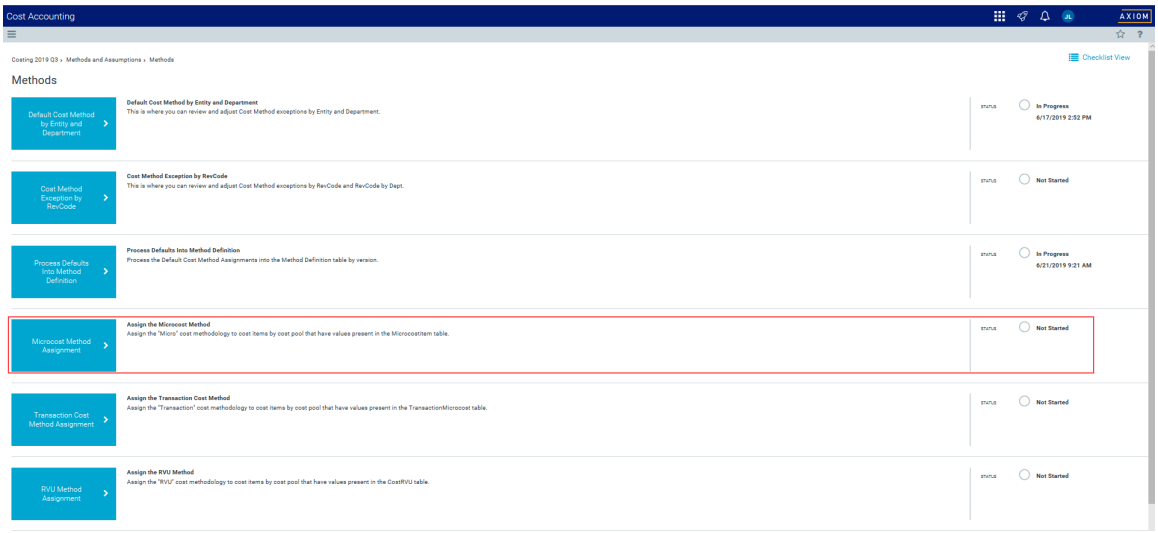
The per-unit cost imported into the Microcost Item table is expected to be an average for the month imported.

Prerequisite: Before you begin this process, make sure you review your chart of accounts, and map them to cost categories as well as map the cost categories to cost pools. For each cost pool, look at the cost items, and assign a method to each.

The Microcost method only assigns cost to cost items if the vendor cost is loaded into the Microcost table.

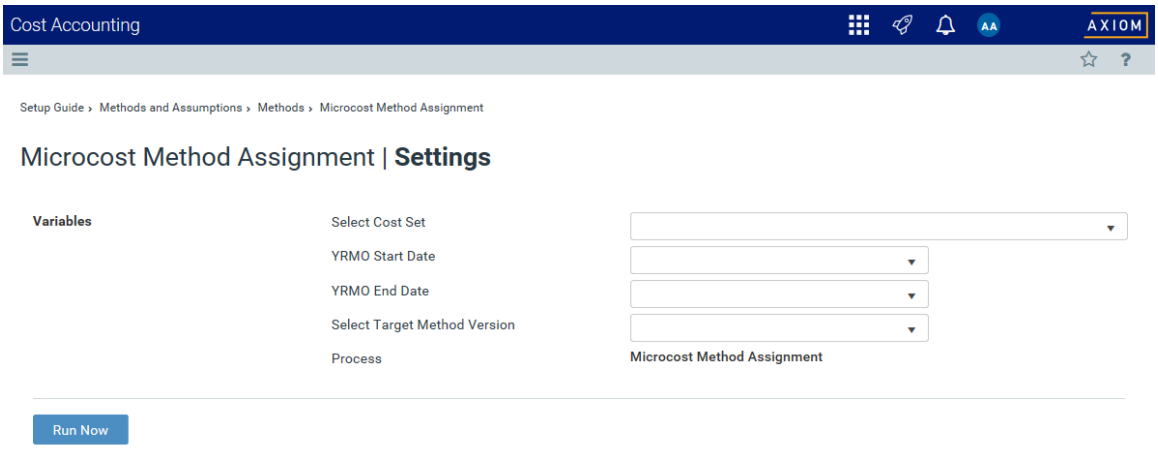
To assign the Microcost method:

1. In the Guide View, click **Methods and Assumptions > Methods > Microcost Method Assignment**.



2. From the **Select Cost Set** drop-down, select the cost set in which to assign the method.

> **NOTE:** The system defaults to the currently active cost set.



3. From the **YRMO Start Date** drop-down, select the starting year and month.
4. From the **YRMO End Date** drop-down, select the ending year and month.
5. From the **Select Target Method Version** drop-down, select the version number to use for the method definition table.
6. Click **Run Now**.

   The system schedules a job to run the import.

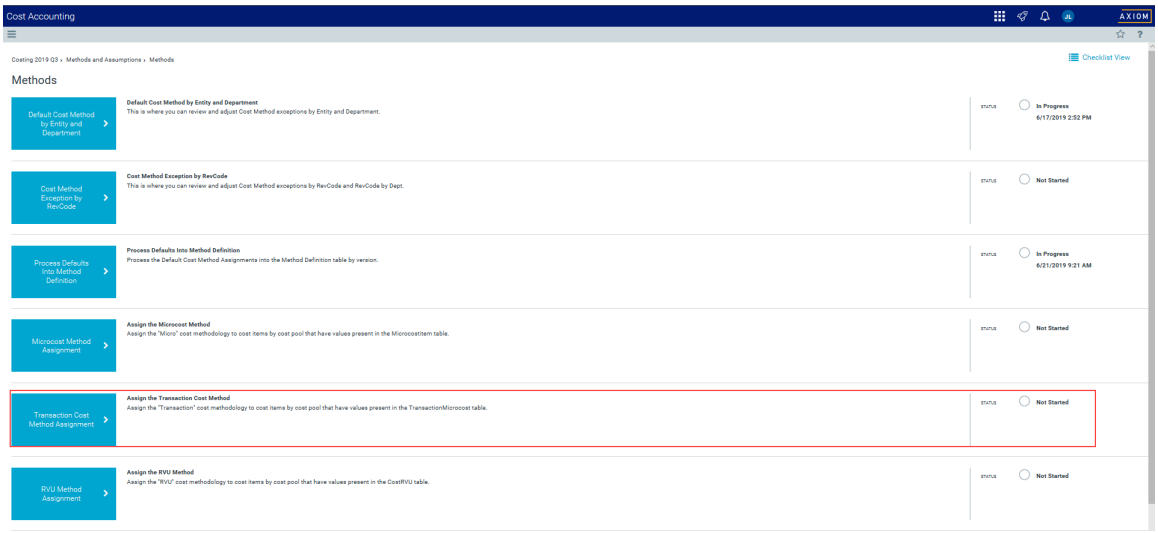
TIP: After you run the method assignment, the system displays a separate tab that displays the status of the assignment tasks, including the result, the time the job was started, how long it lasted, and the user that ran the job. For more information, see Viewing scheduled job results.

Assigning the Transaction Cost method

To assist with assigning many methods to a large number of cost items, similar to RVU and Microcost, you can use the Transaction Cost Method Assignment page to update the cost item method.

To assign the Transaction Cost Methods:

1. In the Guide View, click **Methods and Assumptions > Methods > Transaction Cost Method Assignment**.



2. From the **Select Cost Set** drop-down, select the cost set in which to assign the method.

   NOTE: The system defaults to the currently active cost set.

3. From the **YRMO Start Date** drop-down, select the starting year and month.
4. From the **YRMO End Date** drop-down, select the ending year and month.
5. From the **Select Target Method Version** drop-down, select the version number to use for the method definition table.
6. Click **Run Now**.

   The system schedules a job to run the import.

TIP: After you run the method assignment, the system displays a separate tab that displays the status of the assignment tasks, including the result, the time the job was started, how long it lasted, and the user that ran the job. For more information, see Viewing scheduled job results.

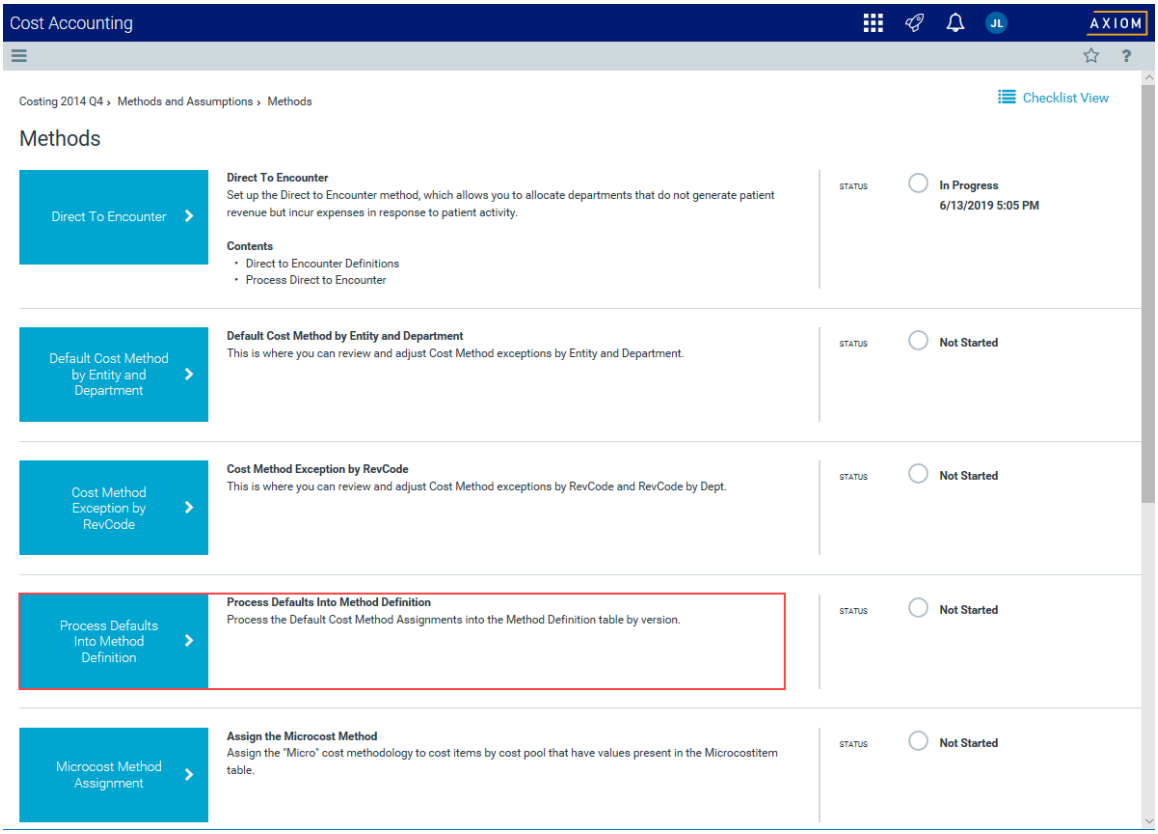
Processing default cost method assignments to method definitions

Use this page to create a new method definition version from the defaults.

IMPORTANT: If a cost item is already assigned a method in the given method definition version, the system will skip the cost item. You cannot use this page to update or change an assignment. To update to an assigned method to an already-mapped cost item, go to the Cost Methods by Cost Item page. You will need to do this after you create a new version using this page. To remap defaults (for example, to change the methodology/ies in which you want to calculate costs, whether to test a new scenario or correct a mistake), you need to re-setup cost pool table defaults, department assignments, revenue code assignments, revenue code department exceptions, and then return to the Process Defaults Into Method Definition page and type in a new version number.

To process defaults into method definitions:

1. In the Guide View, click **Methods and Assumptions > Methods > Process Defaults Into Method Definition**.



Click image to view full size

2. From the **YRMO Start Date** drop-down, select the YRMO start date in which to assign the cost items.
3. From the **YRMO End Date** drop-down, select the YRMO end date in which to assign the cost items.
4. From the **Select Target Method Version** drop-down, select the version of the Method Definition

table in which to process the default cost method assignments.

5. Click **Run Now**.
6. In the Information dialog, click **OK**.

To view the status of the processes, see Viewing scheduled job results.

Assigning default cost methods to cost items

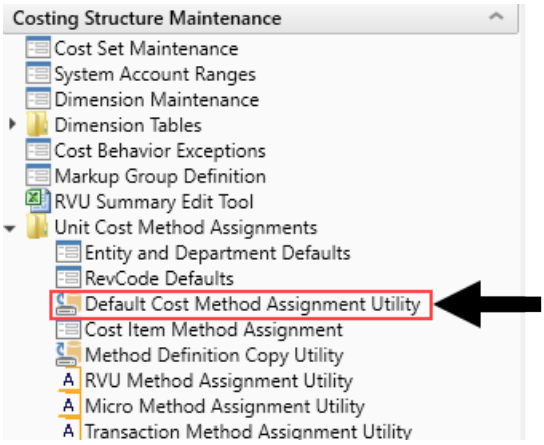
Use the Default Cost Method Assignment utility to assign cost methods to cost items. For each cost item, Axiom Cost Accounting assigns the cost method from one or more of the following dimension tables:

- CostPool
- DeptCostPoolMethod
- RevCodeCostPoolMethod
- RevCodeDeptCostPoolMethod

NOTE: You can only use this utility save to a new method definition version. You cannot overwrite an existing definition.

To assign default cost methods to cost items:

1. In the Cost Accounting Admin task pan, in the **Costing Structure Maintenance** section, click **Unit Cost Method Assignments**, and double-click **Default Cost Method Assigment Utility**.



2. In the **Execute Import: Default Cost Method Assignment Utility** dialog, click **Execute**.

Configuring exceptions to cost item method assignments

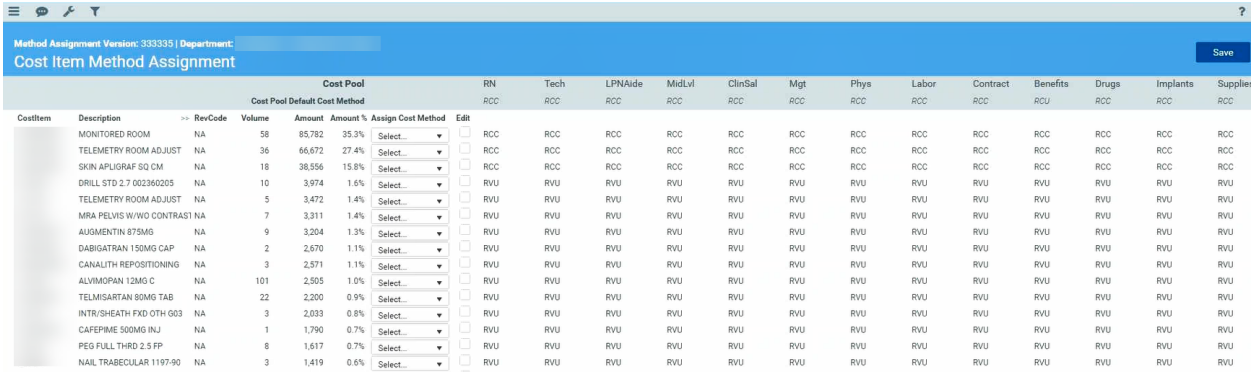
After running the Default Cost Method Assignment utility, use the Cost Item Method Assignment utility to update cost items with exceptions to the department default by cost item and cost pool.

Filtering cost items and editing method assignments

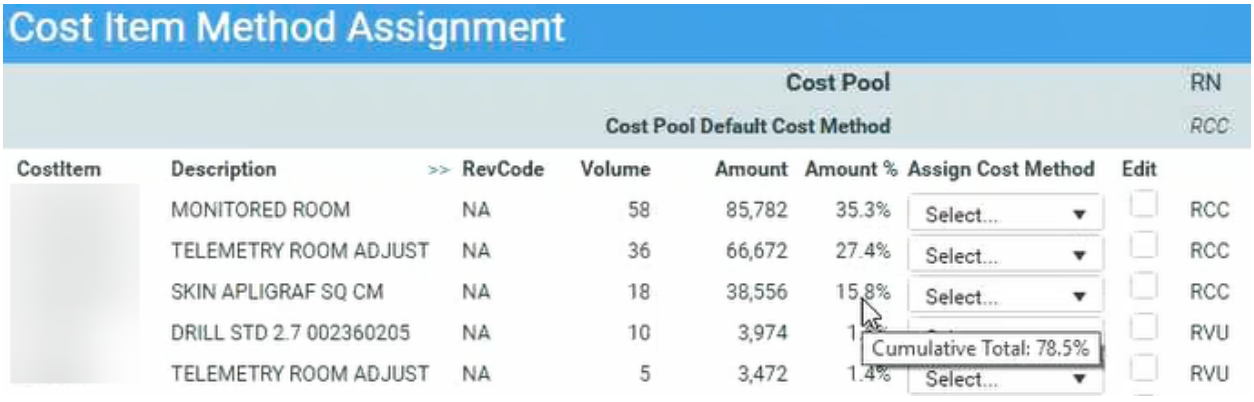
When you open the utility, the page does not display any data other than the cost pools and their corresponding default cost method assignments (located in the first two rows at the top of the page) until you configure the filter. You filter for cost items to display in the utility by using the following parameters:

- Method assignment version
- Entity
- Department
- RevCode (optional)
- Start and end service dates

The utility then displays a list of all the individual cost items and their corresponding method assignments. You can edit the cost item method assignment different ways depending on your needs, such as assigning a cost method across all cost pools or editing an assignment for one or more specific cost pools.

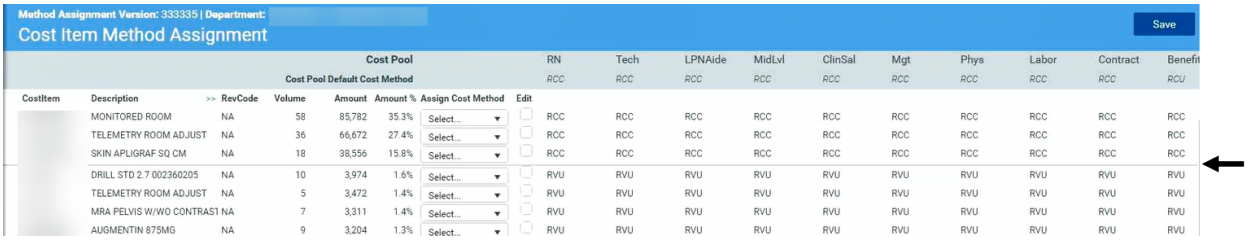


You can also view the cumulative amount of all the cost items by hovering your mouse cursor over each percentage in the Amount % column. This allows you to focus your effort on making assignment changes to the larger majority of your cost items.



Using the Threshold Ruler

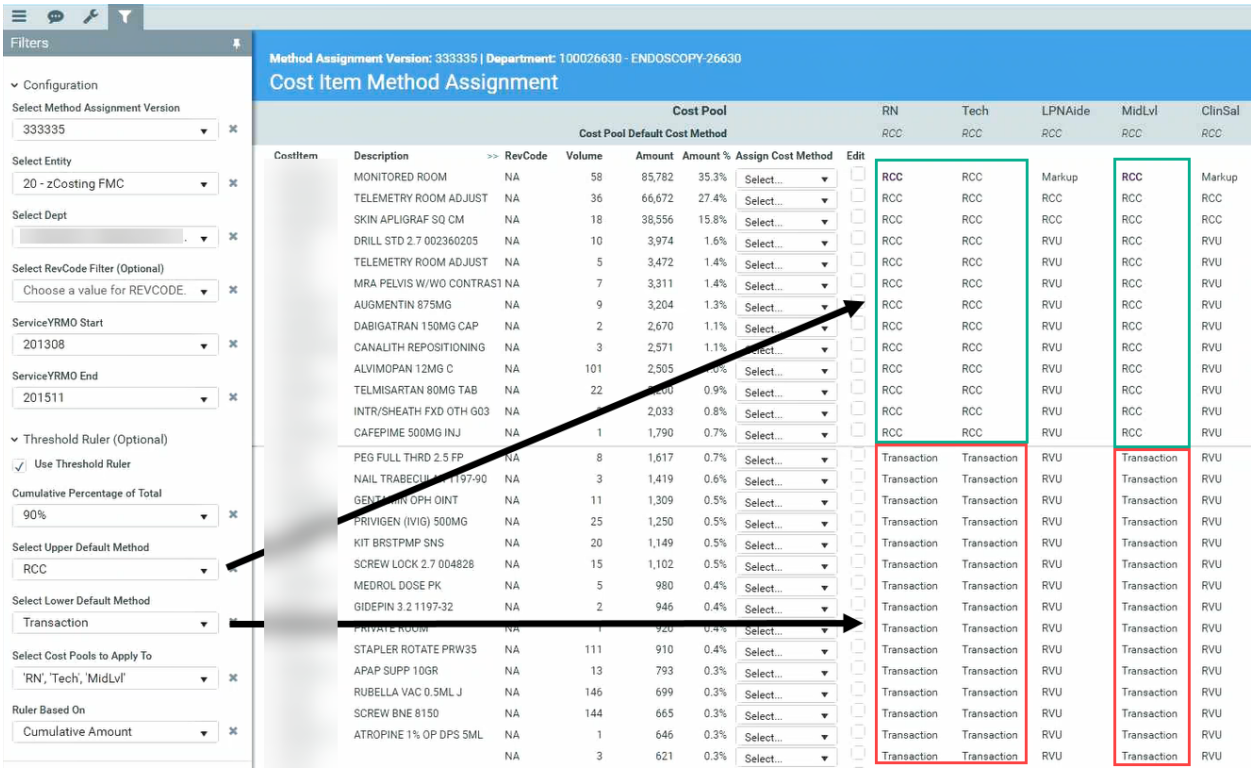
The Threshold Ruler provides a quick and easy way to assign methods to multiple cost items based on a cumulative percentage of revenue. The Threshold Ruler configuration is a part of the filter that allows you to specify a cumulative percentage of the total revenue based on the cumulative amount or volume. When you apply the ruler, the page displays a line to show you which cost items above the line are part of the cumulative percentage.



After identify these cost item, you can then assign a method to the items above and below the line. You can do this for all of the cost items or specify one or more cost items.

In the following example, the cost items above the line make up 90% of the total revenue. The user configures the filter to do the following:

- For the cost items above the line, assign the RCC method to the RN, Tech, and MidLvl cost pools.
- For the cost items below the line, assign the Transaction method to the RN, Tech, and MidLvl cost pools.



Notes regarding cost item assignments

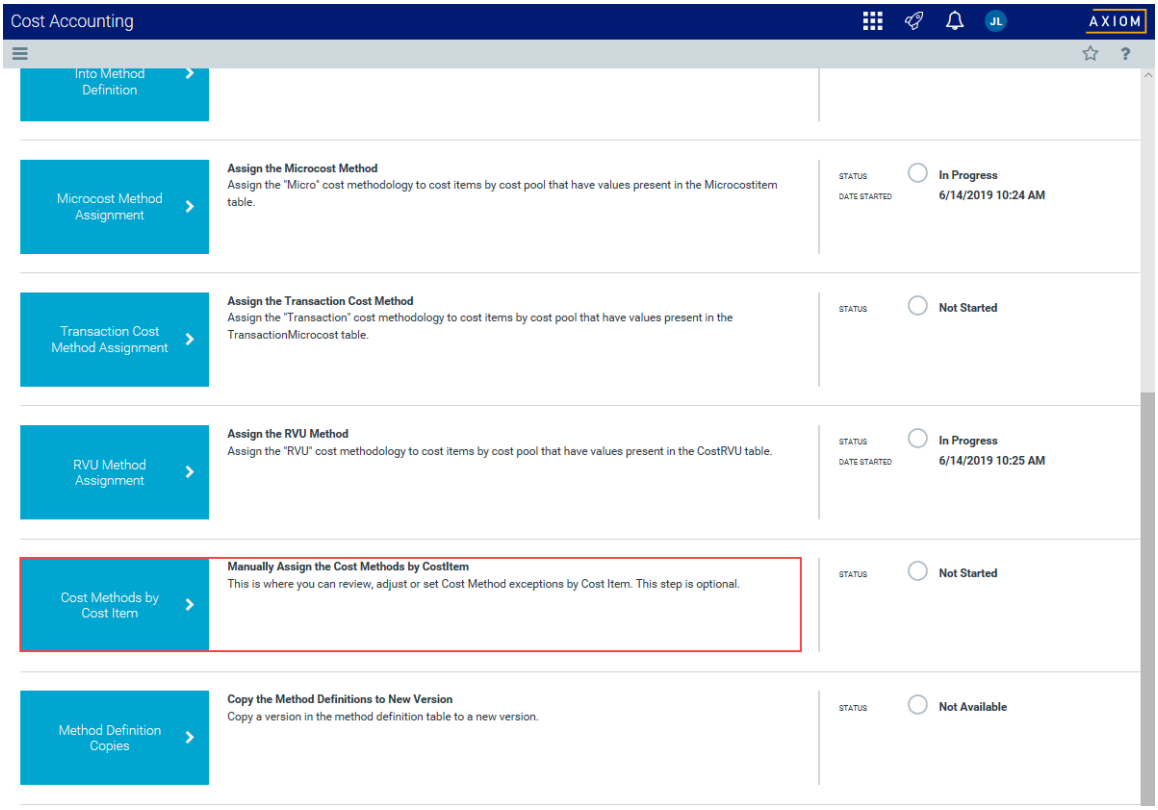
Keep in mind the following when assigning default methods to cost items:

- If a cost item displays with no method assignments, this means that the cost item is not included in the version you selected in the filter. This can happen if you select a service start and end YRMO date that covers a wider range of time than the method assignment version you selected. For example, if a method assignment version covers three months, but you set the service start and end YRMO time frame for five months, then any of the cost items outside of the three month version dates will display without any methods assigned to them. However, if you assign a method to these blank assignments, the system will automatically include them in the version when you save your changes.
- If the cost pool assignment is not applicable, you can assign cost methods for specific entities or departments.
- If using Direct to Encounter functionality, you must assign a method of RVU at the department or cost item level for these Direct to Encounter departments.

Steps to configure cost item method assignments

To configure exceptions to cost item method assignments:

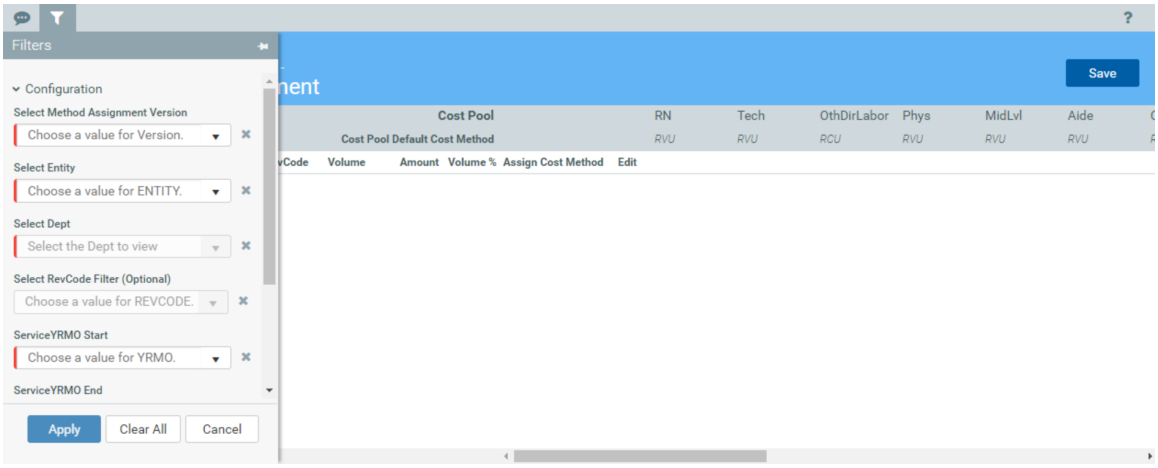
1. In the Guide View, click **Methods and Assumptions > Methods > Cost Methods by Cost Item**.



NOTE: The utility opens in a separate browser window. When the utility first opens, no information displays other than the Cost Pool and Cost Pool Default Cost Method rows at the top of the page.

2. In the upper left corner of the page, click the filter icon.

TIP: To keep the filter dialog available, click the thumbtack in the upper right corner of the dialog. This keeps the dialog displayed while working in the utility.



3. In the **Configuration** section of the filter, complete the following, as needed:

Option	Description
Select Method Assignment Version	As part of running the Default Cost Method Assignment utility, the system assigns a version to the cost assignments based on a specific period of time. From this drop-down, select the version in which to filter the cost items.
Select Entity	Select the entity.
Select Dept	Select the department.
Select RevCode Filter (optional)	Select a revenue code.
ServiceYRMO Start	Select the start date of the service.
ServiceYRMO End	Select the end date of the services.

4. To use the Threshold Ruler, in the filter, select the **Use Threshold Ruler** check box, and do the following:

NOTE: For more information, see Using the Threshold Ruler.

Option	Description
Cumulative Percentage of Total	Select a percentage of the total revenue amount or volume to apply the ruler.
Select Upper Default Method	Select the cost method to assign to the cost items above the line.
Select Lower Default Method	Select the cost method to assign to the cost items below the line.
Select Cost Pools to Apply To	Select one or more cost pools in which to apply the cost method.
Ruler Based On	Select whether to base the Cumulative Percentage of Total on amount or volume.

5. For each appropriate cost item, select the check box in the **Edit** column, and make any necessary adjustment to the unit calculation method by doing any of the following:
   - To assign the same cost method across all cost pools, from the **Assign Cost Method** drop-down, select the cost method.
   - To assign a cost pool to one or more specific cost pools, in the cost pool column, select a method from the drop-down.

     TIP: By default, the **Description** column is truncated to make more room for the data on the page. Click **>>** in the **Description** header column to display more information.
6. After making your changes, in the upper right corner of the page, click **Save**.

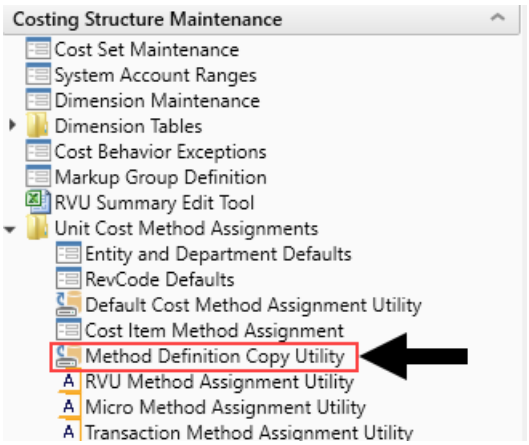
Copying method definitions

Use this utility to create a new method definition set by copying an existing method definition set. You can also use this utility to reset an existing definition by overwriting it with another existing method definition set.

NOTE: To overwrite an existing method definition, the system deletes the target version set before inserting the values of the source method definition set that was selected.

To copy a method definition:

1. In the Cost Accounting Admin task pan, in the **Costing Structure Maintenance** section, click **Unit Cost Method Assignments**, and double-click **Method Definition Copy Utility**.

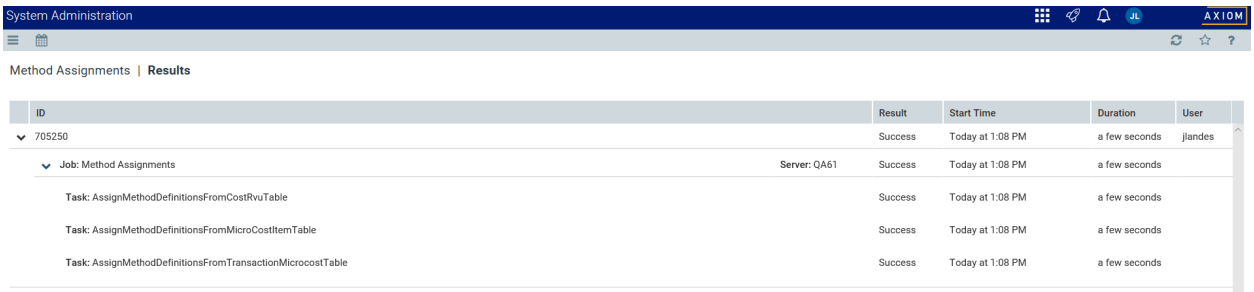


2. In the **Execute Import: Method Definition Copy Utility** dialog, click **Execute**.
3. In the **Variables** dialog, configure the following options, and click **OK**:

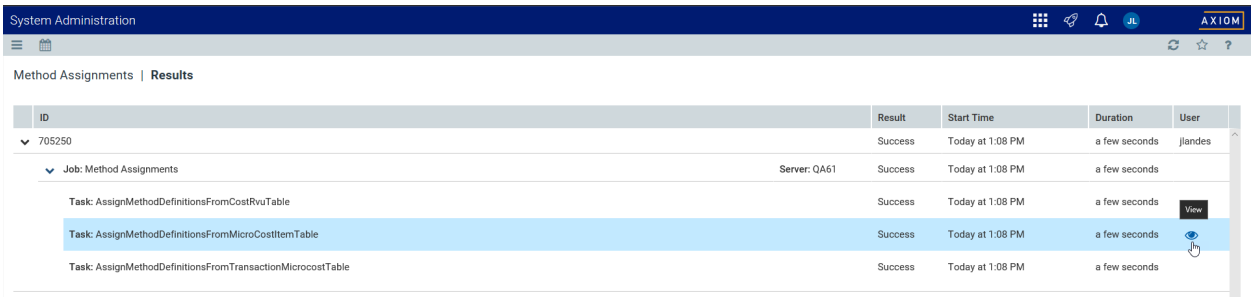
Option	Description
SourceVersion: The existing method definition version to copy	Select the method definition version to copy.
TargetVersion: The new method definition version	Type the version number of the new definition to create. **NOTE:** If the target version exists, you can overwrite it using the OverwriteTarget option below.
OverwriteTarget: Replace target version if exists	To overwrite the target version method definition with the new source version, select **Yes**. If you select **No**, nothing will happen if the target version method definition already exists..

Viewing scheduled job results

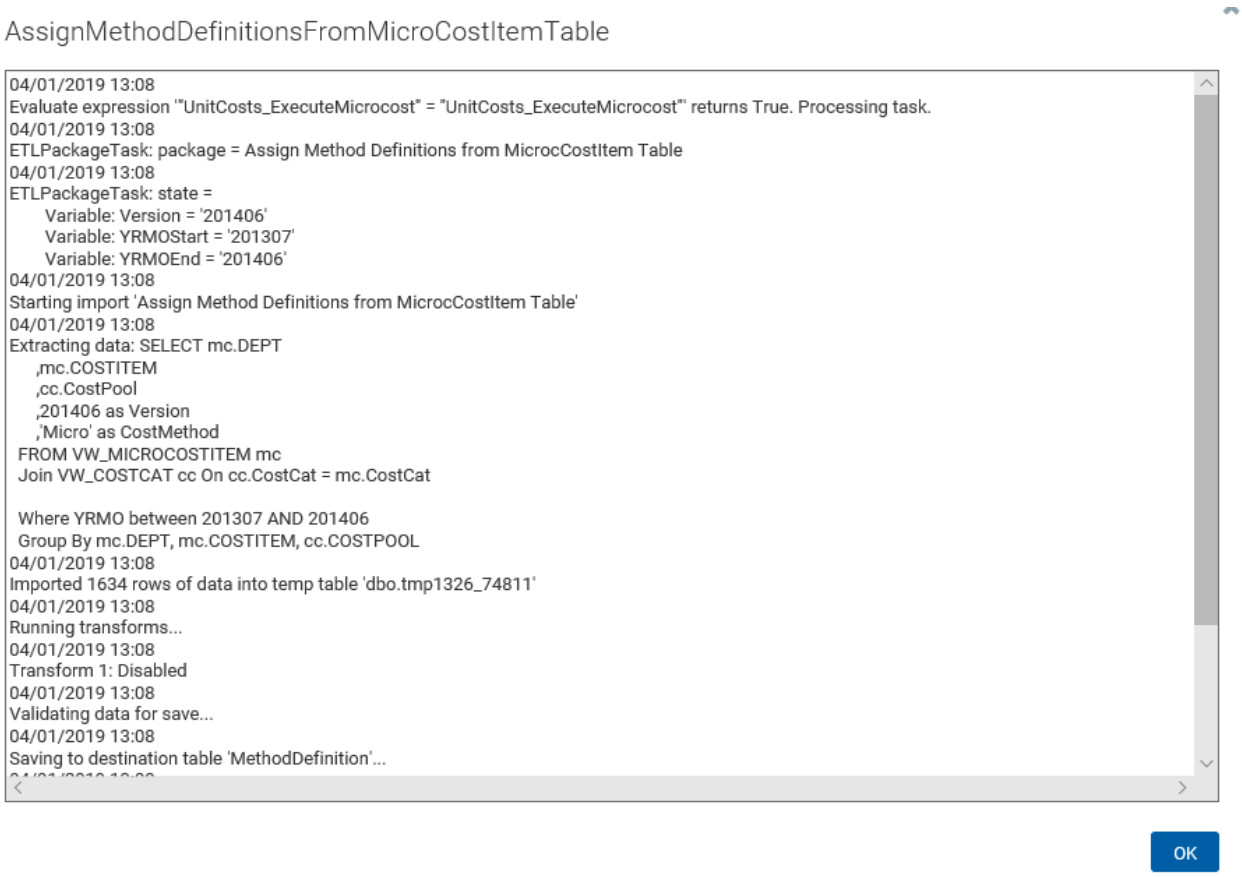
Processing tasks, such as processing reclasses and method assignment, are performed using Scheduler. When tasks are processing, the system opens a separate tab that displays the status of the processes, including the result, the time the job was started, how long it lasted, and the user that ran the job.



To review the details of a task, click the eye icon in the **User** column.



A dialog displays with details about what actions the system performed as part of the task, as shown int he following example.



4

Building Up RVUs

Building Relative Value Units (RVUs) is often a tedious and time consuming task. Additionally, there are numerous ways and methodologies used for creating RVUs across health service organizations. The RVU Developer tool is designed to make both the development and the maintenance of RVUs easier and more efficient. Additionally, it has been designed to support varying levels of detail and to work with any number of methodologies.

The basic concept of building an RVU is to break down the Cost Item into detailed resources with defined values that, when aggregated, form the relative value at the cost pool level, which are then saved to the CostRVU table. For example, CPT procedures performed in a clinic can be studied to determine what resources are used during the procedure. These resources are mapped to the CPT code, forming an RVU or Cost Component. Each of the resources has a quantity, cost, and frequency of use, which ultimately drives the basis of the RVU in dollar terms. The resources are grouped by cost pool and then summed to create the RVUs for the various cost pools, e.g., Labor, Supplies, Equipment, and so on.

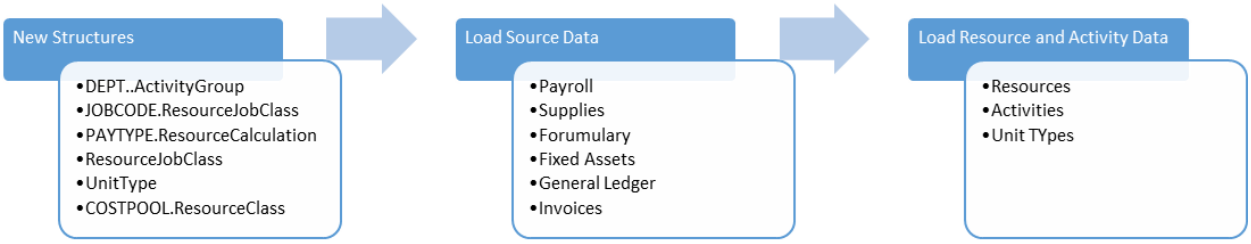
You can break down the development of RVUs into discrete activities with corresponding tasks. An example of this process is outlined, as follows:

NOTE: Generally, labor is the minimal Resource Class used in RVU development while the others are optional and/or selected for specific departments.

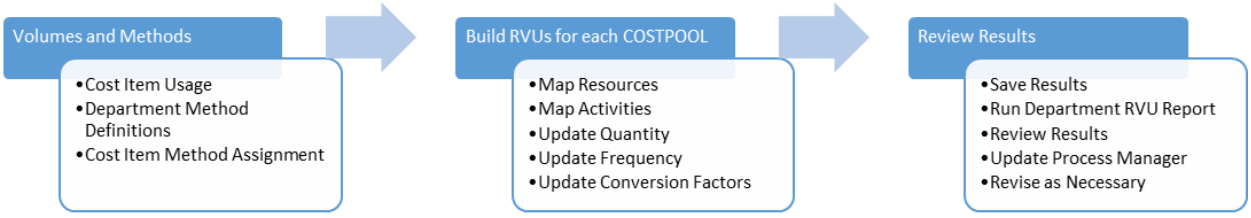
- **Activity 1:** Determine the departments and the cost Items that need RVUs to be developed.
- **Activity 2:** Identify and prepare source data for the RVU development process for the Labor Resource Class and load into the Resource table.
- **Activity 3:** Identify and prepare source data for the RVU development process for the Supply Resource Class and Medication Resource and load into the Resource table.
- **Activity 4:** Identify and prepare source data for the RVU development process for the Equipment Class and load into the Resource table.
- **Activity 5:** Identify and prepare source data for the RVU development process for the Other Resource Class and load into the Resource table. Other resources are often Professional Fees, Purchased Services, etc.
- **Activity 6:** Determine the activity level at which the RVUs will be developed, and create activities.
- **Activity 7:** Determine the frequency of use and the relative value of each resource for each cost item.
- **Activity 8:** Review the resulting RVU and save the cost components, along with the RVU.

The following diagram illustrates the main activities and steps in both data preparation and the RVU development process:

Process Diagram – RVU Development Data Preparation

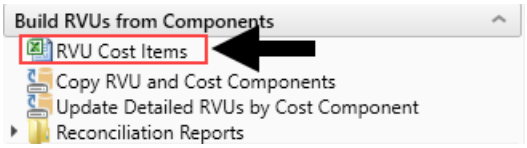


Process Diagram – RVU Development Process

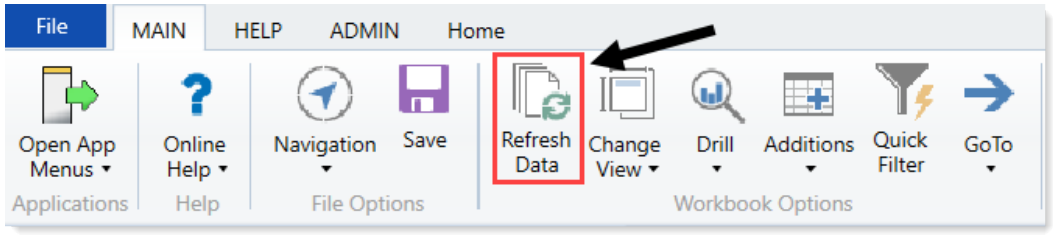


To build up an RVU:

1. In the Cost Accounting Admin task pane, in the **Build RVUs from Components** section, double-click **RVU Cost Items**.



2. To refresh the data, do one of the following:
   - In the **Main** tab, in the **Workbook Options** group, click **Refresh Data**.



   - Click **F9**.

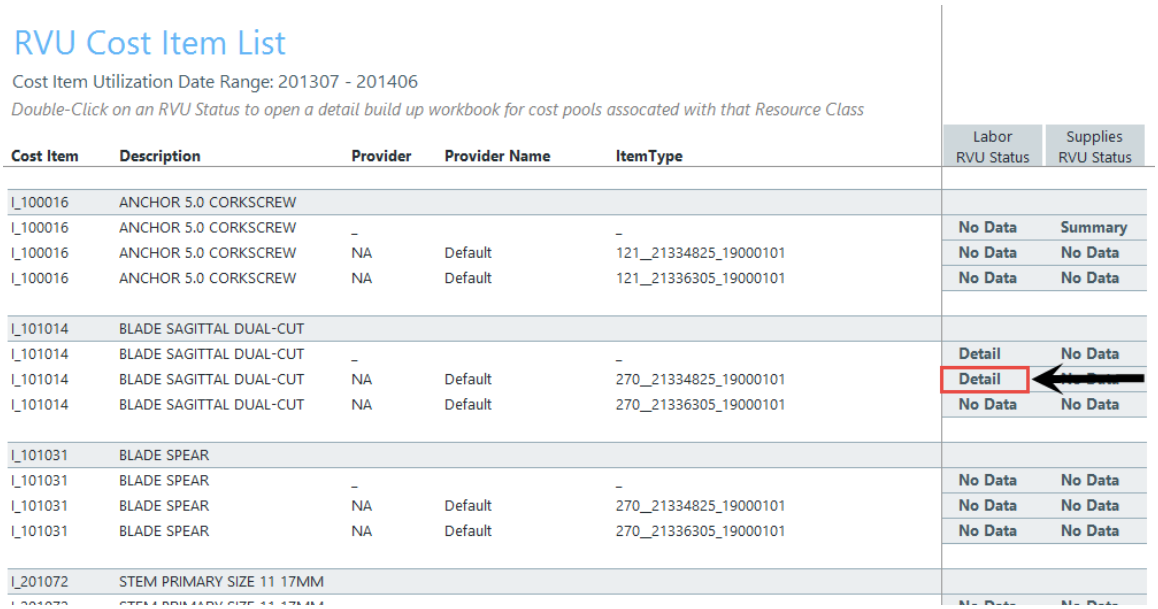
3. In the **Refresh Variables** dialog, select the variables to include, and click **OK**. The RVU Cost Item workbook displays a list of all your cost items according to the parameters you specified in step 3. The Equipment RVU Status, Labor RVU Status, and Other RVU Status columns display one of the

following status types:

- **Summary** - RVUs that already exist in the CostRVU table (for example, not studied at the cost component level).
- **Detail** - Cost components that exist for RVUs.
- **No Data** - No RVUs created.

NOTE: You must select a value for each variable to populate the workbook.

4. To view the detail build up worksheet for a ResourceClass row, double-click **Detail** in any of the three status columns, as shown in the following example:



RVU Cost Item List

Cost Item Utilization Date Range: 201307 - 201406

Double-Click on an RVU Status to open a detail build up workbook for cost pools assocated with that Resource Class

Cost Item	Description	Provider	Provider Name	ItemType	Labor RVU Status	Supplies RVU Status
I_100016	ANCHOR 5.0 CORKSCREW					
I_100016	ANCHOR 5.0 CORKSCREW	_		_	No Data	Summary
I_100016	ANCHOR 5.0 CORKSCREW	NA	Default	121_21334825_19000101	No Data	No Data
I_100016	ANCHOR 5.0 CORKSCREW	NA	Default	121_21336305_19000101	No Data	No Data
I_101014	BLADE SAGITTAL DUAL-CUT					
I_101014	BLADE SAGITTAL DUAL-CUT	_		_	Detail	No Data
I_101014	BLADE SAGITTAL DUAL-CUT	NA	Default	270_21334825_19000101	Detail	
I_101014	BLADE SAGITTAL DUAL-CUT	NA	Default	270_21336305_19000101	No Data	No Data
I_101031	BLADE SPEAR					
I_101031	BLADE SPEAR	_		_	No Data	No Data
I_101031	BLADE SPEAR	NA	Default	270_21334825_19000101	No Data	No Data
I_101031	BLADE SPEAR	NA	Default	270_21336305_19000101	No Data	No Data
I_201072	STEM PRIMARY SIZE 11 17MM					

5. In the workbook for the status column you selected, to add a resource, click the ellipse next to the **Select a resource** row.

Labor RVU Components

DEPT: 100026100 - 3RD FLR S.EAST CAMPUS RVU Version: 201406

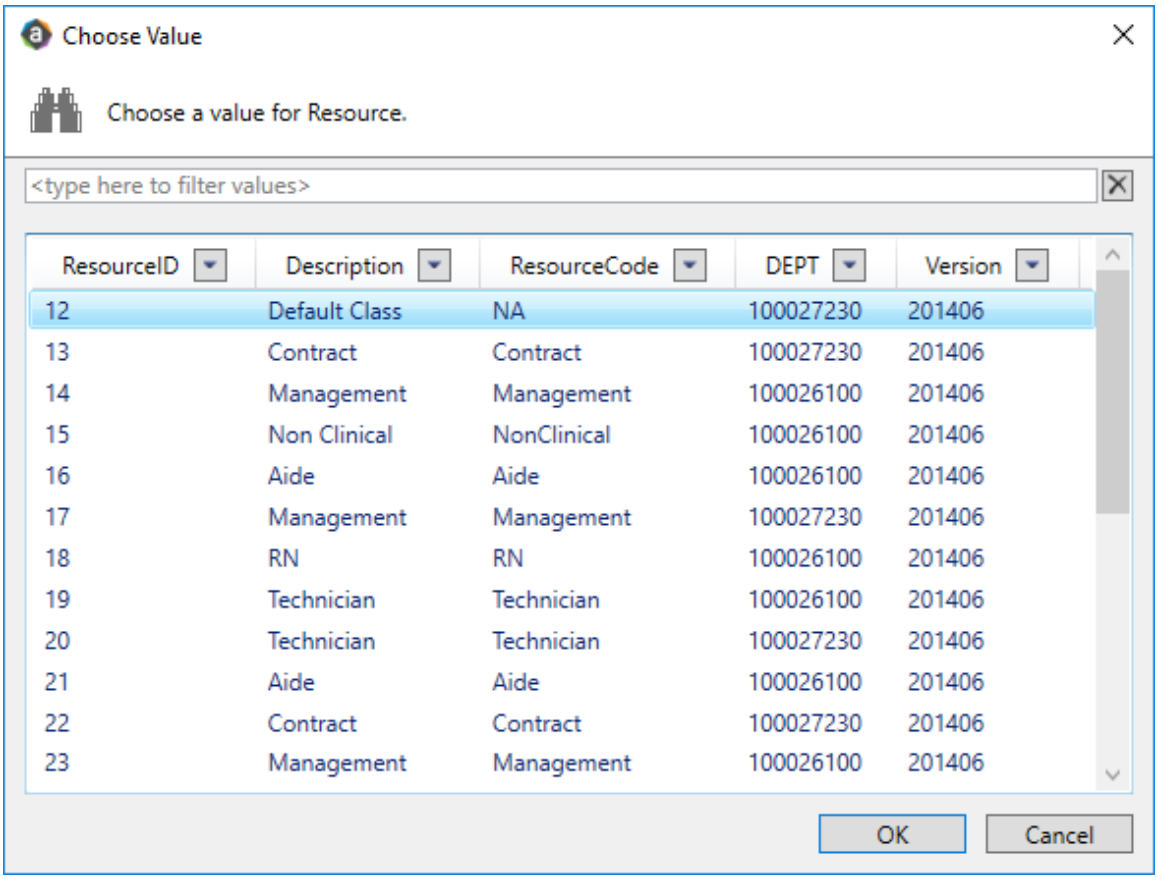
Cost Item: I_101014

Item Type: 270__21334825_19000101

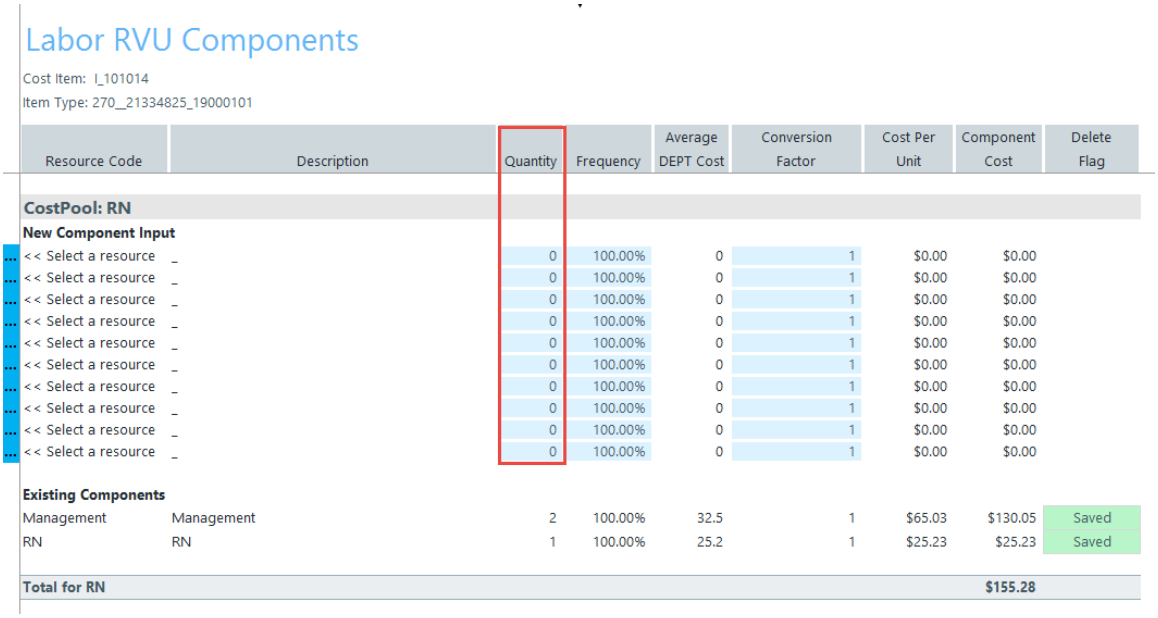
Resource Code	Description	Quantity	Frequency	Average DEPT Cost	Conversion Factor	Cost Per Unit	Component Cost	Delete Flag
CostPool: RN								
New Component Input								
<< Select a resource	_	0	100.00%	0	1	$0.00	$0.00	
<< Select a resource	_	0	100.00%	0	1	$0.00	$0.00	
<< Select a resource	_	0	100.00%	0	1	$0.00	$0.00	
<< Select a resource	_	0	100.00%	0	1	$0.00	$0.00	
<< Select a resource	_	0	100.00%	0	1	$0.00	$0.00	
<< Select a resource	_	0	100.00%	0	1	$0.00	$0.00	
<< Select a resource	_	0	100.00%	0	1	$0.00	$0.00	
<< Select a resource	_	0	100.00%	0	1	$0.00	$0.00	
<< Select a resource	_	0	100.00%	0	1	$0.00	$0.00	
<< Select a resource	_	0	100.00%	0	1	$0.00	$0.00	
Existing Components								
Management	Management	2	100.00%	32.5	1	$65.03	$130.05	Saved
RN	RN	1	100.00%	25.2	1	$25.23	$25.23	Saved
Total for RN							**$155.28**	

NOTE: You can only add ten resources at a time. To add more than ten, add all ten resources, and then click **Save**. The resources are added to the database and move to the **Existing Components** section at the bottom of the screen. The **New Component Input** section is cleared so that you can add more resources.

6. In the **Choose Value** dialog, select a resource from the list, and click **OK**.



7. In the **Quantity** column, type the number or quantity of the resource used for the cost item.



8. In the **Frequency** column, type a percentage for how often the resource is used. For example, if the resource is only used half the time, then enter 50%.

Labor RVU Components

DEPT: 100026100 - 3RD FLR S.EAST CAMPUS RVU Version: 201406

Cost Item: I_101014

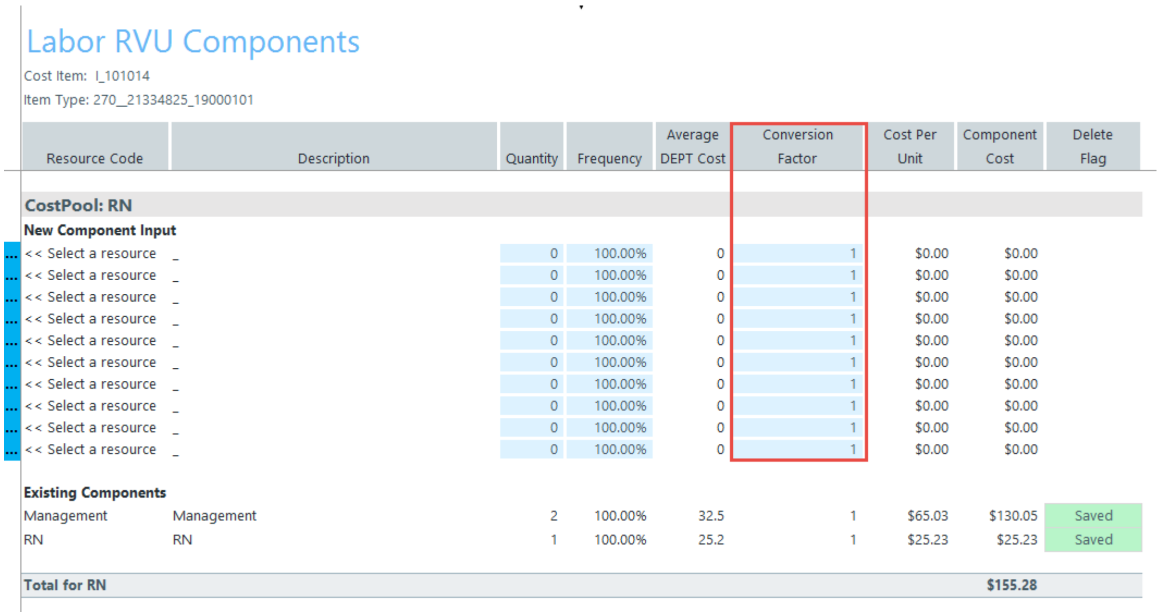
Item Type: 270__21334825_19000101

Resource Code	Description	Quantity	Frequency	Average DEPT Cost	Conversion Factor	Cost Per Unit	Component Cost	Delete Flag
CostPool: RN								
New Component Input								
<< Select a resource	_	0	100.00%	0	1	$0.00	$0.00	
<< Select a resource	_	0	100.00%	0	1	$0.00	$0.00	
<< Select a resource	_	0	100.00%	0	1	$0.00	$0.00	
<< Select a resource	_	0	100.00%	0	1	$0.00	$0.00	
<< Select a resource	_	0	100.00%	0	1	$0.00	$0.00	
<< Select a resource	_	0	100.00%	0	1	$0.00	$0.00	
<< Select a resource	_	0	100.00%	0	1	$0.00	$0.00	
<< Select a resource	_	0	100.00%	0	1	$0.00	$0.00	
<< Select a resource	_	0	100.00%	0	1	$0.00	$0.00	
<< Select a resource	_	0	100.00%	0	1	$0.00	$0.00	
Existing Components								
Management	Management	2	100.00%	32.5	1	$65.03	$130.05	Saved
RN	RN	1	100.00%	25.2	1	$25.23	$25.23	Saved
Total for RN							**$155.28**	

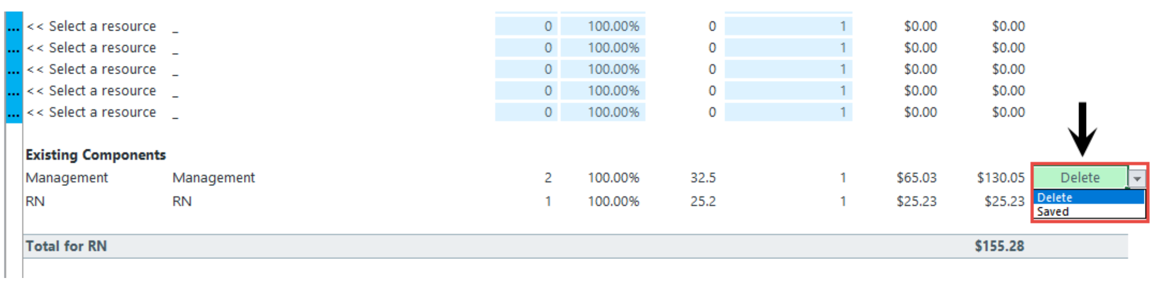
9. In the **Conversion Factor** column, add the factor needed to convert the cost per unit identified as the issue cost to a per-unit basis being consumed or used by the for this cost item. For example, to convert into minutes, then enter a conversion factor to 60, to convert the hourly rate to minutes per unit.

   For example, to convert the average hourly rates loaded into the Resource table from the payroll data into a cost per minutes. This assumes that the quantity is expressed in minutes. If not, then you would enter a 60 conversion factor to convert the hourly rate to rate-per-minute. In another example, a box of 50 items is issued to a floor or department, but the items are consumed one at a time. In this case, you need to use a 50 conversion factor to ensure the appropriate costs are calculated as a basis for the RVU calculation.

   After you press Enter or Tab to move to the next field, the system displays the actual calculated costs per unit for the item using the conversion factor and the total costs for the component.



10. To delete the resource from the CostComponent table for the CostItem, in the **Delete Flag** drop-down, select **Delete**.



11. To save your changes to the database, click **Save**.

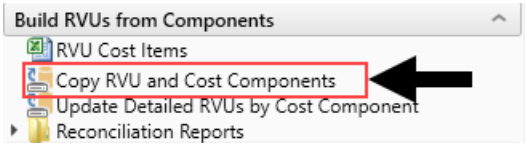
NOTE: Any resources marked as **Delete** are deleted from the database.

Copying RVU versions and cost components

The Copy RVU and Cost Components utility allows you to update existing RVUs and cost components with new data. This utility creates a second copy of all CostRVUs and cost component. Creating a second version then allows for the ability to change values and then update the RVUs while leaving existing version unchanged. Versions for Cost RVUs and cost components refer to the YRMO integer columns in a YYYYMO format.

To Creating new RVU and cost component versions:

1. In the Cost Accounting Admin task pane, in the **Build RVUs from Components** section, double-click **Copy RVUs and Cost Components**.



2. In the **Execute Import: RVU Copy Utility** dialog, click **Execute**.
3. In the **Variables** dialog, do the following, and click **OK**:
   - From the **SourceYRMO** drop-down, select the YRMO to copy the RVU and cost component data from.
   - From the **TargetYRMO** drop-down, select the YRMO to copy the RVU and cost component data to.

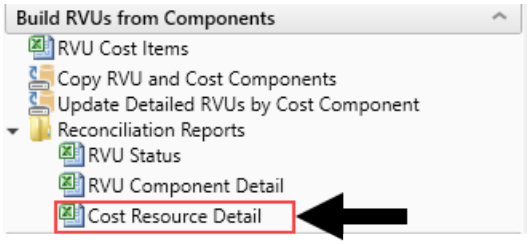
After copying the RVU version, you can update the values using the RVU Maintenance page. For more information, see Creating or updating RVU versions.

Running the Cost Resource Detail report

The Cost Resource Detail report lists all of the resources in the Resource dimension table.

To run the Cost Resource Detail report:

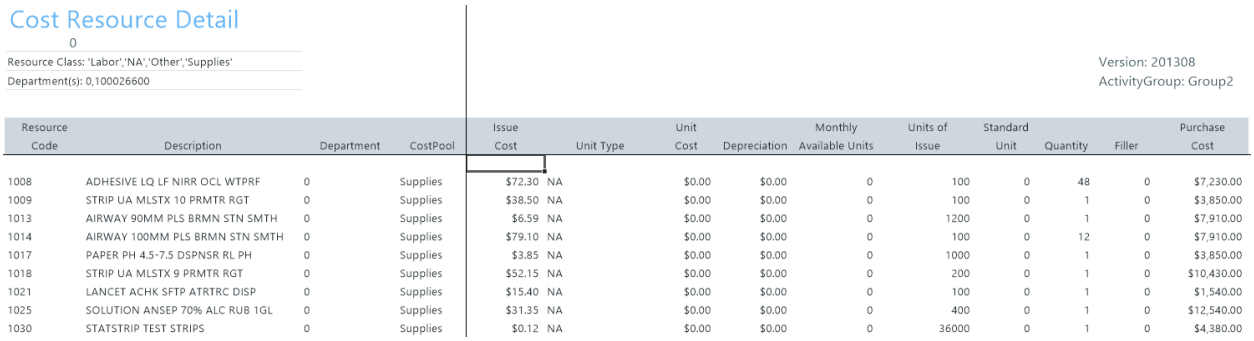
1. In the Cost Accounting Admin task pane, in the **Build RVUs from Components** section, click **Reconciliation Reports**, and double-click **Cost Resource Detail**.



2. In the **Refresh Variables** dialog, select the variables to include in the report, and click **OK**.

> **NOTE:** Some variables require you to select a value to populate the report.

The following is an example of this report:



Cost Resource Detail

0

Resource Class: 'Labor','NA','Other','Supplies'

Department(s): 0,100026600

Version: 201308

ActivityGroup: Group2

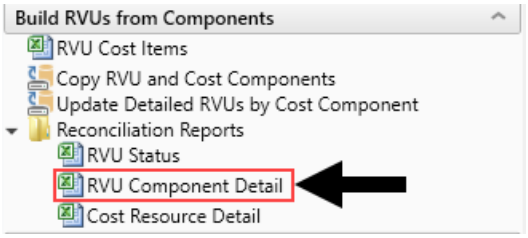
Resource Code	Description	Department	CostPool	Issue Cost	Unit Type	Unit Cost	Depreciation	Monthly Available Units	Units of Issue	Standard Unit	Quantity	Filler	Purchase Cost
1008	ADHESIVE LQ LF NIRR OCL WTPRF	0	Supplies	$72.30	NA	$0.00	$0.00	0	100	0	48	0	$7,230.00
1009	STRIP UA MLSTX 10 PRMTR RGT	0	Supplies	$38.50	NA	$0.00	$0.00	0	100	0	1	0	$3,850.00
1013	AIRWAY 90MM PLS BRMN STN SMTH	0	Supplies	$6.59	NA	$0.00	$0.00	0	1200	0	1	0	$7,910.00
1014	AIRWAY 100MM PLS BRMN STN SMTH	0	Supplies	$79.10	NA	$0.00	$0.00	0	100	0	12	0	$7,910.00
1017	PAPER PH 4.5-7.5 DSPNSR RL PH	0	Supplies	$3.85	NA	$0.00	$0.00	0	1000	0	1	0	$3,850.00
1018	STRIP UA MLSTX 9 PRMTR RGT	0	Supplies	$52.15	NA	$0.00	$0.00	0	200	0	1	0	$10,430.00
1021	LANCET ACHK SFTP ATRTRC DISP	0	Supplies	$15.40	NA	$0.00	$0.00	0	100	0	1	0	$1,540.00
1025	SOLUTION ANSEP 70% ALC RUB 1GL	0	Supplies	$31.35	NA	$0.00	$0.00	0	400	0	1	0	$12,540.00
1030	STATSTRIP TEST STRIPS	0	Supplies	$0.12	NA	$0.00	$0.00	0	36000	0	1	0	$4,380.00

Running the RVU Component Detail report

The RVU Component Detail report shows each cost item and item type pair, each cost pool developed, and the components that were built out as well as the cost of each component.

To run the RVU Component Detail report:

1. In the Cost Accounting Admin task pane, in the **Build RVUs from Components** section, click **Reconciliation Reports**, and double-click **RVU Component Detail**.



2. In the **Refresh Variables** dialog, select the variables to include in the report, and click **OK**.

> **NOTE:** Some variables require you to select a value to populate the report.

The following is an example of this report:

RVU Component Detail

KH COSTING - Farmington Medical Center

DEPT: 26100 - 3RD FLR S.EAST CAMPUS-26100 RVU Version: 201406

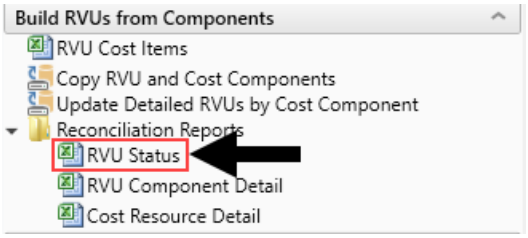
Resource Code	Description	Activity	Quantity	Frequency	Average DEPT Cost	Conversion Factor	Cost Per Unit	Component Cost
Cost Item: I_100016 Item Type: _								
Components for CostPool Supplies								
82168	GLOVE SRG 8 LTX TRIUMPH		10	50.0%	$1,150.00	1	$1,150.00	$5,750.00
CostPool Supplies Total								$5,750.00
Cost Item: I_100016 Item Type: 121__705090_19000101								
Components for CostPool Supplies								
96577	LOOP INC 1UL DISP LGHT GRN		1	100.0%	$518.15	1	$518.15	$518.15
81004	6FR X 55CM RDC MACH 1 GUIDING		1	100.0%	$8,000.00	1	$8,000.00	$8,000.00
CostPool Supplies Total								$8,518.15

Running the RVU Status report

The RVU Status report displays much of the same information that displays on the RVU Cost Item List workbook. This report has two views: Summary RVUs and Detail RVUs.

To run the RVU Status report:

1. In the Cost Accounting Admin task pane, in the **Build RVUs from Components** section, click **Reconciliation Reports**, and double-click **RVU Status**.

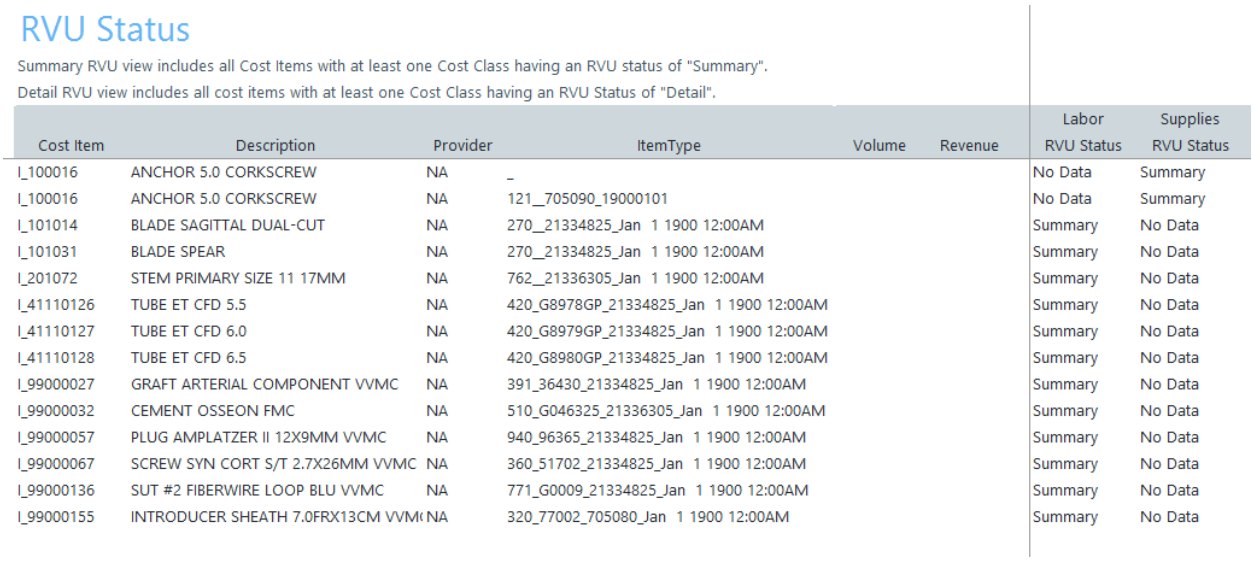


2. In the **Refresh Variables** dialog, select the variables to include in the report, and click **OK**.

   NOTE: You must select a value for each variable to populate the report.

3. To change the view, in the **Main** ribbon tab, in the **Workbook Options** group, click **Change View**, and select **Summary RVUs** or **Detail RVUs**.

The following is an example of the Summary RVUs version of the report:



RVU Status

Summary RVU view includes all Cost Items with at least one Cost Class having an RVU status of "Summary".
Detail RVU view includes all cost items with at least one Cost Class having an RVU Status of "Detail".

Cost Item	Description	Provider	ItemType	Volume	Revenue	Labor RVU Status	Supplies RVU Status
I_100016	ANCHOR 5.0 CORKSCREW	NA	_			No Data	Summary
I_100016	ANCHOR 5.0 CORKSCREW	NA	121__705090_19000101			No Data	Summary
I_101014	BLADE SAGITTAL DUAL-CUT	NA	270__21334825_Jan 1 1900 12:00AM			Summary	No Data
I_101031	BLADE SPEAR	NA	270__21334825_Jan 1 1900 12:00AM			Summary	No Data
I_201072	STEM PRIMARY SIZE 11 17MM	NA	762__21336305_Jan 1 1900 12:00AM			Summary	No Data
I_41110126	TUBE ET CFD 5.5	NA	420_G8978GP_21334825_Jan 1 1900 12:00AM			Summary	No Data
I_41110127	TUBE ET CFD 6.0	NA	420_G8979GP_21334825_Jan 1 1900 12:00AM			Summary	No Data
I_41110128	TUBE ET CFD 6.5	NA	420_G8980GP_21334825_Jan 1 1900 12:00AM			Summary	No Data
I_99000027	GRAFT ARTERIAL COMPONENT VVMC	NA	391_36430_21334825_Jan 1 1900 12:00AM			Summary	No Data
I_99000032	CEMENT OSSEON FMC	NA	510_G046325_21336305_Jan 1 1900 12:00AM			Summary	No Data
I_99000057	PLUG AMPLATZER II 12X9MM VVMC	NA	940_96365_21334825_Jan 1 1900 12:00AM			Summary	No Data
I_99000067	SCREW SYN CORT S/T 2.7X26MM VVMC	NA	360_51702_21334825_Jan 1 1900 12:00AM			Summary	No Data
I_99000136	SUT #2 FIBERWIRE LOOP BLU VVMC	NA	771_G0009_21334825_Jan 1 1900 12:00AM			Summary	No Data
I_99000155	INTRODUCER SHEATH 7.0FRX13CM VVM	NA	320_77002_705080_Jan 1 1900 12:00AM			Summary	No Data

Calculating and updating detailed RVUs from cost components

Use this utility to import data from the Cost Component table and update the RVUs.

NOTE: Updating the RVU information in the CostRVU table is a necessary step after the cost component information has been added or updated.

To calculate and update detailed RVUs from cost components:

1. In the Cost Accounting Admin task pane, in the **Build RVUs from Components** section, double-click **Update Detailed RVUs by Cost Component**.

2. In the **Execute Import: RVU Copy Utility** dialog, click **Execute**.
3. In the **Variables** dialog, select the YRMO to update, and click **OK**.
4. After the utility processes are completed, click **Close**.

5

Managing Statistics, Adjustments, and Reclasses

This chapter includes topics related to configuring and managing statistic accounts, adjustments, and reclasses.

Creating and Maintaining Statistics

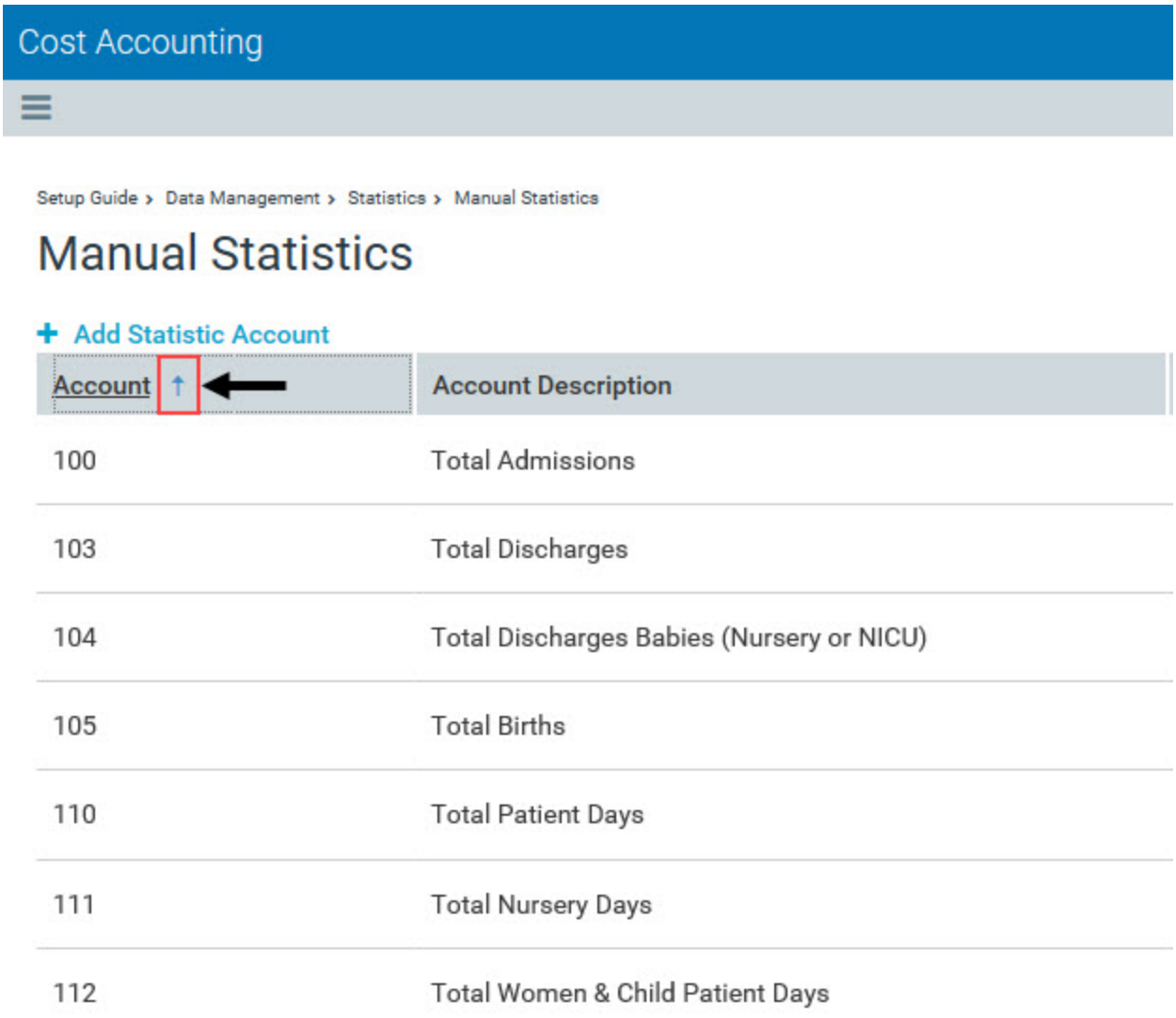
Statistic accounts are used to determine allocation or reclass dollar amounts. Departments that include the statistic account receive their weighted share of the allocated or reclassed balances from the source department or account.

The Manual Statistics page allows you to define statistic values by department for existing statistic accounts in addition to writing statistics into departments for newly created pseudo-accounts.

When a new statistic is created using a pseudo-account of a general statistic account that may not necessarily exist in a particular department, the input manual statistic writes to the department along with any related manually input values. The system saves these to the CGL for reference in any reclass or allocation step.

To view and manage your statistic accounts, in the Setup Guide, click **Data Management > Statistics > Manual Statistics**.

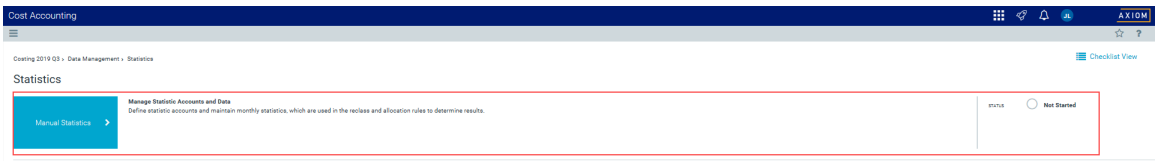
The Manual Statistics pages displays a list of all the statistics accounts set up by your organization. To order a column in ascending order, click the column header until the up arrow displays. To order by descending, click the column header until the down arrow displays.



Adding or editing a statistic account

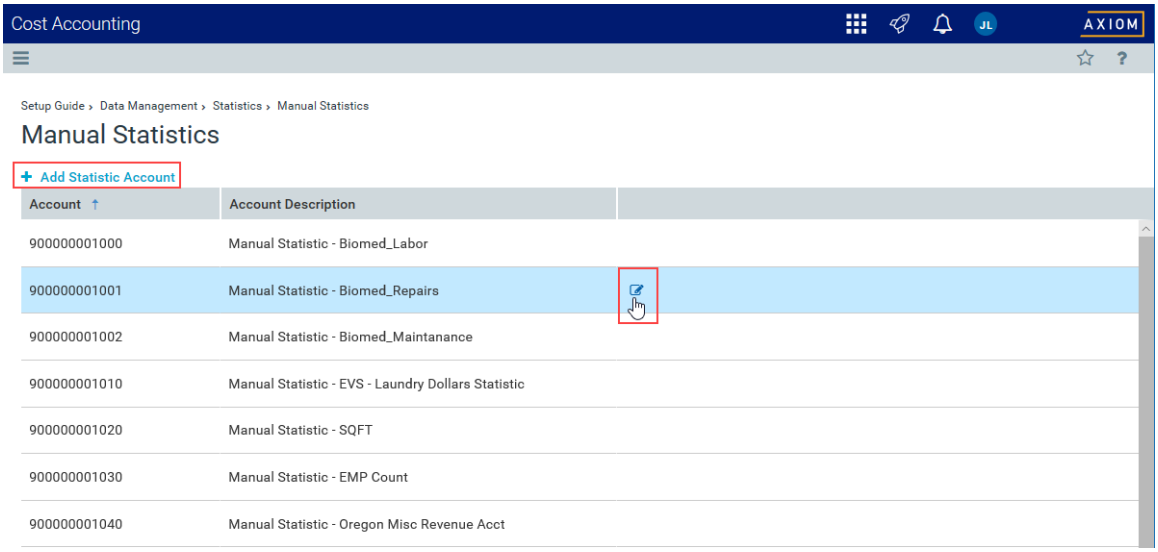
To add or edit a statistic account:

1. In the Guide View, click **Data Management > Statistics > Manual Statistics**.



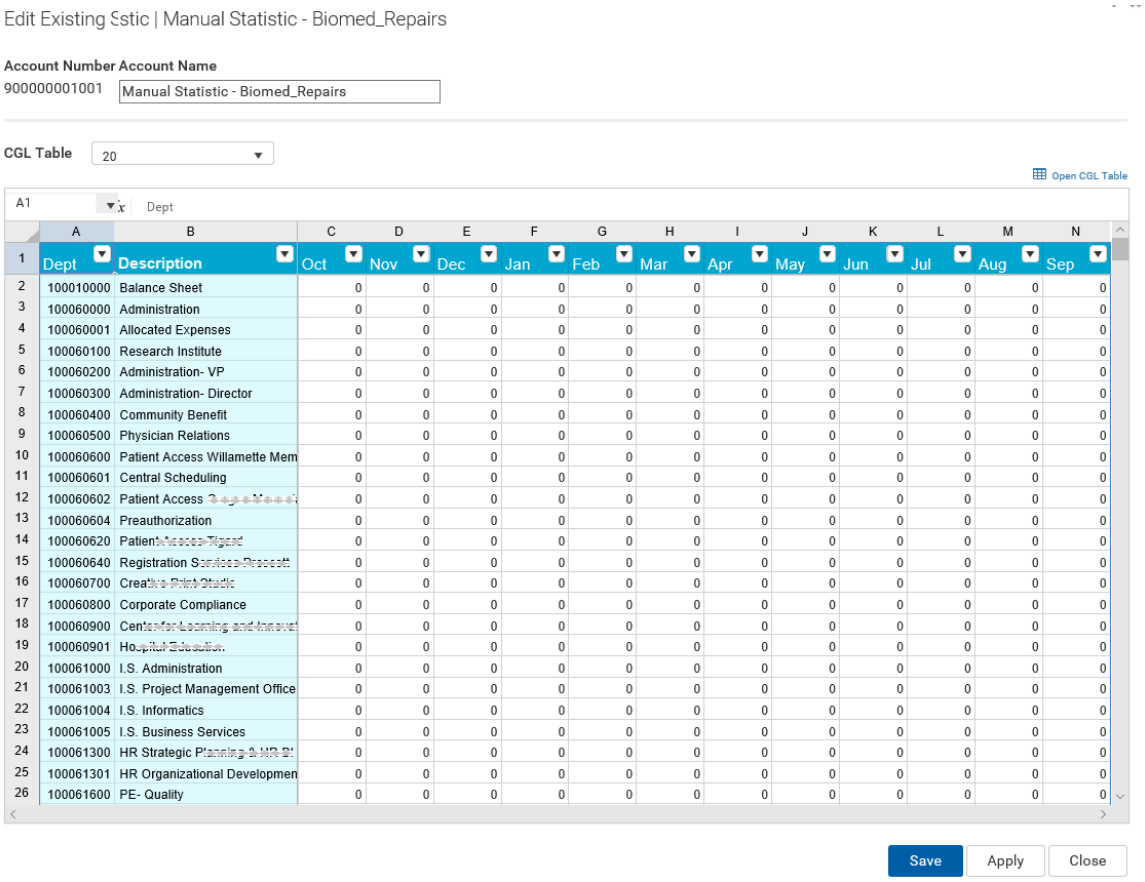
2. Do one of the following:
    - To add a new account, click **+ Add Statistic Account**.

- To edit an account, select the account to highlight it, and then click the notepad icon  .



3. In the **Account Name** field, type the name or description for the account number.

NOTE: The account number is system generated.



4. In the spreadsheet, enter statistics in the columns for the departments you want to use the new account.

   NOTE: The months that display depends on how your fiscal year is set up in the system. You can only enter numeric values in the month columns.

   Click the arrow in a column header to sort and/or filter the data in the column. You can also reference the CGL table while working in this dialog by clicking Open CGL Table above the table.

5. After making your changes, do one of the following:

   - To save changes to the CGL table and keep the window open to continue making changes, click **Apply**.
   - To save changes to the CGL table and close the window, click **Save**.

Working with One-Time Adjustments

Axiom Cost Accounting allows you to directly modify account balances within a given department by posting one-time adjustments. You will most likely use this utility after the Costing General Ledger is initially loaded.

To manage one-time adjustments, from the Setup Guide page, click **Data Management > External Financial Data > One-Time Adjustments**.

NOTE: Adjustments are not persistent and are overwritten during the next costing period, after the General Ledger is loaded, so you need to address any adjustments made to correct accounting errors in the source system. The appropriate adjusted amount is the actual amount to include in the Costing General Ledger (CGL). When you post an adjustment, the system overwrites the CGL record for the department and account entered.

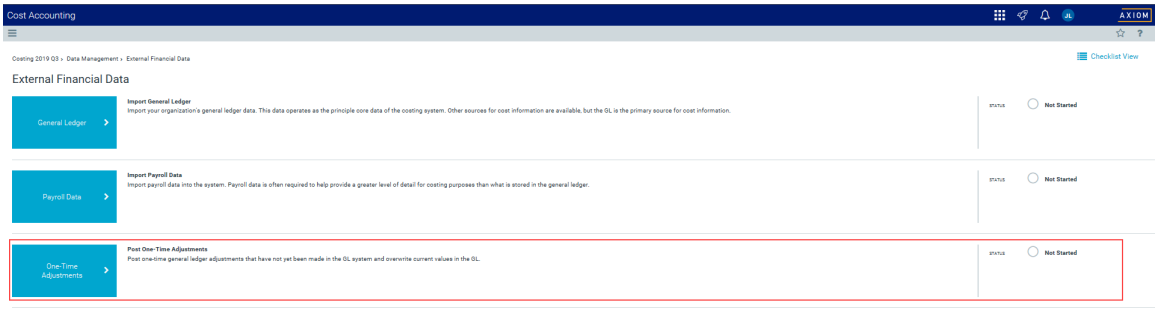
Posting one-time adjustments

You can directly modify account balances within a given department in the Costing General Ledger (CGL) table.

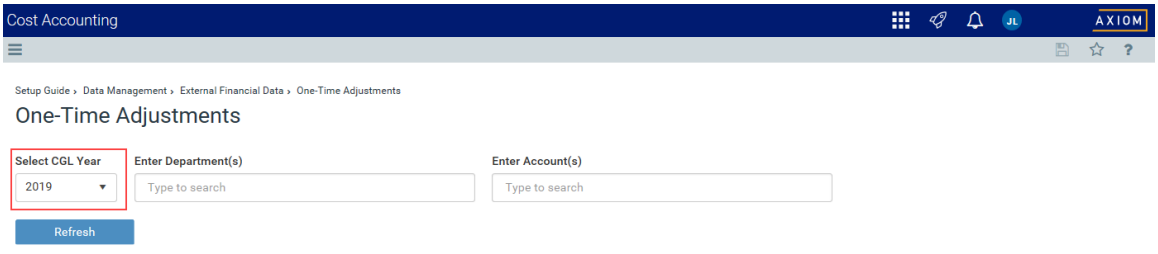
IMPORTANT: Because you changed the CGL table, some existing costing processes may be invalidated. You may need to run some costing processes again. If you import the GL table again, you will need to use this process again to make further adjustments.

To post a one-time adjustment:

1. In the Guide View, click **Data Management > External Financial Data > One-Time Adjustments**.



2. From the **Select CGL Year** drop-down, select the CGL year to apply the adjustment.



3. In the **Select Department(s)** field, place your cursor in the field, and type one or more departments in which to apply the adjustment.

TIP: The drop-down displays only a limited number of departments. If you don't see the department you are looking for, continue to type the department number until it displays. This functionality also applies to the Enter Account(s) field.

4. In the **Enter Account(s)** field, Place your cursor in the field, and type one or more accounts in which to apply the adjustment.
5. To display the table in which to enter your adjustments, click **Refresh**.
6. In the appropriate row(s), enter the replacement amount in each period column.

IMPORTANT: The cells are do not add dollars to the original amount. You must enter an amount to replace the original. For example, if the original amount is $1,000 and you want to change it to $1,500, you need to enter $1,500 and not $500.

TIP: To make adding adjustments easier, you can view the CGL table at the same time you are working in this page by clicking the **Open CGL Table** link, located above the table. This opens the CGL in a separate browser window for you to refer to.

7. After making your changes, click the disk icon  to post your changes to the CGL.

Managing reclass definitions

Reclassification is the process of moving dollars from one General Ledger location to another. Unlike overhead allocations that allow you to move only overhead expenses, you can use reclasses to move expenses, statistics, revenue, deductions, and other dollar types from one department or account to another. For example, you can take non-patient revenue and reclass it as a negative expense from one department to another or reclass statistics from one statistical account to another.

Let's say you have a cafeteria in your hospital. You can run a revenue reclass to offset the expenses of the cafeteria with its revenue, and then run an overhead allocation to redistribute any remaining dollars across different In Patient departments.

There are three types of reclass definitions you can create:

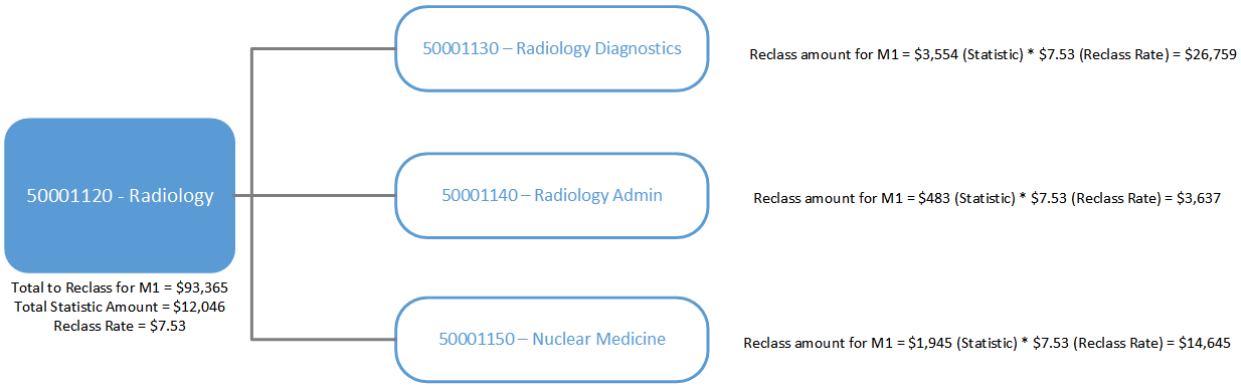
- **Payroll** - Reclass payroll dollars from one department to another
- **Account** - Reclass dollars from specified accounts to spread across accounts in the same or other departments
- **Department** - Reclass dollars from specified departments to spread across other departments

Axiom Cost Accounting determines the spread amount by performing the following calculations and applying a reclass rate to each applicable department or account:

- Sum the total number of statistical accounts

- Divide the total source dollars from the accounts (the departments you are moving dollars from) by the total stats to determine a rate per stat
- Multiple the rate by the total number of stats for each department

In the following example, a hospital reclasses $93,365 of expenses from the Radiology division to spread them across separate Radiology departments. The system determines the M1 reclass rate by dividing $93,365 by the key stat of $12,400. This calculates to a reclass rate of $7.53. The system then multiplies $7.53 by the key stat for each department. The Radiology Diagnostics department receives most of the expenses with a total of $26,759.



Understanding pseudo accounts

In the cost accounting process, you can apply dollars incurred by one department to other departments using the Reclasses, Overhead Allocations, or Adjustment processes. For example, applying costs for inpatient transportation, building maintenance, or marketing to a clinical department.

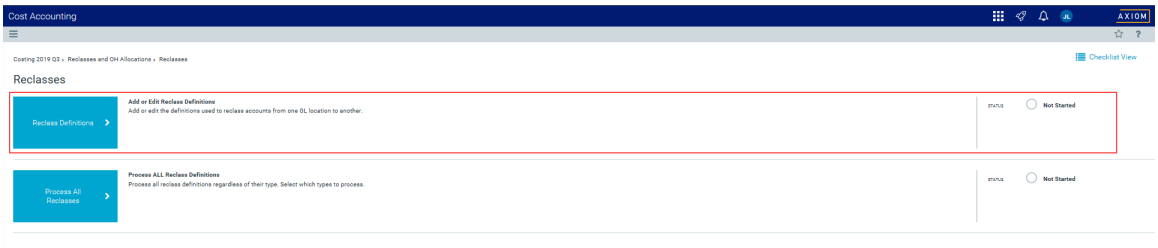
To reflect these transactions, Axiom Cost Accounting creates pseudo accounts within departments to offset costs in source departments and write costs to receiving departments. These accounts are created and stored within Axiom Cost Accounting. For example, when applying inpatient transportation costs to a clinical department, a pseudo off-set is created in the Transportation department with a negative balance, and a correlating pseudo account is created in the Clinical department reflecting the allocated dollars.

Adding, editing, or cloning reclass definitions

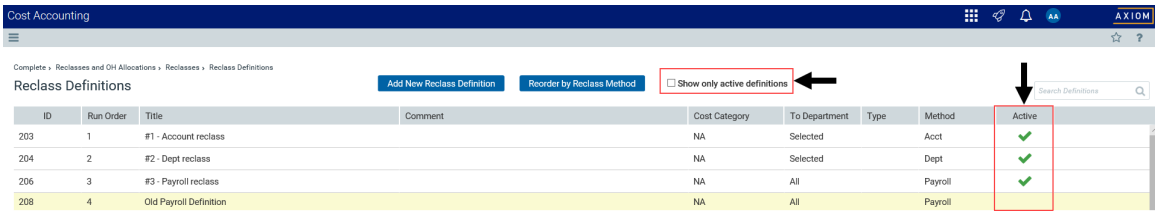
The Reclass Definitions page allows you to view and configure reclass definitions, including setting the order you want the system to process them, and selecting the department or accounts in which to reclass dollars from and to. You can create a new definition by cloning an existing definition and editing it.

To add, edit, or clone reclass definitions:

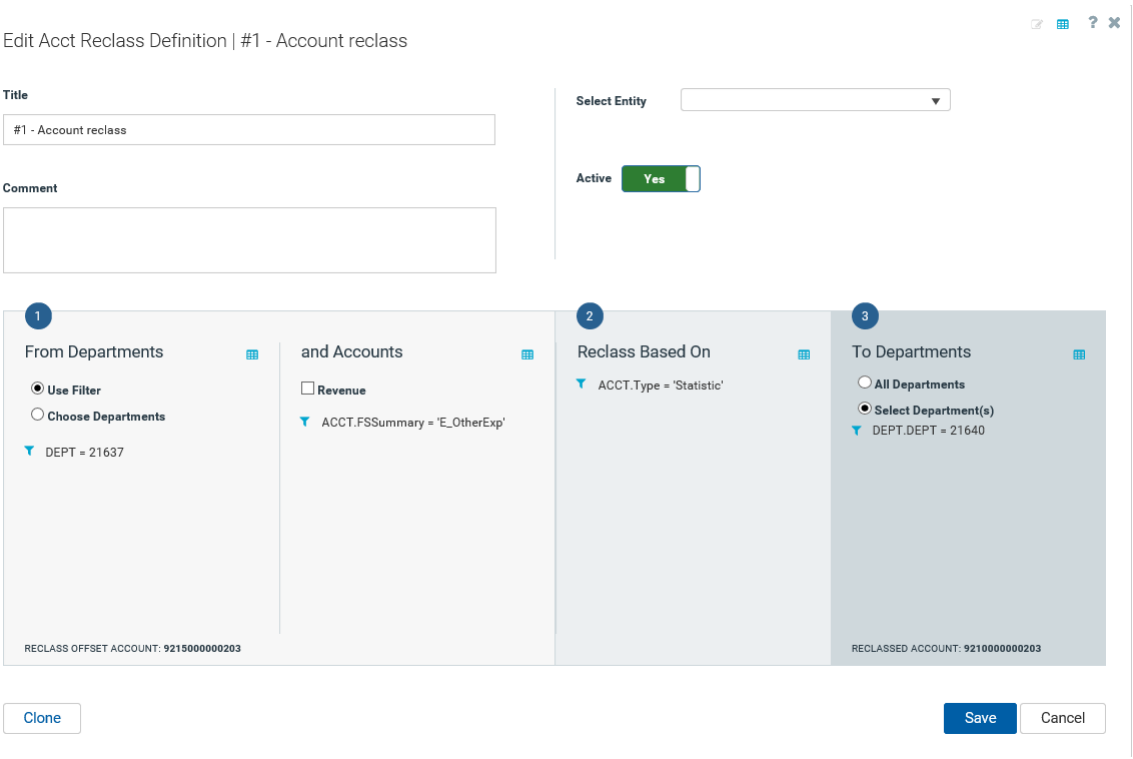
1. In the Guide View, click **Reclasses and OH Allocations > Reclasses > Reclass Definitions**.



2. To show or hide inactive definitions in the list, click the **Show only active definitions** check box at the top of the page. If you unselect the check box, the table displays the inactive definitions shaded in yellow. Only active definitions include a check mark in the **Active** column.



3. Do any of the following:
   - To add a definition, do one of the following:
     - If you are not yet sure in what order to place the new definition, click **Add New Reclass Definition** at the top of the page. The system places the definition to the bottom of the list of active definitions.
     - If you know where to place the new definition in the list, select a definition to highlight it, and click the plus icon. The system places the definition after the existing definition.
   - To edit a definition, select the definition to highlight it, and click the notepad icon.
   - To clone a definition, select the definition to highlight it, and click the notepad icon. In the **Edit Reclass Definition** dialog, click **Clone** in the bottom left corner.
4. In the **Add New Reclass Definition** dialog, select the type of definition to create, and click **OK**.
5. In the **Add/Edit Reclass Definition** dialog, complete the following:

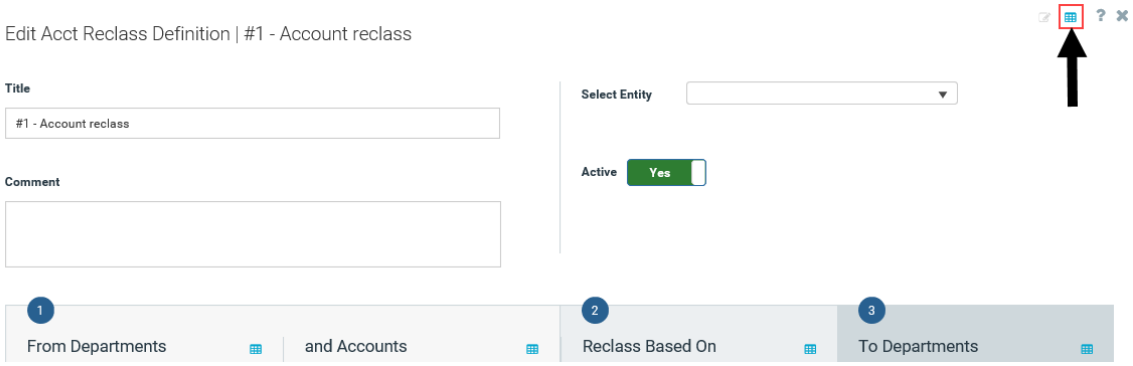


Field	Description
Title	Title for the definition.
Comment	Details for the definition.
Select Entity	Select the entity in which to allocate dollars from. **TIP:** The entity you select determines the departments and accounts you choose from further along in the utility.
Use Source Cost Categories	Do one of the following: • To create the pseudo account for all of the cost categories for your target departments, click the toggle to **Yes**. The system will create the pseudo account for all of the accounts you select further on in this utility. • To create only one pseudo account, click **No**.
Cost Category	If you set the **Use Source Cost Categories** toggle to **No**, select the cost category in which to apply the pseudo account.

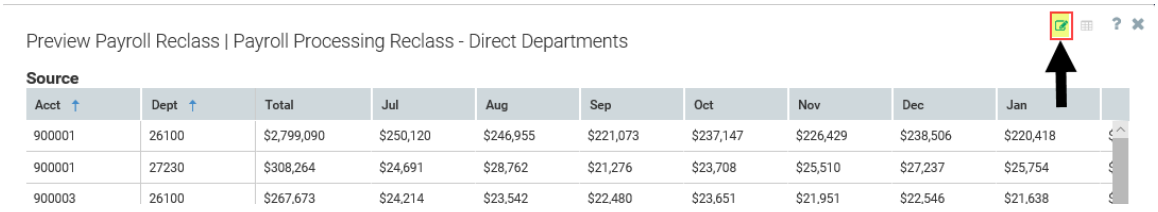
Field	Description
Active	Do one of the following: • To activate the definition, click the toggle to **Yes**. • To deactivate the definition, click the toggle to **No**. For more information regarding this option, see Activating or deactivating reclass definitions.
1. From Departments	Select source departments to allocate dollars from by doing the following: • To create or use a filter, do the following: a. Click **Use Filter**. b. Click **Add Department Filter** to open the Filter Wizard. c. Create or select an existing filter. • To select from a list of departments, do the following: a. Click **Choose Departments**. b. In the **Add Departments** dialog, do any of the following: ◦ To select all of the departments, click **Select All**. ◦ To unselect all of the departments, click **Select None**. ◦ To search for a specific department, type a department number or name in the **Search** box. c. Click **OK**. To preview the filter results, click the spreadsheet icon.
and Accounts	Select the account(s) to allocate by doing one of the following: • To apply the definition to revenue accounts only, select the **Revenue** check box. **NOTE:** This does not apply to Payroll Reclass definitions. • To select the accounts, click the funnel icon to use the Filter Wizard to create or select an account filter (For example, Account.Type = Expense). • To preview the filter results, click the spreadsheet icon.
2. Reclass Based On	Configure the statistic account(s) in which to reclass by clicking the funnel icon to use the Filter Wizard to create or select an account filter. To preview the filter results, click the spreadsheet icon.

Field	Description
3. To Departments	Do one of the following: • To allocate to all the departments based on the criteria selected in the Allocations Based On section, select **All Departments**. • To allocate to specific departments, select **Select Department(s)**, and click the funnel icon to use the Filter Wizard to create or select a department filter. • To preview the filter results, click the spreadsheet icon. **NOTE:** This option does not apply to Payroll Reclass definitions because the reclass is automatically applied to all payroll departments by default.

6. After you finish making changes, click **Save**.
7. To preview the definition results, click the spreadsheet icon at the top of the definition window.



8. To return to the definition, click the notepad icon at the top of the preview window.



9. After you finish adding or editing definition(s), review and edit the definition processing order, as needed.

When you are ready to move the reclass dollars, process the definitions.

Ordering reclass definitions

Axiom Cost Accounting processes reclass definitions in the order they display on the Reclass Definitions page. You can place the definitions in any order that you wish. You can also group them by method type - Payroll, Account, and Department. Even if you decide to group the definitions, you can still edit the order of the definitions within each group.

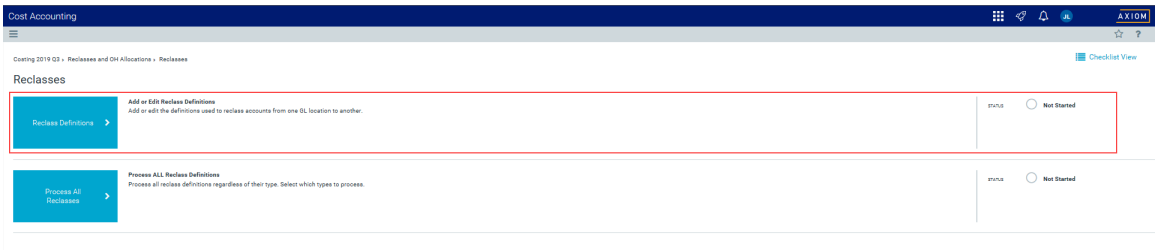
IMPORTANT: Reordering definitions can affect the run and validation process for other definitions.

The order in which the definition will run is indicated in the Run Order column. Keep in mind that any deactivated definitions retain their original locations. So, if you reactivate a deactivated definition, the system will prompt you to specify whether to put the definition back in its original run order location or select a new location. For more information, see Activating or deactivating reclass definitions.

If the list only shows activated definitions, you may notice gaps in the Run Order column. The missing run order definitions have been deactivated. To view the run order for all definitions, whether active or deactived, remove the check mark from the **Show only active definitions** check box at the top of the page.

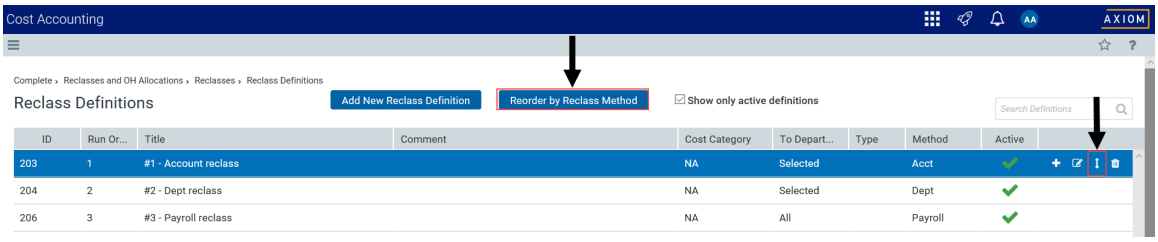
To order reclass definitions:

1. In the Guide View, click **Reclasses and OH Allocations > Reclasses > Reclass Definitions**.



2. Do one of the following:
   - To move a definition to a new location on the list, select the definition to highlight it, and click the arrow icon. In the **Move Account Reclass Definition** dialog, select the definition to move the definition after, and click **OK**.
   - To order the definitions by method type, click **Reorder by Reclass Method** at the top of the page.

     IMPORTANT: Using the Reorder by Reclass Method button means that the system will remove any custom ordering referenced in the first bullet above. You can reorder the definitions, if needed, after you group the definitions by method type.



Activating or deactivating reclass definitions

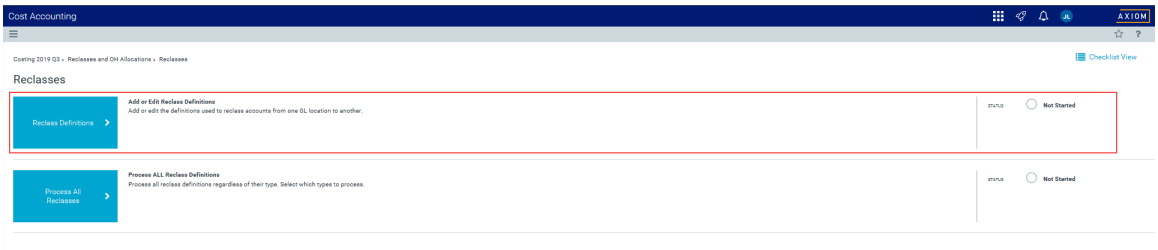
Instead of deleting a definition, you can simply deactivate it so that the system does not process it. You can activate it again, as needed, and place the definition in its original run order or select a new run order position.

Activating a reclass definition

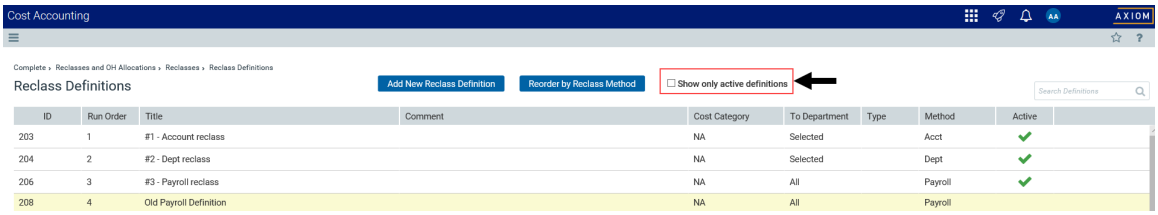
When you create a new definition, the system activates it by default unless you deactivate it. These steps apply to any definitions that you want to reactivate.

To activate a reclass definition:

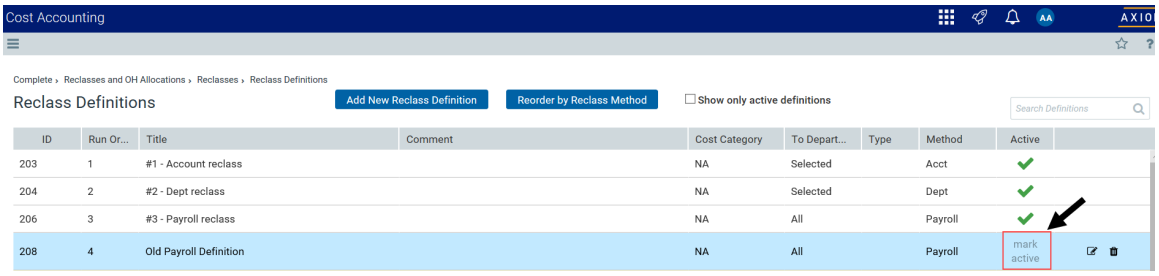
1. In the Guide View, click **Reclasses and OH Allocations > Reclasses > Reclass Definitions**.



2. To display the deactivated definitions in the list, click the **Show only active definitions** check box at the top of the page.



3. Hover your cursor in the **Active** column, and click **Mark Active**.



TIP: You can also activate the definition by clicking the notepad icon, and clicking the **Activate** toggle to **Yes**.

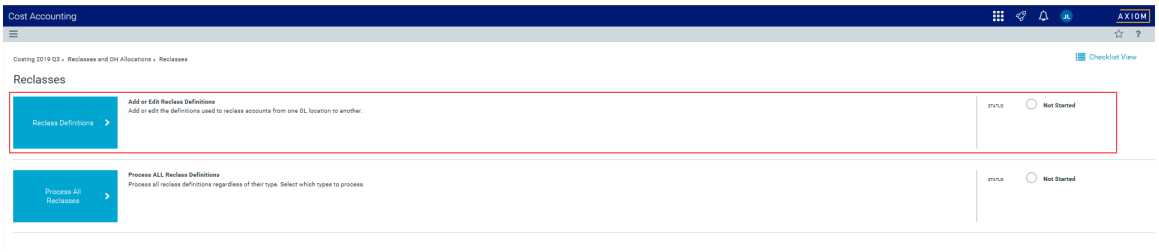
4. In the **Activate Reclass Definition** dialog, do one of the following:
   - To activate the definition in its original run order position, click **Activate and set this Reclass Definition to its original position (Run Order) and re-order the definitions that follow**.
   - To activate the definition and place it in a different run order position, click **Activate and set this Reclass Definition to be positioned after the following item**. Then, from the drop-down, select definition to place the definition after.
5. Click **OK**.

After you finish reactivating definitions, we recommend reviewing and editing the definition processing order, as needed.

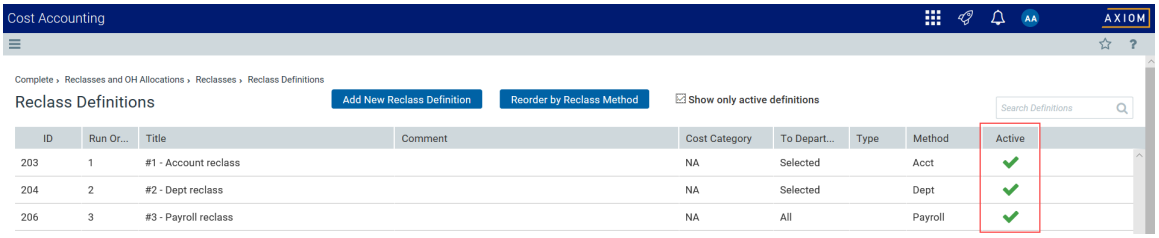
Deactivating a reclass definition

To deactivate a reclass definition:

1. In the Guide View, click **Reclasses and OH Allocations > Reclasses > Reclass Definitions**.



2. In the **Active** column, click the check mark.



TIP: You can also activate the definition by clicking the notepad icon, and clicking the **Activate** toggle to **No**.

3. In the **Deactivate Reclass Definition** dialog, review the message, and click **OK** to proceed.
4. At the confirmation prompt, click **OK**.

After you finish deactivating definitions, we recommend reviewing and editing the definition processing order, as needed.

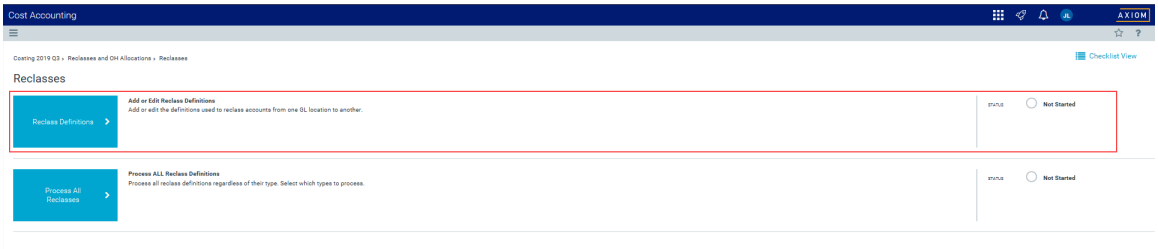
Deleting reclass definitions

Deleting a definition may affect the run process for other definitions and cause validation errors. We recommend reviewing the definition order and making any necessary edits before processing the definitions. For more information, see Ordering reclass definitions.

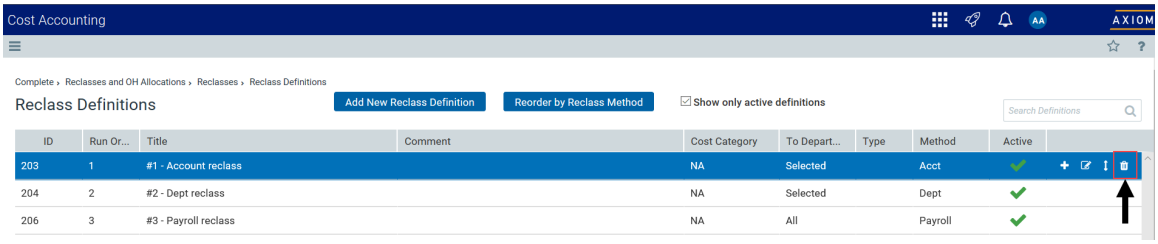
TIP: You may want to consider deactivating a definition instead of deleting it. For more information, see Activating or deactivating reclass definitions.

To delete a reclass definition:

1. In the Guide View, click **Reclasses and OH Allocations > Reclasses > Reclass Definitions**.



2. On the **Manage Reclass Definitions** page, select the definition to highlight it, and click the trash bin icon .



3. At the **Delete Acct Reclass Definition** prompt, click **OK**.

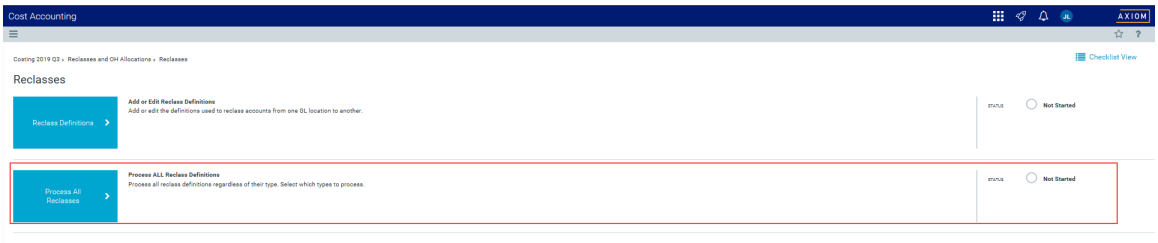
Processing reclass definitions

When processing reclasses, the system kicks off a job in Scheduler to move dollars according to the reclass definitions. The system processes reclasses in the order they are listed on the Reclass Definitions page. For more information, see Ordering reclass definitions.

As part processing reclass definitions, the system automatically places the results in a staging table so that you can reconcile them and make adjustments accordingly before committing them to the CGL table. However, you can skip the review step and commit them directly to the CGL table by selecting the **Auto-Commit results to CGL table** check box.

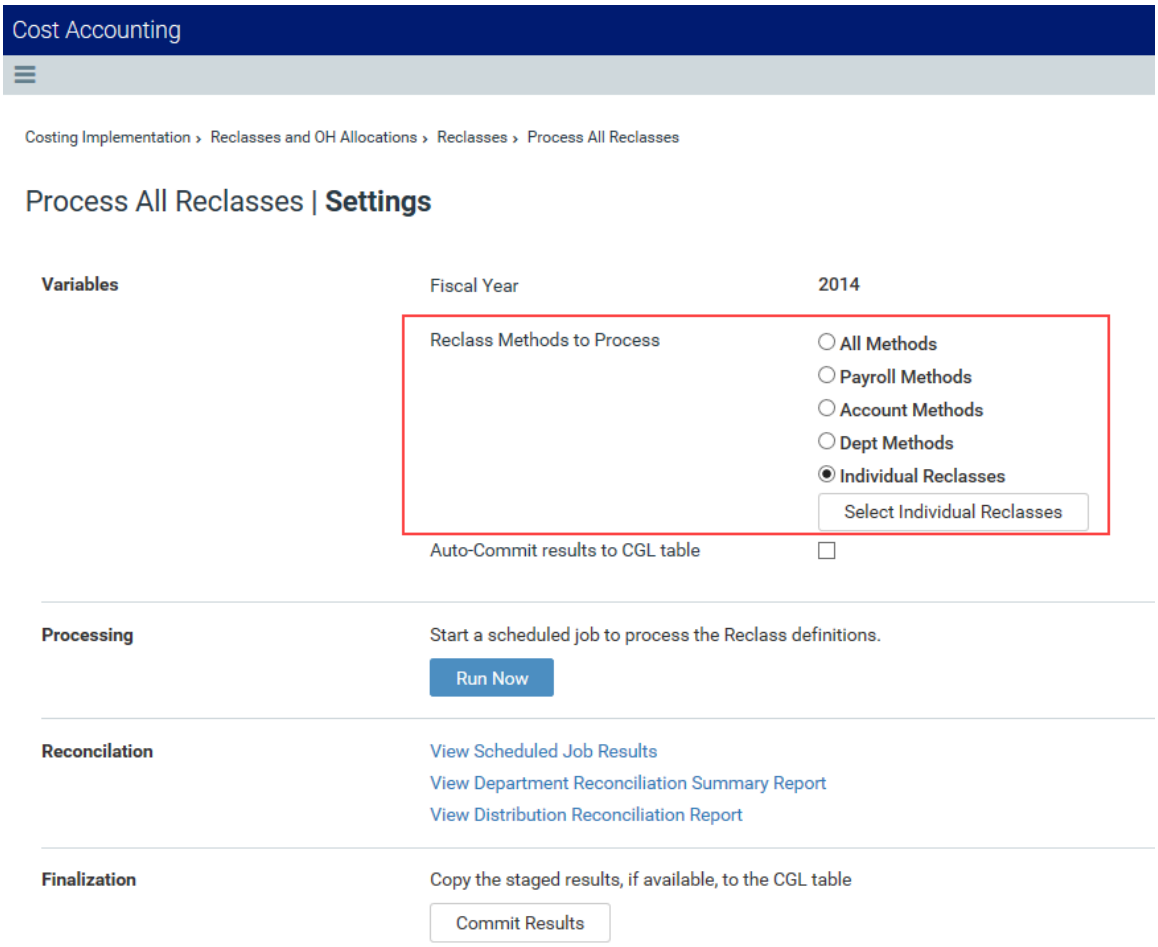
To process reclass definitions:

1. In the Guide View, click **Reclasses and OH Allocations > Reclasses > Process All Reclasses**.



2. Click one of the following reclass methods to process:
   - All Methods
   - Payroll Methods
   - Account Methods
   - Dept Methods
   - Individual Reclasses - Click **Select Individual Reclasses**, click the check box next to each reclass to process, and then click **OK**.

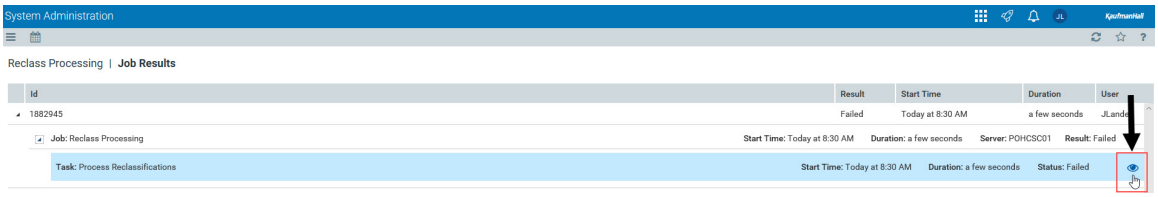
     TIP: Use the **Search** box to find a specific reclass.



3. To skip the reconciliation process and commit the results directly to the CGL table, select the **Auto-Commit results to CGL table** check box.
4. To start the scheduled job that will process the definitions, click **Run Now**.
5. At the **Information** prompt, click **OK**.

   After the job processes, the job results page displays to show you the status of the job. If the job fails, click the eye icon next to the status field to view more information.

   NOTE: The system displays the job results page in a separate tab in your browser.



6. To reconcile the processed reclasses, click one of the following reports:

- View Scheduled Job Results
- View Department Reconciliation Summary report

  NOTE: This report as well as the Distribution Reconciliation report open in the Windows or Excel Client of Axiom Cost Accounting.

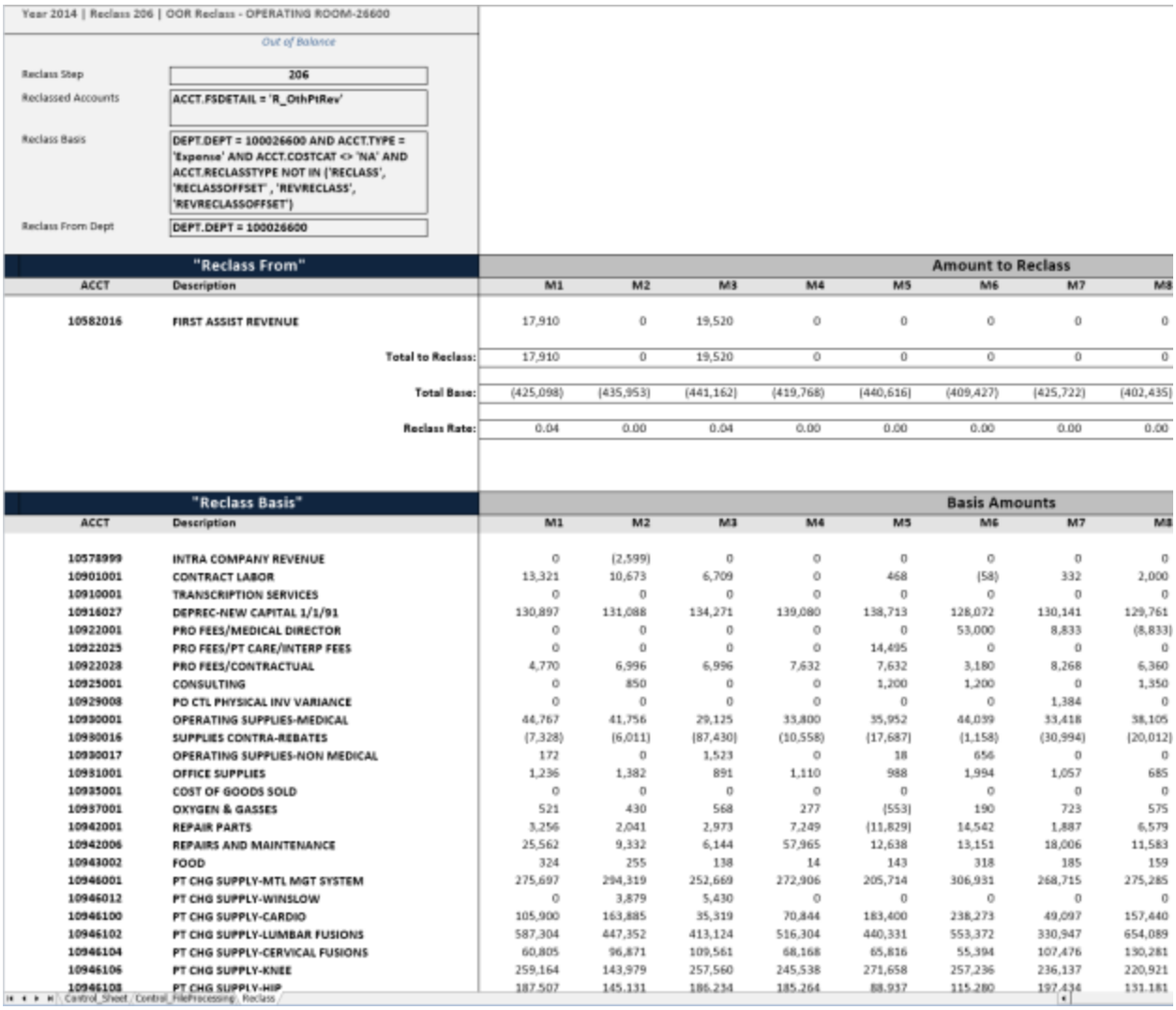
- View Distribution Reconciliation report

7. To copy the staged results to the CGL table, click **Commit Results**.

Validating changes to account reclass rules

The Validation - Reclass Processing by Account report shows the defined Acct and Acct – Revenue reclass rules. You can use this report prior to processing allocations and after the reconciliation of the loaded financial data. You can also use it to review and test individual Acct Reclass steps.

The system spreads allocated dollars across many accounts, with each new reclass account inheriting the traits of the basis accounts. This allows a single account to be spread to several cost accounts. As the system processes, it creates reclass and reclass offset specific accounts, and concatenates the account number assigned to the Account Class in the System Account Ranges table into the account, making it unique.



Year 2014 | Reclass 206 | OOR Reclass - OPERATING ROOM-26600

Out of Balance

Reclass Step	206
Reclassed Accounts	ACCT.FSDETAIL = 'R_OthPtRev'
Reclass Basis	DEPT.DEPT = 100026600 AND ACCT.TYPE = 'Expense' AND ACCT.COSTCAT <> 'NA' AND ACCT.RECLASSTYPE NOT IN ('RECLASS', 'RECLASSOFFSET' , 'REVRECLASS', 'REVRECLASSOFFSET')
Reclass From Dept	DEPT.DEPT = 100026600

"Reclass From"

ACCT	Description	Amount to Reclass M1	M2	M3	M4	M5	M6	M7	M8
10582016	FIRST ASSIST REVENUE	17,910	0	19,520	0	0	0	0	0
	Total to Reclass:	17,910	0	19,520	0	0	0	0	0
	Total Base:	(425,098)	(435,953)	(441,162)	(419,768)	(440,616)	(409,427)	(425,722)	(402,435)
	Reclass Rate:	0.04	0.00	0.04	0.00	0.00	0.00	0.00	0.00

"Reclass Basis"

ACCT	Description	Basis Amounts M1	M2	M3	M4	M5	M6	M7	M8
10578999	INTRA COMPANY REVENUE	0	(2,599)	0	0	0	0	0	0
10901001	CONTRACT LABOR	13,321	10,673	6,709	0	468	(58)	332	2,000
10910001	TRANSCRIPTION SERVICES	0	0	0	0	0	0	0	0
10916027	DEPREC-NEW CAPITAL 1/1/91	130,897	131,088	134,271	139,080	138,713	128,072	130,141	129,761
10922001	PRO FEES/MEDICAL DIRECTOR	0	0	0	0	0	53,000	8,833	(8,833)
10922025	PRO FEES/PT CARE/INTERP FEES	0	0	0	0	14,495	0	0	0
10922028	PRO FEES/CONTRACTUAL	4,770	6,996	6,996	7,632	7,632	3,180	8,268	6,360
10925001	CONSULTING	0	850	0	0	1,200	1,200	0	1,350
10929008	PO CTL PHYSICAL INV VARIANCE	0	0	0	0	0	0	1,384	0
10930001	OPERATING SUPPLIES-MEDICAL	44,767	41,756	29,125	33,800	35,952	44,039	33,418	38,105
10930016	SUPPLIES CONTRA-REBATES	(7,328)	(6,011)	(87,430)	(10,558)	(17,687)	(1,158)	(30,994)	(20,012)
10930017	OPERATING SUPPLIES-NON MEDICAL	172	0	1,523	0	18	656	0	0
10931001	OFFICE SUPPLIES	1,236	1,382	891	1,110	988	1,994	1,057	685
10935001	COST OF GOODS SOLD	0	0	0	0	0	0	0	0
10937001	OXYGEN & GASSES	521	430	568	277	(553)	190	723	575
10942001	REPAIR PARTS	3,256	2,041	2,973	7,249	(11,829)	14,542	1,887	6,579
10942006	REPAIRS AND MAINTENANCE	25,562	9,332	6,144	57,965	12,638	13,151	18,006	11,583
10943002	FOOD	324	255	138	14	143	318	185	159
10946001	PT CHG SUPPLY-MTL MGT SYSTEM	275,697	294,319	252,669	272,906	205,714	306,931	268,715	275,285
10946012	PT CHG SUPPLY-WINSLOW	0	3,879	5,430	0	0	0	0	0
10946100	PT CHG SUPPLY-CARDIO	105,900	163,885	35,319	70,844	183,400	238,273	49,097	157,440
10946102	PT CHG SUPPLY-LUMBAR FUSIONS	587,304	447,352	413,124	516,304	440,331	553,372	330,947	654,089
10946104	PT CHG SUPPLY-CERVICAL FUSIONS	60,805	96,871	109,561	68,168	65,816	55,394	107,476	130,281
10946106	PT CHG SUPPLY-KNEE	259,164	143,979	257,560	245,538	271,658	257,236	236,137	220,921
10946108	PT CHG SUPPLY-HIP	187,507	145,131	186,234	185,264	88,937	115,280	197,434	131,181

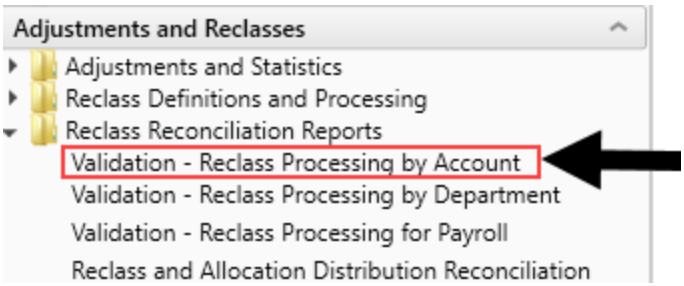
Control_Sheet / Control_FileProcessing / Reclass /

The **"Reclass From"** section populates departments based on the reclass definition department filter. The dollars to reclass populate in the **Amount to reclass** and the **Offset Amounts** sections. The **Reclassed Amounts** are spread across the basis, which populates in the lower section of the report.

As the system processes each rule, the distribution amounts save to the departments that have a basis defined in the step processed. The system also writes an offset to the source department to offset the original value being distributed.

To validate changes to account reclass rules:

1. In the Cost Accounting Admin task pane, in the **Adjustments and Reclasses** section, click **Reclass Reconciliation Reports**, and double-click **Validation - Reclass Processing by Account**.



2. In the **Refresh Variables** dialog, select the variables to include in the report, and click **OK**.

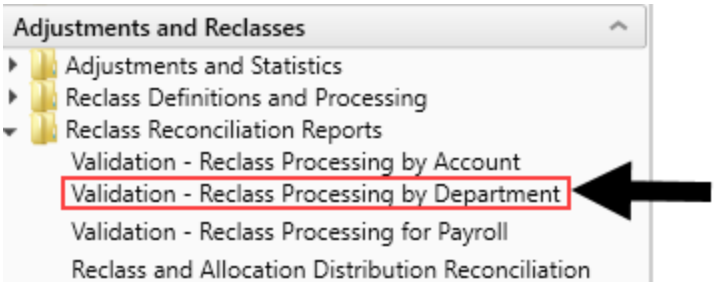
Validating changes to department reclass rules

The Validation - Reclass Processing by Department report shows a summarized view of the processed reclass definitions that you can use to validate that the system has processed the steps and saved them to the database.

The report shows the reclass definition information for each of the processed rules. The reclass activity displays as active or inactive in the report. We recommend that you use this report prior to processing allocations and after the reconciliation of the loaded financial data. You can also use it to review and test individual reclass steps.

To validate changes to department reclass rules:

1. In the Cost Accounting Admin task pane, in the **Adjustments and Reclasses** section, click **Reclass Reconciliation Reports**, and double-click **Validation - Reclass Processing by Department**.



2. In the **Refresh Variables** dialog, select the variables to include in the report, and click **OK**.

Year 2014 | Reclass 9102 | Encounter Supply Cost Variance - Medsup to Misc Variance

In Balance

Reclass ID	9102
Reclassed Accounts	Acct.Costcat = 'Medsup' and Acct.type = 'Expense' and dept.dept in
Reclass Basis	Acct.Costcat = 'Medsup' and Acct.type =
Reclass From Dept	DEPT.DEPT = 100029630

Reclass From

DEPT	Description	Amount to Reclass M1	M2	M3	M4	M5	M6	M7	M8	M9	M10
	Total to Reclass:	0	0	0	0	0	0	0	0	0	
	Total Base:	1,618,306	2,970,903	2,872,118	3,236,104	2,757,248	3,291,593	1,286,191	1,680,528	1,608,615	
	Reclass Rate:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	

Reclass To

DEPT	Description	Basis Amounts M1	M2	M3	M4	M5	M6	M7	M8	M9	M10
100026590	**CATH LAB**	3,247	332,593	496,249	523,189	278,625	361,662	4,034	(643)	4,774	
100026600	**OPERATING ROOM**	1,331,176	1,848,094	1,731,522	2,024,642	1,822,810	2,281,970	1,028,046	1,457,779	1,281,760	1,
100026610	**TASC**	0	0	0	0	0	0	22,978	26,494	17,672	
100026780	**EMERGENCY DEPT**	11,080	61,933	88,885	70,864	69,108	58,706	20,433	10,356	27,065	
100027210	**DIAGNOSTIC RADIOLOGY**	3,264	25,252	13,505	17,081	14,124	13,961	2,723	2,231	(10,006)	
100027830	**RADIATION ONCOLOGY**	126	10,882	5,761	4,642	229	2,830	255	1,176	37	
100097020	**SURGERY**	246,781	522,311	405,473	418,275	393,669	459,897	186,623	164,907	252,072	
100097029	**ENDOSCOPY**	1,165	11,750	14,716	22,540	19,088	17,969	1,110	960	1,030	
100097032	**INFUSION ROOM**	479	1,696	1,546	2,223	1,628	1,150	168	283	306	
100097130	**CARDIAC CATH**	13,361	134,719	103,918	123,742	134,022	72,144	12,100	11,979	23,050	
100097170	**PHARMACY**	1,037	12,980	(4,499)	16,238	14,494	13,772	1,571	(831)	1,591	
100097232	**EMS**	385	2,967	3,369	3,281	2,947	2,686	282	342	370	
100097235	**MILWAUKIE EMERGENCY DEPT**	5,931	4,876	5,058	7,498	4,603	4,398	5,165	4,456	8,213	
100097250	**MILWAUKIE RADIATION ONCOLOGY**	273	850	6,616	1,891	1,900	450	702	1,040	682	

The "Reclass From" section populates departments based on the reclass definition department filter. The dollars to reclass populate in the Amount to reclass and the Offset Amounts sections. The Reclassed Amounts are spread across the basis, which populates in the lower section of the report.

As the utility processes each rule, the system saves the distribution amounts to the departments that have a basis defined in the step processed. The system also writes an offset to the source department to offset the original value being distributed. The reclass account and the offset account are created using the Reclass Setup Manager and populate in the dimensions as the definitions are created

Validating changes to payroll reclass rules

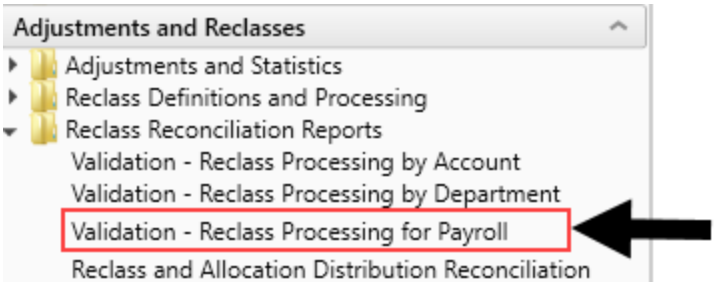
The Validation - Reclass Processing by Payroll report shows the define Payroll reclass rules. Typically, an organization sets up only one rule. The payroll reclass definition identifies accounts specific to salaries and disaggregates the accounts across cost class- or job class-specific statistics.

The system processes all departments in a sequential fashion, with the source department component of the reclass definition functioning as a multipass filter.

You can use this report prior to processing general reclass rules and after the reconciliation of the loaded financial data.

To validate changes to payroll reclass rules:

1. In the Cost Accounting Admin task pane, in the **Adjustments and Reclasses** section, click **Reclass Reconciliation Reports**, and double-click **Validation - Reclass Processing by Department**.



2. In the **Refresh Variables** dialog, select the variables to include in the report, and click **OK**.

Year 2014 | Dept 100026780 | Payroll Processing Reclass - Direct Departments

In Balance

Reclass Step	2101
Reclassed Accounts	Acct.Reclasstype = 'Payrollstat'
Reclass Basis	(ACCT.FSDetail = 'E_Salaries' AND
Reclass From Dept	DEPT.DEPT=100026780

Reclass Source — **Amount to Reclass**

ACCT	Description	M1	M2	M3	M4	M5	M6	M7	M8	M9	M10
900001	REGULAR SALARIES AND WAGES	342,670	343,667	323,182	358,567	329,739	326,854	313,358	324,058	338,087	338,263
900003	DIFFERENTIAL	28,627	26,039	26,773	26,573	24,739	24,246	27,076	25,367	25,585	25,585
900006	SITTERS	622	313	1,307	360	455	306	59	747	274	571
900012	EXTRA PAY	12,853	(600)	0	2,000	1,500	2,536	1,821	11,472	558	28,398
900013	INSERV/EDUCAT/TRAINING	12,706	612	13,572	6,571	7,690	5,607	9,279	11,505	5,357	11,912
900014	ANNUAL LEAVE USED	34,984	47,809	35,575	35,979	43,809	49,249	41,244	35,754	47,240	27,494
900015	DISABILITY LEAVE USED	6,564	400	73	1,831	984	(29)	6,434	6,981	(599)	2,831
900016	AL BANK NET CHANGE	10,966	(8,890)	9,969	7,174	5	(5,127)	(3,958)	9,354	(4,997)	13,593
900017	EIB/JURY DUTY/FUNERAL LEAVE	0	0	0	0	0	0	0	0	1,483	(42)
900018	STANDBY	3,441	4,132	4,232	4,367	4,509	4,496	4,680	4,104	4,258	4,383
900020	OVERTIME	12,669	(678)	13,191	5,737	5,826	3,929	15,635	14,973	8,063	5,636
900021	CALLBACK/HOLIDAY/CONT SHIFT	23,656	3,467	27,947	1,915	6,307	16,569	56,513	4,888	2,083	7,498
900035	WEEKEND DIFFERENTIAL	4,782	4,385	4,468	4,452	4,018	4,151	4,496	4,202	4,077	4,049
900036	GIFT CARD GROSS UP	0	0	0	109	0	0	0	0	15	14
900037	CERNER TRAINING	2,493	1,875	4,005	4,661	3,611	2,110	1,299	2,224	2,195	3,763
900038	MEETINGS	1,192	12	1,029	161	1,182	974	1,553	1,849	(107)	1,564
900999	PAYROLL DEFAULT	0	0	0	0	0	0	0	0	0	2,054
	Total GL Salaries to Reclass:	498,225	422,542	465,327	460,457	434,375	435,871	479,489	457,478	433,571	477,568
	Total Base:	941,251	877,793	1,138,282	913,424	867,778	922,172	937,845	852,167	920,123	923,077
	Reclass Rate:	0.53	0.48	0.41	0.50	0.50	0.47	0.51	0.54	0.47	0.52

Reclass Basis / Target — **Basis Amounts**

ACCT	Description	M1	M2	M3	M4	M5	M6	M7	M8	M9	M10
9900001010	Payroll Stat - RN Salary - Variable	564,302	538,209	569,786	563,255	524,339	545,639	580,277	500,057	513,090	521,785
9900001011	Payroll Stat - RN Salary - Fixed	159,371	123,027	285,607	127,903	129,650	144,449	125,600	132,034	155,234	114,876
9900001030	Payroll Stat - Technician Salary - Variable	127,379	120,449	118,411	119,863	115,170	122,802	123,629	111,297	120,867	129,965
9900001031	Payroll Stat - Technician Salary - Fixed	25,302	24,469	53,091	29,101	27,736	29,733	31,464	28,593	30,518	29,753
9900001040	Payroll Stat - Aide Salary - Variable	326	2,298	2,171	925	922	585	1,424	896	277	685

The **Reclass Source** section shows departments based on the reclass definition department filter. The dollars to reclass populate in the **Amount to Reclass** and the **Reclass Offset** sections of the report. The **Reclassed Amounts** are spread across the basis, which populates in the lower section of the report.

As the system processes each rule, the distribution amounts save to the departments that have a basis defined in the step processed. The system also writes an offset to the source department to offset the original value being distributed.

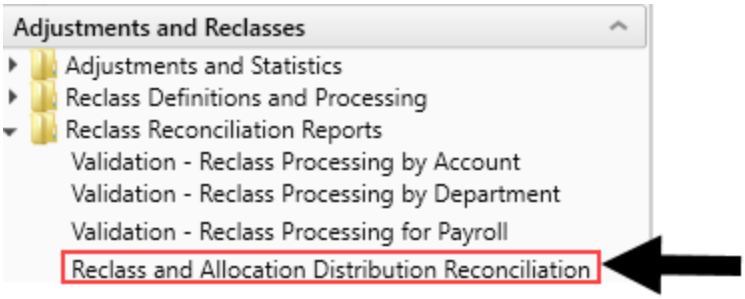
The reclass account and the offset account are created using the Payroll Reclass Account Setup report at implementation.

Discovering variances in reclass and overhead allocation offsets

Use the Reclass and Allocation Distribution Reconciliation report to find variances after you run your allocation and reclass processing or if there are changes in your GL structure.

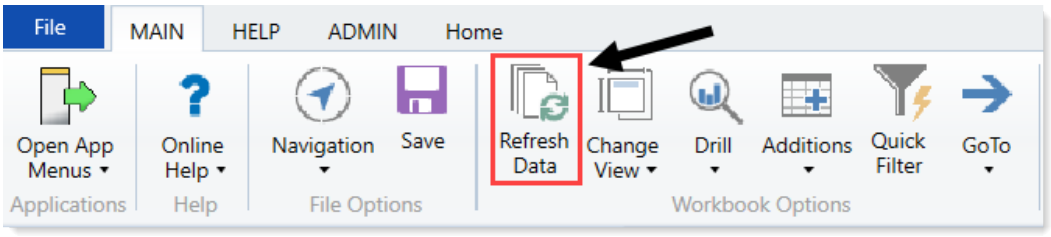
To discover variances in Reclass and Allocation Offsets:

1. In the Cost Accounting Admin task pane, in the **Adjustments and Reclasses** section, click **Reclass Reconciliation Reports**, and double-click **Reclass and Allocation Distribution Reconciliation**.



2. Refresh the data by doing one of the following:

   - In the **Main** ribbon tab, click **Refresh Data**.



   - Pres **F9**.

3. From the **Refresh Variables** dialog, do the following:
   - From the **CGL Year** drop-down, select your CGL year.
   - From the Select a Specific ReclassType (optional) drop-down, select the ReclassType to view in the Reclass section of the report.

     NOTE: This does not affect the Allocation section of the report.

4. To change the view of the report, in the Main ribbon tab, click Change View, and select one of the

following:

- All
- Variance Only

You can drill into the Reclass or Allocation rule for the list of the departments impacted by the selected rule.

6

Managing Overhead Allocations

Overhead allocation definitions in Axiom Cost Accounting are used to define the rules and order in which to move overhead expenses from support departments (Security, IT, Utilities, etc.) to revenue-producing departments (usually In Patient departments).

Axiom Cost Accounting uses the Step Down method, which allocates costs from one department to other departments using a sequential process. When setting up the allocation sequence, we recommend allocating costs starting with the most (based on count) supported departments and working your way down to the fewest supported departments. Keep in mind that this may not always correlate to the departments with the highest cost. For example, if an overhead Administration department holds $500,000 in C-level salaries, you may want to allocate this first since Administration supports the entire system. On the other hand, a grouping of clinical support departments may hold $1 million in cost, but since they would support a more limited amount of departments (clinical only), you would allocate the cost after the Administration department.

TIP: Your Kaufman Hall Implementation Consultant can help you set up the allocation definition run order.

In Axiom Cost Accounting, you manage the allocation definitions and run order in the Allocation Definitions page. From this page, you can add, edit, and delete definitions as well as reorder the sequence of the definitions. This page also allows you to validate that definitions do not violate the rules of other definitions. For example, you may accidentally set up a definition that allocates to the same department twice. In this case, the system would display a validation error.

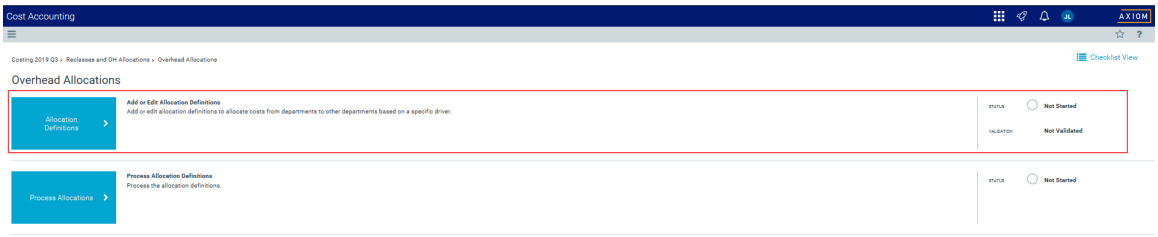
Adding, editing, or cloning overhead allocation definitions

The Allocation Definitions page allows you to view and configure overhead allocation definitions, including setting the order you want the system to process them, and how you want the dollars to be allocated. You can create a new definition by cloning an existing definition and editing it.

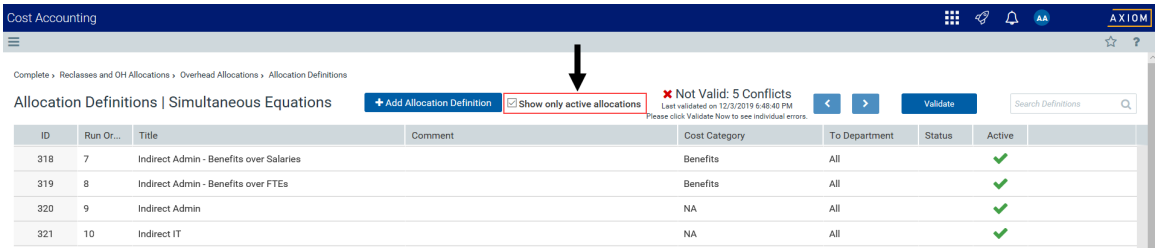
TIP: Make sure to maintain your overhead allocation definitions on a regular basis as departments, accounts, statistics, and so on are updated in your organization.

To add or edit an overhead allocation definition:

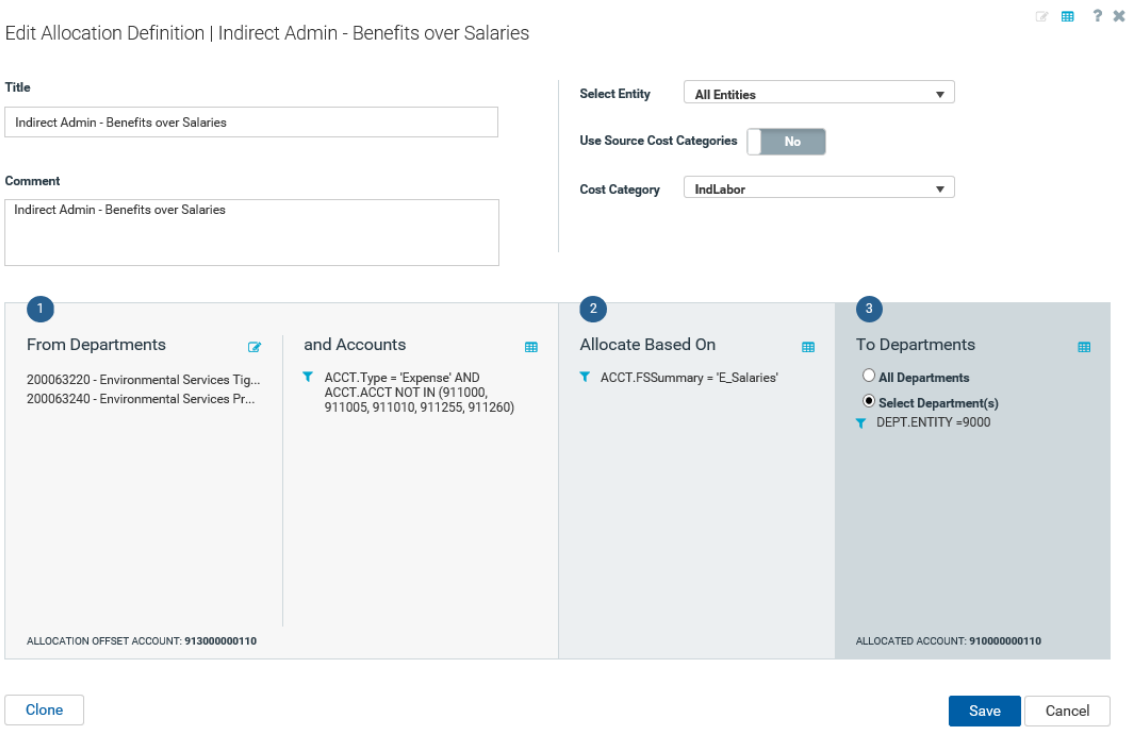
1. In the Guide View, click **Reclasses and OH Allocations > Overhead Allocations > Allocation Definitions**.



2. To show or hide inactive definitions in the list, click the **Show only active definitions** check box at the top of the page. If you unselect the check box, the table displays the inactive definitions shaded in yellow. Only active definitions include a check mark in the **Active** column.



3. Do any of the following:
   - To add a definition, do one of the following:
     - If you are not yet sure in what order to place the new definition, click **Add Allocation Definition** at the top of the page. The system places the definition to the bottom of the list of active definitions.
     - If you know where to place the new definition in the list, select a definition to highlight it, and click the plus icon. The system places the definition after the existing definition.
   - To edit a definition, select the definition to highlight it, and click the notepad icon.
   - To clone a definition, select the definition to highlight it, and click the notepad icon. In the **Edit Allocation Definition** dialog, click **Clone** in the bottom left corner.
4. In the **Add/Edit Allocation Rule** dialog, complete the following:

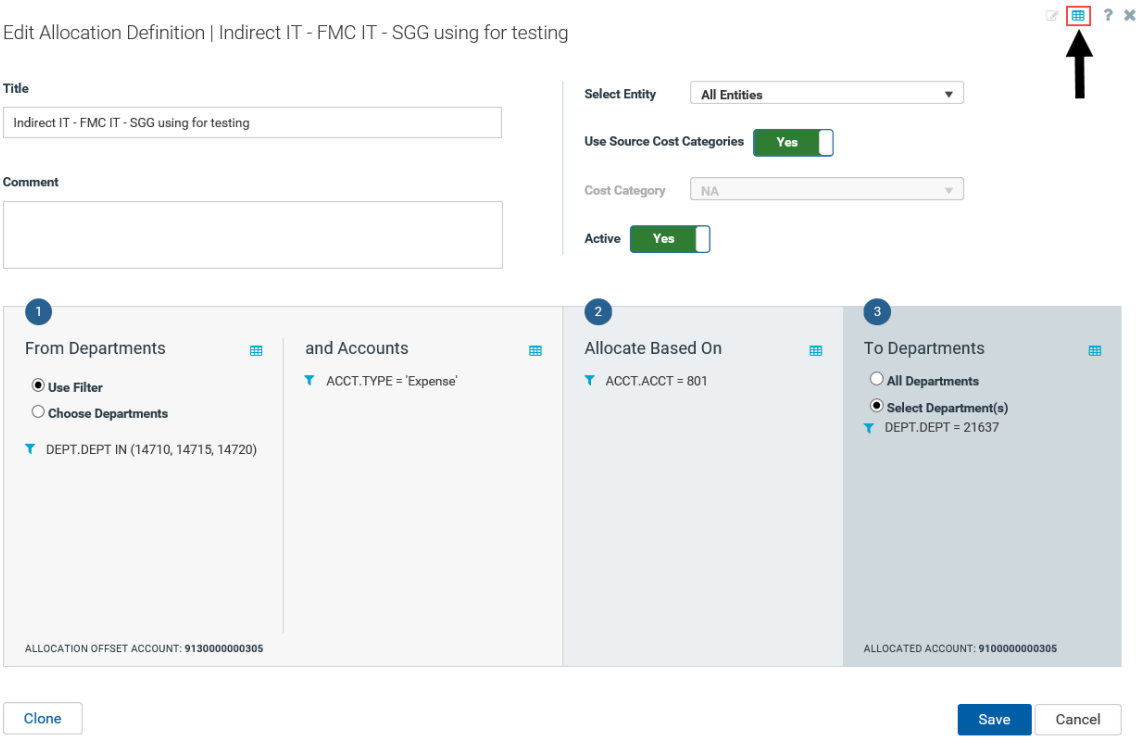


Field	Description
Title	Title of the definition.
Comment	Details of the definition.
Select Entity	Select the entity in which to allocate dollars from. **TIP:** The entity you select determines the departments and accounts you choose from further along in the utility.
Use Source Cost Categories	Do one of the following: • To assign the definition to all cost categories, click the toggle to **Yes**. • To assign the definition to a specific cost category, click the toggle to **No**.
Cost Category	If you set the **Use Source Cost Categories** toggle to **No**, select the cost category to apply the pseudo account to. **NOTE:** This option is only enabled when you select **No** in **Use Source Cost Categories**.

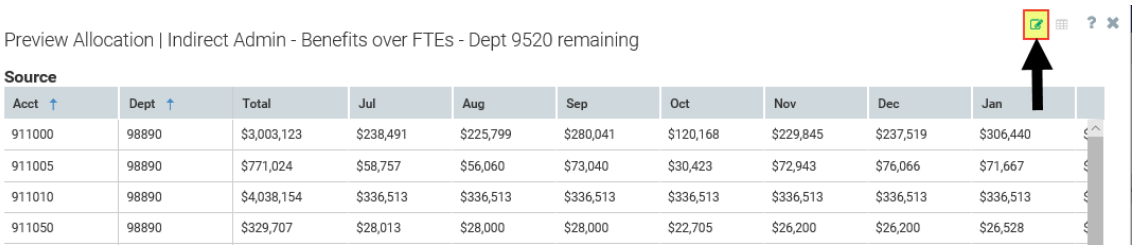
Field	Description
Active	Do one of the following: • To activate the definition, click the toggle to **Yes**. • To deactivate the definition, click the toggle to **No**. For more information regarding this option, see Activating or deactivating overhead allocation definitions.
1. From Departments	Select source departments to allocate dollars from by doing the following: • To create or use a filter, do the following: a. Click **Use Filter**. b. Click **Add Department Filter** to open the Filter Wizard. c. Create or select an existing filter. • To select from a list of departments, do the following: a. Click **Choose Departments**. b. In the **Add Departments** dialog, do any of the following: ◦ To select all of the departments, click **Select All**. ◦ To unselect all of the departments, click **Select None**. ◦ To search for a specific department, type a department number or name in the **Search** box. c. Click **OK**. To preview the filter results, click the spreadsheet icon.
and Accounts	Select the accounts by clicking the funnel icon to use the Filter Wizard to create or select an account filter (For example, Account.Type = Expense). To preview the filter results, click the spreadsheet icon.
2. Allocate Based On	Select the statistic account(s) in which to allocate by clicking the funnel icon to use the Filter Wizard to create or select an account filter. To preview the filter results, click the spreadsheet icon.
3. To Departments	Do one of the following: • To allocate to all the departments based on the criteria selected in the Allocations Based On section, select **All Departments**. • To allocate to specific departments, select **Select Department(s)**, and click the funnel icon to use the Filter Wizard to create or select a department filter. To preview the filter results, click the spreadsheet icon.

5. After you finish making changes, click **Save**.

6. To preview the definition results, click the spreadsheet icon at the top of the definition window.



7. To return to the definition, click the notepad icon at the top of the preview window.



Acct	Dept	Total	Jul	Aug	Sep	Oct	Nov	Dec	Jan
911000	98890	$3,003,123	$238,491	$225,799	$280,041	$120,168	$229,845	$237,519	$306,440
911005	98890	$771,024	$58,757	$56,060	$73,040	$30,423	$72,943	$76,066	$71,667
911010	98890	$4,038,154	$336,513	$336,513	$336,513	$336,513	$336,513	$336,513	$336,513
911050	98890	$329,707	$28,013	$28,000	$28,000	$22,705	$26,200	$26,200	$26,528

8. After you finish adding or editing definition(s), we recommend you do the following:
   - Order definitions - Axiom Cost Accounting processes overhead definitions in the order they display in the Allocation Definitions page. After you add or edit a definition, you may need to reorder the definitions in the list.
   - Validate definitions - Make sure to validate definitions to ensure they do not violate the rules of other definitions. For example, you may accidentally set up a definition that allocates to the same department twice.

Ordering overhead allocation definitions

Axiom Cost Accounting processes overhead allocation definitions in the order they display on the Allocation Definitions page. You can place the definitions in any order that you wish.

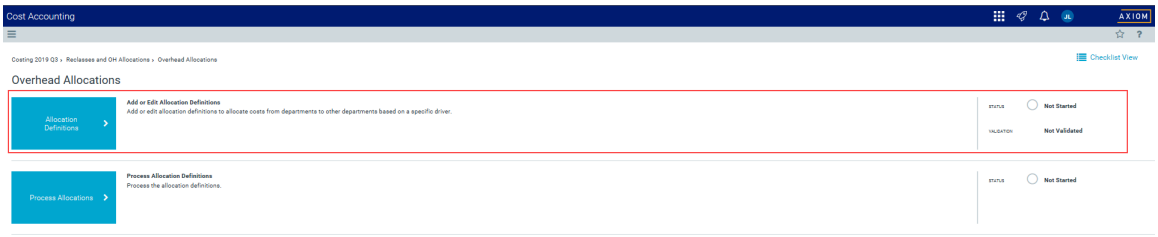
IMPORTANT: Reordering definitions can affect the run and validation process for other definitions.

The order in which the definition will run is indicated in the Run Order column. Keep in mind that any deactivated definitions retain their original locations. So, if you reactivate a deactivated definition, the system will prompt you to specify whether to put the definition back in its original run order location or select a new location. For more information, see Activating or deactivating overhead allocation definitions.

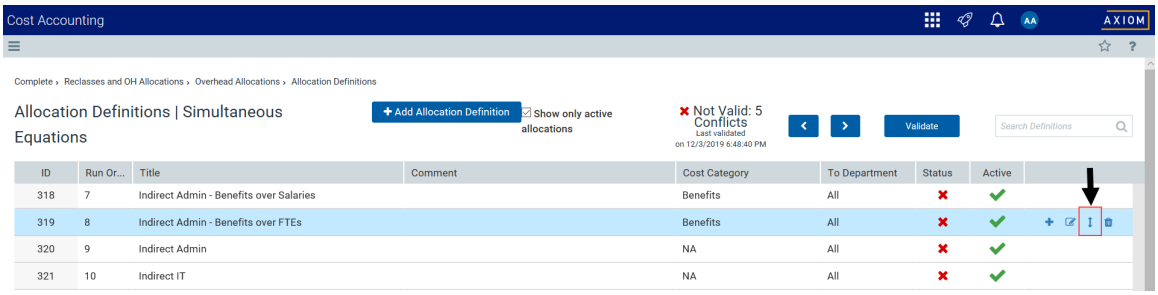
If the list only shows activated definitions, then you may notice gaps in the Run Order column. The missing run order definitions have been deactivated. To view the run order for all definitions, whether active or deactivated, remove the check mark from the **Show only active definitions** check box at the top of the page.

To reorder overhead allocation definitions:

1. In the Guide View, click **Reclasses and OH Allocations > Overhead Allocations > Allocation Definitions**.



2. Select the definition to highlight it, and click the arrow icon .



3. In the **Move Allocation Definition** dialog, select the definition to move the definition after, and click **OK**.
4. Validate the definitions by clicking **Validate** above the list of definitions.

Activating or deactivating overhead allocation definitions

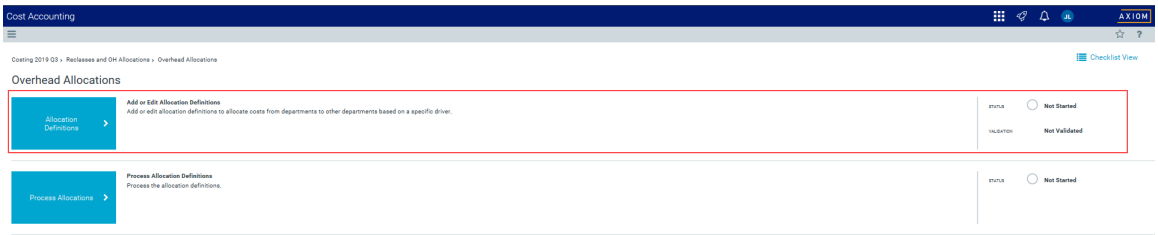
Instead of deleting a definition, you can simply deactivate it so that the system does not process it. You can activate it again, as needed, and place the definition in its original run order or select a new run order position.

Activating an overhead allocation definition

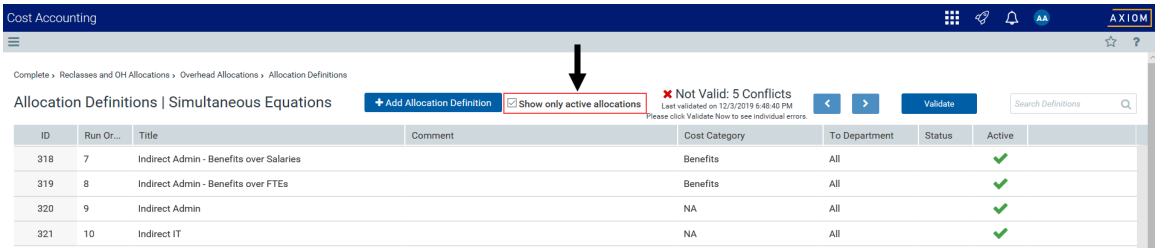
When you create a new definition, the system activates it by default unless you deactivate it. These steps apply to any definitions that you want to reactivate.

To activate an overhead allocation definition:

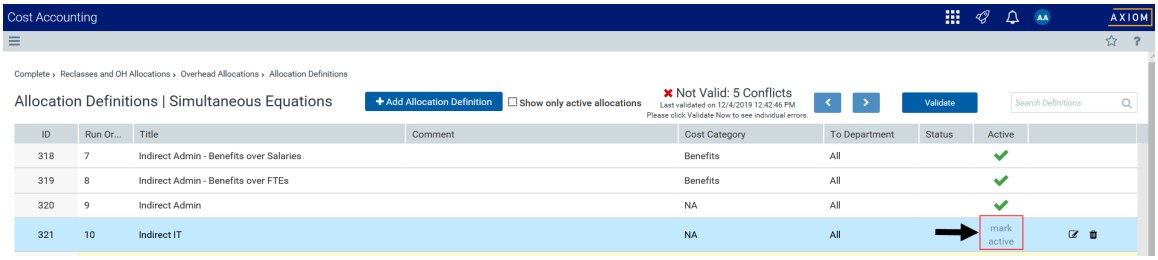
1. In the Guide View, click **Reclasses and OH Allocations > Overhead Allocations > Allocation Definitions**.



2. To display the deactivated definitions in the list, click the **Show only active definitions** check box at the top of the page.



3. Hover your cursor in the **Active** column, and click **Mark Active**.



TIP: You can also activate the definition by clicking the notepad icon, and clicking the **Activate** toggle to **Yes**.

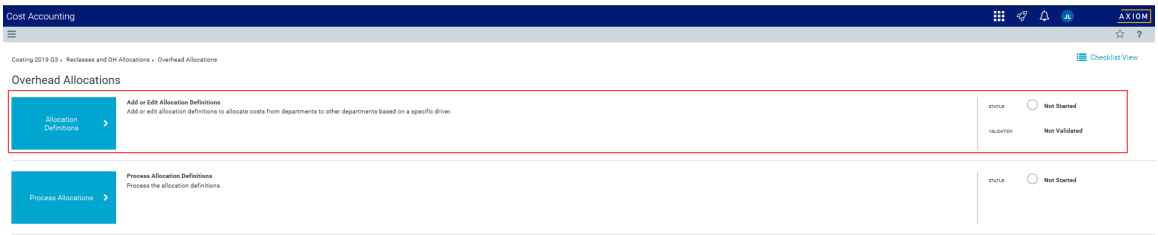
4. In the **Activate Allocation Definition** dialog, do one of the following:
    - To activate the definition in its original run order position, click **Activate and set this Allocation Definition to its original position (Run Order) and re-order the definitions that follow**.
    - To activate the definition and place it in a different run order position, click **Activate and set this Allocation Definition to be positioned after the following item**. Then, from the drop-down, select definition to place the definition after.
5. Click **OK**.

After you finish reactivating definitions, we recommend reviewing and editing the definition processing order, as needed.

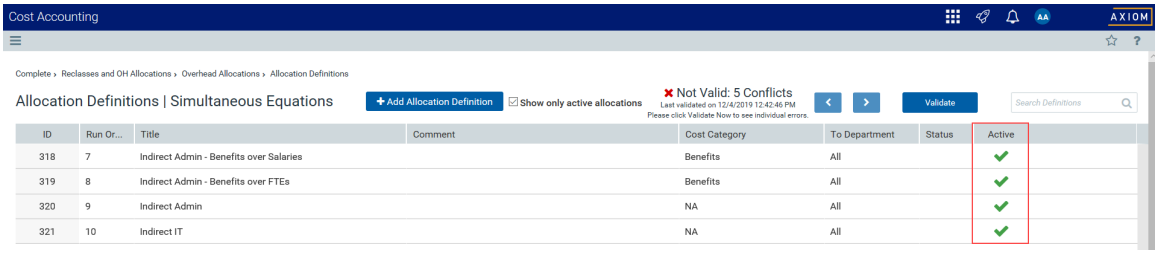
Deactivating an overhead allocation definition

To deactivate an overhead allocation definition:

1. In the Guide View, click **Reclasses and OH Allocations > Overhead Allocations > Allocation Definitions**.



2. In the **Active** column, click the check mark.



> **TIP:** You can also activate the definition by clicking the notepad icon, and clicking the **Activate** toggle to **No**.

3. In the **Deactivate Allocation Definition** dialog, review the message, and click **OK** to proceed.
4. At the confirmation prompt, click **OK**.

After you finish deactivating definitions, we recommend reviewing and editing the definition processing order, as needed.

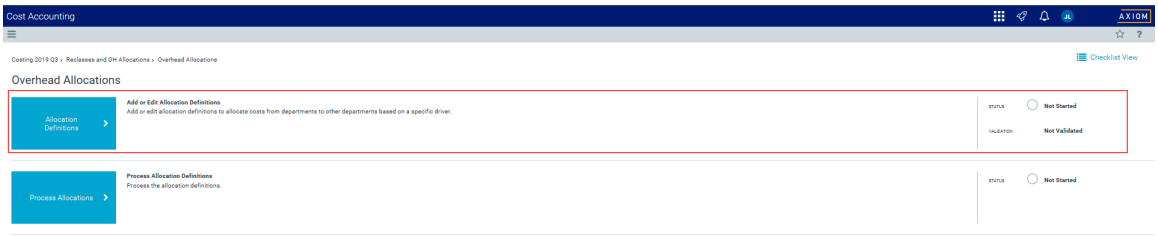
Deleting overhead allocation definitions

Deleting a definition may affect the run process for other definitions and cause validation errors. We recommend reviewing/editing the definition order and performing a validation after deleting a definition.

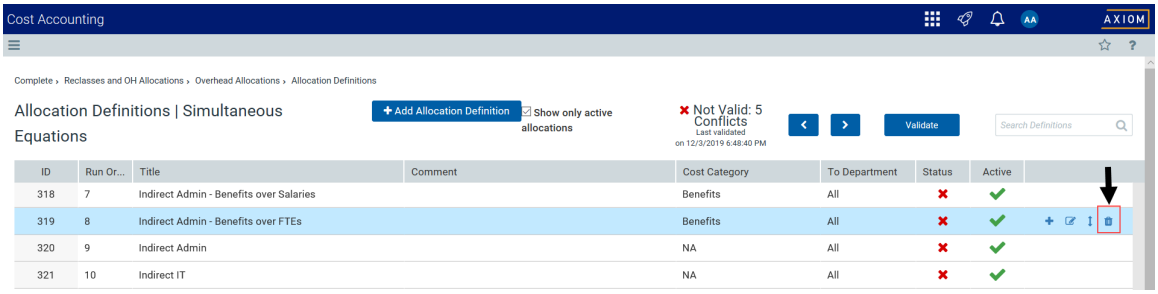
TIP: You may want to consider deactivating a definition instead of deleting it. For more information, see Activating or deactivating overhead allocation definitions.

To delete an overhead allocation definition:

1. In the Guide View, click **Reclasses and OH Allocations > Overhead Allocations > Allocation Definitions**.



2. Click the definition to highlight it, and click the trash bin icon .



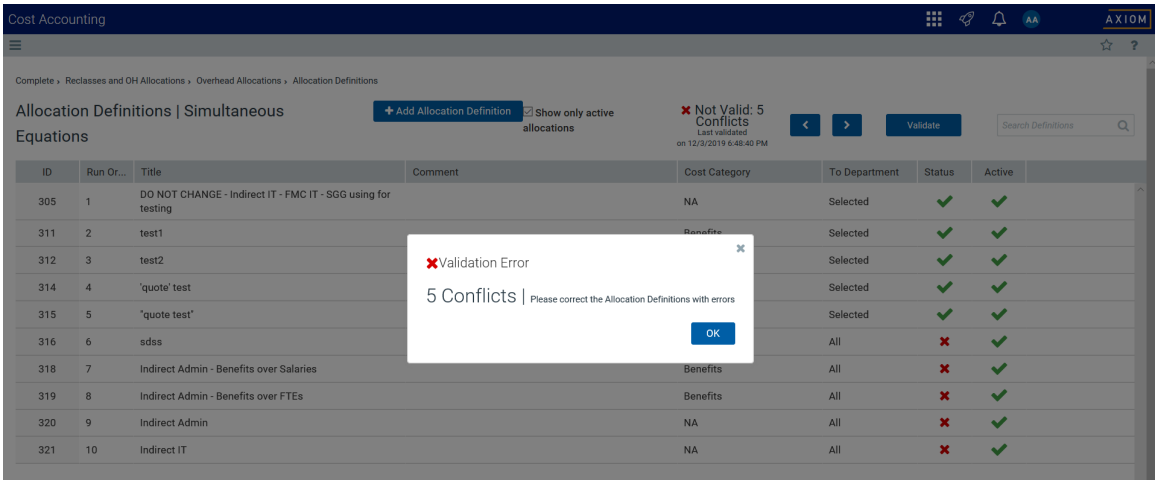
3. At the **Delete Allocation Definition** prompt, click **OK**.

Validating allocation definitions

To prevent over allocation or allocating to the wrong department, Axiom Cost Accounting allows you to validate definitions by checking that they do not violate the rules of other definitions. For example, you may accidentally set up a definition that allocates to the same department twice. We recommend that you run this process each time you add, edit, delete, or reorder definitions.

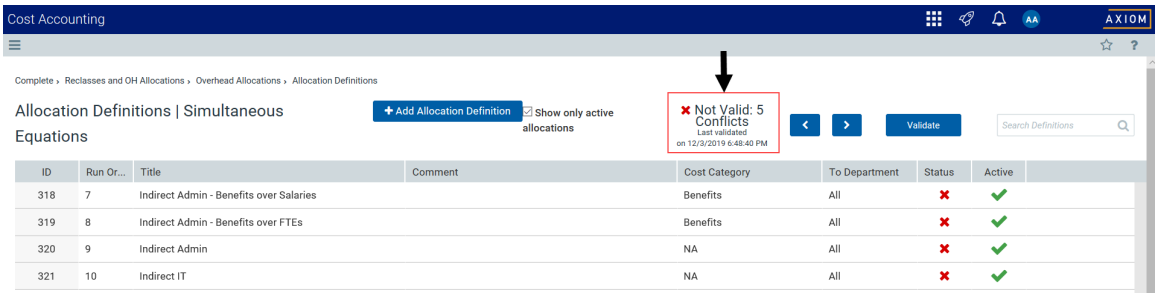
If the system encounters a validation error, there are several ways it displays:

- **Number of errors** - A validation error dialog displays the number of conflicts.



> **NOTE:** If **Not-Validated** displays next to the **Validate** button, it means that no definitions have been validated yet.

- **Not Valid message** - Next to the **Validate** button, a **X** **Not Valid** message displays. Also, an **X** displays in the **Status** column for each definition that encounters an error. Click the X to view the error message.

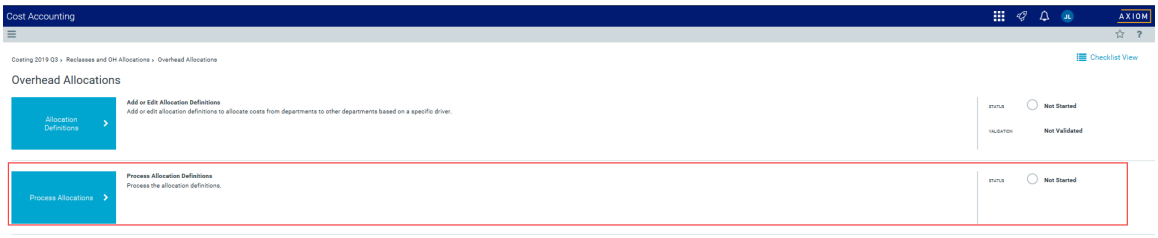


After you resolve all of the errors, the Allocation Definitions page displays green check marks in the **Status** column of all rows and ✔ Valid displays next to the **Validate** button at the top of the page.

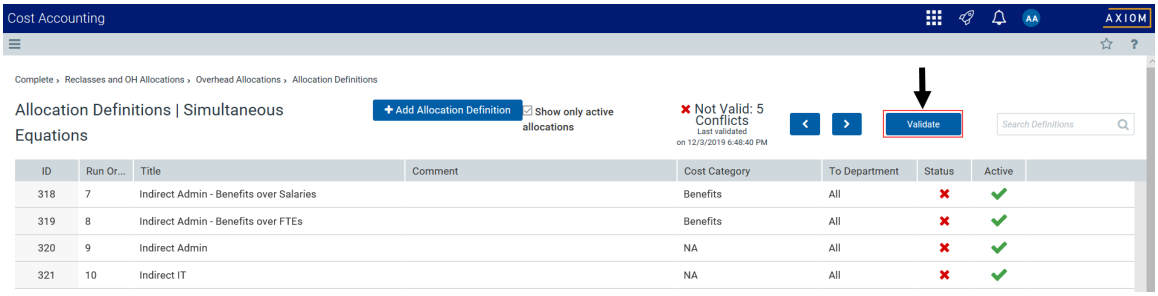
> **NOTE:** Validation errors do not prevent Axiom Cost Accounting from processing definitions. It is a simply a way to indicate potential issues if you run the definition.

To validate allocation definitions:

1. In the Guide View, click **Reclasses and OH Allocations > Overhead Allocations > Allocation Definitions**.



2. On the **Allocation Definitions** page, click **Validate** at the top of the page.



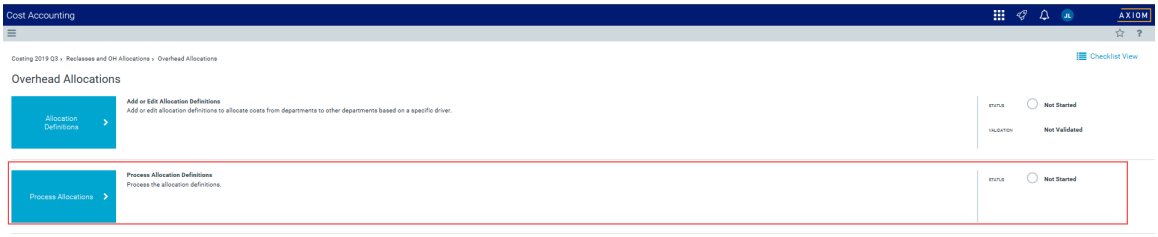
3. In the **Status** column, click the X to view the error message.
4. Edit each definition that encounters a validation error.
5. After you correct each definition, run the validation again until all the errors are resolved.

Processing overhead allocations definitions

The system processes reclasses in the order they are listed on the Allocation Definitions page. For more information, see Ordering overhead allocation definitions.

To process overhead allocation definitions:

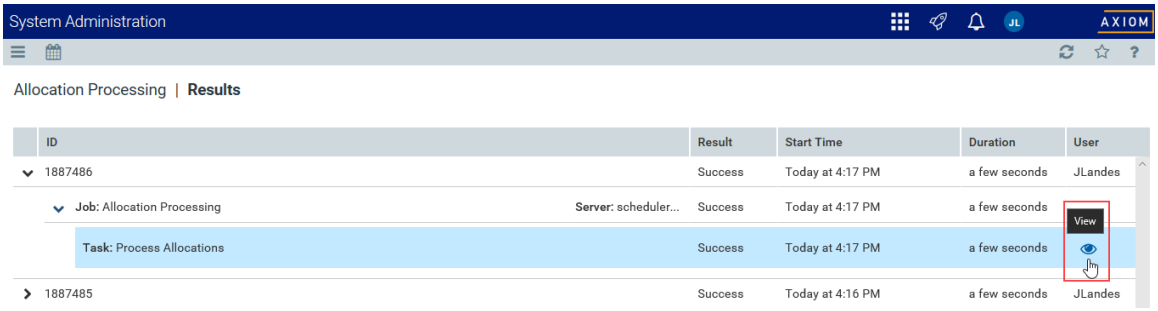
1. In the Guide View, click **Reclasses and OH Allocations > Overhead Allocations > Process Allocations**.



2. To skip the reconciliation process and commit the results directly to the CGL table, select the **Auto-Commit results to CGL table** check box.
3. To start the scheduled job that will process the definitions, click **Run Now**.
4. At the **Information** prompt, click **OK**.

After the job processes, the job results page displays to show you the status of the job. If the job fails, click the eye icon next to the status field to view more information.

NOTE: The system displays the job results page in a separate tab in your browser.



5. To reconcile the processed reclasses, click to open the following reports:
   - View Scheduled Job Results
   - View Department Reconciliation Summary report

     NOTE: This report as well as the Distribution Reconciliation report open in the Windows or Excel Client of Axiom Cost Accounting.

   - View Distribution Reconciliation report
6. To copy the staged results to the CGL table, click **Commit Results**.

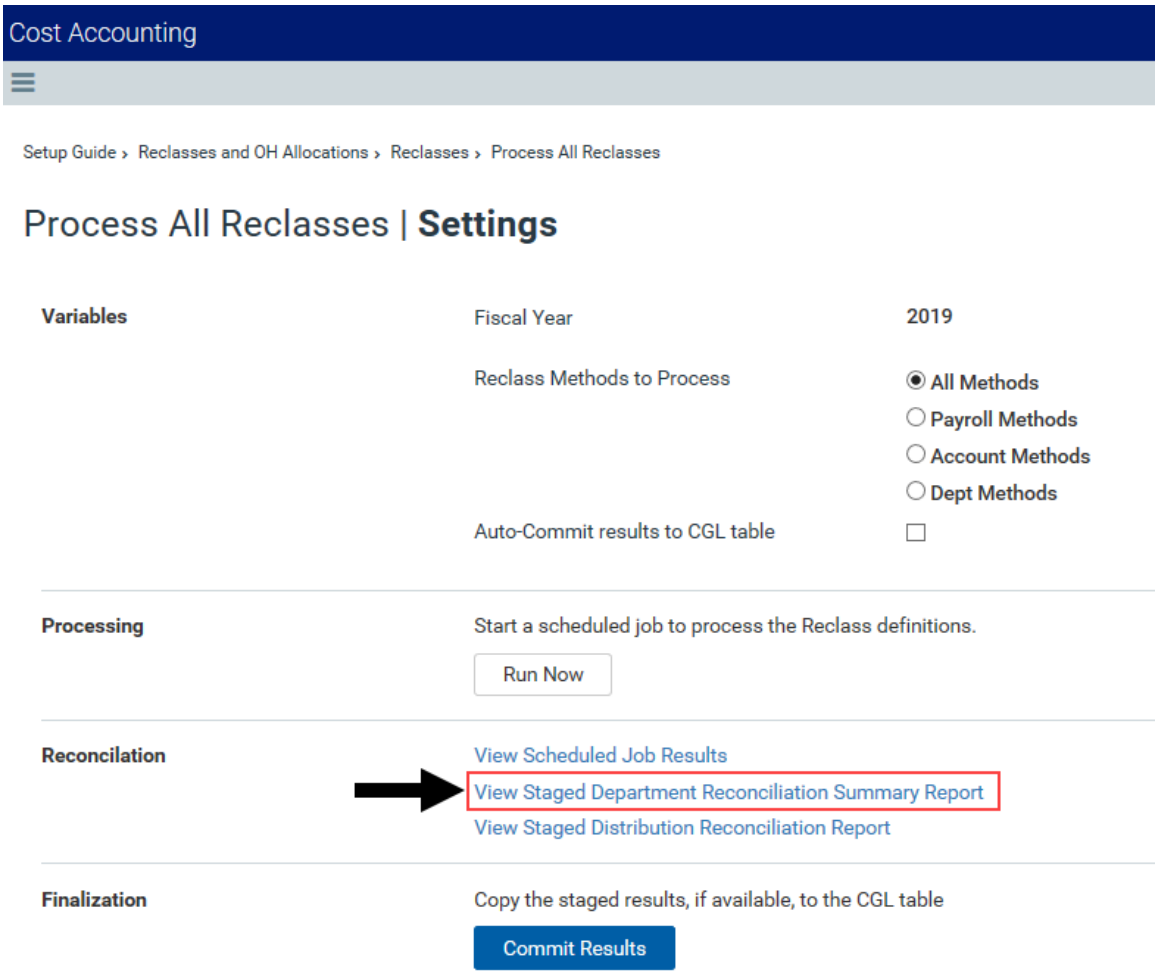
Running the Reclass and Allocation Department Summary report

The Reclass and Allocation Department Summary report summarizes all of the allocations by department type (indirect, direct, deadend, and all other) to review the impact to the CGL.

To run the Reclass and Allocation Department Summary report:

1. In the Guide View, click **Reclasses and OH Allocations > Reclasses > Process All Reclasses**. A link to the report is located in the **Reconciliation** section of the page.

   NOTE: At this time, the report opens in the Windows or Excel Client edition of Axiom Cost Accounting.



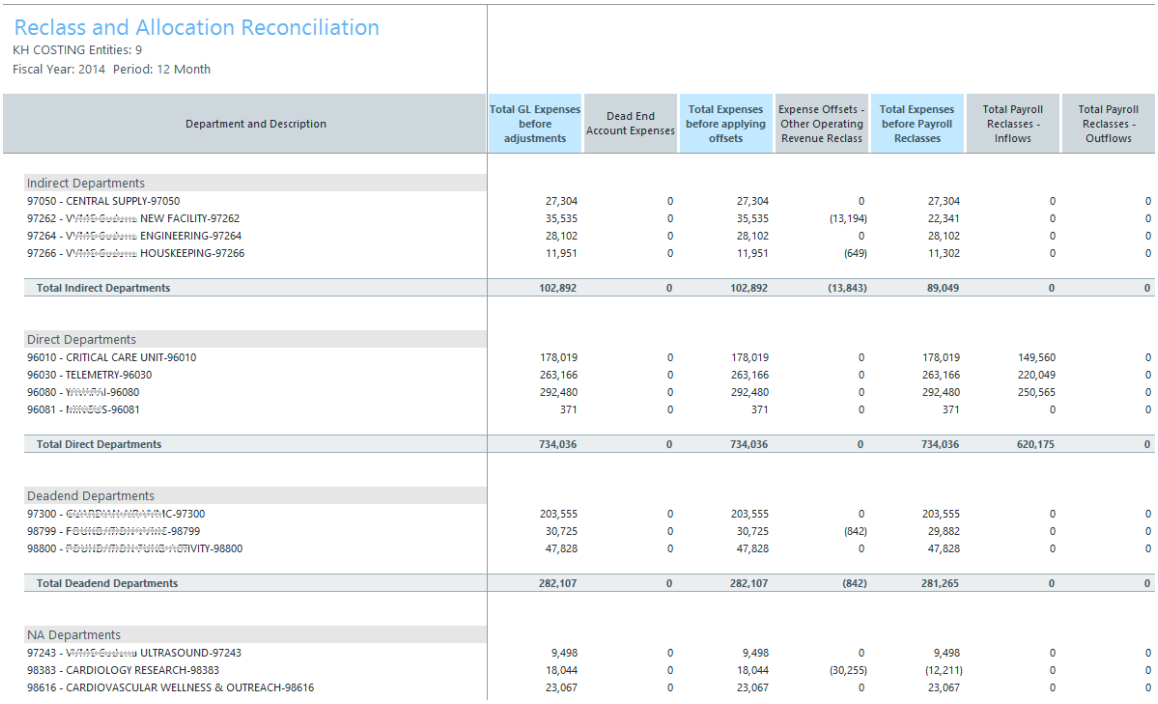
2. In the **Refresh Variables** dialog, select the following variables in which to filter the report, and click **OK**:

Variable	Steps
Select Timeframe	Select the timeframe to include in the report. **NOTE:** The timeframe can be your costing period or another period to research issues.
Select Ending Calendar Year and Month	Select the ending year and month to include in the report.
Select Entity (optional)	Select the entity to include.

The major points of reconciliation include the following:

- In the rows, the departments are grouped by their Type definition on the DEPT table: direct, indirect, dead-end, and NA.

- The columns reflect the type of allocation or reclass operation that was done, with the result reflected afterward so that the changes in expenses can be tracked through each operation for each department.
- Double-click on any department row to display the drill report for that department, showing the details of each inflow and outflow by reclass and allocation rule.



Reclass and Allocation Reconciliation
KH COSTING Entities: 9
Fiscal Year: 2014 Period: 12 Month

Department and Description	Total GL Expenses before adjustments	Dead End Account Expenses	Total Expenses before applying offsets	Expense Offsets - Other Operating Revenue Reclass	Total Expenses before Payroll Reclasses	Total Payroll Reclasses - Inflows	Total Payroll Reclasses - Outflows
Indirect Departments							
97050 - CENTRAL SUPPLY-97050	27,304	0	27,304	0	27,304	0	0
97262 - VMD Guests NEW FACILITY-97262	35,535	0	35,535	(13,194)	22,341	0	0
97264 - VMD Guests ENGINEERING-97264	28,102	0	28,102	0	28,102	0	0
97266 - VMD Guests HOUSKEEPING-97266	11,951	0	11,951	(649)	11,302	0	0
Total Indirect Departments	**102,892**	**0**	**102,892**	**(13,843)**	**89,049**	**0**	**0**
Direct Departments							
96010 - CRITICAL CARE UNIT-96010	178,019	0	178,019	0	178,019	149,560	0
96030 - TELEMETRY-96030	263,166	0	263,166	0	263,166	220,049	0
96080 - [illegible]-96080	292,480	0	292,480	0	292,480	250,565	0
96081 - [illegible]S-96081	371	0	371	0	371	0	0
Total Direct Departments	**734,036**	**0**	**734,036**	**0**	**734,036**	**620,175**	**0**
Deadend Departments							
97300 - [illegible]IC-97300	203,555	0	203,555	0	203,555	0	0
98799 - [illegible]-98799	30,725	0	30,725	(842)	29,882	0	0
98800 - [illegible]IVITY-98800	47,828	0	47,828	0	47,828	0	0
Total Deadend Departments	**282,107**	**0**	**282,107**	**(842)**	**281,265**	**0**	**0**
NA Departments							
97243 - VMD Guests ULTRASOUND-97243	9,498	0	9,498	0	9,498	0	0
98383 - CARDIOLOGY RESEARCH-98383	18,044	0	18,044	(30,255)	(12,211)	0	0
98616 - CARDIOVASCULAR WELLNESS & OUTREACH-98616	23,067	0	23,067	0	23,067	0	0

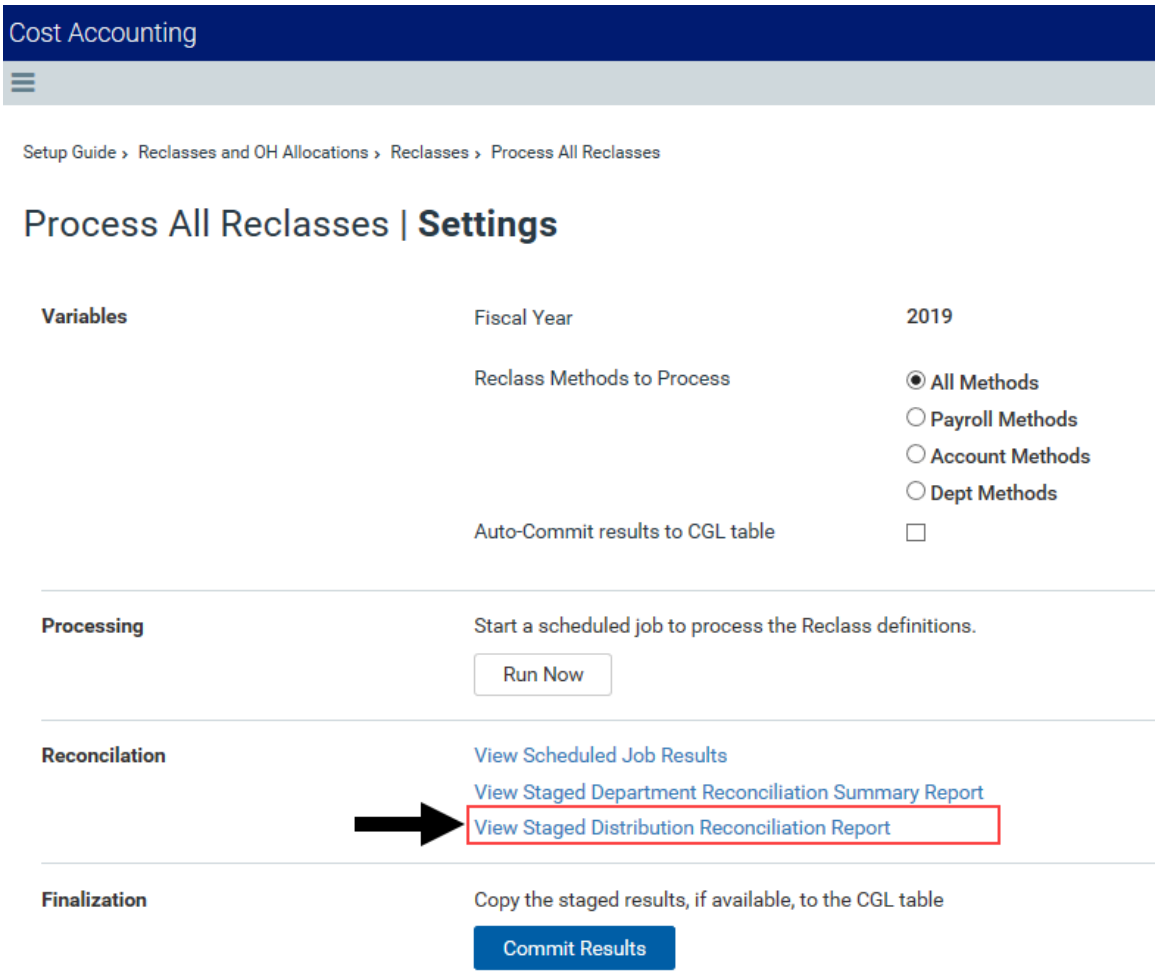
Running the Reclass and Allocation Distribution Reconciliation report

Run this report to find variances after you process allocation and/or reclass definitions or if there are changes to your GL structure.

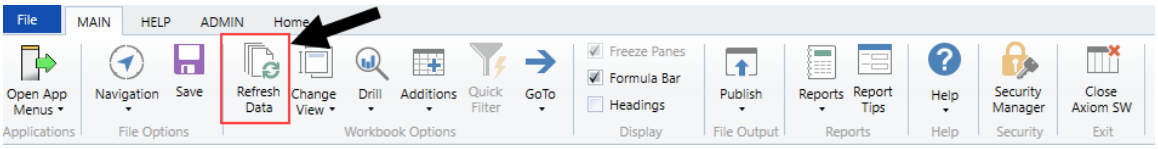
To run the Reclass and Allocation Department Summary report:

1. In the Guide View, click **Reclasses and OH Allocations > Reclasses > Process All Reclasses**. A link to the report is located in the **Reconciliation** section of the page.

> **NOTE:** At this time, the report opens in the Windows or Excel Client edition of Axiom Cost Accounting.



2. Refresh the report by clicking **Refresh Data** in the Main ribbon tab.



3. In the **Refresh Variables** dialog, do one of the following, and click **OK**:
   - To include only one reclass type, select one from the drop-down.
   - To include all of the reclass types, leave the field blank.

7

Working with Cost Item Processing

This section includes topics related to processing cost items.

Understanding calculating and assigning cost items

The calculation of unit costs consists of two general categories:

- Direct assignment or calculation of costs based on detailed charge or cost data.
- The allocation of costs based on a spread methodology using a statistic or other basis.

Unit cost calculations need to be processed in a specific order, with direct assignment methods processed prior to the allocation type of methods. Additionally, the relative cost unit method needs to be processed last, as it relies on the results from other methods to calculate the costs.

Direct Assignment calculation

The following table describes the Direct Assignment methodologies supported for unit cost calculation:

Method	Description
Transaction Microcost	Sometimes referred to as Acquisition or Direct Costing. Transaction Microcost simply means that you can use the cost information that is often available in a patient care system directly in the costing process. You need to extract the data from the source system, which may include a surgical or operating room system, pharmacy system, and so on.
Microcost	Sometimes referred to as Standard Costing. Microcost simply means that you can associate a known cost value directly with the cost item. A Microcost table stores and assigns the cost to the encounter cost-detail level when processing this method. The Microcost method is often used for supply items or other directly contracted service, such as a reference lab fee for a send-out test.
Reverse Markup	A useful method to use to estimate the cost of an item when a chargeable item's price is generated based on a markup table and when the specific cost may not be known using a Microcost method. This method is only available for chargeable items with the actual per-unit charge available in the Cost Detail transaction data.

Important: The Direct Assignment methods listed above can produce results that do not align with your GL dollars. If there are no remaining cost items to allocate costs to in the cost category that you have assigned costs to, then a variance to the GL occurs. There are three ways to handle a variance:

1. Use an allocation method to spread a variance to any remaining cost items for the department for the cost pools.
2. Use a reclass to move any remaining dollars in the department in the cost pool to a new cost pool, and spread them to a selection of cost items in the department.
3. Ignore the variance and leave it as a variance.

Spread calculation

The following table describes the Spread methodologies supported for unit cost calculation:

Method	Description
Relative Value Units (RVU)	An allocation method that depends on a unit of relative value to determine the items that should receive more cost than others.
Provider RVU	An allocation method that uses a relative value unit (RVU) but enables you to allocate provider expenses (generally salaries) directly to his or her patients. This is a process that requires general ledger costs so that accounts are associated with individual providers.
Ratio of Cost to Charges (RCC) Allocations	Widely used to allocate costs according to the price or charge for the item.
Relative Cost Unit (RCU) Allocations	A Kaufman Hall term used to denote the Axiom Cost Accounting ability to map previously calculated cost values as a means of spreading costs without the need to define and load them as an RVU.

IMPORTANT: When using more than one method per cost center or department per cost category, it is important to process these methods in the order indicated above. This ensures that the allocation methods are used last after more specific methods have been processed. More than one method per department is made possible by using an offset methodology within each method. An offset methodology refers to the creation of pseudo-accounts in the CGL that captures the results of a calculation, and then provides the remaining dollars to be processed by a subsequent costing process.

Using the Direct to Encounter method

You can allocate departments that do not generate patient revenue but incur expenses in response to patient activity using Direct to Encounter (D2E).

D2E allows you to spread costs that were historically allocated as indirect overhead to specific encounters that utilize the services of that particular department or area. Examples of indirect costs include Patient Access, Business Office, Radiology Administration, Medical Records, Case Management, and Insurance Pre-Certification departments. D2E spreads these costs as a direct cost rather than an indirect cost to those selected encounters.

About pseudo cost items and Direct to Encounter

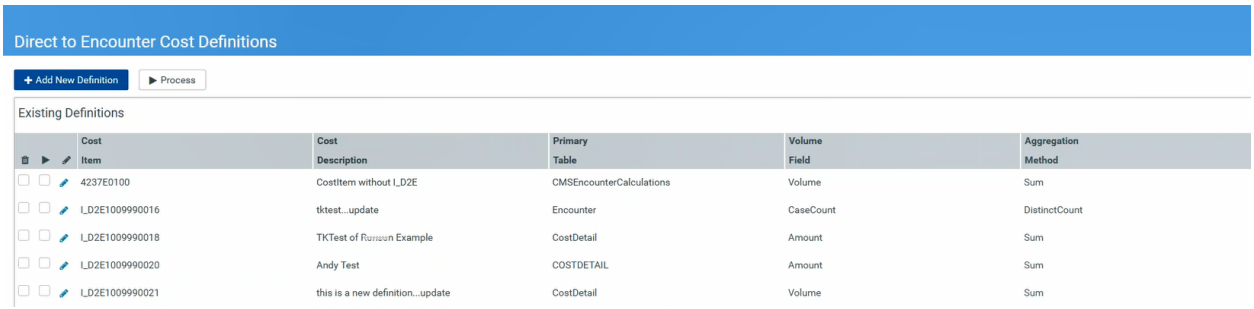
The system generates and assigns a pseudo cost item to the departments and encounters that have been identified as D2E departments, along with encounters receiving services from these departments. This pseudo cost item allows for the allocation of the expenses to those encounters having services in these D2E departments. The encounters that ultimately receive this allocated cost are identified by a statistic that dictates the allocation. For example, the Patient Access department may be an inpatient-only service that touches every inpatient equally. The statistic in this example is a 1 for every inpatient; the resulting allocation simply takes any inpatient and gives them an equal cost of the Patient Access department.

TIP: It may not make sense to spread costs equally to encounters for some departments, so it is important to review each department separately to determine the best method to gather the set of encounters that will receive the costs. For example, Medical Records requires more effort for inpatients, emergency room visits, and observation cases than it does for labs and outpatients. The total charges may be an appropriate measure to allocate Medical Records net expenses to all cases since any registered patient has contact with this department. More effort may be placed, however, in transcribing for inpatients, emergency room cases, and observation cases, which results in more cost to cases with higher total charges.

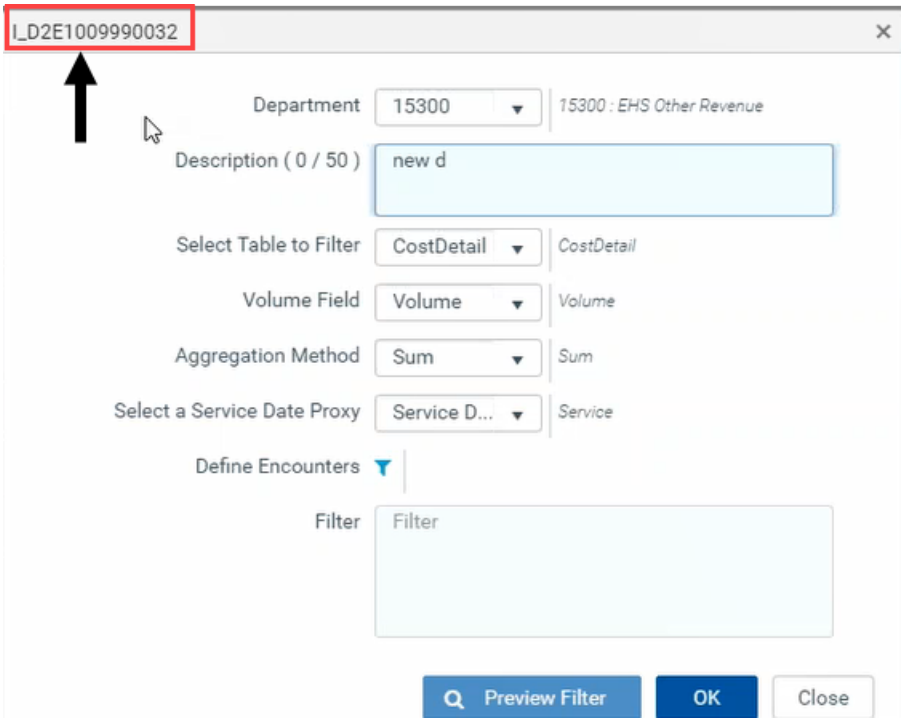
Creating or modifying Direct to Encounter definitions

Direct to Encounter (D2E) is a one-time configuration during the cost design and set up process. If a department changes or closes, however, you need to review the Direct to Encounter definition for that department.

The Direct to Encounter Cost Definitions utility displays a list of all the existing D2E definitions, including the cost item number, cost description, the primary table the definition goes against, volume, and aggregation method.

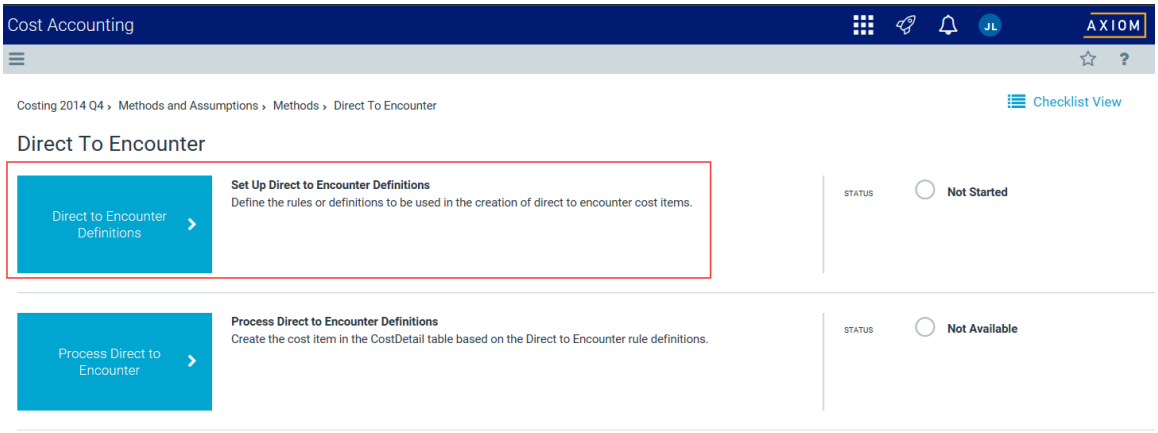


When you create a definition, the system automatically increments the cost item number.



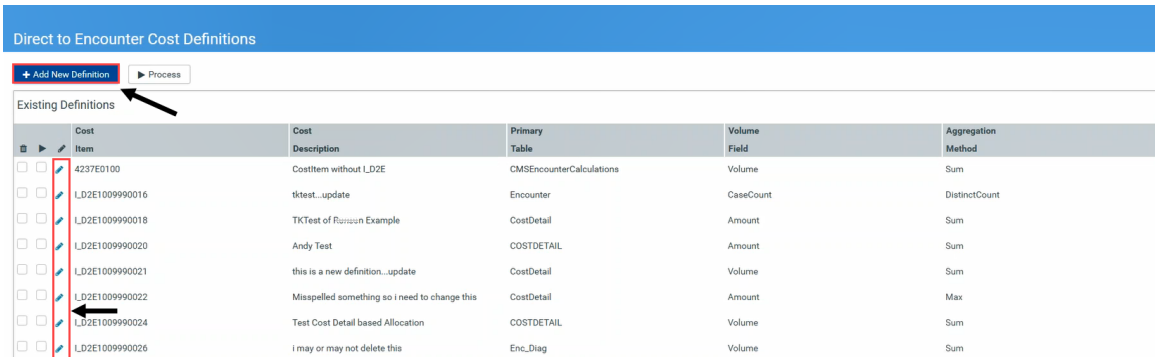
To create or modify Direct to Encounter definitions:

1. In the Guide View, click **Methods and Assumptions > Methods > Direct To Encounter > Direct To Encounter Definitions**.



NOTE: The utility opens in a separate browser window.

2. Do one of the following:
   - To create a definition, click **+ Add New Definition**.
   - To modify a definition, click the pencil icon next to the cost item number.



3. Use the following table to complete the fields in the dialog:

Field	Steps
Department	Select the department to associate the definition.
Description	Type a description for the cost item. When you begin using D2E, we recommend that you include D2E in the description so that you can visually recognize the cost item in reporting. For example: D2E – 12345 Medical Records
Select Table to Filter	Select the table that best suits the allocation (Cost Detail or Encounter). **NOTE:** The table you choose impacts the choices in the remaining drop-downs in the dialog. For example, if you select Cost Detail, you need to select the correct selection from the Volume Field drop-down and the Cost Detail Date Proxy drop-down. The dialog will prompt you to make the correct selections.

Field	Steps
Volume Field	Select the best fit for the allocation. The volume field allows you to select a numerical field on which to generate the "volume" for each patient's D2E Cost Item. This volume will determine what proportion of cost from the pool each patient receives, so take care that you select a volume proxy that is meaningful for the distribution of the costs in the department. Example 1: The volume for allocating the costs of the patient registration department to patients may use a simple case count on the Encounter table for the volume, each patient getting an equal registration share. Example 2: The volume for allocating the costs of a piece of equipment from the IT department that is used over the period of a patient stay may use the length of stay as the volume. You will notice that there are more selections when using the ENCOUNTER table. This is because there are more useful numeric value fields in the ENCOUNTER table. The CHARGE DETAIL table only has two meaningful volume fields.
Aggregation Method	Select one of the following: • To allocate costs based on an average calculation of the volume method, select **Average**. • To allocate costs based on a count of the volume method, select **Count**. • To allocate costs based on a one time count of the volume method, select **Distinct Count**. • To allocate costs based on the maximum value in the volume method, select **Maximum**. • To allocate costs based on the minimum value in the volume method, select **Minimum**. • To allocate costs based on the sum of the volume in the volume method, select **Sum**.

Field	Steps
Select Service Date Proxy	Because you are creating service dates that do not actually exist, you need to select a date field to copy to generate meaningful service dates to match the actual periods of stay for the patients and to align with the period of costs you are wanting to allocate to those patients. Do one of the following: • For the Encounter table filter, for the date range of data to be utilized to allocate the expenses to the encounter level, select **Admit Date** or **Discharge Date**. • For the CostDetail table filter, for the date range of data to be utilized to allocate the expenses to the encounter level, select **Post Date** or **Service Date**.
Define Encounters	Create or select an existing filter using the Filter Wizard to capture all of the patients to whom you wish to assign costs.

4. To preview your changes, click **Preview Filter**.

   NOTE: When you close the preview, the system automatically saves your changes and returns you to the definition table. To continue making edits to the definition you previewed, select the pencil icon next to the definition name. The preview filter is not meant to use to review data; it is simply used to help ensure you have captured the correct type of data in the table.

5. After making your changes, click **OK**.

   NOTE: The OK button displays only if you did not preview the definition, and you want to save your changes.

6. When you are ready, process the definitions.

For example, when allocating Surgery Scheduling to specific encounters utilizing the D2E function, the basis is by patient count only for those cases who have a charge in the Surgery Department:

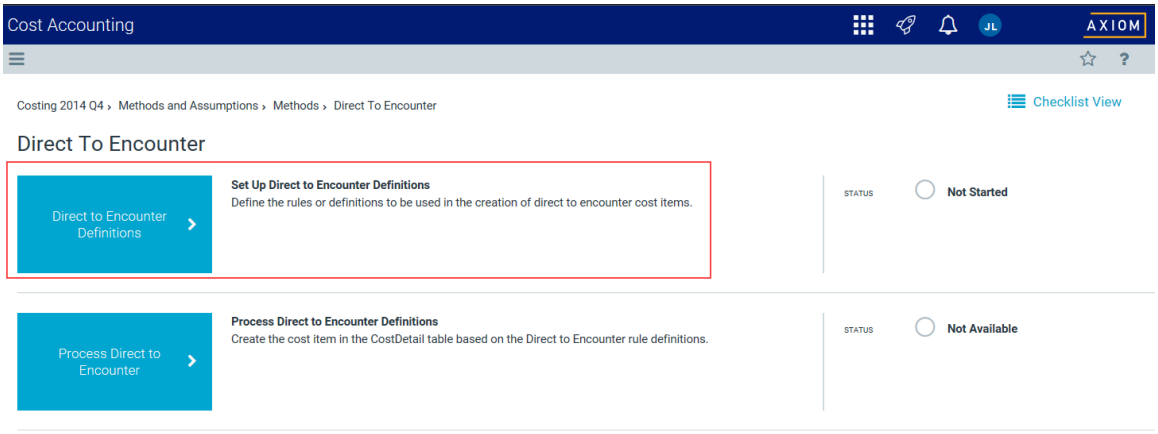
- Department to be allocated is Surgery Scheduling.
- Create a cost item for Surgery Scheduling – D2E – 12345 Surgery Scheduling.
- Select Surgery Scheduling from the Department drop-down list.

- Select the table to filter. Since we are going to use patient count for selected departments, we filter on the COSTDETAIL table.
- The volume field will be encounter because we are counting encounters.
- The Aggregation Method is DistinctCount because the encounter should be counted only one time. An encounter may have several charges in this department, so be sure to count the case only one time.
- Base the selection of encounters on Service Date.
    - The filter is the cost center(s) for surgery. This selects only those cases that have at least one charge in the surgery department(s).

Deleting Direct to Encounter definitions

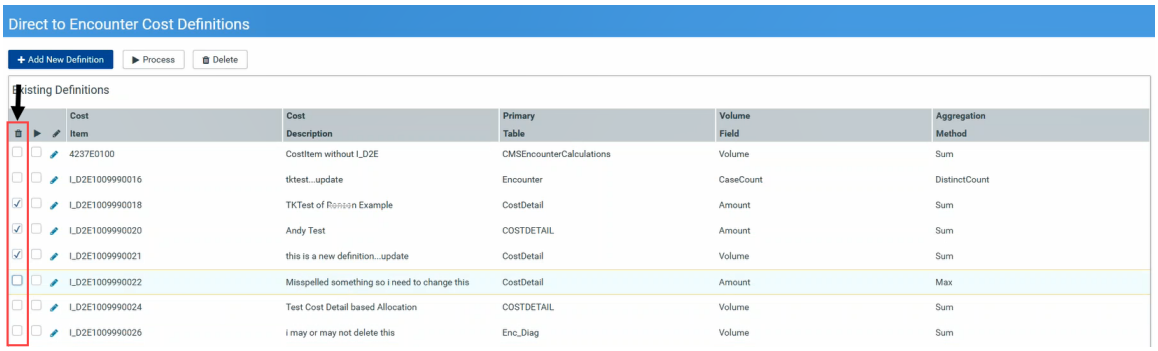
To delete a Direct to Encounter definition:

1. In the Guide View, click **Methods and Assumptions > Methods > Direct To Encounter > Direct To Encounter Definitions**.



NOTE: The utility opens in a separate browser window.

2. In the Delete column, select the check box for each definition to delete.



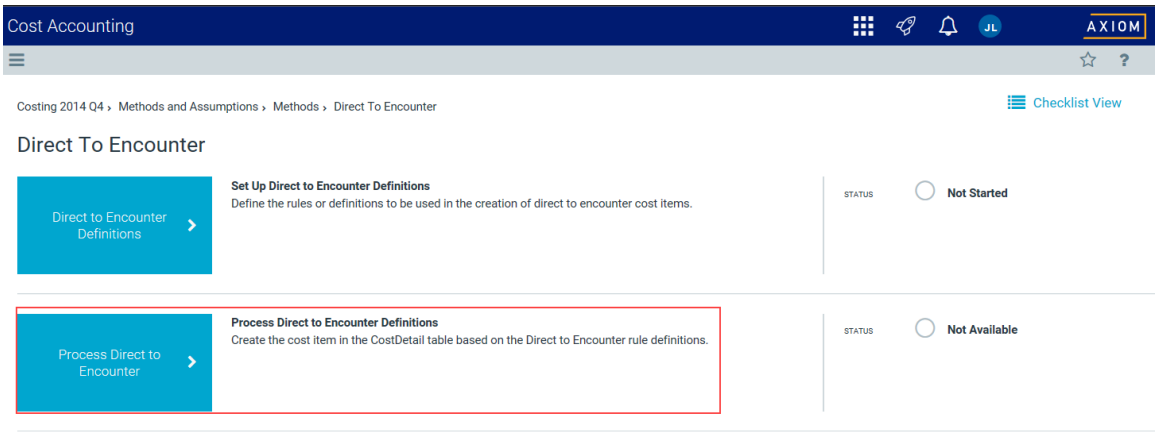
3. Click **Delete**.

4. When you are ready, process the definitions.

Processing Direct to Encounter definitions

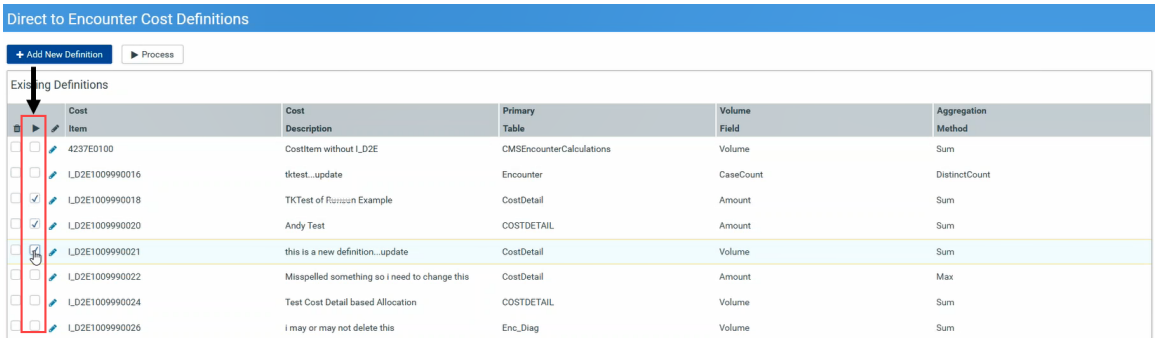
To process Direct to Encounter definitions:

1. In the Guide View, click **Methods and Assumptions > Methods > Direct To Encounter > Direct To Encounter Definitions**.



NOTE: The utility opens in a separate browser window.

2. In the **Process** column, click the check box next to each definition to process.



3. Click **Process**.
4. In the **Process Settings** dialog, complete the following:
    a. From the **Start YRMO** drop-down, select the start year and month of the encounters.
    b. From the **End YRMO** drop-down, select the end year and month of the encounters.
    c. To process all of the definitions, select the **Process all Definitions** check box.

NOTE: Even though you may have only selected specific definitions from the list, this check box gives you the option to process all of the existing definitions instead of the ones you selected. To continue only processing those definitions you selected. Leave this check box blank, and click **Start**.

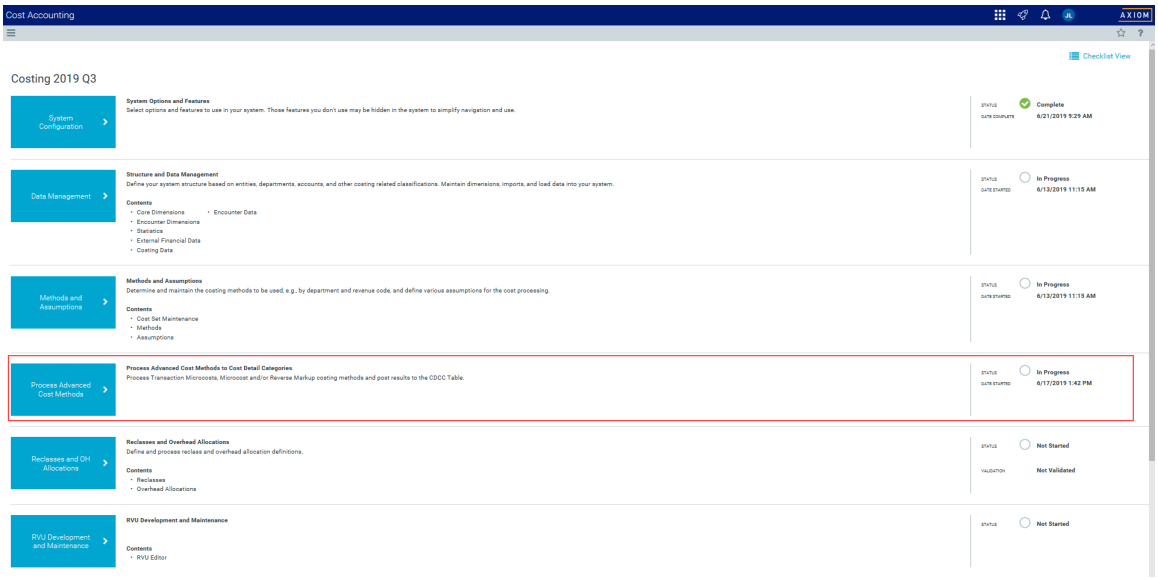
d. Click **Start**.

Processing advanced Cost Methods

This page allows you to process advanced cost methods, such as Transaction Microcosts, Microcost, and/or Reverse Markup costing methods and post the results to the CDCC table.

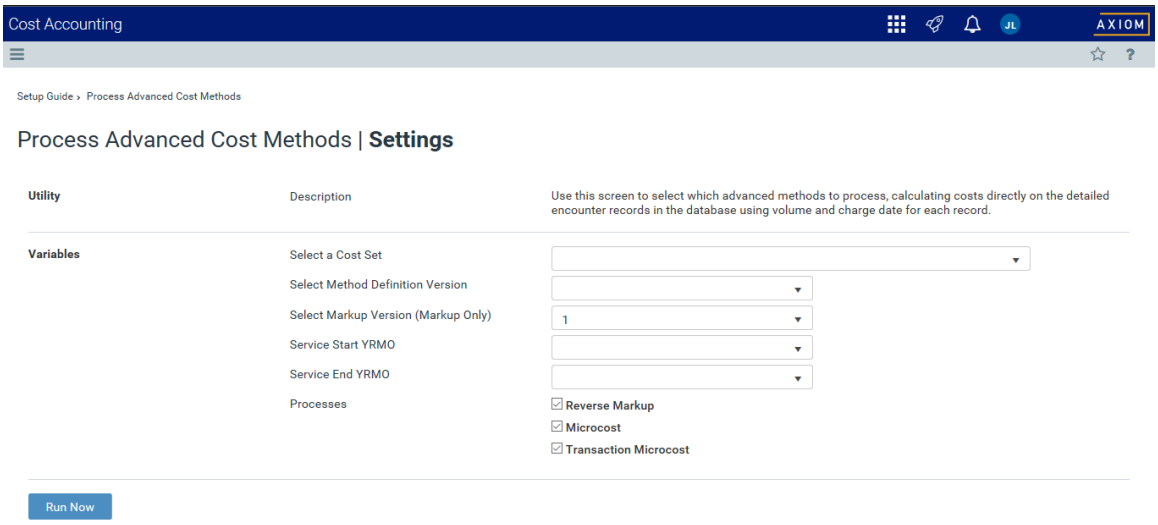
To process advanced cost methods:

1. In the Guide View, click **Process Advanced Cost Methods**.



Click image to view full size

2. From the **Select a Cost Set** drop-down, select a cost set.



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3. From the **Select a Method Definition Version** drop-down, select a method definition version to process.
4. From the **Select Markup Version (Markup Only)** drop-down, select a markup version to process.
5. From the **Service Start YRMO** drop-down, select the YRMO start date.
6. From the **Service End YRMO** drop-down, select the YRMO end date.
7. In the **Processes** area, select the processes to run.
8. Click **Run Now**.
9. In the Information dialog, click **OK**.

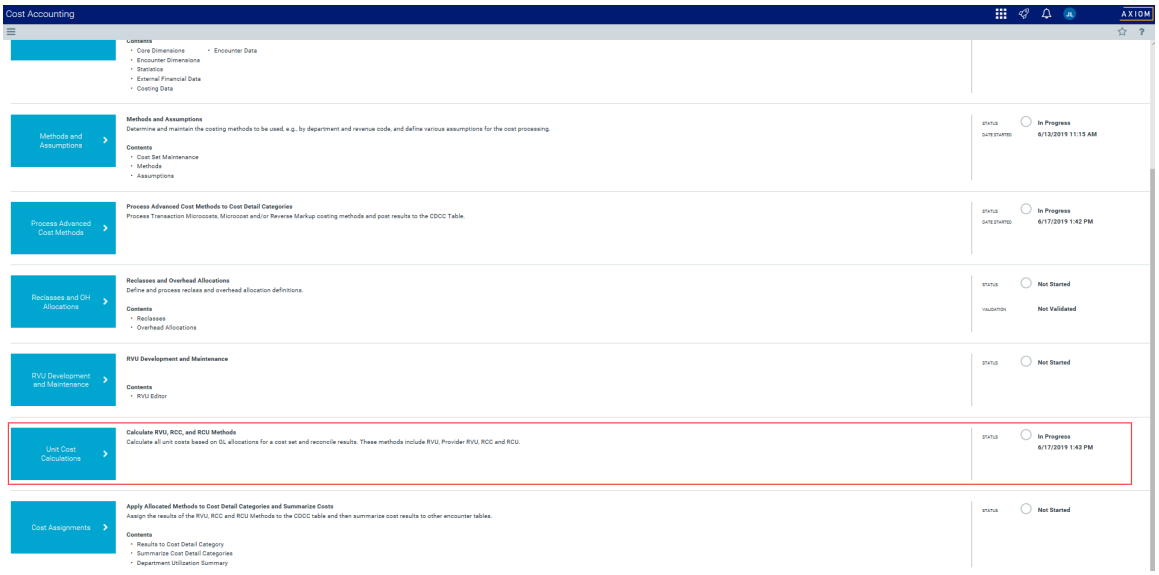
To view the status of the processes, see Viewing scheduled job results.

Calculating unit costs by method

The system uses the method assigned to each cost item for each cost pool to determine which cost calculations to perform to obtain the total cost per cost item. The Unit Cost Calculations page allows you to calculate all unit costs based on GL allocations for a cost set and reconcile the results.

To calculate unit costs:

1. In the Guide View, click **Unit Cost Calculations**.



2. From the **Select a Cost Set** drop-down, select a cost set to calculate.
3. In the **Select Cost Methods** section, select one or more cost methods to use to calculate the cost items.

   NOTE: If the method you want to use does not display, you need to go to the System Configuration page to select the method.

4. Click **Run Now**.

Assigning unit costs to cost items

This section focuses on moving or assigning calculated costing results from the Cost Results table to cost detail and encounter-based records.

After calculating unit costs, you run the following processes to place the unit cost values into tables for reporting used for reconciliation purposes:

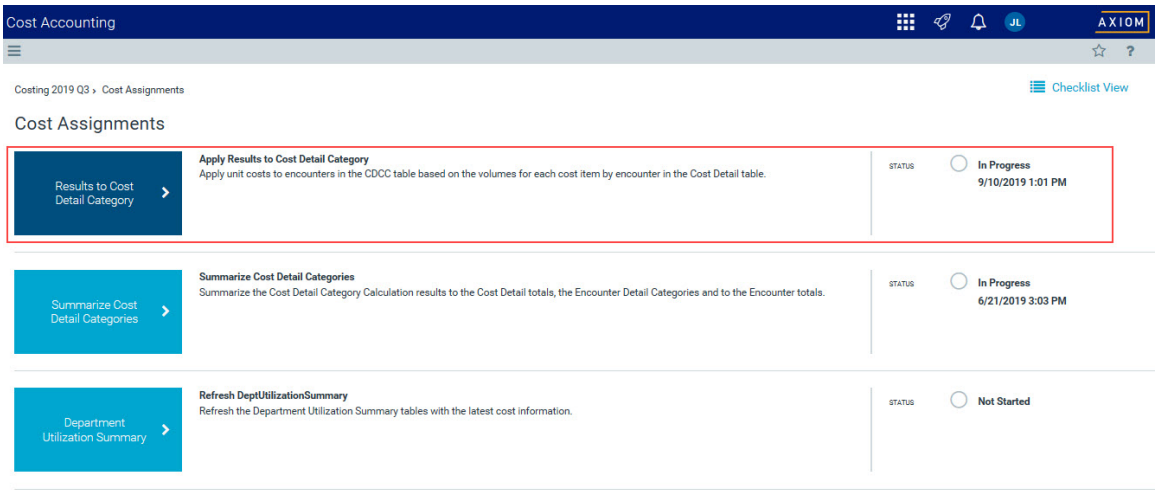
1. Apply results to the Cost Detail Category Calculation table
2. Summarize the Cost Detail Category Calculation results
3. Refresh the Department Utilization Summary tables

Applying results to the Cost Detail Category Calculation table

Assigning Cost Item unit level results at the Cost Category level to CostDetail table includes a step to the CostDetailCategoryCalculation, which is at the encounter and transaction level, using a Compound Key of EncounterSeq and TransactionID.

To apply results to the Cost Detail Category Calculation table:

1. In the Guide View, click **Cost Assignments > Results to Cost Detail Category**.



2. In the **Variables** section, the default options are already set by default based on your active cost set. In most cases, you do not need to change these options.

   NOTE: The YRMO dates are constrained to the cost set selected in the **Select Cost Set** drop-down.

3. Click **Run Now**.

To view the status of the processes, see Viewing scheduled job results.

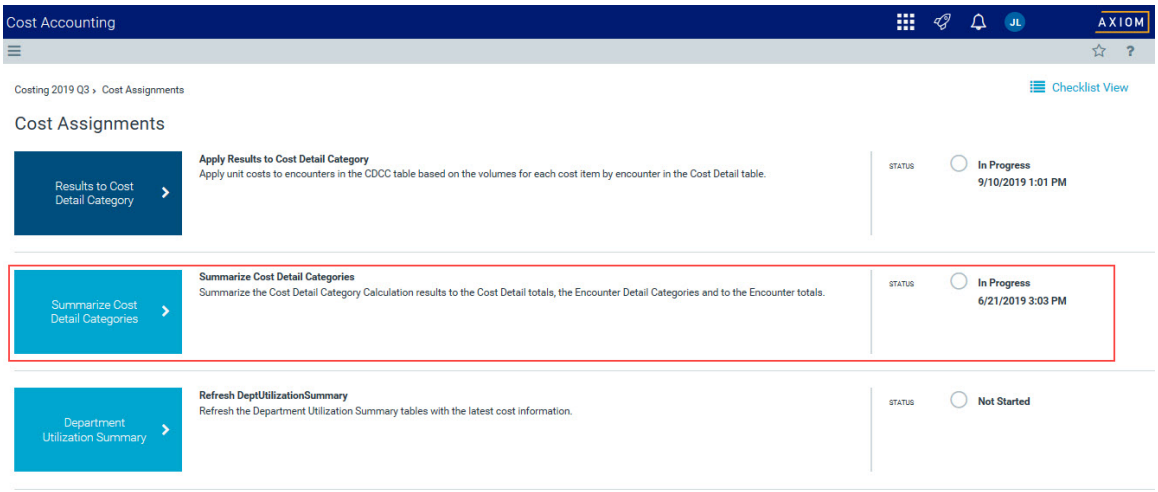
Summarizing the Cost Detail Category Calculation results

Use this job to run the following tasks:

- **Sums cost detail category to cost detail totals** - The Cost Detail Category Cost information is summarized to the CostDetail table, which does not store cost-category level costs. The CostDetail table cost information is limited to calculated fields (e.g., subtotals for Direct and Indirect as well as totals).
- **Sums cost detail totals to encounters** - The encounter detail cost category results are summarized to the Encounter, which does not store cost category-level costs. The encounter cost information is limited to the calculated subtotal and total costs, such as Fixed Direct, Variable Direct, Total Direct, and so on.
- **Sums cost detail category to encounter detail** - The Cost Category/Cost Item transaction-level results from Applying results to the Cost Detail Category Calculation table are summarized to a second table in this process, EncounterDetailCategoryCalculation. This table stores category level cost information at the encounter level.

To summarize the Cost Detail Category Calculation results:

1. In the Guide View, click **Cost Assignments > Summarize Cost Detail Categories**.



2. In the **Variables** section, the default options are already set by default based on your active cost set. In most cases, you do not need to change these options.

   NOTE: The YRMO dates are constrained to the cost set selected in the **Select Cost Set** drop-down.

3. Click **Run Now**.

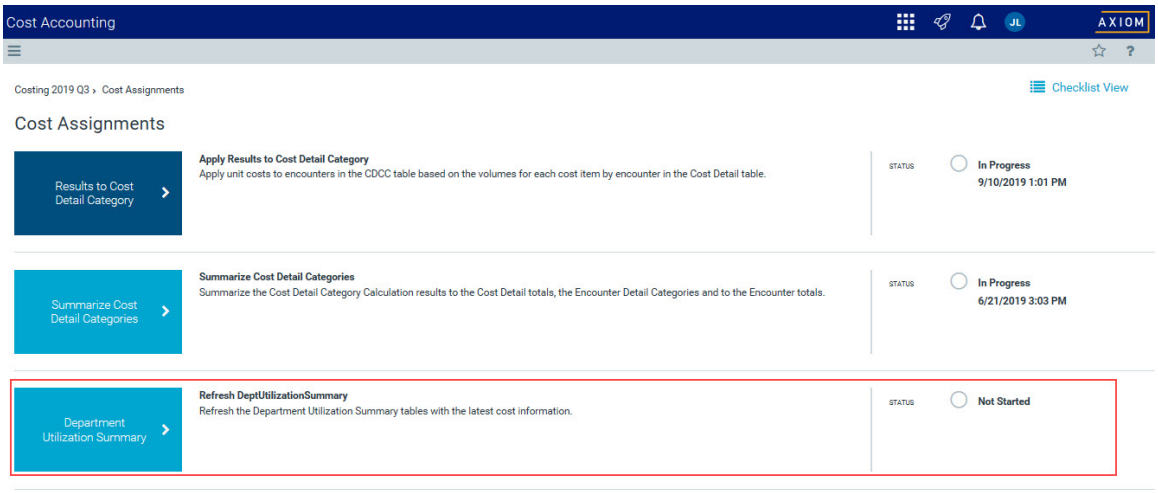
To view the status of the processes, see Viewing scheduled job results.

Refreshing the Department Utilization Summary table

The Department Utilization Summary table is simply a pivot table version of the CDCC to provide easier reporting.

To apply results to the Cost Detail Category Calculation table:

1. In the Guide View, click **Cost Assignments > Department Utilization Summary**.



2. In the **Variables** section, the default options are already set by default based on your active cost set. In most cases, you do not need to change these options.

   NOTE: The YRMO dates are constrained to the cost set selected in the **Select Cost Set** drop-down.

3. Click **Run Now**.

To view the status of the processes, see Viewing scheduled job results.

8

System Administration

This chapter addresses system management features and instructions.

Process Management

Using the Process Management feature, you can define a set of process steps—including assigning ownership and due dates—and then track the completion of these steps. For example, you could manage and track an annual rollover process, monthly data updates, or any specialized process such as cash flow forecasting for financial institutions.

Process management provides the following benefits:

- A documented workflow to complete a particular process in Axiom Cost Accounting. All necessary steps can be detailed in the process, including steps that happen outside of Axiom Cost Accounting (for example, preparing a source file for use in an import). Steps can be dependent on prior steps, or they can be performed in parallel as appropriate.
- Clear ownership of each process step, including due dates. Users who are assigned a step will be notified of this responsibility, and can view and complete the step within their Process task pane.
- Easy access to features necessary to complete process steps. Each step can be associated with certain features in Axiom Cost Accounting, so that the user responsible for the step can often launch the necessary feature directly from the Process task pane and perform the assigned task.
- A permanent audit trail for the process, including who completed a step and when. The process status details can be viewed while the process is active, and also after the process is complete, so that there is always a record of the process.

NOTE: In order to manage plan files in a planning process, you must use a special version of process management known as a *plan file process*. These processes are defined at the file group level using a *plan file process definition*. Plan file processes are dedicated to editing and reviewing plan files according to a defined set of steps, owners, and due dates. Because plan file processes support different step types and different features, they are not discussed in this section. This section only discusses general process definitions.

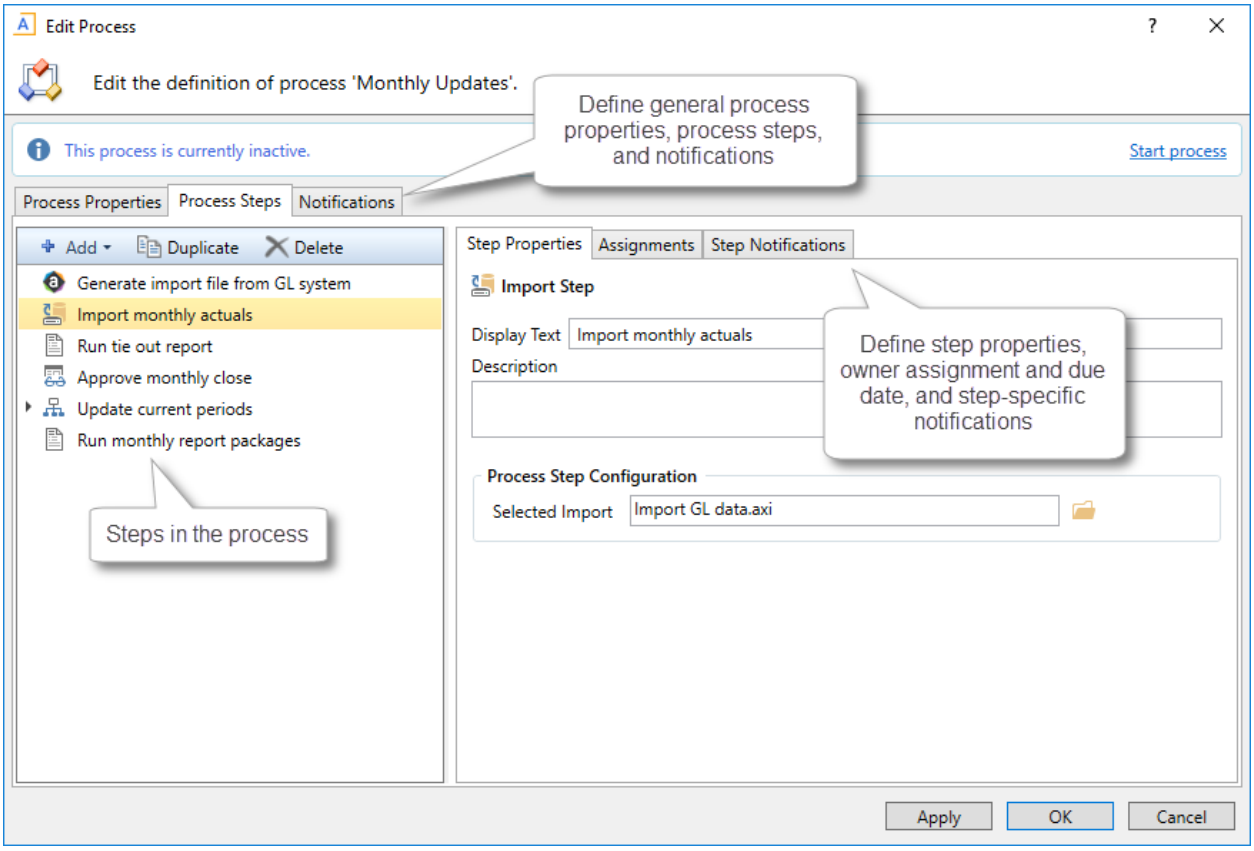
About process management

Process management can be used to manage and track an Axiom-related process from end to end—encompassing all aspects of the process, including steps that may need to be completed outside of the system.

Defining processes

In order to use process management, you first create a process definition. This file defines the properties of the process, such as:

- Name and description (for example "Annual Rollover")
- Process owner
- Steps in the process
- Owners and due dates for each step
- Associated files and features for each step
- Notifications to be sent during the process



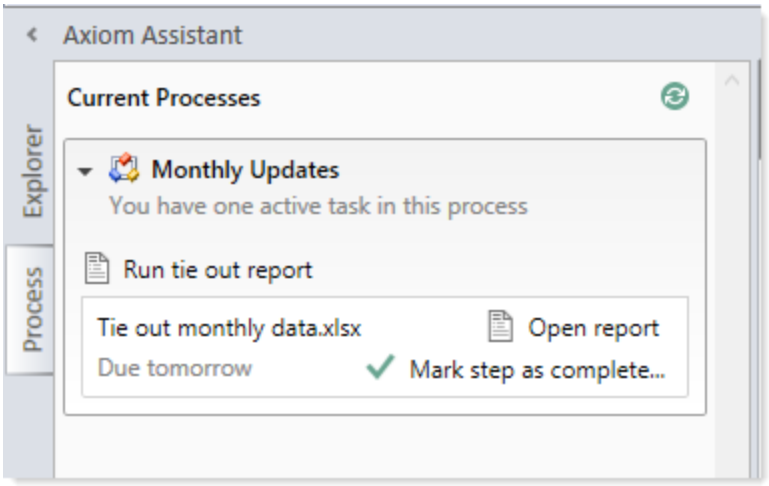
Example process definition

The process definition is a file that is stored in the Process Definition Library (or for processes that belong to a file group, within the file group's Process Definitions folder). The process definition can be subsequently edited and "activated" as needed, whenever you need to perform and track the process. When a process is activated, a new incarnation of the process is created to track the details of that particular process instance. This ensures that you always have a history of each time the process is performed, including who completed each step in the process and when.

Performing a process

When you are ready to perform a process, you "activate" or start it. The first step in the process is made active, and a notification is sent to the assigned step owner (or owners). This default notification gives the user information such as the process name, the step name and description, and the due date. You can optionally customize the notifications for a process, and you can disable them if desired.

When a process is active, the process owner and all administrators can see the process in the Process task pane. Other users only see the process if they are the assigned owner of a step in the process.



Example process task pane for a step owner (non-admin)

The assigned user must perform the task and then mark the step as complete by the designated due date. For more information, see Step ownership and completing process tasks. If necessary, an administrator or the process owner can override step ownership and complete the step.

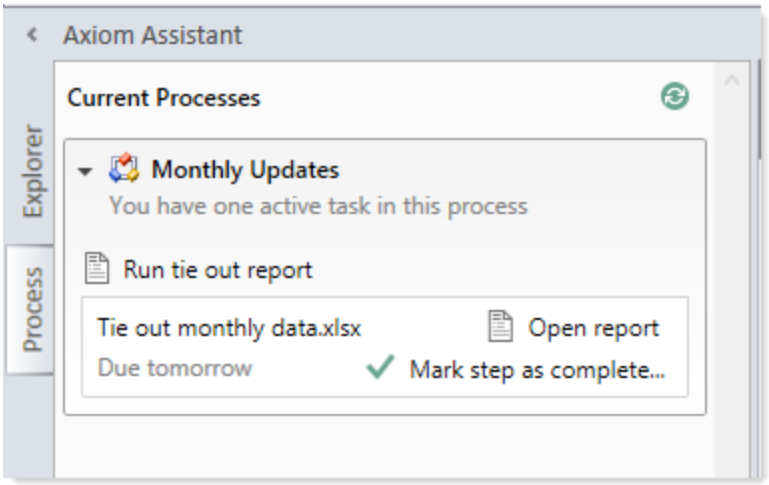
Once the currently active step is complete, the process moves to the next step, and so on until all steps are complete. Generally speaking, only one step at a time is active in a process. However, there can be multiple active steps at the same time if a Parallel Subprocess step is used in the process. When the active step is a parallel subprocess, all sub-steps of the subprocess become active simultaneously and can be completed in parallel. The subprocess is not completed until all sub-steps are completed. For more information, see Performing process steps in parallel. The Multiple Approvals Process Step also counts as a parallel subprocess.

When all steps in the process are complete, the process instance is automatically completed.

Step ownership and completing process tasks

Each step in a process represents a task to be performed, and that step has one or more assigned owners. When a step becomes active in a process, a task is generated for the assigned owner. This user is expected to perform the task for that step, and then mark the step as complete by its assigned due date. This is done using the Process task pane.

If a user is the assigned owner of an active step, the process and the active step display in the Process task pane (or in a custom task pane that has been configured to show the process task control).



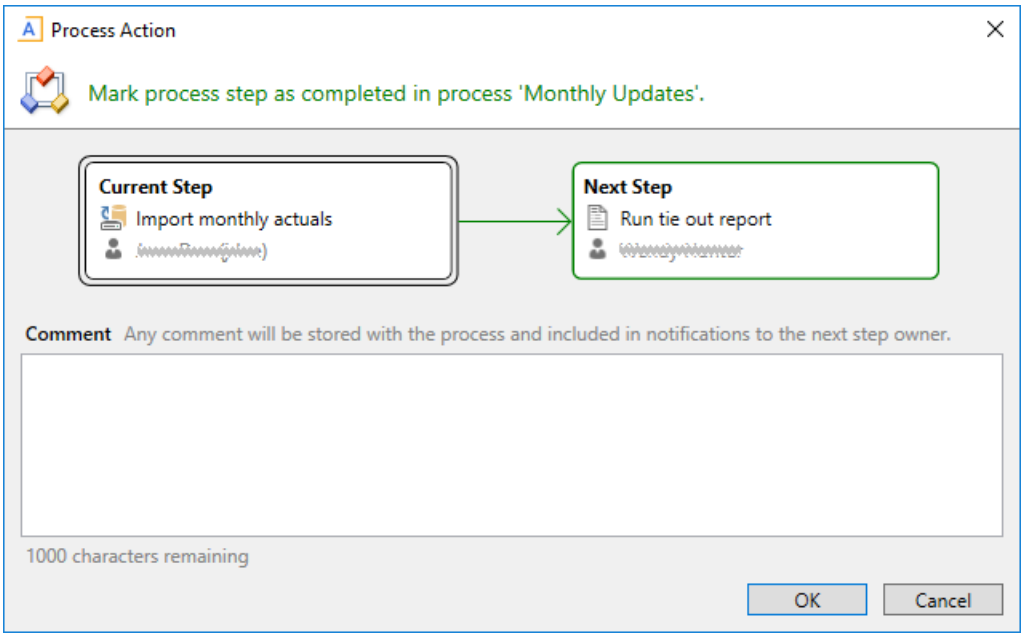
Example active task in task pane

The process task may be an activity that the assigned user performs in Axiom Cost Accounting, such as running an import, or it may be an activity that the user completes externally, such as obtaining the source file for the import from another system and saving it to the designated location. The task may be simply to confirm that the process is ready to continue (an approval step).

The step name and description should be defined so that the assigned user clearly understands what they are expected to do to complete the task. In some cases, the step may have an associated "action", such as the **Open report** button in the example screenshot above. This is provided as a convenience, so that the user can easily access features that are related to the task. However, once the file or feature is open, it is up to the user to decide what to do with that file or feature in order to perform the task. Axiom Cost Accounting does not perform any validation before allowing a step to be completed; it is up to the assigned user to determine that the step is complete.

Once the user has completed the task to their satisfaction, they can mark the step as complete by clicking the button in the task pane. This opens the Process Action dialog, so that the user can confirm that they want to complete the step, as well as enter any step comments.

This dialog displays slightly differently depending on step type. Most steps will display as follows, showing a step progression diagram for context:



NOTE: If the step is part of a Parallel Subprocess, then the step progression diagram is not displayed, because the process does not continue to the next step until all steps in the subprocess are complete. The user is simply informed that they are completing the current step.

Certain step types have slightly different step completion behavior. For example:

- If the step is an Approval Process Step, then the **Mark step as complete** button does not display in the task pane. Instead, the user can click either **Approve** or **Reject**. If they click Approve, the step is completed and the process moves to the next step. If they click Reject, the process is moved back to the prior step.
- If the step is a Scheduler Process Step, then the step displays in the Process task pane for information only, because the step will be processed and completed automatically by Axiom Cost Accounting. However, if the Scheduler job experiences errors, then the user has various options to restart the job or to manually mark the step as complete if the job does not need to be re-run.

In most cases, the current, next, and prior step owners show in the completion dialog. Prior steps and their owners only show when the task can be rejected back to the prior step. However in some cases, it is not possible or feasible to show the step owners. For example, if the next step in the process is a subprocess that may resolve to multiple steps with multiple possible owners, then Axiom Cost Accounting does not attempt to show the next steps or their owners. Instead it displays the name of the subprocess and that there will be "(multiple step owners)".

Once the step is completed, the process no longer displays in the user's Process task pane (unless the user is also the step owner of the next step). If the user has no active tasks in any processes, then the Process task pane will be empty for the remainder of the current session, and will not open the next time the user logs in (unless the user has been assigned a new active task in the meantime). Exceptions are as follows:

- Process owners see the process in their Process task pane as long as the process is active.
- The Process task pane is visible to administrators as long as any process in the system is active.

If necessary, an administrator or the process owner can mark a step as complete. For example, imagine that the assigned user already performed the necessary task but then left on vacation before they marked the step as complete. The administrator can mark the step as complete so that the process can continue. In this case the process history will reflect both the original assigned owner, and the fact that the administrator completed the step.

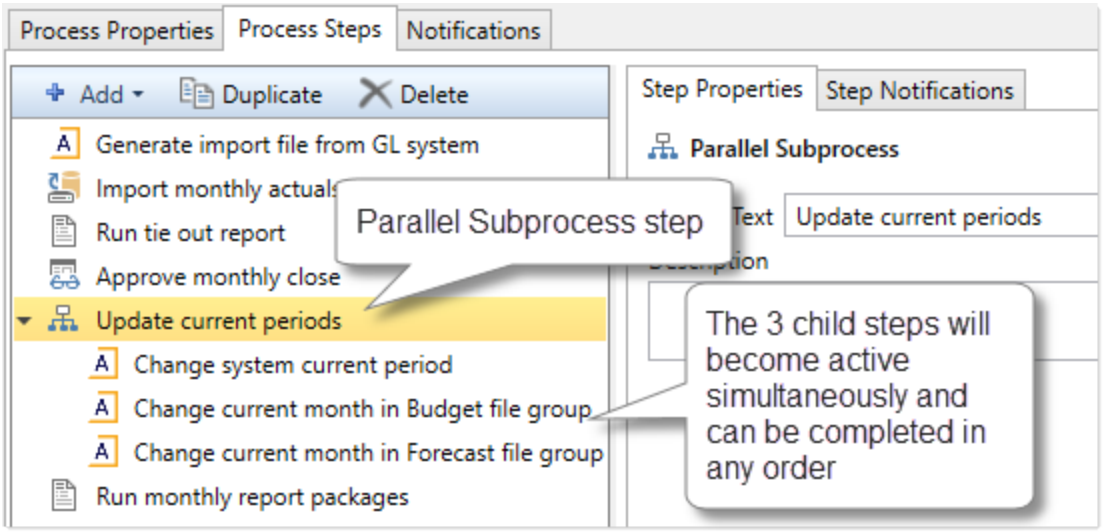
Performing process steps in parallel

In general, the order of steps in your process definition determines the order in which tasks for the process can be completed.

When the process is started, the individual steps are made active in the order they are listed. By default, each step is dependent on the prior step being completed (sequential steps). So if step 1 is the currently active step, step 2 is not made active and cannot be completed until step 1 is marked as complete. Once step 1 is completed, step 2 becomes active, and so on.

However, you may have some steps in your process that are not dependent on each other and can be completed in any order. These steps are known as parallel steps, meaning they can all be active at the same time.

To configure parallel steps, you must use a **Parallel Subprocess** step, and then define the parallel steps as sub-steps of the subprocess. This tells Axiom Cost Accounting that the sub-steps of the subprocess can be completed in any order.



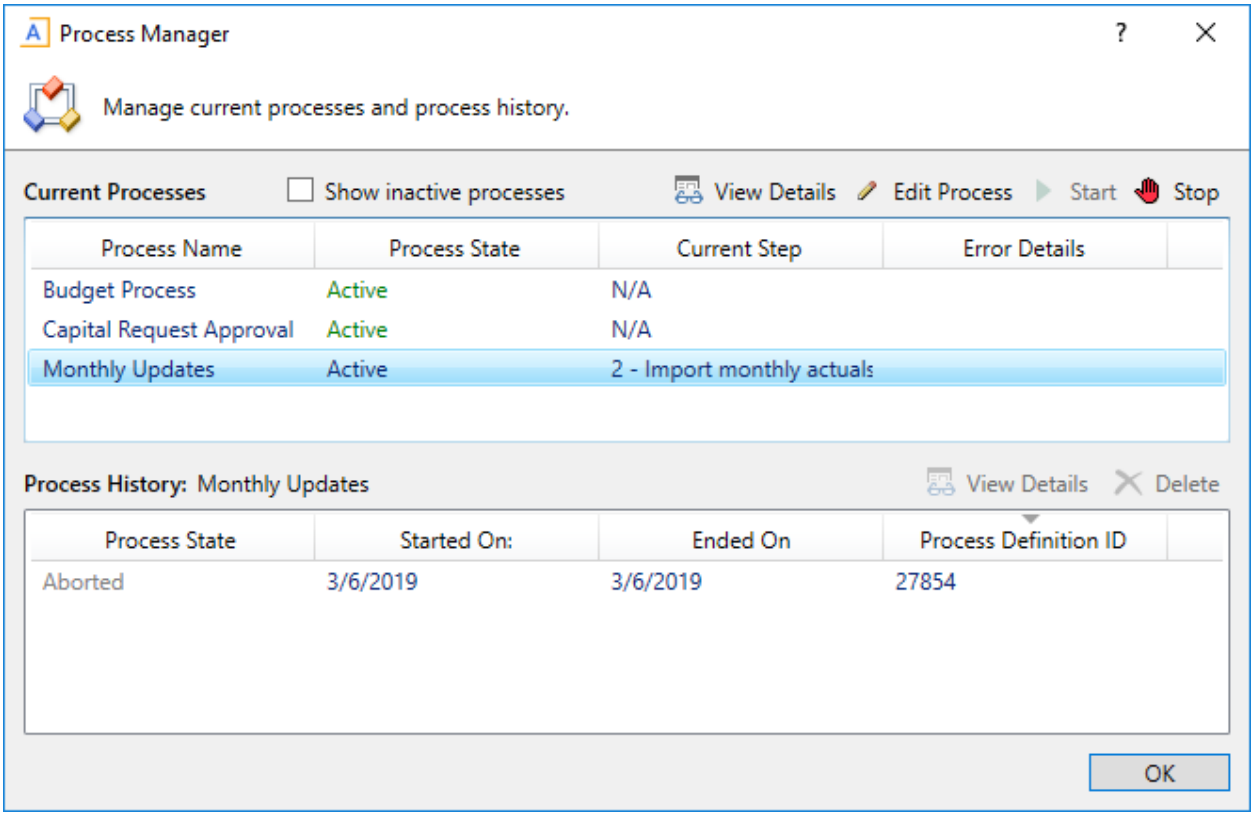
When the Parallel Subprocess step becomes the active step, all sub-steps are also made active. Once all sub-steps in the subprocess are completed, then the Parallel Subprocess step is automatically marked as completed, and the process moves to the next step.

Imagine that step 2 of a process is a Parallel Subprocess step, and the subprocess has 5 sub-steps. Once step 1 is completed, then step 2 becomes active as well as all 5 of its sub-steps. The owners of the sub-steps can work on these steps and complete them in any order. Once all 5 of the sub-steps are completed, step 2 is automatically completed, and then step 3 of the process becomes the active step.

NOTE: The Multiple Approvals Process Step is a special type of Parallel Subprocess. It can only contain Approval Process Steps as sub-steps, but otherwise its behavior is the same as the Parallel Subprocess.

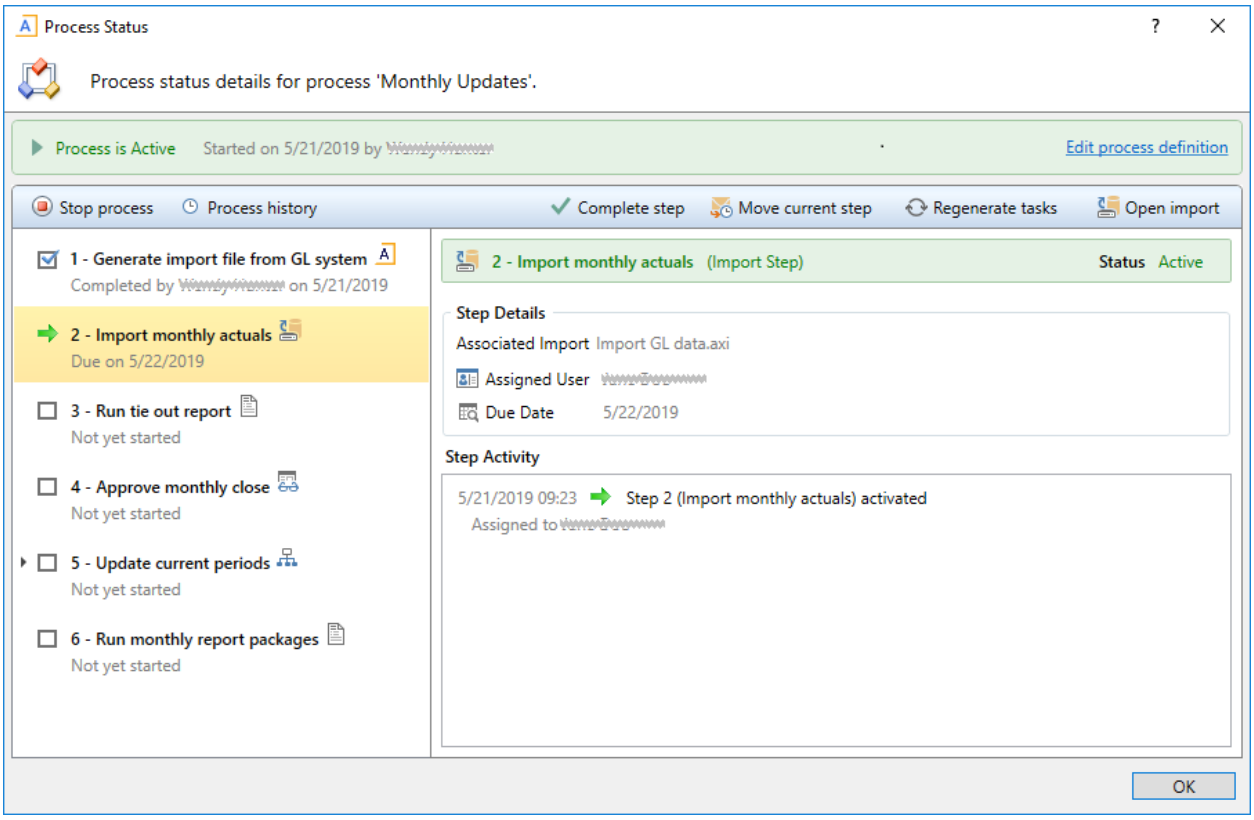
Tracking process status and history

Administrators and process owners can view process status and history at any time. Using the Process Manager dialog, you can see the status of all active processes or all current processes at-a-glance.



Example Process Manager dialog

Administrators and process owners can view the details for an active process, to see when each step was completed and by whom, as well as any comments added by users. You can also perform process administration tasks within this dialog, such as overriding step ownership, restarting stalled steps, and stopping the process.



Example process details in the Process Status dialog

Administrators can view the historical details for any process. For example, if you have a process that you run monthly, you can go back and view the prior month's details, or any amount of history that you want to retain.

Creating Process Definitions

Using a process definition, you can define the set of steps to be managed and tracked as part of a process, including step order, ownership, associated actions, and due dates.

Process definitions are stored in the Process Definition Library. Access to the definitions is controlled by the file security settings on the **Files** tab of security. Only users who need to create and modify the process definitions need access to these files. Users who are assigned to perform individual steps in the process do not need access to the definition in order to perform the task or to view the process status.

NOTE: This topic discusses how to create a general process definition. If you want to manage plan files in a planning process, then you should use a *plan file process definition* instead. General process definitions and plan file process definitions share certain basic settings, but plan file process definitions are dedicated to plan file process steps, and also support additional features that are unique to plan file processes.

Process definitions are typically created by administrators, or other power users who are responsible for administrating parts of the system. The creator of the process definition needs to understand all steps of the process, who needs to perform each step, and when that step needs to be performed.

Process definitions do not have any impact on the system until they are activated.

To create a new process definition:

1. On the **Axiom** tab, in the **Administration** group, click **Manage > Processes > Process Definitions**.

   NOTE: In systems with installed products, this feature may be located on the **Admin** tab. In the **Workflow** group, click **Process Management > Process Definitions**.

   The Axiom Explorer dialog opens, filtered to show the Process Definition Library. If you have access to the Process Definitions folder for any file groups, those folders also display here.

2. Right-click the **Process Definition Library** (or a subfolder), then click **New > Process Definition**. If you want to create a process definition for a file group, you can right-click the **Process Definitions** folder in the file group.

   The **Edit Process** dialog opens. As you are working in this dialog, any validation errors for missing or invalid settings will display at the bottom of the dialog. You can save the process definition with configuration errors, however, you will not be able to start the process until all configuration errors are resolved.

3. In the **Process Properties** tab, complete the general process settings as desired. For more information, see:
   - Designating the process owner
   - Configuring process visibility to step owners
   - Process Definition Properties

4. In the **Process Steps** tab, define the steps for the process.
   - To add a step, click **Add** and then select the type of step to add. New steps are added after the step that you currently have selected in the list.

     However, if the currently selected step supports sub-steps, then the new step is added as a sub-step. This applies to step types such as Parallel Subprocess. In this case, if you want to add a new top-level step that comes after the subprocess step, you must click **Add After Current Step** and then select the type of step to add.

- To remove a step, select that step and then click **Delete**. If the deleted step has child steps, those steps are removed as well.
- To change the order of steps, you can drag and drop them to different locations in the list.
- To copy a step, select the step and then click **Duplicate**. You can then modify the copied step as needed and move it to the desired location in the list.

Steps are performed in the order listed. By default, steps are dependent and sequential—meaning, each step in the list must be completed before the next step can be done. However, it is possible to use a Parallel Subprocess to define parallel steps—meaning multiple steps that are not dependent and can be performed at the same time. The parallel steps are then defined as sub-steps to the Parallel Subprocess. (Multiple Approvals Process Steps also behave like Parallel Subprocesses.)

Once you have added a step to the process, you can configure the settings for that step in the right-hand pane. This includes the display text for the step, the step ownership and due date, and other properties specific to the step type. You can also configure step-specific notification settings.

For more information on configuring the steps in the process, see the following topics:

- Assigning owners to process steps
- Defining the due date for a process step
- Process step types
- Defining notifications at the step level

TIP: In most cases, you should configure the process-level notification settings on the **Notifications** tab before configuring any step-level notification settings. This way the steps will have access to the inherited process-level settings.

5. In the **Notifications** tab, complete the notification settings for the process. You can enable or disable notifications for the process, define the default notification delivery method, and define default notifications to apply to the steps in the process. For more information, see Configuring Notifications.
6. Click **Apply** to save, or **OK** if you are finished editing.

Copying an existing process definition

You can create a new process definition by copying an existing definition. To do this, use normal Axiom Explorer functionality:

- Right-click the definition file in the Process Definition Library, and then select **Copy**.
- Right-click a folder, and then select **Paste** to paste a copy of the file. The new file will be named ***OriginalFileName*** **- Copy**.
- Rename the file, then open the file and change the process definition settings as desired.

Creating a general process definition for a file group

You can create general process definitions that belong to a file group. For example, you might use a general process definition in a file group to document and manage the rollover procedures for the file group.

General process definitions in file groups have the following special properties:

- The processes are stored in the **Process Definitions** folder of the file group, instead of in the Process Definition Library.
- All step types that require a designated file group are automatically associated with the current file group. There is no option to specify a file group because the current file group is assumed.
- Processes can be copied when the file group is cloned, so that you do not have to create new processes for cloned file groups.
- The ability to create and edit processes for a file group is reserved for administrators and for users with the appropriate file access to the Process Definitions folder of the file group (as granted on the **Files** tab of the **Security Management** dialog).

General process definitions cannot be used to manage the plan files in a file group through a defined set of planning steps. To do that, you must use a *plan file process definition*. This is a special type of process definition that can only be created in a file group.

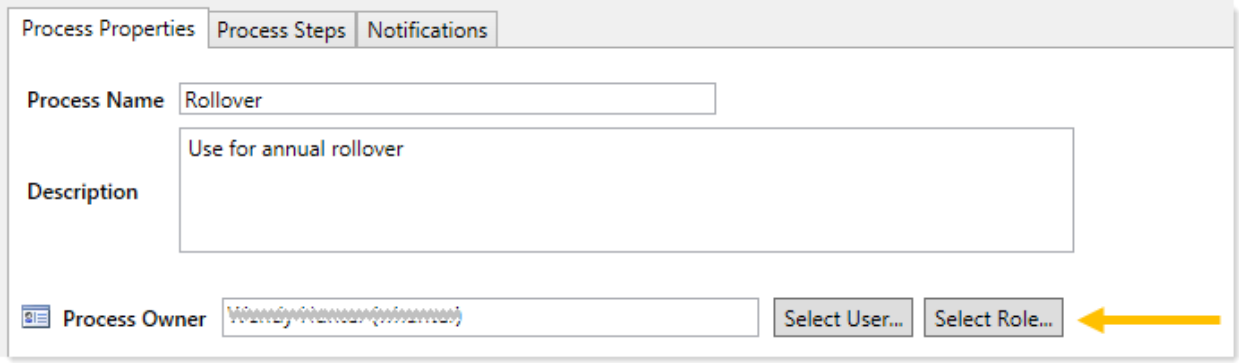
Designating the process owner

Each process definition has a designated owner. The process owner receives all administrative notifications for the process, and can also:

- Start and stop the process
- Access the Process Status dialog when the process is active
- Move, complete, and regenerate steps

NOTE: Administrators can also perform all of these actions, regardless of whether or not they are the process owner.

The owner of the process is designated by the **Process Owner** setting on the **Process Properties** tab. By default, the process owner is set to the user who created the process definition. If desired, you can change the owner to a different user or to a role by clicking **Select User** or **Select Role**. If the owner is a role, then all users in that role are treated as process owners.



If the designated owner is a non-admin user, then you should make sure that the user has read/write access to the process definition, so that the user can open and edit the definition as needed, and can start the process. Once the process has been started, the process will display in the owner's Process task pane for the duration of the process, and the owner will gain access to the **View status** link so that they can perform any necessary administrative functions for the process. Process owners can also access the Process Manager dialog to perform process management activities for the processes they own.

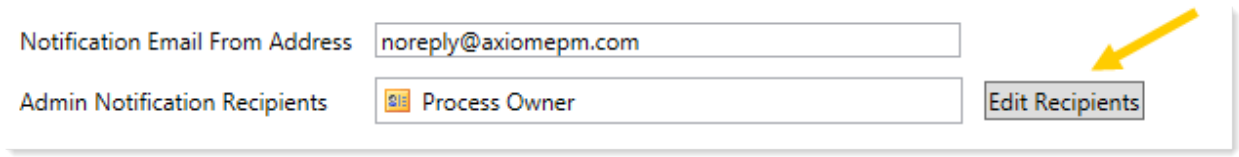
Administrative notifications

Notifications are automatically sent to the designated process owner when the following situations occur:

- The process is started or stopped.
- An error occurs in a process step.

These notifications are system-managed and cannot be disabled or customized. However, you can designate additional users to receive these notifications.

The **Admin Notification Recipients** are designated on the **Notifications** tab. By default, the process owner is the only recipient of these notifications. To add or remove recipients, click **Edit Recipients**.



In the **Edit Recipients** dialog:

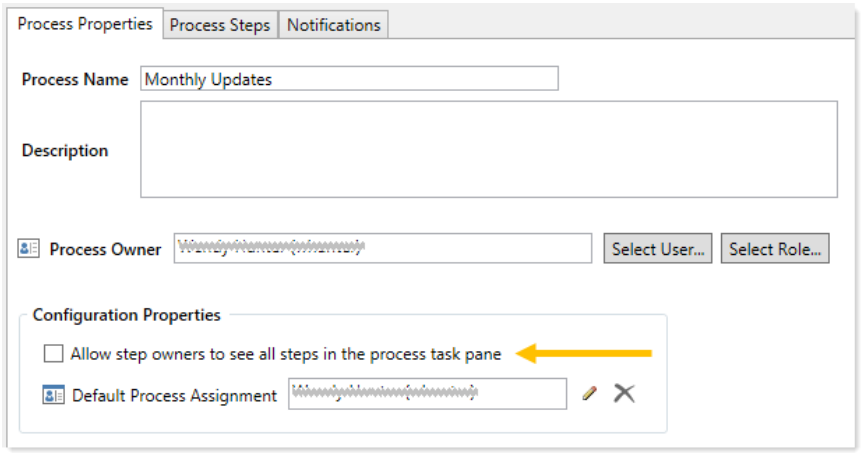
- To add a recipient, click **Add Recipients>User** or **Add Recipients> Role** to choose a user or role.
- To remove a recipient, select the user or role in the Notification Recipients list and then click **Delete**.

The process owner cannot be removed as a recipient. If the designated process owner is a role, then all users in that role will receive the administrative notifications.

NOTE: If the user who stopped or started the process is also an administrative notification recipient, that user will not receive a notification, because that user already knows about the change in process status. The intent of the started/stopped notifications is to inform interested parties that somebody else stopped or started the process.

Configuring process visibility to step owners

When you create a process definition, you can specify whether step owners can see all steps in the process in the Process task pane, or only their current step. This is controlled using the following setting on the **Process Properties** tab: **Allow step owners to see all steps in the process task pane**.

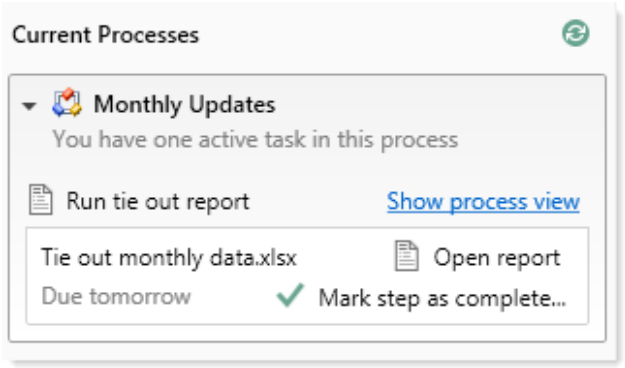


This setting is disabled by default, which means that step owners only have access to the Task View in the Process task pane. The Task View displays the currently active step as follows:

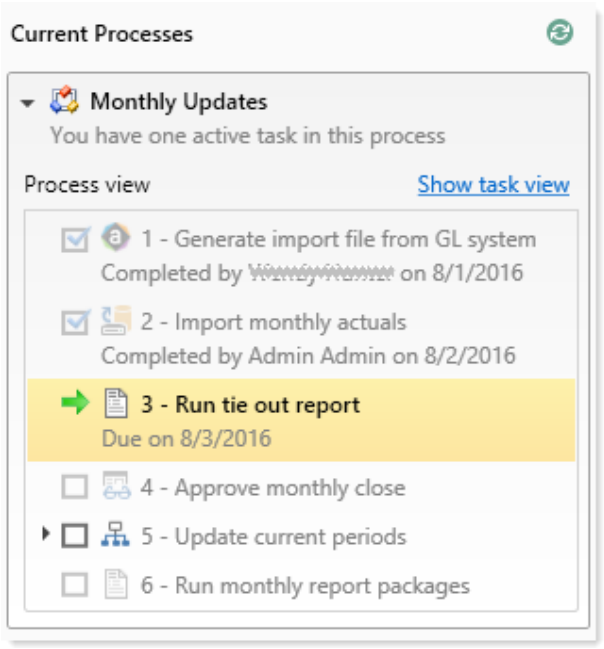
- The name and details of the currently active step are displayed without any reference to the step number. However, the user can see the step number in the tooltip.
- The step owner cannot see any other steps in the process, within the Process task pane. When the user completes the step, they can see the next step in the process. If the step can be rejected backwards, the user can also see the prior step.

If desired, you can enable this setting, which gives step owners access to the Process View in the Process task pane. Process View displays the full list of all steps in the process, so that the user can understand the context of the currently active step within the overall process. Process View is for information only—users cannot complete steps or launch files / features from Process View. Users can toggle between Task View and Process View as desired.

The following screenshots show examples of Task View versus Process View, including the toggles to switch back and forth. If a user does not have permission to see Process View, then the **Show process view** toggle does not display.



Task View



Process View

This setting does not apply to administrators or to process owners. These users always have access to Process View, regardless of whether this setting is enabled. Process View is the only available view for these users when they do not have an active task in the process.

Assigning owners to process steps

Each step in a process definition must have a defined owner to perform that step and mark it as complete. The assigned step owner can be a user or a role.

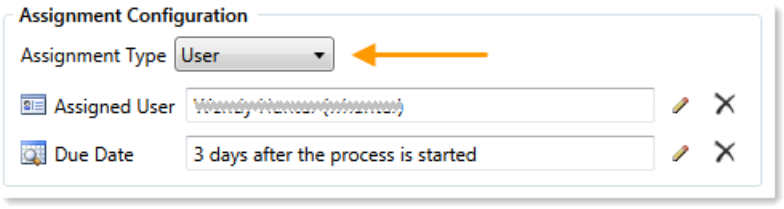
When a step is made active, the assigned owner is notified that they have a task to complete in the process (if notifications are enabled for the process and for the step). The owner can view the active task in the Process task pane, perform actions associated with the task, and then mark the step as complete.

This topic discusses step ownership options for general process definitions. Plan file process definitions have additional options to assign step ownership, so that each plan file can be assigned a different owner for each step.

NOTE: When using a Parallel Subprocess or a Multiple Approvals step, ownership assignments are only made on the child steps. The parent step does not have ownership assignments.

Assigning owners to individual steps

In the process definition, step owners are assigned on the **Process Steps** tab, in the **Assignments** sub-tab. Select the step for which you want to assign ownership, then use the **Assignment Type** field to select the ownership type.



For steps in general process definitions, the assigned owner can be a user or a role:

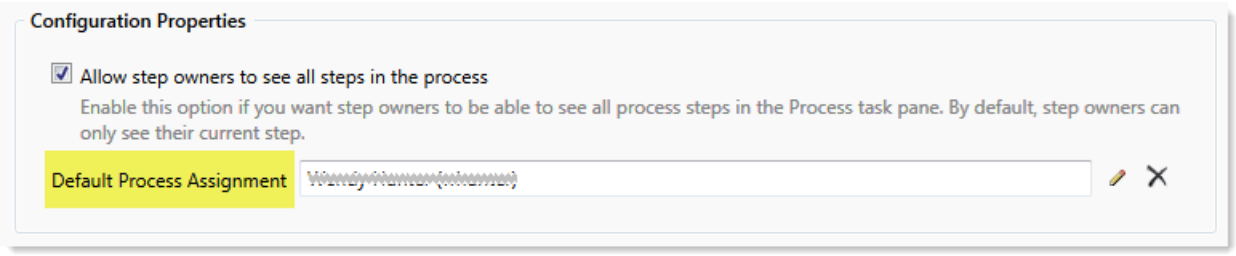
Assignment Type	Description
User	Assign a specific user as the owner of the step. When the step becomes active, a process task will be generated for the user to complete the step. Click the Edit button to the right of the **Assigned User** box to select a user. You can select any user in the Axiom Cost Accounting system. **NOTE:** If most or all of the steps in your process use the same owner, you can choose to set a default owner at the process level. If you do this, then you can leave the Assigned User at the step level blank, and that step will automatically be assigned to the default owner.
Role	Assign a role as the owner of the step. When the step becomes active, a process task will be generated for all users in that role, and any of those users can complete the step. Click the Edit button to the right of the **Assigned Role** box to select a role. You can select any role in the Axiom Cost Accounting system.

Until a process is active, you can edit step ownership settings as desired. Once a process is active, you can edit ownership settings for any step that is not already completed. If you change the ownership settings of an active step, new tasks will be regenerated as needed to reflect the new settings, including sending new Step Activated notifications (if enabled for the process).

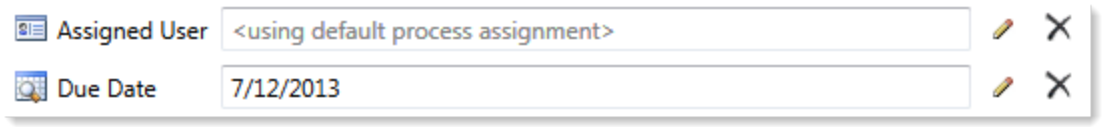
Defining a default user assignment for the process

If desired, you can specify a default user assignment at the process level. This option is useful when you have a process where most or all of the steps are performed by the same user.

The default user assignment can be set on the **Process Properties** tab, as the **Default Process Assignment**.



If an individual step is set to User as the Assignment Type, but no user has been specified, then the step will use the default assignment. This is indicated in the step properties as follows:



Once a process has been started, the default process assignment cannot be changed. However, you can still change the owner of any individual steps that have not yet been completed.

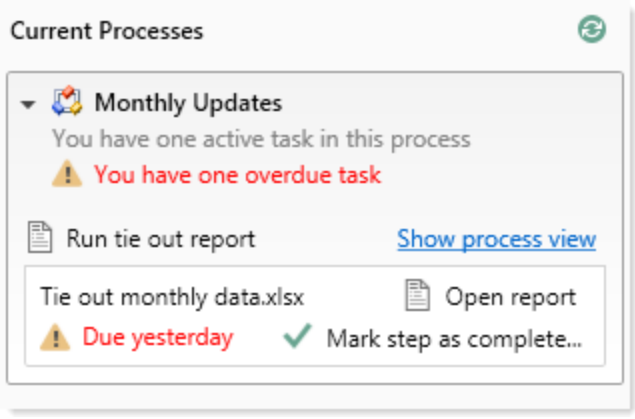
Step ownership and security permissions

For steps in a general process definition, step ownership only grants the ability to mark the step as completed in the process. It does not grant the user the necessary security permissions to perform any associated action for the step, and it does not prevent any other user from performing that associated action. When assigning owners to process steps, you should be sure that the owner has the appropriate security permissions to perform the associated task for the step.

For example, imagine that the step is "Import actuals data" and the step has been linked to the GLActuals import utility. If the user has permission to execute that import (as defined in security), then the user can click **Open import** for the task in the Process task pane to execute that import. However, if the user does not have permission to execute the import, then being the step owner does not grant them the permission. Additionally, if other users have security permissions to execute that import, they can still do so.

Defining the due date for a process step

Each step in a process definition can have a defined due date. If a step has not been completed by the due date, then the step becomes overdue. If the active step in a process has become overdue, a warning displays in the Process task pane and the due date displays in red.

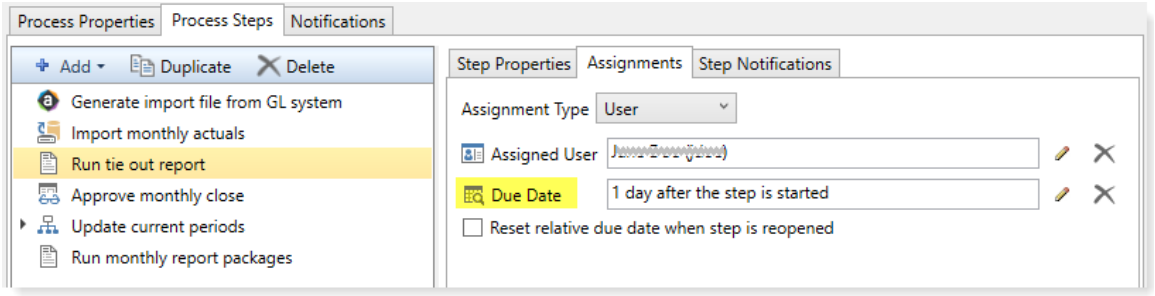


Example display of overdue step

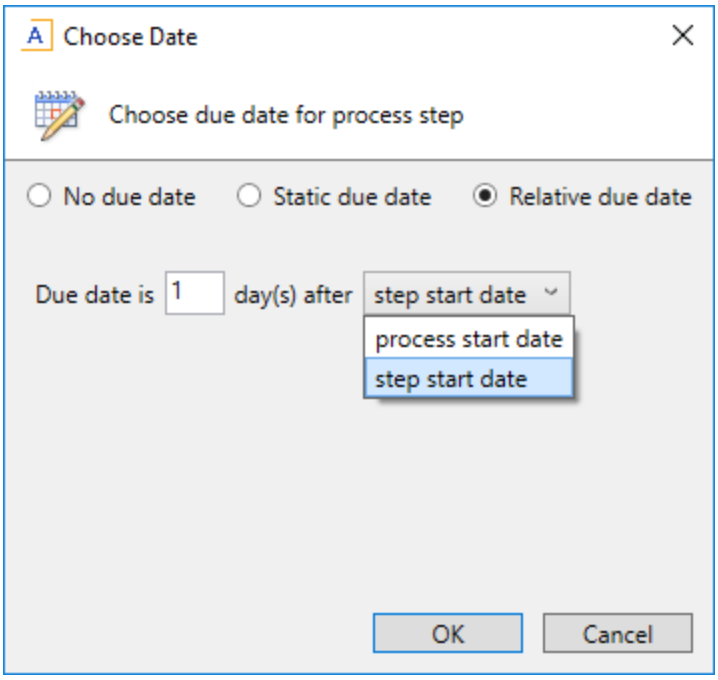
In the process definition, step due dates are defined per step on the **Process Steps** tab, in the **Assignments** sub-tab.

To define the due date for a step:

1. Click the **Edit** icon to the right of the **Due Date** box.



2. In the **Choose Date** dialog, select one of the following options:
   - **No Due Date**: The step does not have a due date.
   - **Static Due Date**: Select a specific date for the due date. You can select the date from a calendar.
   - **Relative Due Date**: Specify a number of days to dynamically determine the due date. The number of days can be relative to the date the process was started (**process start date**), or to the date this particular step was started (**step start date**). For example, the step can be due 7 days after the process was started, or 7 days after this step was started. By default, the process start date is used.



Example Choose Date dialog

3. If you specified a relative due date that is based on the step start date, decide whether or not to enable **Reset relative due date when step is reopened**. This option displays underneath the **Due Date** field.

   By default this option is disabled, which means that the step due date is calculated when the step is first started, and that due date does not change if the step is later reopened. So if the step due date is 6/1/2019 when the step is first started, and then later the step is reopened on 6/2/2019, the step due date will remain at 6/1/2019 and the reopened task will be 1 day past due.

   If instead you want the step due date to be reset (recalculated) based on the date the step is reopened, then you should enable this option. Continuing the above example, if the step is reopened on 6/2/2019 and the due date for the step is configured to be 3 days after the step start date, the due date for the reopened task will be recalculated to 6/5/2019.

Changing due dates

You can change the due date of a step at any time if the process is not active. If you have already defined a due date and now you want to clear it (so that the step has no due date), click the **Delete** icon ✕ to the right of the **Due Date** field.

For active processes, you can change the due date of any step that is not already completed. If you change the due date of an active step, new tasks will be regenerated as needed to reflect the new due date, including sending new Step Activated notifications (if enabled for the process).

Using the result of a previous step

You can configure a step in a process definition to perform an action on the result of a previous step. This is intended to support processes where an item is created in one step and then you want to perform one or more actions on this newly created item.

Currently, this configuration is only supported for processes that use a File Group Process Step with the Clone File Group action. This is the only step type that officially creates a new item in Axiom Cost Accounting. Although you can use other process steps to direct step owners to create any kind of item, the creation is not an official step action and is not tracked by the process.

The typical use case for this configuration is for a rollover process. For example:

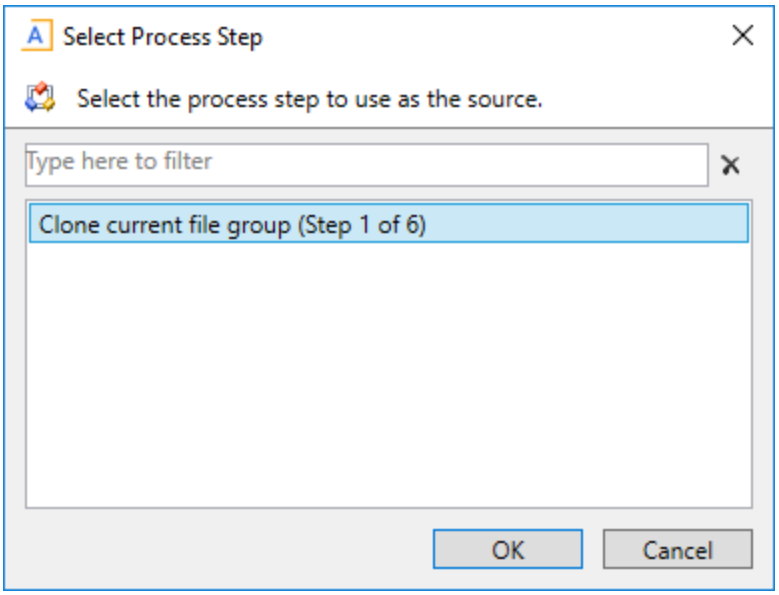
- Step 1 uses the Clone File Group action to create a new file group for the new cycle of planning.
- Step 2 creates the plan files for the new file group that was created in Step 1.
- Step 3 processes the plan files for the new file group that was created in Step 1.

For Step 1, you would point the step to an existing file group such as Budget 2019. When the process is activated, the step owner would perform the cloning process and create a new file group such as Budget 2020. However when setting up the process definition, you can't point Step 2 to the Budget 2020 file group because it isn't created yet. Instead, you would configure Steps 2 and 3 to use the result of Step 1.

Configuring a step to use the result of a previous step

When defining a File Group Process Step, do the following to use the result of a previous step:

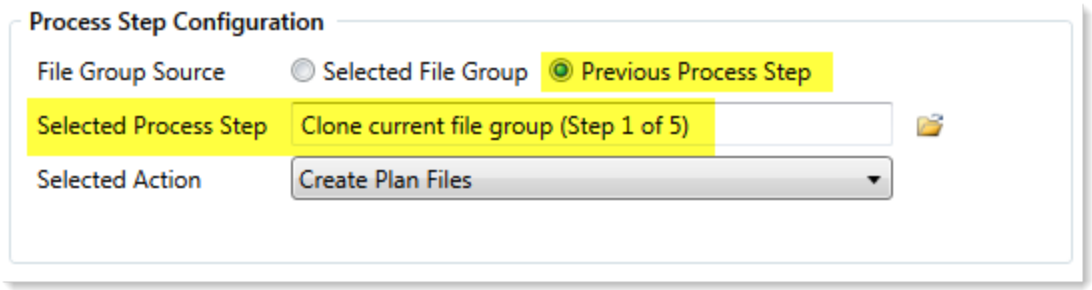
1. For **File Group Source**, select **Previous Process Step**.
2. For **Selected Process Step**, click the Browse button to select the step where the file group is created.



The Select Process Step dialog displays a list of steps that are eligible for selection. If no steps are eligible, a message informs you of this. Only steps that meet the following criteria are eligible for selection:

- Must precede the current step.
- Must create a file group using the Clone File Group action.

To continue the example in the previous section, the configuration for Step 2 will look like the following:



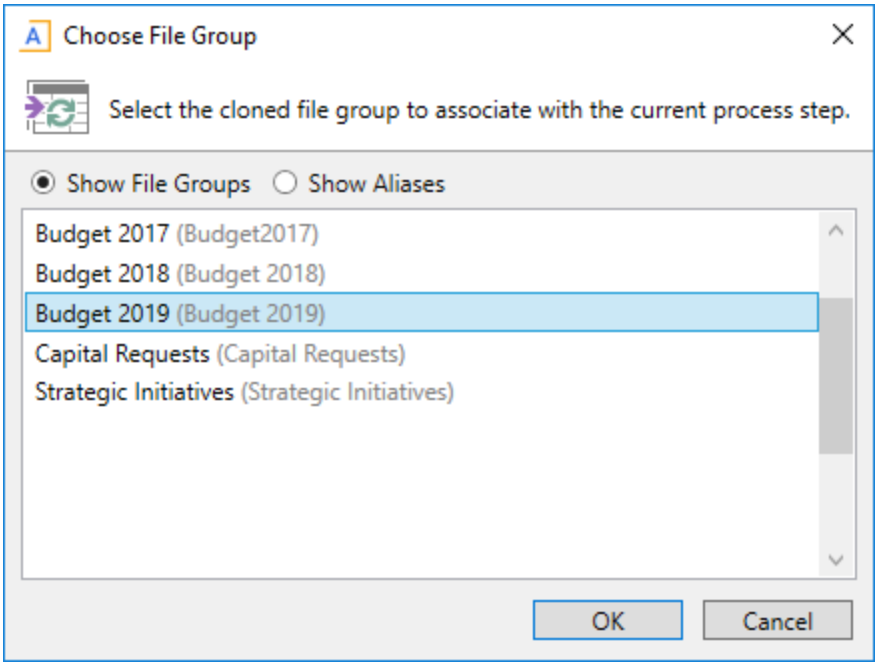
This means that Step 2 will create plan files for the file group that was created in Step 1.

Tracking the step result in active processes

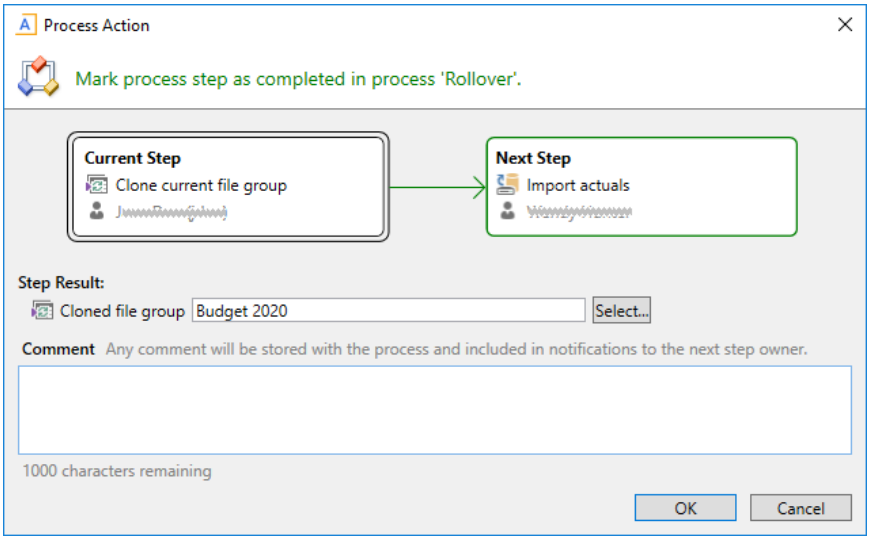
If a process is configured to use the result of a previous step, then the result of that step must be tracked within the process. To continue the previous example, when Step 1 is completed the process needs to know the name of the file group that was created, so that it can pass the name of that file group to Steps

2 and 3.

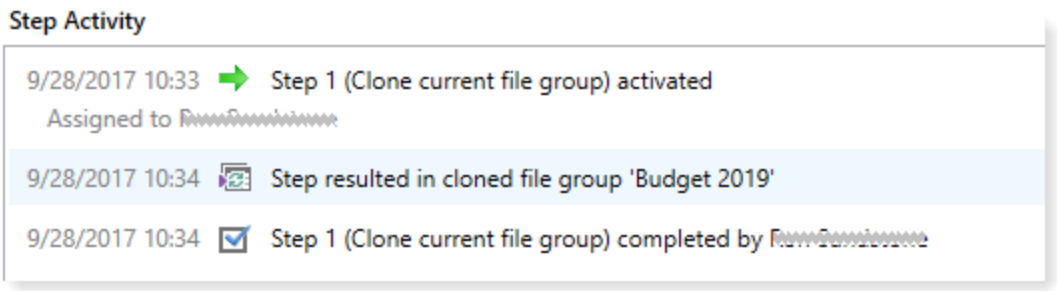
When a step owner completes a step where the created file group is used by a subsequent step, then as part of the completion process they must specify the name of the file group that was created.



This selected file group is then associated with the step. In the Process Action dialog, it is displayed as the **Step Result**. If needed, you can change the selected file group here before completing the step, by clicking **Select**. However, once the step has been completed, the step result is then fixed and cannot be changed without reopening the step.



The file group that is specified as the step result will be passed to the subsequent steps that use that result. The step result is also documented in the process details for future reference.



Process Definition Properties

This topic is a reference for all properties that can be configured for general process definitions.

Process Properties tab

This tab defines the basic properties of the process definition.

Item	Description
Process Name	The name of the process. This name defines: • The name of the process definition file. • The process name displayed in process dialogs and web pages, if no separate display name is defined.
Display Name	Optional. The display name of the process. By default, the process name is used as the display name. If a display name is defined, then the process displays in process dialogs using the display name instead of the process name. The process definition file continues to use the process name.
Description	Optional. The description of the process definition. This description displays in the Process Status dialog.
Process Owner	The owner of the process. By default, this is set to the user who created the process definition, but it can be changed to another user. The process owner receives all administrative notifications for the process and can perform all administrative actions for the process (such as starting and stopping the process, overriding task ownership to mark steps as complete, and so on).

Configuration Properties

The following configuration properties can be set for the process:

Item	Description
Allow step owners to see all steps in the process task pane	Specifies whether the assigned step owners can see all steps in the process when they interact with tasks in the Process task pane. By default, this option is disabled, which means that step owners only have access to the Task View in the Process task pane, which shows the currently active task. If this option is enabled, then step owners gain access to the Process View, which shows all steps in the process. Users can toggle between each view. This setting is only applicable to non-admin step owners. Administrators and process owners can always see all steps of any process.
Default Process Assignment	The user to be used as the default step owner if no specific user assignment is made for a particular step. The default assignment only applies to steps where the **Assignment Type** is set to **User**.

Process Steps tab

This tab defines the steps for the process. Steps are managed in the left-hand pane. Step properties are defined in the right-hand pane using the following sub-tabs: **Step Properties**, **Assignments**, and **Step Notifications**.

Step Properties

This sub-tab defines basic properties for the selected step.

Item	Description
Display Text	The display text for the step. If left blank, the display text is the step type (for example, "Approval Step" or "Generic Process Step"). It is strongly recommended to define display text that clearly identifies the specific purpose of this step.
Description	Optional. The description of the step. You can use this field to further explain the purpose of the step or to provide additional instruction to the step owner. Users can see the step description in a tooltip when hovering the cursor over the step in the Process task pane.
Process Step Configuration	Some step types have additional properties that only apply to that particular step type. For more information about each step type and its unique configuration properties, see Process step types.

Assignments

This sub-tab defines ownership assignments and due dates for the selected step. This tab does not apply to parent Parallel Subprocess or Multiple Approvals steps.

Item	Description
Assignment Type	Specifies the type of ownership assignment. The following assignment types are available: • **User**: A specific user will be assigned to the step. • **Role**: A specific role will be assigned to the step. Additional inputs are required, depending on the selected type. For example, if the type is User, then you must specify the assigned user. For more information, see Designating the process owner.
Due Date	The date when the step must be completed. This can be a specific calendar date, or the due date can be relative based on a number of days after either of the following: the date the process was started, or the date this particular step was started. The due date can also be left blank if the step does not have a specific due date. For more information, see Defining the due date for a process step.
Reset relative due date when step is reopened	Specifies whether the due date is reset when the step is reopened. This option is only available if the step uses a relative due date that is based on the step start date. By default, the step due date is calculated when the step is started, and that due date persists if the step is reopened. If instead you want the due date to be reset (recalculated) based on the date the step is reopened, select this option.

Step Notifications

This sub-tab defines notification properties for the selected step. The settings on this tab are only used if notifications are enabled at the process level. If notifications have been disabled for the entire process, a note displays across the top of the tab.

This tab has the following sections:

- **Inherited Notifications**: Use this section to manage the inherited notifications for this step. Inherited notifications are notifications defined at the process level. You can optionally enable or disable the inherited notifications on a per step basis, and you can edit the recipients for this step.
- **Custom Notifications**: Use this section to manage custom notifications for this step. You can add new notification types, or you can add custom versions of the inherited notification types.

For more information on customizing notifications for steps, see Defining notifications at the step level.

Notifications tab

This tab defines email notification settings for the entire process.

Item	Description
Enable Process Notifications	Specifies whether notifications will be sent for the process. These notifications are typically sent to step owners, but can also be sent to other recipients. This option is enabled by default. When this option is enabled, you can also optionally enable or disable notifications for individual steps, using the **Step Notifications** sub-tab for the steps. If this option is disabled, then no notifications will be sent for the process. Any step-level notification settings will be ignored. This setting does not affect administrative notifications, which are always sent to the process owner (and any other recipients designated in **Admin Notification Recipients**).
Default Notifications	Defines the default notifications to apply to each step in the process. Each process starts with two notification types by default: Step Activated and Step Rejected. By default, these notifications are enabled for all eligible steps. You can define additional default notification types as desired and customize the existing default notifications. For more information, see Defining default notifications for a process.
Notification Delivery	Specifies the default delivery setting for all notifications in this process. Select one of the following: • **Notification task pane**: Display the notification in the recipient's Notifications task pane. • **Email notification** (default): Send the notification by email, using the recipient's email address as defined in Axiom Security. • **Both notifications**: Send the notification by email and display it in the Notifications task pane. All notifications defined for the process will use the default delivery setting, unless you choose to specify a different delivery setting on a per notification basis. Administrative notifications always use the default delivery setting.
Notification Email From Address	Specifies the "from" email address for all notifications sent for the process. By default, the "from" address is the default "from" address defined for Scheduler in the system configuration settings (for example, `noreply@axiomepm.com`). If desired, you can override this default and type in a different email address to be used for the process.
Admin Notification Recipients	Specifies the recipients of administrative notifications for the process. By default, the process owner receives all administrative notifications, but you can designate other users or roles to receive these notifications as appropriate. For more information, see Designating the process owner.

Deleting a process definition

You can delete a process definition if it is not active and you no longer need it. Deleting a process definition will also delete all history for that process, so you should make absolutely sure that the definition and its history are not needed before you delete it.

To delete a process definition:

1. On the **Axiom** tab, in the **Administration** group, go to **Manage > Process Management > Process Definitions**.

   NOTE: In systems with installed products, this feature may be located on the **Admin** tab. In the **Workflow** group, click **Process Management > Process Definitions**.

   The Axiom Explorer dialog opens, filtered to show the Process Definition Library (as well as any file group Process Definition folders that you have access to, if applicable).

2. Right-click the definition that you want to delete, then click **Delete**.

   You will be prompted to confirm that you want to delete the definition, and warned that all associated history will also be deleted.

3. At the confirmation prompt, click **OK**.

The process definition is now deleted.

Process step types

Process management supports various step types to be used for different purposes. This section details the available step types for general process definitions, and the type-specific settings.

This section does not cover the special step types supported by *plan file process definitions*.

Approval Process Step

The Approval Process Step is intended to be used for steps where you need the explicit approval of a user in order to move forward with the process.

Process behavior

When the Approval Process Step is the active step, the step owner has the following options:

- **Approve** the process so that it will move to the next step.
- **Reject** the process so that it will return to the prior step.

The Approval Process Step is the only step type that supports moving the process either forward or backward; all other steps only have the option to move forward when completed.

Step-specific settings

Approval Process Steps in general processes do not have any unique step settings. Only the general step settings apply.

Restrictions

Approval Process Steps cannot be sub-steps of a Parallel Subprocess step. Because the sub-steps of a parallel subprocess can be completed in any order, an approval or a rejection would not make sense in this context. If you want to approve the steps in a parallel subprocess, then the next step after the parallel subprocess should be an approval step. In this case, note that if the assigned user rejects the process to return to the prior step, the entire parallel subprocess will be "reopened" and made active again.

If you want to enable parallel approval steps (approvals that can occur concurrently instead of sequentially), then you can use the special Multiple Approvals Process Step. This step works like a parallel subprocess, however, it is specially designed to handle approval steps only. For more information, see Multiple Approvals Process Step.

File Group Process Step

The File Group Process Step is intended to be used for steps where you need the user to perform some kind of action on a file group.

NOTE: This step type is for performing actions on a file group as part of a larger process. If instead you want to manage plan files through a planning process, use a plan file process.

Process behavior

When the File Group Process Step is the active step, the step owner has two actions available in the Process task pane:

- **<Action>**: The user can click the action link to open a file or perform the action associated with this step. The text of the action and what it does depends on the selected action for the step. For example, if the selected action is Process Plan Files, then the link text is "Process Plan Files" and clicking on it opens the Process Plan Files dialog for the file group.
- **Mark step as complete**: The user can click on this link to complete the active task.

Step-specific settings

When configuring a File Group Process Step, complete the following settings in addition to the general step settings:

Item	Description
File Group Source	Specify the source of the file group for this step: • **Selected File Group**: You will select an existing file group on which to perform an action. • **Previous Process Step**: The file group for this action is created in a previous process step. You will select the step in the process where this file group is created. For example, imagine a process where step 1 clones a file group to create a new file group, and then step 2 creates plan files for the new file group. In step 1, you would use Selected File Group to specify the existing file group that you want to clone. In step 2, you would use Previous Process Step to specify the file group that was created in step 1. This step does not apply if the process definition is associated with a particular file group. In that case, the current file group is assumed.
Selected File Group	The file group for the step. Click the **Select** button to select an existing file group. This option is only available if File Group Source is set to Selected File Group. This step does not apply if the process definition is associated with a particular file group. In that case, the current file group is assumed.
Selected Process Step	The previous step in the process where the file group for this step is created. This option is only available if File Group Source is set to Previous Process Step. For more information, see Using the result of a previous step. Click the **Select** button to select the step. Only steps that meet the following criteria are eligible for selection: • Must precede the current step. • Must create a file group using the Clone File Group action. This step does not apply if the process definition is associated with a particular file group. In that case, the current file group is assumed.

Item	Description
Selected Action	The action to perform on the file group: • **Open Plan Files**—If the user has one available plan file in the file group, that plan file will open. Otherwise, the Open Plan Files dialog opens, showing the user's available plan files. • **Create Plan Files**—Opens the Create Plan Files dialog with no special setup; the user will need to configure it as needed to complete the step. **NOTE:** If the file group is an on-demand file group, then this action behaves like the "Add new file" link in the Open Plan Files dialog. The user can click on the link to create a new on-demand plan file. • **Clone File Group**—Opens the Clone File Group dialog with no special setup; the user will need to configure it as needed to complete the step. • **Edit File Group**—Opens the Edit File Group dialog with no special setup; the user will need to configure it as needed to complete the step. • **Process Plan Files**—Opens the Process Plan Files dialog with no special setup; the user will need to configure it as needed to complete the step. The display text and/or description for the step should make it clear to the user what they are expected to do in order to consider the step complete.

NOTE: The assigned user for the step must have the appropriate security permissions to access the file group and perform the designated action. The File Group Process Step does not grant any permissions or elevate any existing permissions.

Generic Process Step

The Generic Process Step can be used for any step that is not covered by the other step types. This step type has no special behaviors and is not associated with any particular feature in Axiom Cost Accounting.

You might use this step for:

- A task that a user needs to compete outside of Axiom Cost Accounting.
- A task that uses an Axiom Cost Accounting feature for which there is no specific step type.

Process behavior

When the Generic Process Step is the active step, the step owner can use **Mark step as complete** in the Process task pane to complete the step.

This step cannot be associated with an action; the assigned user will need to perform the task on their own. It is important to define the display text and description clearly so that the user understands what they need to do in order to consider the step complete.

Step-specific settings

Generic Process Steps do not have any unique settings. Only the general step settings apply.

Import Process Step

The Import Process Step is intended to be used for steps where you need a user to access an import utility in Axiom Cost Accounting, whether to edit the import settings and/or execute the import.

Process behavior

When the Import Process Step is the active step, the step owner has two actions available in the Process task pane:

- **Open import**: The user can click this link to access the import according to their security permissions. The step name and/or description should make it clear to the user what they are expected to do with the import.
- **Mark step as complete**: The user can click this link to complete the active task.

Step-specific settings

When configuring an Import Process Step, complete the following setting in addition to the general step settings:

Item	Description
Selected Import	The import utility to associate with this step. Click the folder icon to select the import.

NOTE: The assigned user for the step must have the appropriate security permissions to access the import and perform the desired action. The Import Process Step does not grant any permissions or elevate any existing permissions.

Multiple Approvals Process Step

The Multiple Approvals Process Step is intended to be used when you want multiple users to approve a process concurrently instead of sequentially. The difference in approach is as follows:

- For sequential approvals, use several Approval Process Steps in a sequential order. Only one approval step is active at a time, and that step must be completed before the process moves to the next approval step.
- For concurrent approvals, use a Multiple Approvals Process Step with two or more Approval Process Steps as sub-steps. When the parent Multiple Approvals Process Step becomes active, then all approval sub-steps become active concurrently. All of the sub-steps must be completed before the process moves to the next step.

Process behavior

When the Multiple Approvals Process Step is the active step, then all of its approval sub-steps are also made active. Owners of the approval sub-steps can complete their steps as appropriate without any dependencies on the other sub-steps. When *all* sub-steps are approved by their owners, then the Multiple Approvals Process Step is automatically marked as complete and the process moves on to the next step. However, if *any* of the sub-steps are rejected, then the entire step is rejected and the process is moved back to the step immediately before the Multiple Approvals Process Step.

Step-specific settings

The only available step settings for Multiple Approvals Process Steps are display text and description. These steps do not have owner assignments or due dates. Owner assignments and due dates are defined individually for each sub-step.

Restrictions and limitations

- A Multiple Approvals Process Step must have two or more sub-steps. The sub-steps can only be Approval Process Steps.
- When an owner of a sub-step in a Multiple Approvals Process Step completes a step, the previous and next steps shown in the Process Action dialog are the top-level steps before and after the Multiple Approvals Process Step. The other sub-steps do not have an order and therefore are not shown in relation to the step being approved or rejected.

Parallel Subprocess

The Parallel Subprocess step is intended to be used when you have several steps that are not dependent on each other, and instead can be performed at the same time (in parallel). The only purpose of this step is to define a set of sub-steps that can be performed concurrently.

Process behavior

When the Parallel Subprocess step is the active step, all sub-steps of that subprocess are also made active. Owners of the sub-steps can complete their steps as appropriate without any dependencies on the other sub-steps. When *all* sub-steps of the subprocess are marked as complete by their owners, then the Parallel Subprocess step is automatically marked as complete. For more information, see Performing process steps in parallel.

Step-specific settings

The only available step settings for Parallel Subprocesses are display text and description. They do not have owner assignments or due dates. Owner assignments and due dates are defined individually for each sub-step.

Restrictions and limitations

- A Parallel Subprocess must have two or more sub-steps, to define the steps that can be performed in parallel.
- Approval Process Steps cannot be sub-steps of a Parallel Subprocess. Because the child steps of a Parallel Subprocess can be completed in any order, an approval or a rejection would not make sense in this context.
    - If you want to approve the steps in a Parallel Subprocess, then the next step after the Parallel Subprocess should be an Approval Process Step. In this case, note that if the assigned user rejects the process to return to the prior step, the entire Parallel Subprocess will be "reopened" and made active again.
    - If you want multiple Approval Process Steps to be active simultaneously, then you should use a Multiple Approvals Step. This is a special type of parallel subprocess that only allows for approval steps.
- When an owner of a sub-step in a Parallel Subprocess completes a step, they will not see the previous and next steps in the Process Action dialog. Within the context of the subprocess, all sub-steps are occurring concurrently and there is no "previous" and "next". However, if a user has the ability to view all steps of the process in the Process task pane, they can see the overall step progression there.

Report Process Step

The Report Process Step is intended to be used for steps where you need a user to run a report in Axiom Cost Accounting. For example, you may want a user to run a report for any of the following reasons:

- Verify data before moving on in the process
- Run a save-to-database report utility
- Distribute report packages using File Processing features
- Process alerts

Process behavior

When the Report Process Step is the active step, the step owner has two actions available in the Process task pane:

- **Open report**: The user can click this link to access the report according to their security permissions. The step name and/or description should make it clear to the user what they are expected to do with the report.
- **Mark step as complete**: The user can click this link to complete the active task.

Step-specific settings

When configuring a Report Process Step, complete the following settings in addition to the general step settings:

Item	Description
Selected Report	The report to associate with this step. Click the folder icon to select a file in the Reports Library.
Open Form As	If the report is form-enabled, then you can specify how the file is opened when the user opens it from the Process task pane: • **Form in the client**(default) • **Form in web browser** • **Spreadsheet** This option only displays if the selected report is form-enabled. **NOTE:** When using the Axiom Excel Client, Axiom forms will always open in the user's browser instead of within the application, regardless of this setting.

NOTE: The assigned user for the step must have the appropriate security permissions to access the report and perform the desired action (such as Allow Save Data to perform a save-to-database). The Report Process Step does not grant any permissions or elevate any existing permissions.

Scheduler Process Step

The Scheduler Process Step is intended to be used for steps where you want to run a Scheduler job as part of the process. Unlike other step types, the Scheduler Process Step is an automated step, meaning that no user intervention is required to run the Scheduler job or to complete the step (assuming no errors occur).

Process behavior

When the Scheduler Process Step is made active, Axiom Cost Accounting will automatically place the job in the Scheduler queue for immediate processing (pending Scheduler thread availability). If the processing completes successfully, then the step is automatically marked as complete and the process continues to the next step. Any notifications defined in the job are honored; no additional notifications are sent.

If the job experiences any errors, or if Axiom Cost Accounting is unable to schedule the job for some reason, then the step is effectively stalled. However, unlike other stalled steps, if this occurs the assigned user has several options available in the Process task pane to attempt to resolve the issue:

- **View job results**: The user can view the job results to troubleshoot the issue. However, note that the user must have the **Scheduled Jobs User** permission and at least read-only access to the job in order to view the job results.
- **Restart scheduled job**: This option places the job in the Scheduler queue to be run again. This assumes that the error was the result of some temporary issue which no longer applies, or that the underlying issue has been addressed and the job is now expected to complete without error.

- **Mark step as complete**: This option can be used to ignore the job error and manually complete the step. This may be appropriate for situations where the job completed with partial success which is sufficient to consider the step complete, or for cases where the step owner or an administrator ran the Scheduler job or related utility manually as part of troubleshooting the original issue, so the job does not need to be run again as part of processing this step.

Step-specific settings

When configuring a Scheduler Process Step, complete the following settings in addition to the general step settings:

Item	Description
Selected Scheduler Job	The Scheduler job to associate with this step. Click the folder icon to select the job.

Although the step is automated, you must still specify an assigned user for the step. The job will run using the permissions of the assigned user. The assigned user is not required to have any access to Scheduler or to the specified job, although ideally the user will have this level of permissions in order to troubleshoot the job results if any errors occur.

Table Process Step

The Table Process Step is intended to be used for steps where you need a user to perform some kind of administrative action on a table.

Process behavior

When the Table Process Step is the active step, the step owner has two actions available in the Process task pane:

- **<Action>**: The user can click the action link to open a table or perform the action associated with this step. The text of the action and what it does depends on the Selected Action for the step. For example, if the Selected Action is Clone Table, then the link text is "Clone Table" and clicking on it opens the Create Table dialog for table cloning.
- **Mark step as complete**: The user can click on this link to complete the active task.

Step-specific settings

When configuring a Table Process Step, complete the following settings in addition to the general step settings:

Item	Description
Selected Table	The table on which to perform the designated action. Click the folder icon to select a table.
Selected Action	The action to perform on the table: • **Clone Table** • **Edit Table Data** (meaning Open Table in Spreadsheet) • **Edit Table Structure** In all cases, the assigned user will be able to open the associated dialog from the Process task pane when the step is active. The display text and/or description for the step should make it clear to the user what they are expected to do in order to consider the step complete. If Edit Table Data is the selected action, then you can optionally define a Data Filter and/or a Row Limit for the task.
Data Filter	Optional. Define a data filter to limit the data to be displayed in Open Table in Spreadsheet. Use the Filter Wizard to create the filter criteria statement. This setting only applies if Edit Table Data is the selected action.
Row Limit	Optional. Enter a number to limit the number of rows to be displayed in Open Table in Spreadsheet. This setting only applies if Edit Table Data is the selected action.

NOTE: The assigned user for the step must have the appropriate security permissions to access the table and perform the designated action. The Table Process Step does not grant any permissions or elevate any existing permissions.

Configuring Notifications

General processes can send several different types of notifications, all of which can be configured at the process level and at the step level. These notifications are used to inform or remind users about tasks they need to perform, or to inform other interested parties about the current step status.

When setting up notifications for a process, you can determine:

- The types of notifications that are sent for the process and for each step
- The recipients of each notification
- The content of each notification
- The delivery method of each notification (email, Notifications task pane, or both)
- Whether notifications are sent at all, for the entire process or per step
- The frequency and timing of reminder notifications

When defining notifications for a process, you can define default notifications at the process level. These process-level notifications are inherited by the individual steps in the process. At the step level, you can choose to enable or disable the inherited notifications as needed, and you can define custom notifications to be used for that step only.

NOTE: The information in this section does not apply to administrative notifications for a process, which are system-managed notifications intended to inform the process owner about the general operation of the process and any errors encountered. For more information about process ownership and administrative notifications, see Designating the process owner.

Notification types for general processes

The following types of notifications can be sent for a general process in process management:

Notification Type	Description	Available Recipient Types
Step Activated	Notification that is sent when a step is made active. By default, the notification informs the step owner(s) that they have a task to perform in the process. You can customize the default notification as desired. **NOTE:** This notification type is *not* used when a previously active step is reopened due to an approval step rejection. Instead, the Step Reopened notification type is used.	• Task owners • Any named user or role • Process owner
Step Reopened	Notification that is sent when a step is reopened, due to a subsequent approval step being rejected. By default, the notification informs the step owner that their task has been reopened. You can customize the default notification as desired.	• Task owners • Any named user or role • Process owner
Step Rejected	Notification that is sent when an approval step is rejected. This notification type is not configured by default and is entirely user-definable. This notification type only applies to approval steps and multiple approval steps. **NOTE:** This notification type is about the step that was rejected, not about the prior step that was reopened as a result of the rejection. It is intended to inform the process owner or other interested parties about the rejection.	• Previous step owners • Any named user or role • Process owner

Notification Type	Description	Available Recipient Types
Step Completed	Notification that is sent when a step is completed. This notification type is not configured by default and is entirely user-definable.	• Previous step owners • Any named user or role • Process owner
Due Date Reminder	Notification that is sent to remind users of an upcoming step due date. This notification type is not configured by default and is entirely user definable, including the reminder schedule.	• Task owners • Any named user or role • Process owner
Overdue Reminder	Notification that is sent to remind users of an overdue step. This notification type is not configured by default and is entirely user definable, including the reminder schedule.	• Task owners • Any named user or role • Process owner

NOTE: For more information on the recipient types, see Customizing recipients for process notifications.

Most of these notification types do not apply to subprocess steps (the parent step of the subprocess). For example, a Step Activated notification is *not* sent when a multiple approvals step is made active; instead the notification is sent for the first sub-step in the subprocess. Similarly, the Due Date Reminder and Overdue Reminder notification types do not apply to subprocess steps, because these steps do not have due dates (only the sub-steps do).

The only notification types that apply to subprocess steps are:

- **Step Completed**: This can be used with any subprocess. It will be sent when all sub-steps in the subprocess are completed.
- **Step Rejected**: This only applies to multiple approvals steps. It will be sent when the multiple approvals subprocess is rejected due to any of its approval sub-steps being rejected.

You can define multiple instances of the same notification type, at any level of the process. If multiple notifications apply when a particular step activity occurs (such as when a step is activated), then all eligible notifications will be sent. For example, you might do this if you want to define different notification content for different recipients of the notification type.

Notification design considerations

Keep in mind the following design considerations when defining notifications for a process.

- **Step Activated / Step Reopened - Sending to recipients other than step owners**

  If you want to send the Step Activated or Step Reopened notification to any recipients other than the step owners, you should consider creating a second instance of the notification type with text that is appropriate for the other recipients.

  The default text for these notification types assumes that the notification is being read by the step owners. The text includes statements such as "You have a new task..." and "Please login to Axiom Cost Accounting to complete your tasks." It may be confusing for process owners or other recipients to receive this notification because these users do not actually have a new task, they are just being informed of someone else being assigned a new task. The non-owner recipients should have a separate instance of the notification type, with text that better reflects the informational status of the notification, such as: "A new task has been issued for Step 'Import data' in Process 'Rollover'."

- **Step Activated / Step Reopened - Delivering to the Notifications task pane**

  Because the default delivery method is email, the default text for these notifications contains the sentence "Please login to Axiom Cost Accounting to complete your tasks." If you decide to deliver notifications to the Notifications task pane instead, this sentence does not apply and should be removed.

- **Step Rejected - Using with multiple approvals steps**

  If you want to use the Step Rejected notification type with a multiple approvals step, you should consider at which level you want the notification to be issued. You can enable Step Rejected for each approval sub-step in the subprocess, which means that the notification will be sent at the level of the individual sub-step that was rejected. Or, you can enable Step Rejected at the subprocess level (the parent multiple approvals step), which means that the notification will be sent for the parent step when any of the sub-steps are rejected.

  This choice impacts how the variables are resolved in the notification text and what information is available to the notification. You can also choose to send both levels of notification, but this is probably more notifications than necessary for the same event, unless each notification is for different recipients.

Disabling notifications for a process

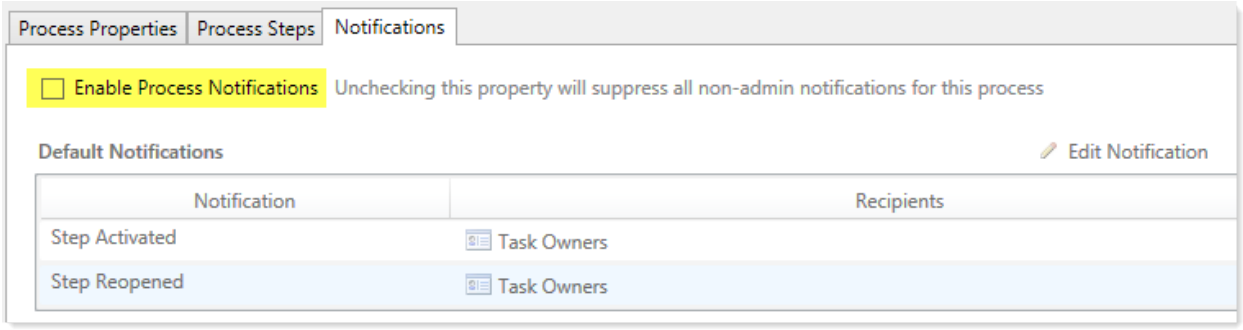
By default, each process includes "built-in" notifications intended to inform step owners about new and reopened tasks in the process. You can define additional notifications and customize the built-in notifications as needed.

However, if you don't want to send these notifications, then you can disable notifications for the entire process or for specific steps. If notifications are disabled, then the only way users can learn of their active tasks is through the Process task pane, or through other custom reports created by your organization.

Disabling notifications at the process level

Use the **Enable Process Notifications** option on the Notifications tab to enable or disable notifications for the entire process.

- By default, this check box is selected, which means notifications are enabled for the process. Notifications will be sent according to the notification settings defined for each individual step (which may include using the inherited process-level notifications).
- If you clear this check box, then notifications are disabled for the process. No notifications will be sent. The **Default Notifications** section becomes grayed out and cannot be edited. Additionally, any notification settings made at the individual step level will be ignored.



Notifications disabled for a process

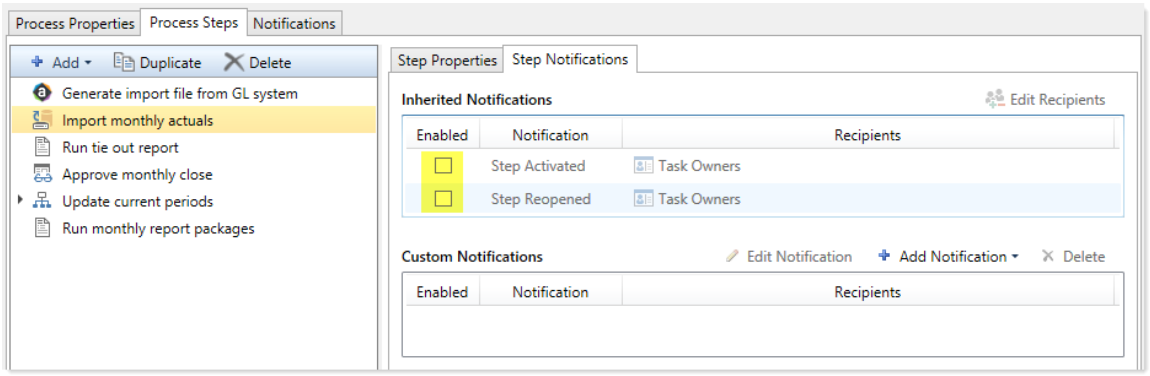
Administrative notifications are always sent and cannot be disabled. For more information on these notifications, see Designating the process owner.

Disabling notifications at the step level

If **Enable Process Notifications** is enabled at the process level, then you can enable or disable notifications at the individual step level.

To disable notifications for a particular step, go to the **Process Steps** tab and then select the desired step. In the **Step Notifications** sub-tab, you can enable or disable notifications by type.

- **Inherited Notifications**: These notifications are inherited from the process-level notifications. To disable the inherited notifications at the step level, clear the **Enabled** check box for each notification.



Inherited notifications disabled for a step

- **Custom Notifications**: These notifications are defined for the current step. To disable a custom notification, clear the **Enabled** check box.

  It would be unusual to define a custom notification for a step and then disable it, unless you are disabling it temporarily for testing purposes or for other transient reasons. If you do not need the custom notification for the step, you can delete it instead of disabling it.

Any inherited or custom notifications that are disabled for the step will not be sent for that step.

If **Enable Process Notifications** is *disabled* at the process level, then any step-level notification settings are ignored and no notifications will be sent for the process. However, you can continue to edit the step-level notification settings so that they are configured as you want them in case you later re-enable notifications at the process level. A warning message displays across the top of the Step Notifications sub-tab to inform you when notifications are disabled at the process level.

Disabling notifications at the subprocess level

It is not possible to disable notifications for all sub-steps of a subprocess. If you want to disable notifications for a subprocess, you must disable them for each individual sub-step in the subprocess, using the methodology described in the previous section.

Inherited and custom notifications can also be disabled for the subprocess (parent) step itself, using the methodology described in the previous section.

Defining default notifications for a process

You can define default notifications at the process level. These notifications are inherited by all eligible steps in the process, and can be enabled or disabled for those steps.

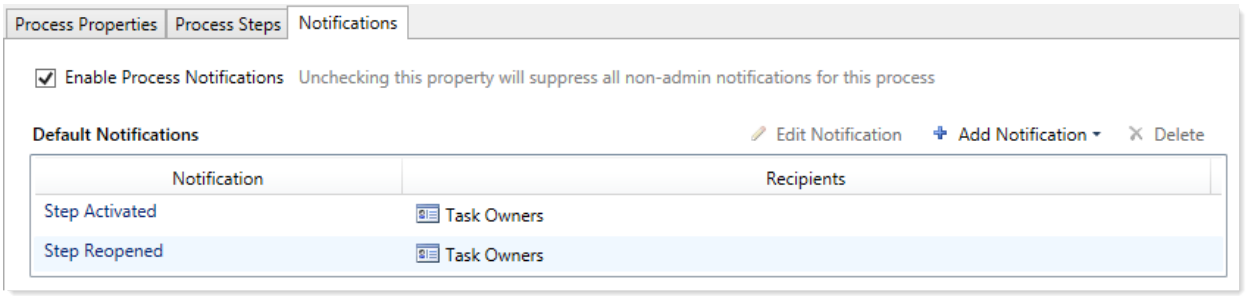
Default notifications are best for notifications that you want to use for all or most of the steps in the process. If many steps use the same notification, then it is easier to define it at the process level rather than for each individual step. If you don't want a default notification to apply to a particular step, then you can disable it at the individual step level.

The following steps are eligible to inherit the default notifications defined at the process level:

- Any top-level step that is not a subprocess step can inherit all default process-level notifications.
- Subprocess steps (the parent step of the sub-steps) can only inherit certain notification types from the default process-level notifications. Notification types that do not apply to subprocess steps will not be inherited by those steps.
- Sub-steps of parallel subprocesses (including multiple approvals steps) can inherit all default process-level notifications.

Built-in default notifications for all processes

By default, all process definitions start with two default notifications at the process level: a Step Activated notification and a Step Reopened notification.



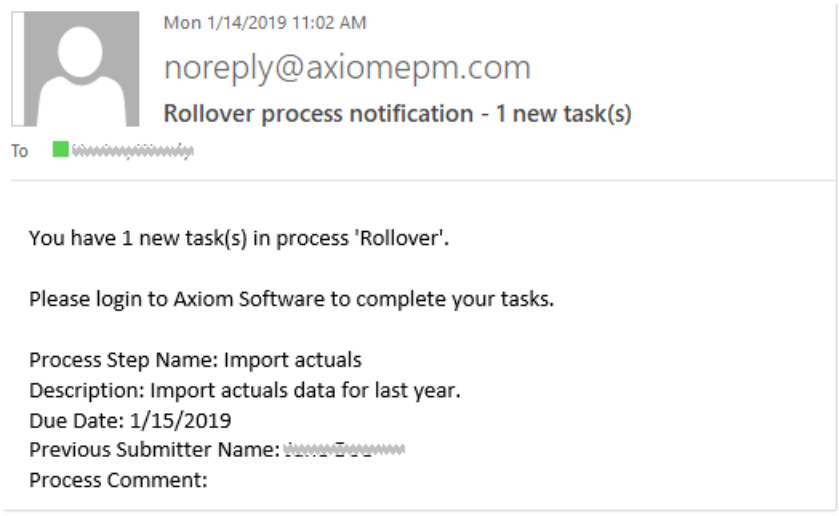
Built-in default notifications for a process

These built-in notifications are configured as follows:

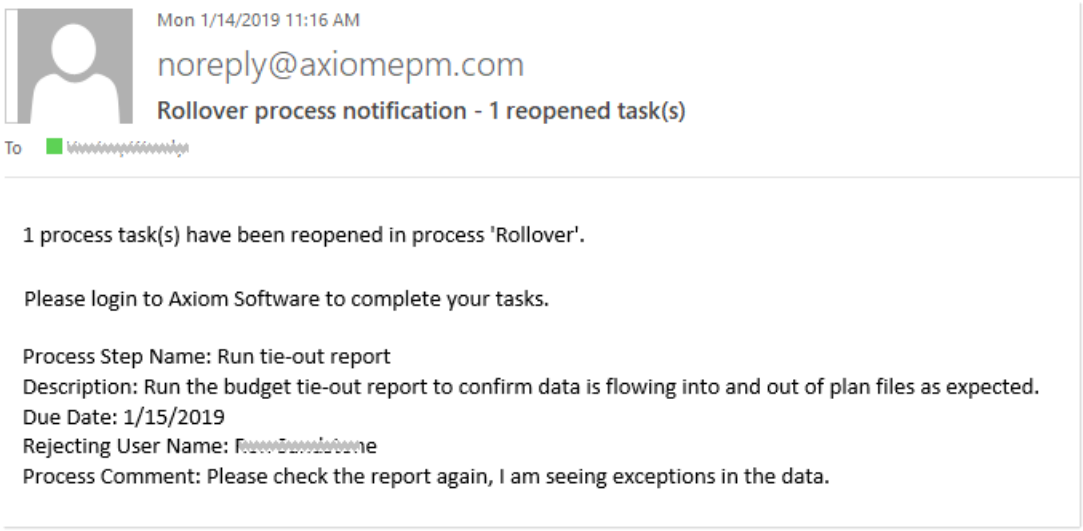
- Notification recipients are set to task owners.
- Notification delivery is set to use the process-level setting (which by default is email delivery).
- The messages contain basic details about the process and the current task.

You can use the built-in notifications as is, or you can customize them as desired. All aspects of the notification are customizable. You can also opt to delete the built-in notifications and create your own from scratch.

The following screenshots show example default process notifications for a general process definition.



Step Activated notification



Step Reopened notification

Adding, editing, and deleting default process notifications

You can add, edit, and delete default process notifications using the **Notifications** tab of the **Edit Process** dialog. Any existing default notifications defined for the process (including the built-in notifications) display in the **Default Notifications** grid.

You can define default process notifications at any time. If the process is already active, any changes made will apply to new notifications delivered after that point.

To add a default notification:

1. Click **Add Notification**, then select the notification type that you want to add. For more information on the available notification types, see Notification types for general processes.

2. In the **Edit Process Notification** dialog, define the properties for the new notification. For more information, see Notification properties for process definitions. Note the following:
    - Most newly added notifications do not have any default recipients. You must add the desired recipients before the notification is valid for use. The exception is reminder notification types—these notifications go to task owners by default.
    - Newly added notifications do not have any defined message text. You must define this content before you can save the notification.
3. Click **OK** to save the notification.
4. You are prompted to choose whether you want the new notification to be enabled in existing steps by default. Click **Yes** or **No** as appropriate.

    NOTE: It is not possible to globally enable the notification for all steps after it is saved. If you don't enable the notification at this point, you must manually go to each existing step and enable it as needed.

The notification is added to the grid, and is available to be inherited by all eligible steps. Whether the notification is enabled in existing steps depends on your Yes/No selection when saving the notification. Whether the notification is enabled for newly created steps depends on the **Default Enablement** setting for the notification.

To delete a default notification:

- Select the notification in the grid, and then click **Delete**.

The deleted notification is removed from the process. Any steps that were inheriting the notification can no longer use it.

To edit a default notification:

- Double-click the notification in the grid. You can also select the notification in the grid and then click **Edit Notification**.

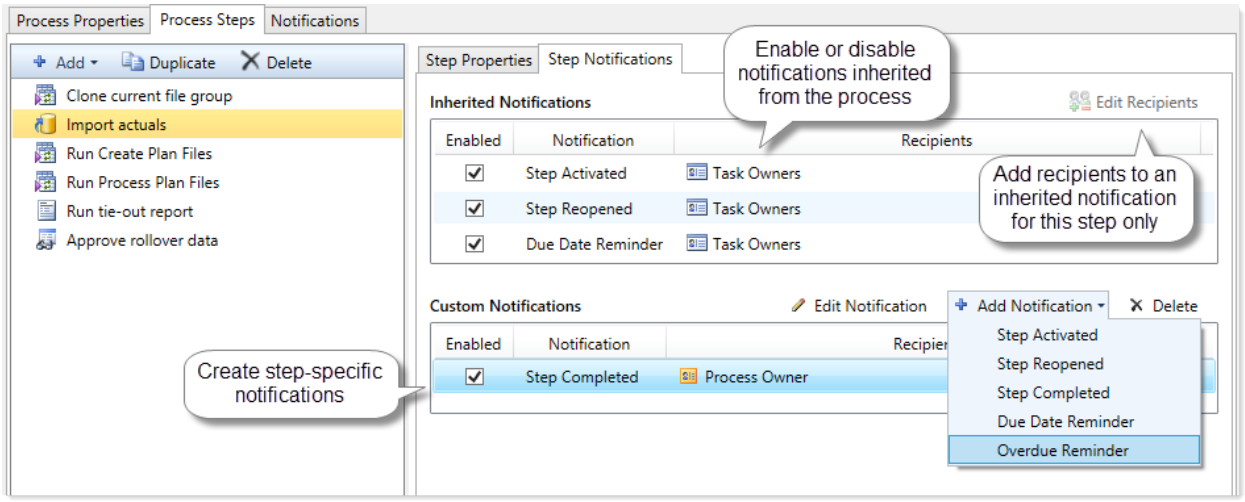
Within the **Edit Process Notification** dialog, you can edit notification properties such as:

- The delivery method for the notification (email, Notifications task pane, or both)
- The urgency of the notification
- The recipients of the notification
- The notification message contents
- The notification reminder schedule (for reminder notification types only)

Defining notifications at the step level

For each step in a process definition, you can configure notifications as follows:

- You can manage inherited notifications for the step. These are notifications that the step inherits from the default process-level notifications. Inherited notifications can be enabled or disabled, and you can optionally add recipients for the current step.
- You can define custom notifications for the step. These notifications only apply to the current step.



NOTE: If multiple instances of the same notification type apply to a step, then each instance will be sent when the notification is triggered. For example, if a step has an inherited Step Activated notification as well as a custom Step Activated notification, then both notifications will be sent (unless one of the notifications is disabled).

Manage inherited notifications for a step

You can manage inherited notifications for the individual steps in a process. All steps inherit the default notifications defined at the process level. You can enable or disable inherited notifications at the step level, and you can add recipients at the step level.

To manage inherited notifications for a step, go to the **Process Steps** tab in the **Edit Process** dialog. Select the step, then go to the **Step Notifications** sub-tab. Any existing inherited notifications for the step display in the **Inherited Notifications** grid.

- Use the **Enabled** check box to enable or disable an inherited notification. If enabled, the notification will be sent for this step; if disabled, the notification will not be sent.

  Whether an inherited notification is enabled by default for a step depends on the choices made when the notification was created at the process level or the subprocess level.

- To add recipients to an inherited notification, select the notification in the grid and then click **Edit Recipients**. For more information, see Adding step-specific recipients to inherited notifications.

The only inherited notification property that can be customized at the step level is the recipients. If you want to customize the text of an inherited notification for use with a specific step only, then you should do one of the following (depending on what you want to accomplish):

- Disable the inherited notification and instead create a custom notification of the same type for the step.

  OR

- Leave the inherited notification enabled and create a custom notification of the same type for the step, but send each notification to different recipients.

Inherited notifications for subprocess steps

Parallel subprocess steps and multiple approvals steps can only inherit certain types of notifications from the process. This only applies to the parent subprocess step itself. The child steps of the subprocess can inherit all notification types as normal.

The only notification types that a subprocess step can inherit are:

- **Step Completed**: When all steps in the subprocess have been completed, the Step Completed notification will be sent.
- **Step Rejected**: This notification type only applies to multiple approvals steps. If any of the approval sub-steps are rejected, the Step Rejected notification will be sent for the parent multiple approvals step. Note that this type of notification should be defined at either the parent level or the child level, but not both (unless you want to send each notification to different recipients).

Define custom notifications for a step

You can define custom notifications for each step in a process. The custom notifications defined at the step level only apply to that step. If the process is already active, any changes will apply to new notifications delivered after that point.

To define custom notifications for a step, go to the **Process Steps** tab in the **Edit Process** dialog. Select the step, then go to the **Step Notifications** sub-tab. Any existing custom notifications defined for the step display in the **Custom Notifications** grid.

To add a custom notification:

1. Click **Add Notification**, then select the notification type that you want to add. For more information on the available notification types, see Notification types for general processes.
2. In the **Edit Process Notification** dialog, define the properties for the new notification. For more information, see Notification properties for process definitions. Note the following:

- Most newly added notifications do not have any default recipients. You must add the desired recipients before the notification is valid for use. The exception is reminder notification types—these notifications go to task owners by default.
- Newly added notifications do not have any defined message content. You must define this content before you can save the notification.

3. Click **OK** to save the notification.

The notification is added to the grid, and by default it is enabled for the step. You can disable it if desired, if you want to temporarily turn off the notification for the step.

To delete a custom notification:

- Select the notification in the grid, and then click **Delete**.

The deleted notification is removed from the step.

To edit a custom notification:

- Double-click the notification in the grid. You can also select the notification in the grid and then click **Edit Notification**.

Within the **Edit Process Notification** dialog, you can edit notification properties such as:

- The delivery method for the notification (email, Notifications task pane, or both)
- The urgency of the notification
- The recipients of the notification
- The notification message contents
- The notification reminder schedule (for reminder notification types only)

Custom notifications for subprocess steps

You can define custom notifications for parallel subprocess steps and multiple approvals steps. The process is the same as for normal steps. However, only Step Completed and Step Rejected (for multiple approvals steps) notifications can be defined for the parent subprocess step. The child steps of the subprocess can use all notification types as normal.

Customizing notification content for general process definitions

The default Step Activated and Step Reopened notifications for process definitions have default content that you can use as is, or you can customize it as desired. When defining all other notifications, the content is entirely up to you—there is no default content.

All notification content is defined in the **Notification Message** tab of the **Edit Process Notification** dialog. To access this dialog, go to the **Notifications** tab for the process or the **Step Notifications** tab for a step, and then add or edit a notification.

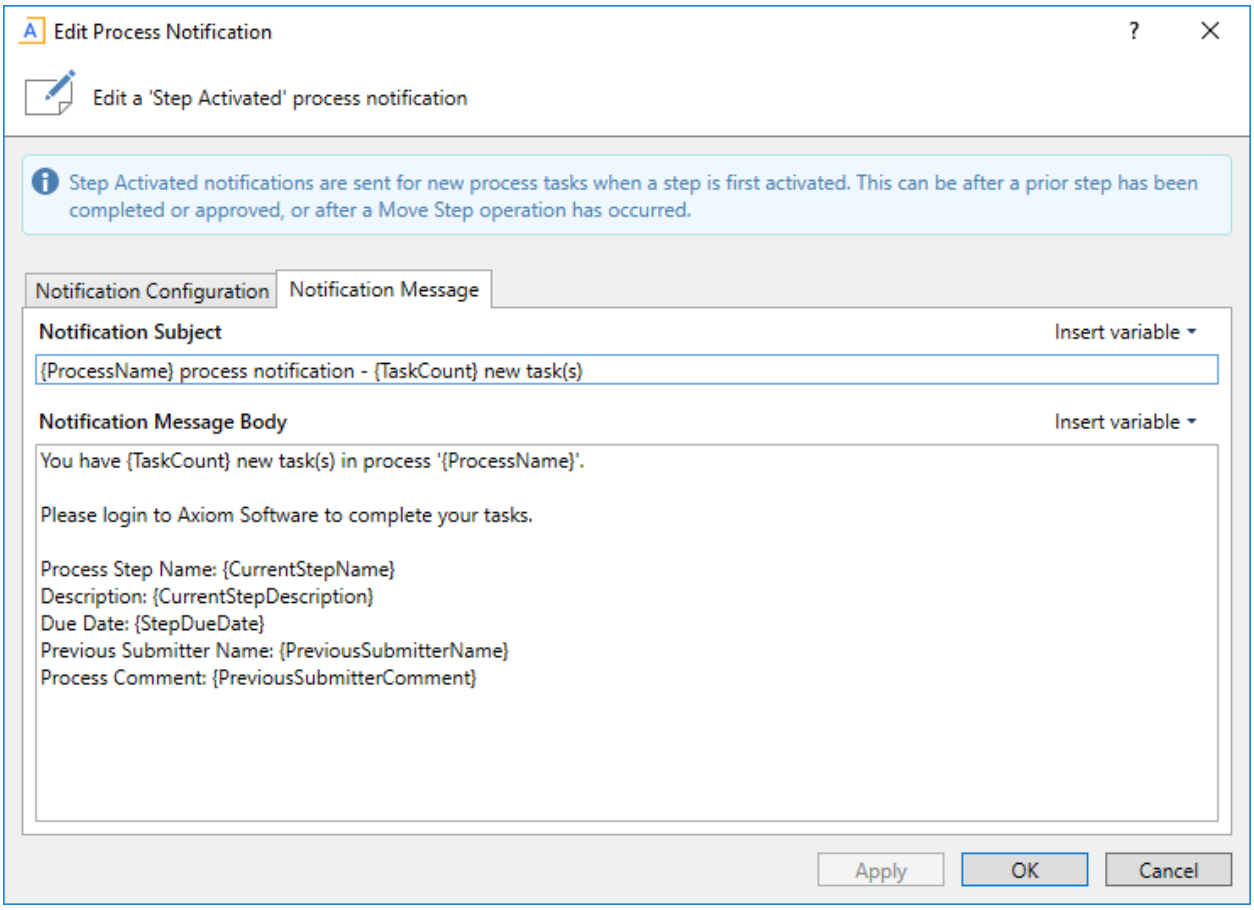
NOTE: If a step has inherited a notification from the process level, the content of that notification cannot be edited at the step level. You must go to the process level to edit the content of the inherited notification.

Process management supports a set of process variables that can be used to return process, step, and task information for use in notification content. For example, you can return the name of the process, the name of the step, and the due date of the step.

Notification message sections

Each notification message has two sections—the **Notification Subject** and the **Notification Message Body**. Both sections for the notification must have some content in order to be valid.

The subject is rendered as the email subject line and/or as the notification title in the Notifications task pane. The message body is the body text.



Example notification for a general process definition

Process variables

Process variables can be used in all sections of the notification message, although certain variables can only be used in certain sections. The variables use standard variable syntax in Axiom Cost Accounting—for example: `{StepDueDate}`.

Use the **Insert variable** menu for the current section to insert a variable into the text. The menu displays only the variables that are currently valid for use, based on the current section, the step type, and the process type. Although you can manually type the variables, it is recommended to use the menu to ensure that you only use variables that are valid for the current section. When you choose a variable from the menu, it is displayed in plain text—for example, Due Date for `{StepDueDate}`.

General variables

The following variables return general information about the process and its steps.

Variable	Description	Notification Types
{CompletingUserComment}	The comment made by the user who completed the step. • This variable resolves to blank if no comment was entered. • If the step that was completed was a parallel subprocess or a multiple approvals step, then this variable resolves as a list of sub-steps, completing users, and comments, such as: Sub-step 1 name - user name - comment Sub-step 2 name - user name - comment	Step Completed
{CompletingUserName}	The name of the user who completed the step. • If the step that was completed was a parallel subprocess or a multiple approvals step, then this variable resolves as a list of sub-steps and completing users, such as: Sub-step 1 name - user name Sub-step 2 name - user name	Step Completed
{CurrentStepName}	Name of the current step.	All notification types

Variable	Description	Notification Types
{CurrentStepDescription}	Description of the current step.	All notification types
{CurrentStepNumber}	Number of the current step.	All notification types
{DaysPastDue}	Number of days past the due date for the current step.	Due Date Reminder, Overdue Reminder
{DaysTilDueDate}	Number of days until the due date for the current step.	Due Date Reminder, Overdue Reminder
{OwnerFullName}	The full name of the current task owner.	Step Activated, Step Reopened, Due Date Reminder, Overdue Reminder
{NextStepDueDate}	The due date of the next step in the process. • If the next step is a parallel subprocess or a multiple approvals step, then this variable resolves as a list of sub-steps and due dates, such as: Sub-step 1 name - due date Sub-step 2 name - due date • If the completed step was a sub-step of a parallel subprocess or a multiple approvals step, and the subprocess is still active, then this variable resolves to text such as "N/A - parallel subprocess step is not complete". • If the completed step was the last step in the process, then this variable resolves to text such as "N/A - the process is complete".	Step Completed, Step Rejected

Variable	Description	Notification Types
{NextStepName}	The name of the next step in the process. • If the next step is a parallel subprocess or a multiple approvals step, then this variable resolves as follows: Parallel Subprocess Step Name (Comma-separated list of sub-step names) • If the completed step was a sub-step of a parallel subprocess or a multiple approvals step, and the subprocess is still active, then this variable resolves to text such as "N/A - parallel subprocess step is not complete". • If the completed step was the last step in the process, then this variable resolves to text such as "N/A - the process is complete".	Step Completed, Step Rejected
{NextStepOwner}	The owner of the next step in the process. • If the next step is a parallel subprocess or a multiple approvals step, then this variable resolves as a list of sub-steps and owners, such as: Sub-step 1 name - user name Sub-step 2 name - user name • If the completed step was a sub-step of a parallel subprocess or a multiple approvals step, and the subprocess is still active, then this variable resolves to text such as "N/A - parallel subprocess step is not complete". • If the completed step was the last step in the process, then this variable resolves to text such as "N/A - the process is complete". • If the owner is a role, then this variable resolves as a comma-separated list of all owners in the role.	Step Completed, Step Rejected

Variable	Description	Notification Types
{PreviousStepName}	The name of the previously active step in the process. • This resolves to N/A for the first step in the process when used in Step Activated notifications. • If the previous step was the last-completed step of a parallel subprocess or a multiple approvals step, then this variable resolves as follows: Parallel Subprocess Step Name (Comma-separated list of sub-step names)	Step Activated, Step Reopened
{PreviousSubmitterComment}	The comment made by the user who completed the previously active step. • This resolves to N/A for the first step in the process. For other steps, it resolves to blank if no comment was entered. • If the previous step was a parallel subprocess or a multiple approvals step, then this variable resolves as a list of sub-steps, submitters, and comments, such as: Sub-step 1 name - user name - comment Sub-step 2 name - user name - comment	Step Activated
{PreviousSubmitterName}	The name of the user who completed the previously active step. • This resolves to N/A for the first step in the process. • If the previous step was a parallel subprocess or a multiple approvals step, then this variable resolves as a list of sub-steps and submitters, such as: Sub-step 1 name - user name Sub-step 2 name - user name	Step Activated

Variable	Description	Notification Types
{ProcessName}	The name of the process (display name if defined, process name if not).	All notification types
{RecipientFirstName}	The first name of the notification recipient.	All notification types
{RecipientFullName}	The full name of the notification recipient.	All notification types
{RejectingUserComment}	The comment made by the user who rejected the step (or in the case of On Demand Process Aborted, the user who aborted the plan file in the process). This variable resolves to blank if no comment was entered.	Step Reopened, Step Rejected, On Demand Process Aborted
{RejectingUserName}	The name of the user who rejected the step (or in the case of On Demand Process Aborted, the user who aborted the plan file in the process).	Step Reopened, Step Rejected, On Demand Process Aborted
{StepDueDate}	The due date for the step.	Step Activated, Step Reopened, Due Date Reminder, Overdue Reminder
{TaskCount}	The count of tasks covered by this notification.	Step Activated, Step Reopened, Due Date Reminder, Overdue Reminder

Other variables

The following variables can only be used in notifications for Report Process Steps.

Variable	Description	Notification Types
{LinktoReport}	Link to open the specified report for the step.	Any notification type

Note the following when using the `{LinkToReport}` variable:

- If the report is form-enabled, then the hyperlink will open the file as a form or as a spreadsheet depending on the step-level setting **Open Form As**. For email notifications, if the step is configured to open the file as a form, then the form will be opened in the Web Client (browser) in all cases. For notifications delivered to the Notifications task pane, the option to open the form in the browser or the desktop client will be honored.
- If the report is not form-enabled, the hyperlink opens the report as a spreadsheet in the user's default desktop client.
- When the report is opened as a spreadsheet and the notification is sent via email, the hyperlink uses the same format as hyperlinks generated using GetDocumentHyperlink, including the differing URL format for systems using SAML or OpenID Authentication.

Customizing recipients for process notifications

When defining the notifications for a process definition, you can customize the recipients for each notification. You can choose specific users and roles to receive notifications, and you can select defined classes of recipients such as task owners and the process owner.

Recipient types

The following recipient types are available for process notifications. Certain recipients are only available for certain notification types.

Recipient Types	Description
Task Owners	The notification will be sent to the current task owners for the step. This recipient type is not available for the Step Completed or Step Rejected notification types, because once the step is completed it has no current owners.
User	Select any named user defined within Axiom Cost Accounting security to send the notification to that user. This recipient type is available for any notification.
Role	Select any named role defined within Axiom Cost Accounting security to send the notification to all users in that role.
Process Owner	The notification will be sent to the process owner. This recipient type is available for any notification.
Previous Step Owners	The notification will be sent to the users who completed all previous steps in the process. This recipient type is only available for the Step Completed and Step Rejected notification types. For more information, see Behavior of Previous Step Owners recipient type.

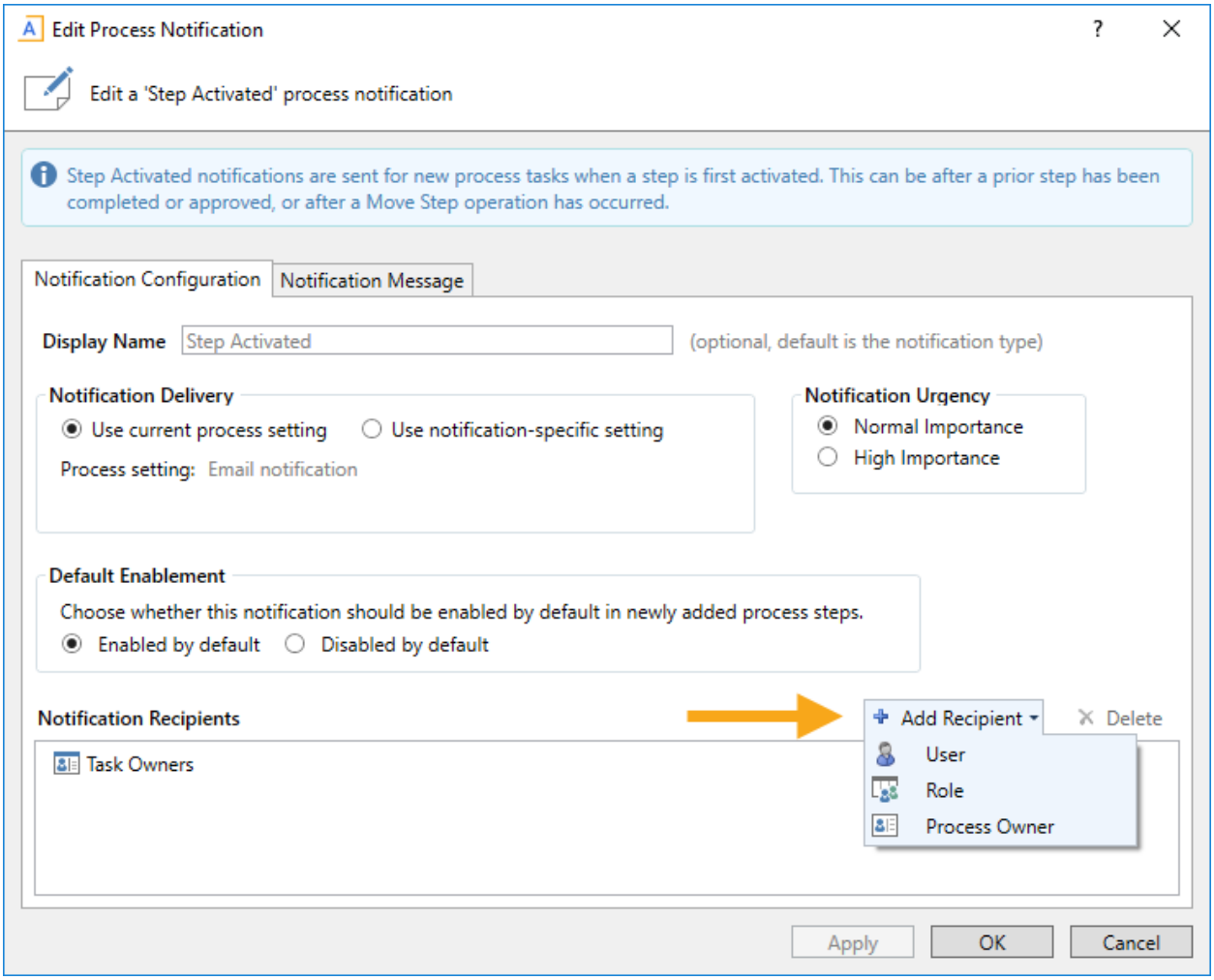
Generally speaking, the Task Owners recipient type is intended to be used when you want to inform a user that they have a task to complete in the process, or to remind the user that they need to complete the task. All other recipient types are intended to inform interested users about what is currently going

on with the process. For example, a process owner may want to receive a notification as each step in the process is completed, to help them keep tabs on the process. Similarly, there may be a specific user or role who is also interested in receiving this information, for the entire process or perhaps for a specific step.

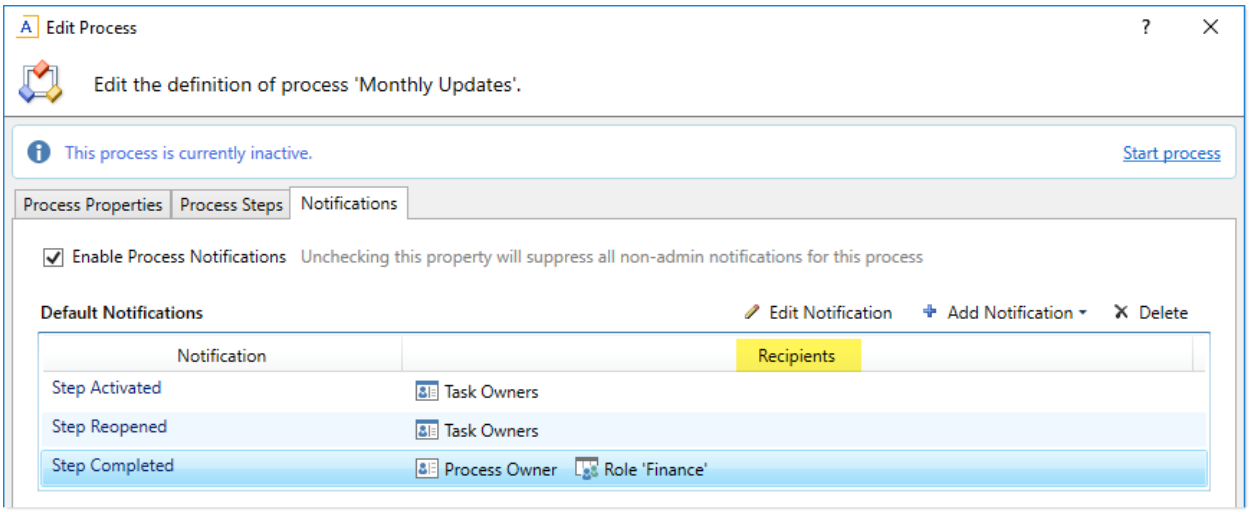
When using different types of recipients for the same notification type, in most cases you should define multiple notifications with different text. The text for task owners should be action-oriented (such as "You have a new task to complete for process Rollover"), whereas the text for interested parties is more informational ("User jdoe completed step Import Actuals for process Rollover").

Defining recipients for a notification

When you create or edit a notification at any level of the process, you can specify the recipients on the **Notification Configuration** tab of the **Edit Process Notification** dialog. The **Add Recipient** list only shows the recipients that are valid for the current notification type and process type.



Once the notification has been saved, you can see the list of recipients in the notifications grid:

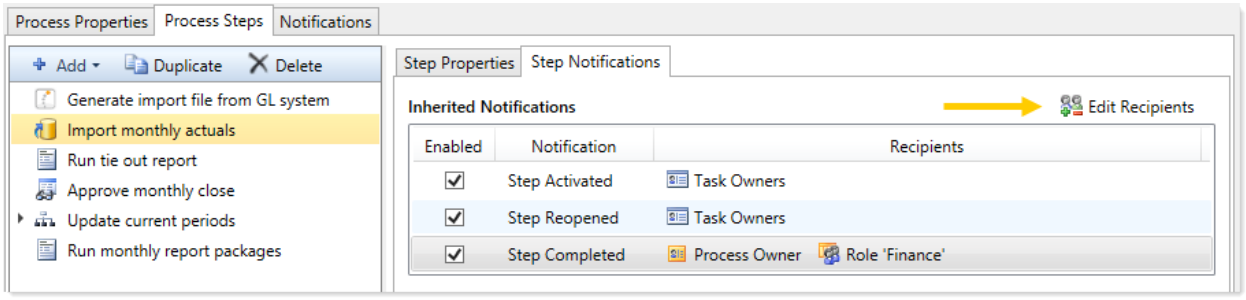


Adding step-specific recipients to inherited notifications

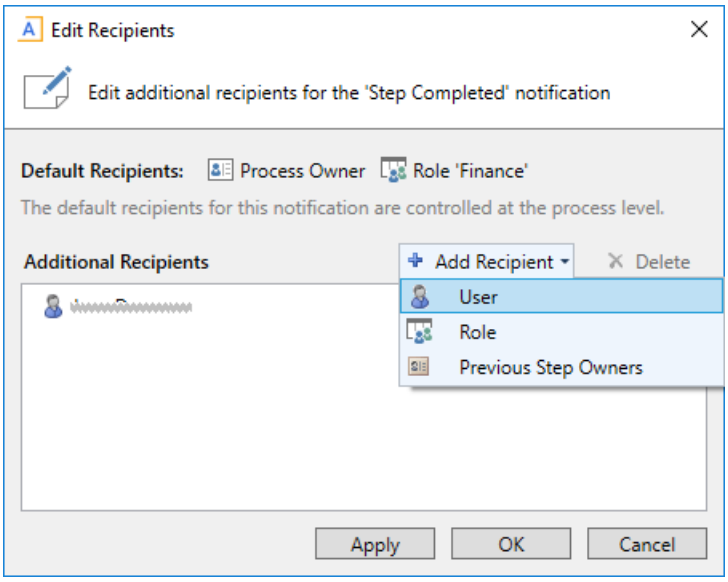
When a step inherits a notification from the process level, you have the option of adding recipients for that step only.

For example, imagine that you want to notify a specific user when a particular step completes. You can always choose to create a custom notification for that step and send it to that user. However, if an inherited Step Completed notification is already available to the step, then you can just add the user to that notification.

To add the user to the inherited notification, select the step and go to the **Step Notifications** sub-tab. Select the notification in the grid, then click **Edit Recipients**.



In the **Edit Recipients** dialog, you can see the default recipients defined for the inherited notification at the top of the dialog. You cannot remove any of these recipients, but you can add a recipient for this step only. In the following screenshot, the user Jane Doe will be included in the notification when this step is completed.



- To add a recipient, click **Add Recipient** and then select the type of recipient to add. Any recipient types that are already included in the default recipients are not listed here.
- To remove an additional recipient, select the recipient and then click **Delete**.

Any recipients listed in the **Additional Recipients** section will receive the notification for this step only.

Behavior of Previous Step Owners recipient type

The Previous Step Owners recipient type can be used to notify the previous owners of a process about the status of subsequent process steps. For example, users who completed the previous steps of the process may want to know when a certain milestone step of the process is completed, or when the final step of the process is completed. This notification type has some special behaviors depending on the particular process configuration.

For purposes of determining the users who are considered "previous step owners," only the users who *completed* previous steps qualify. Note the following:

- Assigned step owners who did not complete a step are not included as a recipient. For example, if the owner of a step was a role with three users, only the user who actually completed the step will receive the notification.
- If a previous step was completed by an administrator or the process owner (overriding step ownership), then that completing user will receive the notification instead of the assigned step owner.
- If a previous step was skipped or not completed (due to a **Move current step** operation), then that step will not have a completing user to receive the notification.

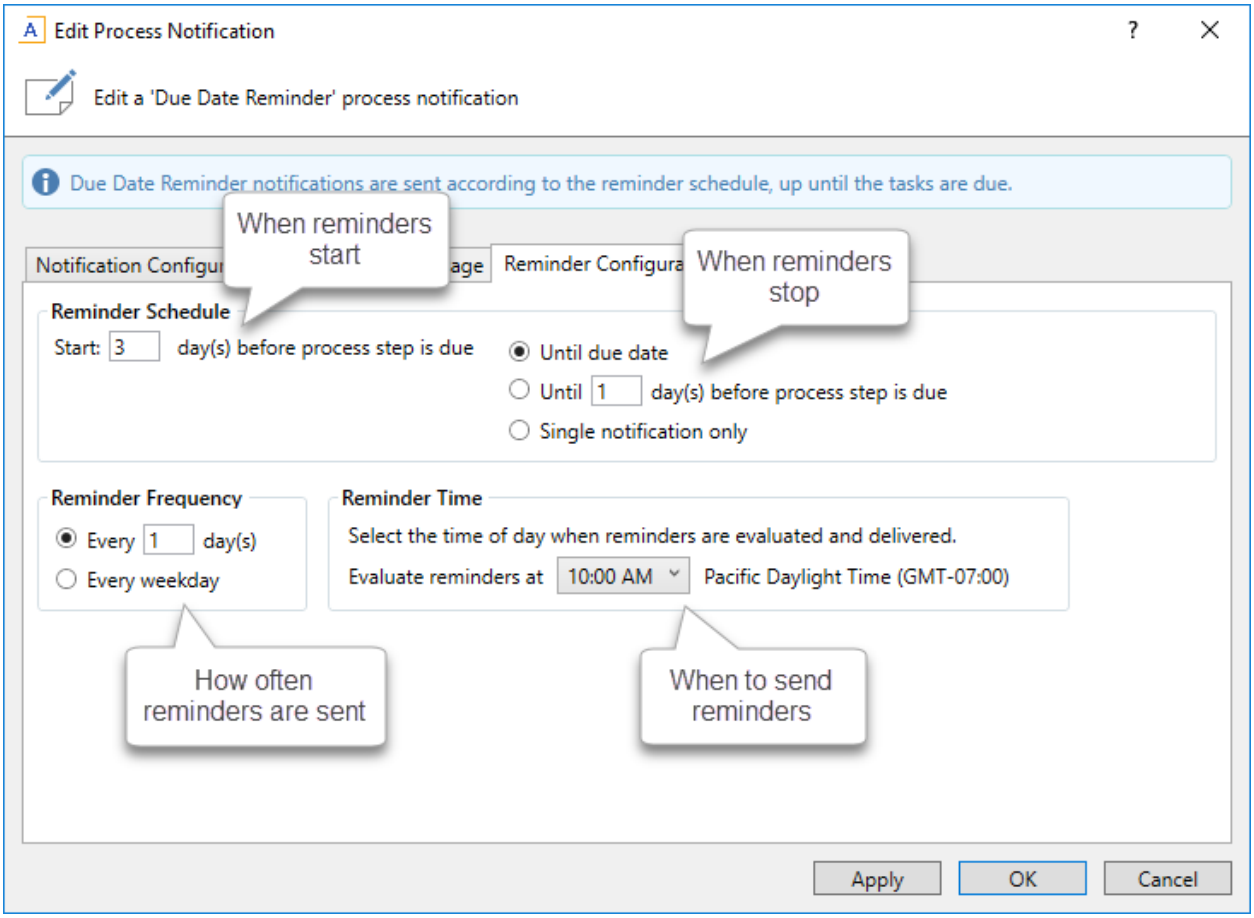
If a process definition contains a parallel subprocess (including multiple approvals), the previous step owners are treated as follows:

- When a sub-step of the parallel subprocess is completed, the other sub-steps in the subprocess are ignored for purposes of determining previous step owners. This is because the sub-steps of the parallel subprocess do not have an order, so the concept of "previous" does not apply. However, the previous step owners of steps completed before the subprocess will receive a notification.
- When steps after the parallel subprocess are completed, the previous step owners of all sub-steps of the parallel subprocess will receive a notification.

Setting up schedules for reminder notifications (standard processes)

When defining a Due Date Reminder or Overdue Reminder notification for a process definition, you must set the schedule for these reminders.

Within the **Edit Process Notification** dialog, the schedule is defined on the **Reminder Configuration** tab. This tab is only present for reminder notifications—all other notifications are triggered by step events such as step activation or completion.



Example Reminder Configuration tab

Due Date Reminder schedules

To decide on the appropriate Due Date Reminder schedule, you should consider the following:

- How many days before the due date do you want the reminders to start? This will impact the start of the schedule.
- How many reminders do you want to send / how frequently should the user be reminded? This will impact the reminder frequency and the end of the schedule.
- Do you want to send a reminder on the due date itself?

If you want to send reminders prior to the due date *and* on the due date itself, keep in mind that you may want to use different text for these notifications. For example, when sending reminders before the due date, you probably want to include text such as: "This is a reminder that your task for Step 'Import Data' is due in 3 days." If you use the same text on the due date, it will resolve as "due in 0 days"—which is technically true, but not as clear as saying "this task is due today." You might also want to use stronger wording in the notification on the due date itself. To do this, you can create two Due Date Reminder notifications, one to be sent before the due date, and one to be sent only on the due date. Each notification would have different text, and use a different reminder schedule.

To set the reminder schedule for a Due Date Reminder notification, complete the following settings on the **Reminder Configuration** tab:

1. In the **Reminder Schedule** section, set the start date for the reminder by editing the setting **Start _ _ day(s) before process step is due**. Enter any number of days before the due date. By default, this is set to 1 day before the due date.

   For example, if the step is due on 1/10/2016 and you set the start date to 3 days before the due date, then reminders will start on 1/7/2016.

   You can specify 0 days as the start date if you only want to send a reminder on the due date itself.

2. In the **Reminder Schedule** section, set the stop date for the reminder by selecting one of the following options:
   - **Until due date** (default): Reminders will be sent from the start date until the due date (including the due date itself).
   - **Until __ day(s) before process step is due**: Reminders will be sent from the start date until the number of days specified before the due date. By default this is set to 1 day before the due date.
   - **Single notification only**: The reminder will be sent once, on the start date.
3. In the **Reminder Frequency** section, select the frequency of the notifications:
   - **Every __ day(s)** (default): The reminder notification will be sent according to the specified day interval, from the start date to the end date. By default this is set to send a notification every 1 day, meaning a notification will be sent each day. All days of the week are included when choosing this option, including Saturday and Sunday.

- **Every weekday**: A reminder notification will be sent each weekday (Monday-Friday), from the start date to the end date. No notifications will be sent Saturday or Sunday.

  NOTE: If **Every weekday** is selected and the configured schedule causes a notification to fall on the weekend, that notification is simply not sent—it is not moved to the nearest weekday. This means that some schedule configurations may not send any notifications if the entire schedule happens to fall on the weekend. Specifically, you should not select this option if you are only sending a single notification, in case that single notification falls on the weekend.

4. In the **Reminder Time** section, select the time of day at which this reminder will be evaluated and delivered. You can select any hour from 12:00 AM to 11:00 PM. By default, this is set to 5:00 PM. See How reminder schedules work for more information.

The following table contains some example schedules and the resulting notifications. The frequency is assumed as every 1 day in these examples.

Example	Start Date	Stop Date	Resulting Notifications
Reminders before and on the due date	3 days before	Until due date	4 - one each on the three days before the due date, and one on the due date
Reminders only before the due date	3 days before	Until 1 days before step is due	3 - one each on the three days before the due date, none on the due date
Reminder only on the due date	0 days before	Single notification	1 - one on the due date

The frequency impacts how many of these notifications are ultimately sent. If the frequency is set to every 2 days in the first example, then only 2 of the 4 eligible notifications will be sent. Similarly if the frequency is set to weekdays only, then the number of notifications sent depends on how many of those days (if any) fall on a weekend.

Overdue Reminder schedules

To decide on the appropriate Overdue Reminder schedule, you should consider the following:

- How many days after the due date do you want the reminders to start?
- How many reminders do you want to send / how frequently should the user be reminded?

Of course, at a certain point, if a task is persistently overdue then some other action should be taken. Your organization may run reports that are intended to inform the process owner about tasks that are overdue, so that they can take action accordingly. Another option in this case would be to create an Overdue Reminder notification that goes to the process owner or to other designated users. For example, your organization may have a rule that if a task is 3 days late, the situation should be escalated

to the task owner's manager. You could have two Overdue Reminder notifications—one that goes to the task owners when the task becomes overdue, and another that goes to the process owner when the task is 3 days late.

To set the reminder schedule for an Overdue Reminder notification, complete the following settings on the **Reminder Configuration** tab:

1. In the **Reminder Schedule** section, set the start date for the reminder by editing the setting **Start _ _ day(s) after process step is due**. Enter any number of days after the due date. By default, this is set to 1 day after the due date.

   For example, if the step is due on 1/10/2016 and you set the start date to 1 day after the due date, then reminders will start on 1/11/2016.

2. In the **Reminder Schedule** section, set the stop date for the reminder by selecting one of the following options:
   - **No end date** (default): Reminders will be sent from the start date until the step is completed.
   - **Until __ day(s) after process step is due**: Reminders will be sent from the start date until the number of days specified after the due date. By default this is set to 1 day after the due date.
   - **Single notification only**: The reminder will be sent once, on the start date.
3. In the **Reminder Frequency** section, select the frequency of the notifications:
   - **Every __ day(s)** (default): The reminder notification will be sent according to the specified day interval, from the start date to the end date. By default this is set to send a notification every 1 day, meaning a notification will be sent each day. All days of the week are included when choosing this option, including Saturday and Sunday.
   - **Every weekday**: A reminder notification will be sent each weekday (Monday-Friday), from the start date to the end date. No notifications will be sent Saturday or Sunday.

     NOTE: If **Every weekday** is selected and the configured schedule causes a notification to fall on the weekend, that notification is simply not sent—it is not moved to the nearest weekday. This means that some schedules may not send any notifications if the entire schedule falls on the weekend. Specifically, you should not select this option if you are only sending a single notification, in case that single notification falls on the weekend.

4. In the **Reminder Time** section, select the time of day at which this reminder will be evaluated and delivered. You can select any hour from 12:00 AM to 11:00 PM. By default, this is set to 5:00 PM. See How reminder schedules work for more information.

How reminder schedules work

Reminder notifications are evaluated once per hour using the system Scheduler job **System.ProcessNotifications**.

This job checks all active steps in all active processes to see if these steps have any configured reminder notifications.

- If a step has reminder notifications, the job checks the due date of that step and the schedule of those notifications to see if any are eligible to be sent.
- If the notification is eligible to be sent, and the configured reminder time of the notification falls within the current hour in which the job is running, the notification will be sent.

Under normal circumstances, this setup results in only one reminder being sent per day, for each eligible step / notification combination. However, a reminder notification could be sent multiple times in a day if either of the following occurs:

- The reminder time is edited for an active process.
- The schedule for the system job is changed so that the job runs multiple times in an hour (or the job is manually run again within an hour).

All times for this process are evaluated on the Axiom Application Server. When you select a time, you select it based on your local time zone (shown next to the selected time for your reference). This selected time is converted to Coordinated Universal Time (UTC) when it is saved to the server, so that the reminders will be evaluated relative to your selected local time.

Reminder schedules are only evaluated while the step is active. If the step is completed, rejected, or aborted, then no reminder notifications will be sent.

Notification properties for process definitions

The following properties can be set for each notification defined in a general process definition.

Notification Configuration tab

This tab defines general properties for the notification.

Item	Description
Display Name	Optional. The name of the notification. This name is for use when configuring notifications for the process; it is not displayed anywhere in the actual notification to users. If left blank, the notification type is used as the display name (such as "Step Activated"). If you have more than one of a particular notification type, you should define a unique display name for each to avoid confusion.

Item	Description
Notification Delivery	Specifies how the notification will be delivered to recipients. By default, the option **Use current process setting** is enabled, which means that the notification will be delivered according to the process-level delivery settings on the **Notifications** tab. If you want to override the process-level settings for this particular notification, then select **Use notification-specific setting** instead. If **Use notification-specific setting** is enabled, then select one of the following: • **Notification task pane**: Display the notification in the recipient's Notifications task pane. • **Email notification** (default): Send the notification by email, using the recipient's email address as defined in Axiom Security. • **Both notifications**: Send the notification by email and display it in the Notifications task pane.
Notification Urgency	Specifies the urgency of the notification. Select one of the following: • **Normal Importance**: The notification will not be called out as having any particular importance. • **High Importance**: The notification will be flagged as important. In the Notifications task pane, the notification will display with an exclamation point. For email notifications, the display depends on the recipient's email client configuration.
Default Enablement	Specifies whether the notification will be enabled by default in newly added process steps that are eligible to inherit the notification. Select one of the following: • **Enabled by default** (default): The notification will be enabled by default in newly added process steps. • **Disabled by default**: The notification will be disabled by default in newly added process steps. This setting is only present when defining default notifications for the process. It does not display for step-specific custom notifications. This setting does not impact whether a notification will be enabled in existing steps. When you create a new default notification, you will be prompted to choose whether you want the new notification enabled in existing steps.
Notification Recipients	The recipients of the notification. If recipients have already been selected, they will display in the Notification Recipients box. • To add recipients, click **Add Recipient** and then click the type of recipient to add. • To delete a recipient, select the recipient in the Notification Recipients box and then click **Delete**.

Notification Message tab

This tab defines the message for the notification. All message sections for the notification must have some content in order to be valid. For more information, see Customizing notification content for general process definitions.

Item	Description
Notification Subject	Defines the subject line for the notification.
Notification Message Body	Defines the message body for the notifications. This text should contain all necessary task details for the notification.

Reminder Configuration tab

This tab defines the reminder schedule for the "reminder" notifications. This tab only applies to the following notification types: Due Date Reminder and Overdue Reminder. For more information, see Setting up schedules for reminder notifications (standard processes).

Item	Description
Reminder Schedule	Specifies when reminder notifications will start, and how long they will continue. To specify when reminder notifications will start (the start date): • For due date reminders, enter the number of days before the due date that you want reminders to start. By default, reminders start 1 day before the step is due. • For overdue reminders, enter the number of days after the due date that you want reminders to start. By default, reminders start 1 day after the step is due. To specify how long reminder notifications will continue (the stop date), select one of the following: • **Until due date** / **No end date** (default): For Due Date Reminders, notifications will continue until the due date is reached. For Overdue Reminders, notifications will continue until the step is completed. • **Until __ day(s) before / after process step is due**: Notifications will continue until the specified number of days before the step is due (for Due Date Reminders) or after the step is due (for Overdue Reminders). By default this is set to 1 day. • **Single notification only**: The notification will only be sent once, on the specified start date.

Item	Description
Reminder Frequency	Specifies the frequency of reminder notifications between the start date and the stop date. Select one of the following: • **Every X days**: A reminder notification will be sent according to the specified day interval. By default this is set to send a notification every 1 day, meaning a notification will be sent each day. All days of the week are included when choosing this option, including Saturday and Sunday. • **Every weekday**: A reminder notification will be sent each weekday (Monday-Friday). No notifications will be sent Saturday or Sunday. This option does not apply if the notification is set to **Single notification only**.
Reminder Time	Specifies the time of day when reminders will be evaluated and delivered. Select any hour from 12:00AM to 11:00PM. By default, this is set to 5:00 PM.

Managing Active Processes

Once process definitions have been created, administrators and process owners can perform tasks such as starting or stopping a process, viewing overall process status and process history, and managing step status.

Management tasks can be performed from the following locations:

- On the **Axiom** tab, in the **Administration** group, go to **Manage > Process Management > Current Processes**.

  NOTE: In systems with installed products, this feature may be located on the **Admin** tab. In the **Workflow** group, click **Process Management > Current Processes**.

- From the **Process** task pane, click **View status**. This is only available for active processes.

You can also start processes and access process details from within the process definition itself.

Starting or stopping a process

A process is only managed by the system if it has been started. Once a process is started, it will remain active until it is completed or stopped.

NOTE: Only administrators or process owners can start or stop a process.

Starting a process

Once you have completed a process definition and you are ready to work on the process, you can start it. When you start a process, Axiom Cost Accounting does the following:

- Creates a unique process instance to track the process steps and store the process details. Each activation of a particular process definition is stored separately, so that you can always see the historical details.
- Activates the first step in the process and creates one or more tasks as appropriate.
- Displays the activated process in the Process task pane. Administrators can see every activated process; other users will only see the process if they are the process owner or if they have a task for the currently active step.

To start a process:

1. On the **Axiom** tab, in the **Administration** group, click **Manage > Process Management > Process Definitions**.

   NOTE: In systems with installed products, this feature may be located on the **Admin** tab. In the **Workflow** group, click **Process Management > Process Definitions**.

   This opens the Axiom Explorer dialog, showing the Process Definition Library (and any file group Process Definitions folders that you have access to). You can also access these definitions from the Explorer task pane.

2. Open the process definition that you want to start, and then click **Start Process** in the top right-hand corner of the dialog.

   NOTE: The process definition cannot be started if it contains any missing or invalid settings. These validation errors will display at the bottom of the dialog if present. You can click the link to be taken to the tab or step that contains the error. Once all errors are resolved, you will be able to start the process.

3. At the confirmation prompt, click **OK**.

The process is now active. Once a process has been started, you can track its progress using the Process Manager or by clicking the **View status** link in the Process task pane. For more information, see Viewing process status and comments.

You can also start processes from the Process Manager dialog. On the **Axiom** tab, click **Manage > Process Management > Current Processes**. In the **Process Manager** dialog, select **Show inactive processes**. Select the process that you want to start, then click **Start**.

NOTE: In systems with installed products, this feature may be located on the **Admin** tab. In the **Workflow** group, click **Process Management > Current Processes**.

Stopping a process

When you stop a process, all current tasks are deleted and the process status changes from Active to Aborted. If the process definition is started again later, a new process instance will be created and the process will start over from the first step. There is no way to restart a particular process instance at the step it was on when it was stopped.

To stop a process:

1. On the **Axiom** tab, in the **Administration** group, go to **Manage > Process Management > Current Processes**.

   NOTE: In systems with installed products, this feature may be located on the **Admin** tab. In the **Workflow** group, click **Process Management > Current Processes**.

2. In the **Process Manager** dialog, select the process that you want to stop, and then click **Stop**.
3. At the confirmation prompt, click **OK**.

You can also stop processes using the Process Status dialog. From the **Process** task pane (or a custom task pane configured to show the process control), click **View status**. In the **Process Status** dialog, click **Stop process**.

Completing a process

General processes are automatically completed when all steps in the process are complete. Once a particular process instance is completed, that same instance cannot be restarted. If the process definition is started again, a new process instance will be created and the process will start over from the first step.

Axiom Cost Accounting saves the process details for each activated instance of a process. Administrators and process owners can always go back and view the available history. For more information on viewing process history, see Viewing process history.

Scheduling a process

You can use the Scheduler task **Start Process** to automatically start a process at a specific point in time. The schedule can be one-time, or recurring.

If the process is already active when the Scheduler job executes, you can decide what to do with the current process. You can leave the current process running, or you can stop the current process and then start a new process.

If you use a recurring schedule to start the process, then the process steps should use relative due dates so that the due dates will adjust dynamically for each execution. If the due dates are specific calendar dates, then you must remember to edit the process definition before each scheduled execution for the new calendar dates.

Modifying active processes

If a process is not active, you can edit its definition as desired. When a process is active, then certain edits are not allowed, and other edits have no effect on the active process.

To edit a process definition:

1. On the **Axiom** tab, in the **Administration** group, go to **Manage > Process Management > Process Definitions**.

   NOTE: In systems with installed products, this feature may be located on the **Admin** tab. In the **Workflow** group, click **Process Management > Process Definitions**.

   The Axiom Explorer dialog opens, filtered to only show the Process Definition Library.

2. Double-click the process definition that you want to edit.
3. In the **Edit Process** dialog, make any allowed edits as needed.

   If the process is currently active, a warning message displays at the top of the **Process Properties** tab.

4. Click **Apply** to save (or **OK** if you are finished making edits).

Disallowed edits for active processes

The following edits cannot be made to the process definition of an active process, because they would invalidate the currently active step or the process history:

- Making any edits to the properties of a completed step
- Moving the currently active step to another level
- Deleting the active step

Editing considerations

All properties of the currently active step can be edited. Note the following:

- If you change the step name, description, or action of the active step, and the current step owner currently has the Process task pane open, they will need to refresh it in order to see these changes.
- If you change the step owner or due date of the active step, this will cause the task for the step to be regenerated with the new information, including sending a new Step Activated notification to the step owner (if applicable).
- If you add a step to an active parallel subprocess or multiple approvals step, the new step will be automatically activated in the process when you save the change to the process definition.

For the most part, any new, deleted, or moved steps should be after the currently active step, so that they will still be part of the step progression. However, it is possible to add new steps to any point of the process, delete any steps other than the currently active step, and move any steps (except as noted in the previous section). You should carefully consider the effect any of these types of changes will have on the active process before making them. For example:

- If you add a step before the currently active step, then that step will not be part of the progression unless you move the process back to that step, or unless it is possible for the process to be rejected back to that step.
- If you move the currently active step to an earlier point in the process, this may result in re-activating already completed steps as the process moves forward from the currently active step. If you move the currently active step to a later point in the process, this may result in some steps never being started.
- If you delete a completed step, that step will no longer display in the process definition or in the Process Status dialog for the current instance. The only way to view the details of that step would be to query the Axiom.ProcessEvents table, which would still contain the events for the step activation and completion.

Viewing process status and comments

Administrators can view the status of all processes at any time. They can view a summary of process status, and they can view details for each individual process. Any comments added by users when completing steps are also displayed in these details.

Designated process owners can also view the status of processes that they own.

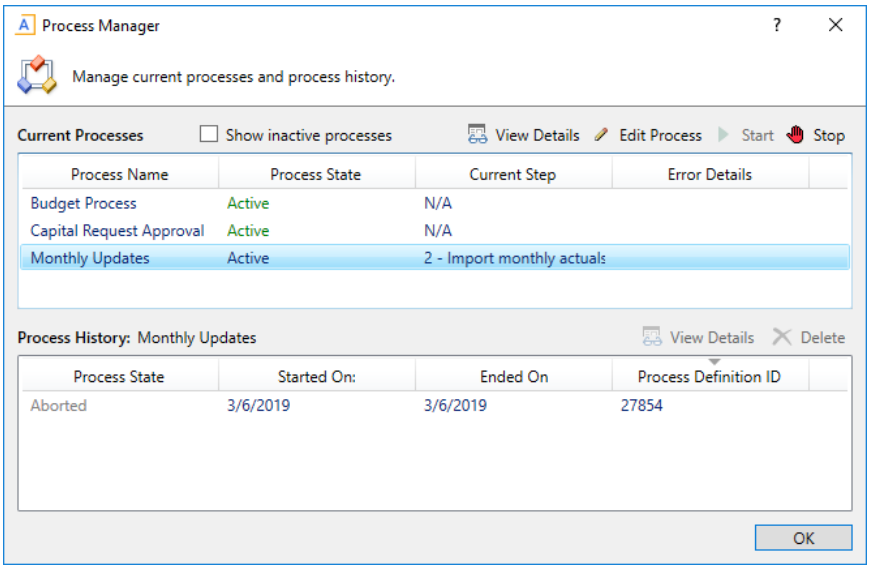
Process status summary

The Process Manager dialog shows key information for processes at a glance, such as the current state of the process and the current step of the process. To access this dialog:

- On the **Axiom** tab, in the **Administration** group, click **Manage > Process Management > Current Processes**.

  NOTE: In systems with installed products, this feature may be located on the **Admin** tab. In the **Workflow** group, click **Process Management > Current Processes**.

By default, the Process Manager dialog shows active processes only. You can click **Show inactive processes** to see all processes. The details displayed are for the most recent instance of the process (the "current" process).



Example summary of active processes

From here you can perform actions such as viewing the process details, editing the process definition, and starting and stopping the process. You can also view process history.

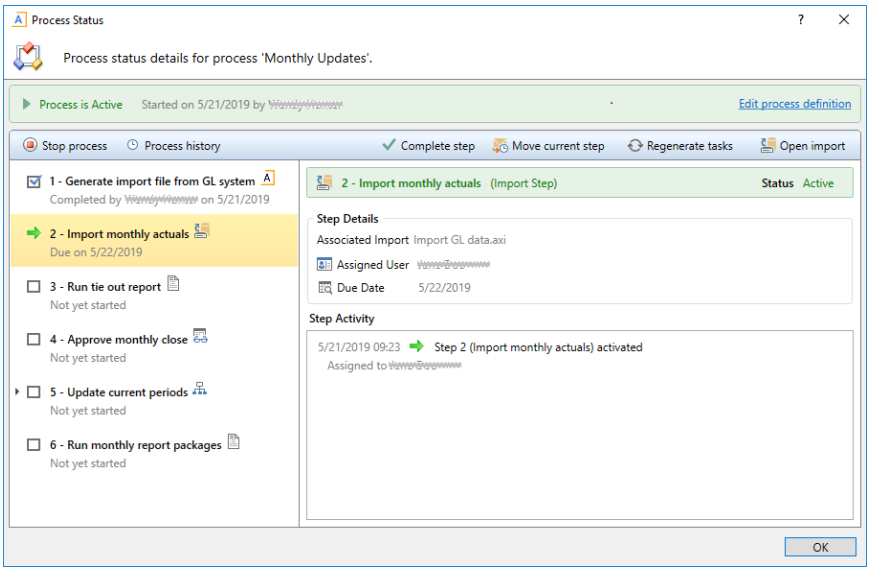
For administrators, this dialog shows all processes. For process owners, the dialog only shows processes that the user owns.

Viewing individual process details

To view the details of a specific process from the Process Manager dialog, select the process in the list and click **View Details**. Alternatively, administrators and process owners can view the details of an active process by clicking the **View status** link in the Process task pane (or in the process definition).

In the **Process Status** dialog, you can view all of the information about the process, including:

- Status of each individual step, whether it is completed, active, or not yet started
- Properties of each individual step, including step type, assigned owner, due date, and any associated file or feature
- Details of all step activity, such as when it was made active, when it was completed (and by whom), and any comments associated with the activity



Example process details

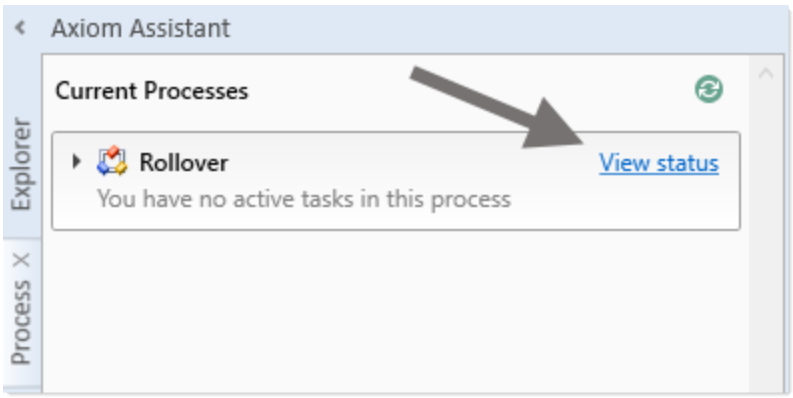
You can also perform administrative activities for the process from this dialog, such as stopping the process, performing step actions, completing steps (overriding step ownership), and reactivating stalled steps.

Moving processes to different steps

Administrators and process owners can move an active process to a different step. There are two different options for moving a process to a different step. These options are intended to be used for different circumstances as follows:

- **Complete step** should be used when you need to override step ownership, but the step should be completed as normal and the process should move on to the next step. For example, the step owner may have forgotten to complete the step before leaving for vacation, so they have asked an administrator to complete it for them.
- **Move current step** should be used when you need to make administrative adjustments to the process. When moving a step, the current task is aborted instead of completed, and the target step is activated. Any steps in between the aborted step and the target step are simply not started.

These actions can be performed in the **Process Status** dialog. To open this dialog, click **View status** for the process in the Process task pane (or in a custom task pane configured to show the process control).



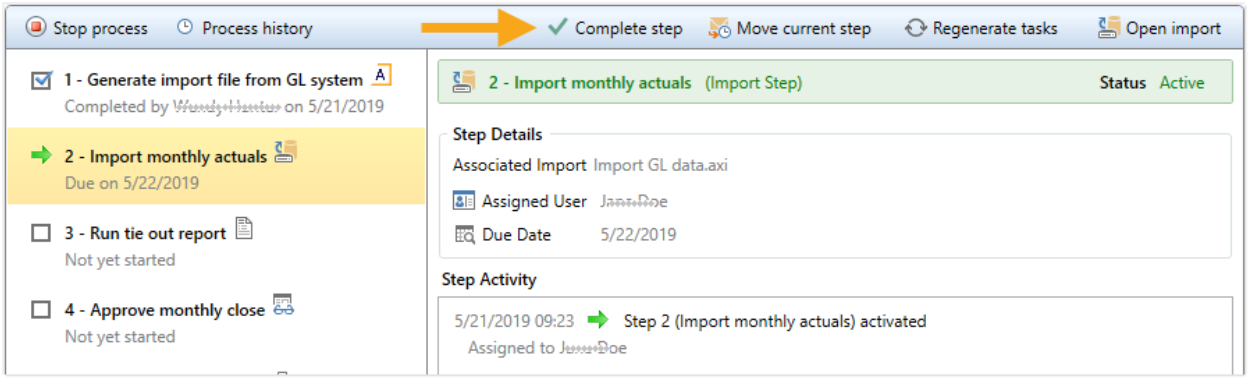
The process definition also contains a **View status details** link to open the Process Status dialog, when the process is active.

Completing a step (overriding step ownership)

As necessary, you can override step ownership and mark the active step as completed. The process history will track both the original ownership assignment and the user who actually completed the step.

For example, imagine that the assigned user for a step performed the necessary task, but forgot to mark the step as complete before leaving on vacation. In this case, an administrator can mark the step as complete so that the process can continue.

To do this in the Process Status dialog, select the step that you want to complete, then click **Complete step**. If the step is an approval step, then you can click **Approve step** or **Reject step** as appropriate.



This opens the same **Process Action** dialog that you see when completing a step from the Process task pane, where you can define a comment if desired. When you click **OK**, the step will be completed just as if the owner had completed it (including any resulting notifications), except that you will be recorded as the completing user instead of the owner.

Moving to a different step

As necessary, you can move a process from the currently active step to a different step. The ability to move the current step depends on which step is currently active and whether it is a top-level step or part of a subprocess:

- If the currently active step is a top-level step, then the process can be moved to any other top-level step. If the process is a plan file process definition, then any or all plan files can be moved to any other top-level step.
- If the currently active step is a sub-step in a parallel subprocess (including sub-steps of a multiple approvals step), then you can select the parent subprocess step and choose to move the process to any other step at the same level. In this case, all subprocess steps are aborted and the process is moved to the selected step.

To move a step in the Process Status dialog:

1. Select a currently active step (or its parent step) and then click **Move current step**.
2. In the **Move Current Step** dialog, select the step that you want to move to. The dialog only displays eligible steps as described previously in this section.
3. By default, notifications are *not* sent to new step owners when moving the current step. If you want to send notifications as part of the move, then select **Send notifications to users affected by this current step change**. If this check box is selected, then you can also optionally enter a comment to be included in the notification and stored with the process.

   If enabled, the notification sent when a step is moved will always be the Step Activated notification for the target step. Because the currently active step is aborted instead of completed, no Step Completed notifications will be sent.
4. Click **OK** to move the step.

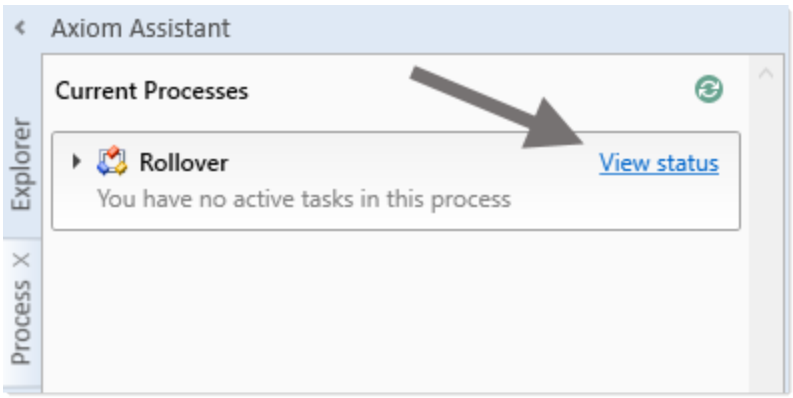
The current step is aborted, and the target step is made active.

Fixing common process issues

While a process is active, administrators and process owners may need to address common process issues such as:

- Regenerating tasks for a stalled step
- Regenerating tasks to reflect changes in the process assignments or security
- Restarting a Scheduler Process Step

These actions can be performed in the **Process Status** dialog. To open this dialog, click **View status** for the process in the Process task pane (or in a custom task pane configured to show the process control).



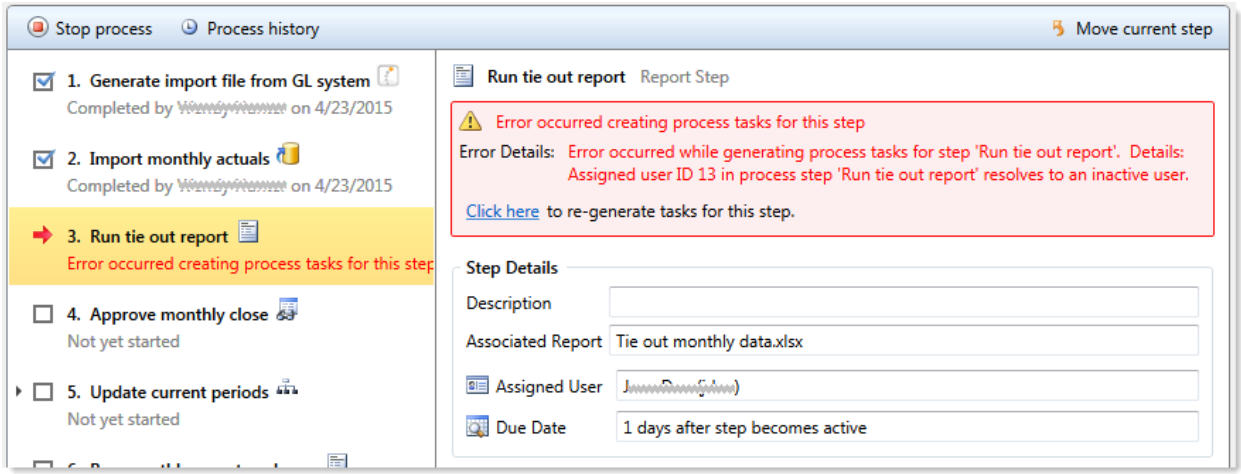
The process definition also contains a **View status details** link to open the Process Status dialog, when the process is active.

Regenerating tasks for a stalled step

If an issue occurs that prevents a step from becoming active, the step will stall in the process, and the process cannot continue.

For example, imagine that the assigned user for step 2 of a process has been disabled or deleted in security. When step 1 is completed, step 2 cannot be made active because the assigned user is not eligible or the user record does not exist. Step 2 then becomes stalled, which causes the overall process to become stalled.

In this example, if the user was disabled in the system accidentally, you could edit Security to re-enable the user, and then regenerate the tasks for the step. To do this in the Process Status dialog, select the stalled step and then click the link in the error message.



Axiom Cost Accounting will attempt to reactivate the step, which causes any associated tasks to be regenerated. If the task generation is successful, the step will be made active and the process can continue as normal.

NOTE: If instead the step needs a different owner, then you can edit the process definition to assign a different user. When you save the change to the process definition, the task for that step will automatically be regenerated for the new owner, and the error state will be removed.

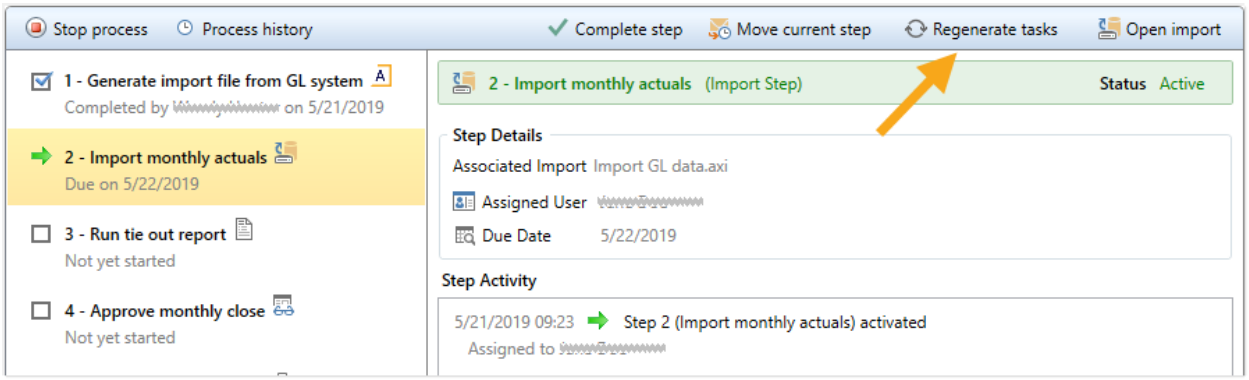
Regenerating tasks to reflect process or security changes

In certain cases, you may need to regenerate tasks for an active step in order to incorporate changes made to the process assignments or to security. For example:

- If the owner assignment is an assignment column or an assignment workbook, and the assignments in the column or workbook have been changed since the step became active.
- If the owner assignment is a role, and the members of the role have changed since the step became active.
- If security permission changes have been made that would affect the ownership of the active step.

NOTE: It is not necessary to manually regenerate tasks if you change the assignment *type* for a step (for example, from user to assignment column), or change the specifically assigned user or role. In these cases, the tasks are regenerated automatically when you save the change to the process definition. In the examples listed above, the process is not aware of the changes made outside of the process definition, so the process does not know to automatically regenerate the tasks.

To regenerate tasks for a step in the Process Status dialog, select the step and then click **Regenerate tasks**.



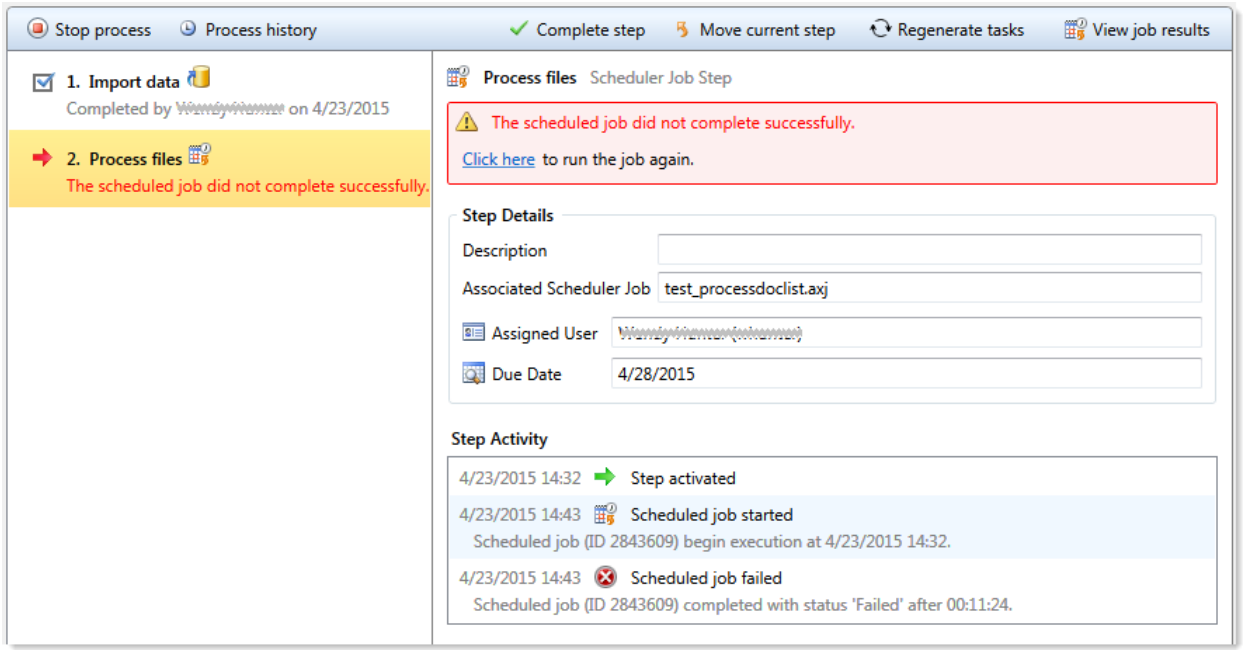
A message box informs you that all current tasks for the step will be deleted and new tasks will be created. Click **OK** to continue.

Restarting Scheduler jobs after errors

If a Scheduler Process Step experiences an error when attempting to run a Scheduler job, then you have the option to restart the job. You should restart the job if the error was the result of a temporary condition that no longer applies, or if the underlying condition that caused the error has since been

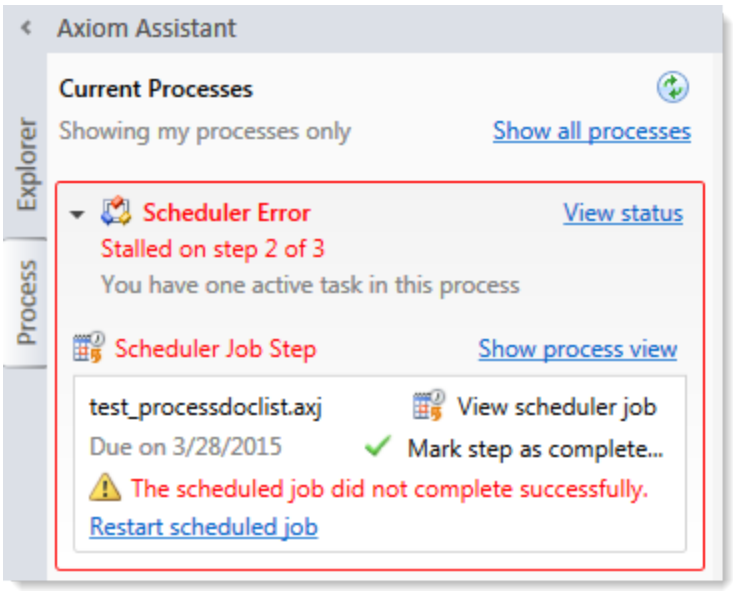
addressed and you no longer expect the job to experience any errors. If you are not certain why the job experienced errors, you can click the **View job results** link to investigate the issue before restarting the job.

To restart the job from the Process Status dialog, select the stalled Scheduler step, and then click the link in the error message. This will remove the error state and place the job in the Scheduler queue again.



Alternatively, you can choose to manually mark the step as complete if the job does not need to be run again. For example, the job results may have been Partial Success and in this case that may be enough to consider the step complete. Or, you may have manually run the job or run the associated activity while troubleshooting the error, and therefore the job does not need to be run again.

Unlike other error conditions for active processes, the administrator or process owner is not required to intervene. The step owner also has access to these options within the Process task pane when a Scheduler job experiences errors, and therefore may be able to address the issue without requiring assistance.



Viewing process history

Each time a process is started, a new process instance is created to track the details of that particular execution of the process. This ensures that you always have a history of each time the process is performed, including who completed each step in the process and when. You can retain this history as long as needed.

Administrators and process owners can view the history for a process. Administrators can view history for all processes, whereas process owners can only view history for processes they own.

To view the history for a process:

1. On the **Axiom** tab, in the **Administration** group, click **Manage > Process Management > Current Processes**.

   NOTE: In systems with installed products, this feature may be located on the **Admin** tab. In the **Workflow** group, click **Process Management > Current Processes**.

2. In the **Process Manager** dialog, select the process for which you want to view the history. If necessary, select **Show inactive processes** to display all processes.

   When you select a process in the top of the dialog, the bottom of the dialog populates to show the historical instances for that process.

3. In the **Process History** section, select the process instance for which you want to view the history, and then click **View Details**.

   Make sure to click the View Details button that is directly over the Process History section, not the button that is above the Current Processes section.

The **Process Status** dialog opens, displaying the details for the historical instance of that process. In addition to reviewing the details, you can perform the following actions from this dialog:

- **View process definition**: Opens a read-only copy of the process definition as it existed at the time of this historical instance. If desired you can use **Save As** to "restore" this historical definition as a new definition.
- **Start process**: Starts a new instance of the process, using the current process definition. This option is only available if there is not already an active instance of the process.

  If there is already an active instance of the process, a message will display at the top of the dialog to inform you of this. You can click the link in this message to be taken to the currently active instance.

Deleting process history

If you do not need the history of a particular process instance anymore, you can select that instance in the Process History section and then click **Delete**  . Process history is retained until it is manually deleted (it does not get automatically purged by the Purge System Data Scheduler job).

If the process definition is deleted, all history for that process is also automatically deleted.

Scheduler Overview

Using Scheduler, you can schedule certain Axiom Cost Accounting tasks to be processed on a Scheduler server at a specific date and time. For example, you can schedule plan file processing or data imports.

Processing tasks using Scheduler has advantages over manual processing, such as:

- Leverages the server's processing power and frees up your computer's resources.
- Enables recurring scheduling of ongoing tasks.
- Allows tasks to be scheduled during "off hours," during periods of low network and system activity.
- Allows tasks to be performed in batch, including enforcing task dependencies.

Scheduler processes tasks using jobs. Each job is a scheduled unit that can contain one or more tasks. The tasks in a job can be processed sequentially or concurrently as appropriate.

Only system administrators and users with the **Scheduled Jobs User** security permission can access Scheduler.

About Scheduler

This section contains conceptual information about the Scheduler feature in Axiom Cost Accounting.

Scheduler jobs and tasks

The primary unit of Scheduler processing is a *job*. Each Scheduler job can contain one or more *tasks* to be performed as part of that job.

Each Scheduler job defines the following basic properties:

- The tasks to perform for the job and the properties of those tasks
- The schedule of the job, including recurrence (if any)
- The priority of the job
- The notification options for the job

The tasks define the actual activities to be performed by the job, such as importing data or processing plan files. Some Scheduler tasks correspond to existing features that can also be processed manually (such as Process Plan Files), while other tasks are Scheduler-specific and can only be processed via Scheduler. Each task has a unique set of options that are specific to that task and to the activity to be performed. For more information on the available task types, see Scheduler Task Reference.

The tasks in a job can be processed sequentially or concurrently as appropriate. Tasks can be dependent on other tasks in the job as needed—for example, you can configure a job so that if a task fails, the job stops and does not process the next task. Tasks can also be processed iteratively, to perform the same task repeatedly over a defined set of values.

The Scheduler jobs in your system fall into the following basic categories:

- **Client-created**: You can create Scheduler jobs as needed to perform tasks in your system.
- **System jobs**: Axiom Cost Accounting provides a set of system jobs to perform necessary system tasks.
- **Product-controlled**: When a product is installed, it may include one or more Scheduler jobs to support the use of that product. Generally speaking, these jobs should not be changed unless the product documentation says customization is allowed, or as advised by Kaufman Hall Software Support.

How Scheduler jobs are run

Once a Scheduler job has been created, it can be run using any of the following options:

- The job can be scheduled for execution at a future date and time using a scheduling rule. Scheduling rules can be one-time only, or recurring.
- The job can be run "one time" manually as needed through Scheduler.
- The job can be triggered for execution using an event handler. This allows Scheduler jobs to be triggered in various ways, such as by clicking a button in an Axiom form.

Scheduler jobs are processed by one or more servers running the Scheduler service. For Cloud Service systems, the Scheduler service is part of your cloud system and managed by Kaufman Hall Software Support. For on-premise systems, the Scheduler service is installed on one or more servers in your environment. The Scheduler service polls the Axiom Application Server periodically to check for any jobs that are ready to be run. Eligible jobs are then executed on the server, based on their processing priority.

When a job is executed by Scheduler, it is run using a particular user identity. In order for a job to be executed successfully, the user must be an active user defined in Axiom Cost Accounting security, and the user must have the appropriate security permissions to perform the tasks in the job. The user identity for a job is determined as follows:

- If a job is a system job, then it is run as the system-managed identity of **System** instead of a user identity.
- If a job is run by using **Run Now**, then it is run as the user who placed the job on the schedule.
- If a job is run by an active scheduling rule, then it is run as the *job owner*. The job owner is the user who last saved the job.
- If a job is run via an event handler, then the job may be run as either the job owner, or the job requester (the user who raised the event).

System jobs

System jobs are automatically created by Axiom Cost Accounting to support necessary system functionality. Some system jobs are created as part of the initial installation and are intended to run on an ongoing basis, while other system jobs are created on-demand in response to system events. Only administrators can edit these system jobs.

System jobs have two defining characteristics:

- System jobs are run using the system-managed identity of **System** instead of a user identity. The System identity has full rights to the system as necessary to perform system tasks.
- System jobs are run by the default System Scheduler service. For on-premise systems, this service is created and started automatically on the Axiom Application Server, and does not require a separate installation. This service is exclusively for running system jobs.

  Cloud Service systems may or may not have a separate System Scheduler service, depending on the system configuration (as determined by Kaufman Hall Software Support). If your cloud system does not have a System Scheduler service, then your system jobs are run using the available Scheduler services for the cloud system.

  In the Scheduler dialog (Desktop Client), the System Scheduler service is listed on the **Servers** tab using the following naming convention: ***<ServerName>*-System**.

If necessary, a product-controlled or client-created job can be flagged as a system job, so that it can be run using the System identity instead of a user identity. To designate a job as a system job, enable **Mark as System Job** in the **General** job properties. The following rules apply to manually-created system jobs:

- Only system administrators can designate a job as a system job.
- The job cannot contain any tasks that are designated as “non-system” tasks. Non-system tasks are any tasks that might involve spreadsheet processing, such as Process Plan Files.

Processing priority for scheduled jobs

Once a job reaches its start time, it is eligible to be processed by Scheduler and joins the processing queue. For scheduled jobs, the start time is based on the scheduling rule that placed it on the schedule. For other jobs, the start time is the time that the job was placed on the schedule using **Run Once** or triggered by an event handler.

Each Scheduler service has a configured number of *threads* that are used to process jobs. As a Scheduler thread becomes available, it takes the next job in the processing queue. The priority of jobs in the processing queue is determined by the combination of the job's priority category, and its **Priority Elevation** setting.

Each job has a priority category, based on how the job execution was initiated. The priority categories are as follows:

1. **Manual**: The job was executed manually.
2. **Event Handler**: The job was executed by a Scheduler event handler.
3. **Scheduled Job**: The scheduled instance of the job results from an active scheduling rule.
4. **Subordinate Job**: The job was generated as a subordinate job, from a currently executing job.

Manual jobs are highest priority and are processed first, and subordinate jobs are lowest priority and are processed last. Within each category, jobs are processed according to their **Priority Elevation** setting.

For example, imagine that Scheduler has 2 available threads and the following jobs are eligible to be processed:

Job	Priority Category	Priority Elevation
A	Manual	Default
B	Event Handler	Default
C	Scheduled	Default
D	Scheduled	Elevated

- Scheduler will execute jobs A and B first, because those are the highest priority jobs based on their priority category.
- When the next thread becomes available, Scheduler will execute job D. Although job C may have entered the queue first, and the two jobs have the same priority category, job D's priority elevation is set to **Elevated** so it takes precedence within the category. If instead both jobs were set to **Default**, then job C would be executed first if it entered the queue before job D.
- When the next thread becomes available, Scheduler will execute job C.

NOTE: If a job's **Priority Elevation** is set to **Interrupt**, then it is run as soon as it is eligible, regardless of its priority category and regardless of whether any Scheduler threads are currently available to process the job. If no Scheduler threads are available, a new one is created to process the job, even if this temporarily exceeds the number of configured threads for the server.

The Scheduler dialog

The **Scheduler** dialog is used to create and manage Scheduler jobs.

To access Scheduler:

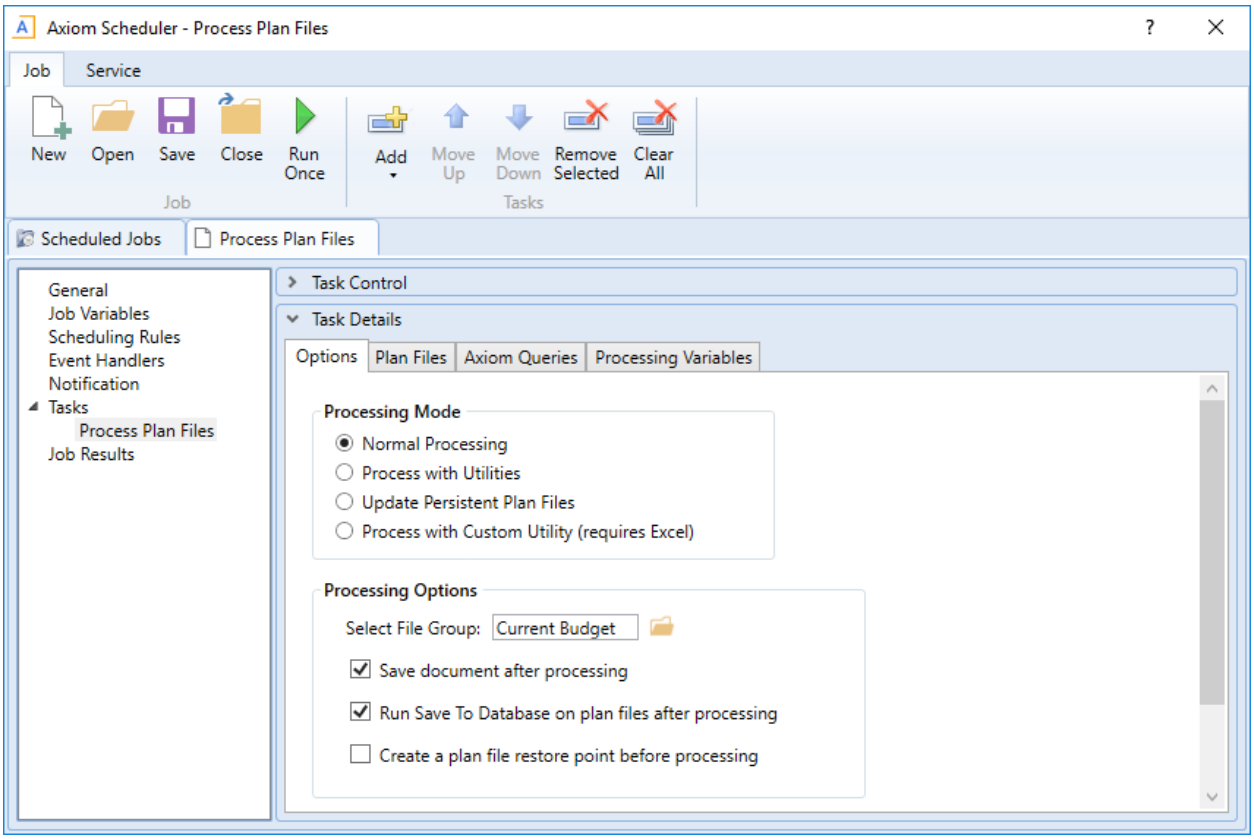
- On the **Axiom** tab, in the **Administration** group, click **Manage > Scheduler**.

  NOTE: In systems with installed products, this feature may be located on the **Admin** tab. In the **System Management** group, click **Scheduler**.

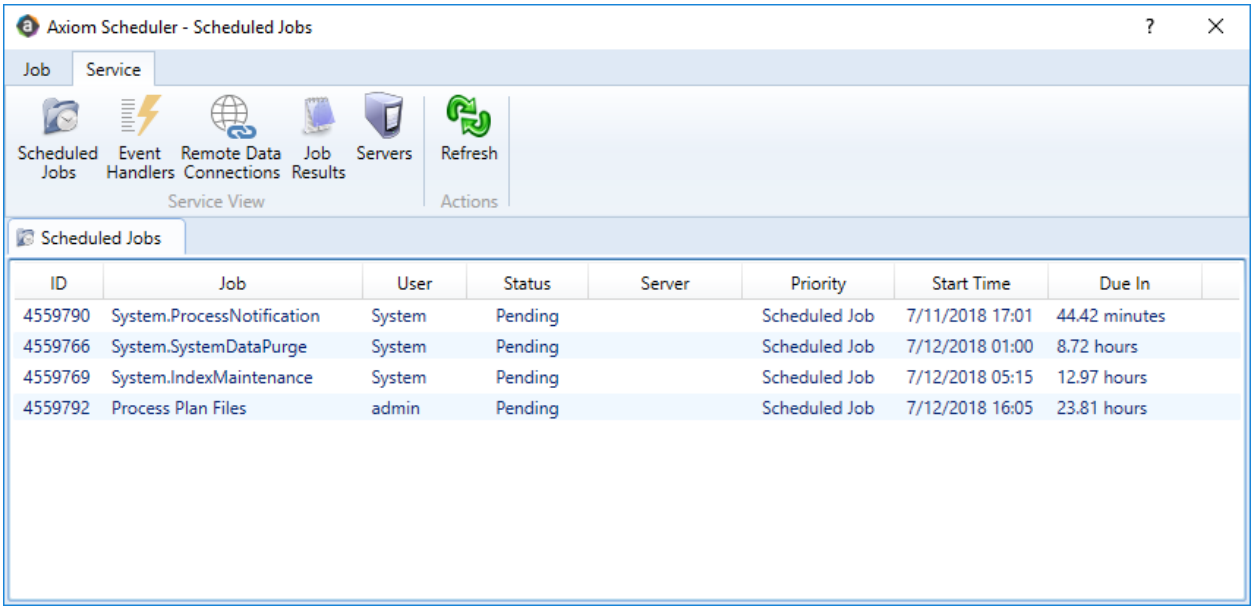
The top section of the **Scheduler** dialog contains a ribbon-style toolbar with two tabs: **Job** and **Service**.

- On the **Job** tab, you can create, run, and edit jobs.
- On the **Service** tab, you can manage scheduled jobs and view job results.

As you perform actions on the **Job** and **Service** tabs, additional tabs are opened in the navigation pane of the dialog. For example, clicking the **Scheduled Jobs** button on the **Service** tab opens the **Scheduled Jobs** tab in the navigation pane. You can move between any open tab in the navigation pane, regardless of which tab is selected in the ribbon. The ribbon updates to show the related commands for the selected item.



Example Job tab



Example Service tab

When you right-click a tab in the dialog's navigation pane, you can close or save items as follows:

- For all items, you can **Close**, **Close All**, or **Close All But This**.

- For jobs, you can **Save** or **Save As**. Selecting **Save As** allows you to save a copy of the job to the **Scheduler Jobs Library** in the Axiom Cost Accounting file system.

The **Scheduler Jobs Library** is also accessible via Axiom Explorer.

Scheduler Job Setup

To perform Axiom Cost Accounting tasks using Scheduler, you must create jobs. Each job can execute one or more tasks. This section discusses how to set up jobs, including how to schedule jobs for future execution and how to be notified when a job has been completed.

Managing Scheduler jobs and tasks

Using the **Axiom Scheduler** dialog, administrators can create and edit Scheduler jobs. To access this dialog:

- On the **Axiom** tab, in the **Administration** group, click **Manage > Scheduler**.

  NOTE: In systems with installed products, this feature may be located on the **Admin** tab. In the **System Management** group, click **Scheduler**.

This section discusses how to create, edit, and delete jobs and tasks, not how to manage the Scheduler queue once jobs have been placed on the schedule. If you need to stop or reschedule a scheduled job, see Managing scheduled jobs.

Scheduler jobs are saved as XML files and are stored in the Axiom Cost Accounting file system at `\Axiom\Scheduler Jobs Library`.

Creating a Scheduler job

You can create a new Scheduler job to perform one or more tasks.

To create a new job:

1. In the **Scheduler** dialog, on the **Job** tab, click **New**.

   A new tab appears in the navigation pane, labeled **New Job**. The left-hand side of the job lists sections for which you can define various job settings. When you click a section name, the settings for that section display in the right-hand side of the job.

2. In the **General** section, define general job settings as desired.

   For detailed information on the available settings for a job, see Job properties.

3. In the **Scheduling Rules** section, specify scheduling details for the job.

   You can schedule the job for future execution, for one time or on a recurring basis.

NOTE: If you are always going to run the job manually, and do not need to schedule it for future execution, then you do not need to define scheduling rules.

For more information, see Defining scheduling rules for a job.

4. In the **Notification** section, specify email notification options for the job.

   You can send email notifications every time the job completes, or only when the job experiences errors. By default, the job is configured to notify on completion.

   For more information, see Setting up email notification for jobs.

5. In the **Tasks** section, add one or more tasks to the job.

   a. On the **Job** tab of the ribbon, in the **Tasks** group, click **Add**. This brings up a list of available tasks. Select the task that you want to add.

      The task is added to the **Tasks** section, and the settings for the task display in the right-hand side of the job.

   b. Complete the settings for the task as desired.

      The **Task Control** section of the task contains standard task settings, and the **Task Details** section contains settings unique to the task type. For more information, see Task Control properties.

      If a required setting is not completed, the setting is highlighted in red and error text appears in the bottom of the dialog. Make sure to complete all required settings for the task before saving.

   Repeat this process until you have added all desired tasks to the job. Tasks are processed in the order listed. If you need to change task order, select a task and then click **Move Up** or **Move Down**.

6. In the **Job** tab of the ribbon, click **Save**.

7. At the bottom of the **Save As** dialog, in the **File name** box, type a name for the job, and then click **OK**.

   The job is saved as an XML file in the Scheduler Jobs Library.

If the job was saved with an active scheduling rule, Axiom Cost Accounting determines the next scheduled date of execution and schedules the job. You can view the job in the **Scheduled Jobs** list (on the **Service** tab of the ribbon, click **Scheduled Jobs**).

Advanced job settings

This procedure covers the basic steps of creating a job. Jobs also support the following advanced options:

- **Event handlers**: You can create event handlers for the purposes of running the job using the RunEvent function. This allows users to trigger job execution from within an Axiom file.
- **Job variables**: You can create job variables and then use those variables within certain job settings. You can then dynamically pass in values for those variables when using the RunEvent function to execute the job.

For more information, see Advanced options, Using job variables, and Using RunEvent to execute a Scheduler job.

Editing a job

You can edit a job at any time to change job settings, add or remove tasks, change scheduling rules, or change notification options.

This section describes the general process of opening a job for editing. For more details on the impacts of editing scheduling rules, see Defining scheduling rules for a job.

To edit a job:

1. In the **Scheduler** dialog, in the **Job** tab, click **Open**.

   The **Axiom Explorer** dialog opens, showing the Scheduler Jobs Library only.

2. Select the job and then click **Open**.

   The job opens in the **Scheduler** dialog. Make sure the job is the active tab in the navigation pane (the most recently opened tab is the active tab by default).

3. Edit the job and task properties as desired.

   For detailed information on the available settings for a job, see Job properties. For detailed information on task settings, see Task Control properties.

4. In the **Job** tab of the ribbon, click **Save**.

Deleting a job

Deleting a job removes any scheduled executions of the job from the scheduled jobs list.

To delete a job:

1. In the **Scheduler** dialog, in the **Job** tab, click **Open**.

   The **Axiom Explorer** dialog opens, showing the Scheduler Jobs Library only.

2. Navigate to the job that you want to delete, then right-click the job and select **Delete**.

You can also delete Scheduler jobs from Axiom Explorer or the Explorer task pane.

Defining scheduling rules for a job

Once a job has been created, you can run it on demand, or you can schedule it for future execution. Jobs can be scheduled to be run one time, or on a recurring basis. To schedule a job, you define scheduling rules for the job.

You can add, edit, and remove the scheduling rules for a job at any time using the **Scheduling Rules** section of the job properties. You can also flag a rule as active or inactive. If a job has no scheduling rules, or if all of its scheduling rules are inactive, then it will not be run unless it is run manually by a user.

If a job is saved with an active scheduling rule, then Axiom Cost Accounting determines the next scheduled instance of the job and places it in the scheduled jobs list. Once that instance has been processed, the next scheduled instance is determined and scheduled, and so on. Each time the job is run using an active scheduling rule, it is run as the current job owner (unless the job is a system job, in which case it is run as the Scheduler Service System identity).

If a job has multiple active scheduling rules, Axiom Cost Accounting evaluates all of the rules and schedules a single instance of the job, for the earliest time allowed by the rules. Multiple scheduling rules do not result in multiple scheduled instances of the job.

NOTE: If a time zone is listed on the Scheduling Rules section of the job, then the defined rules will be evaluated in the context of that listed time zone. Otherwise, scheduling rules are evaluated in the context of the local time zone for the Scheduler Server. If necessary, the system configuration setting **SchedulingBehaviorTimezone** can be used to specify a particular time zone for evaluating scheduling rules.

Adding a Scheduling rule

You can add a scheduling rule to a job to schedule it for future execution, either one time or on a recurring basis.

If you only plan to run the job manually on demand, then you do not need to create a scheduling rule.

To add a scheduling rule to a job:

1. In the **Scheduler** dialog, open a job to edit or create a new job.
2. In the left-hand side of the job, select **Scheduling Rules**.

   By default, this area is empty. You must add a rule in order to define scheduling for the job.
3. On the **Job** tab of the Scheduler ribbon, in the **Scheduling Rules** section, click **Add**.

   A new row appears in the right-hand side of the job. By default, the new row is active, but does not have start / end dates or any specific recurrence settings.
4. Complete the following settings within the row as needed:

Item	Description
Active	If you want the job to be placed on the schedule as soon as you save the job with the new scheduling rule, then you should leave this option checked. However, if you just want to save your schedule settings but you are not ready to begin scheduling the job, then you can clear the **Active** check box for the rule. The job will not be scheduled until it is saved with an active scheduling rule.
Starting On Ending On	Optional. These dates specify the time frame for the scheduling rule. The starting date defines the earliest point in time that the job can be scheduled, and the ending date defines the latest point in time that the job can be scheduled. If these dates are not defined (left blank), then the job will be perpetually scheduled according to the rule settings, as long as the rule is active. If you want to schedule a one-time job, then set the starting / ending dates to the same date and time. **NOTE:** Your system locale determines the format of dates.
Day of Week	Specify the day(s) of the week that you want the job to be run: • `*` (Default): The job will be run on all days within the start / end range. • `0-6`: The job will be run on the specified day or days, where 0 is Sunday and 6 is Saturday. Use a comma or a hyphen to separate multiple days (hyphen if the days are contiguous, commas if not). For example, you can enter `1,3,5` for Monday, Wednesday, and Friday, or enter `1-5` for Monday through Friday.
Hours	Specify the time of day (hours) that you want the job to be run, in relation to the specified days: • `*` (Default): The job will be run on all hours. • `0-23`: The job will be run on the specified hour or hours, where 0 is midnight and 23 is 11:00 PM. Use a comma or a hyphen to separate multiple hours (hyphen if the hours are contiguous, commas if not). For example, you can enter `0,12` to run at midnight and noon, or enter `0-12` to run every hour from midnight to noon.

Item	Description
Minutes	Specify the time of day (minutes) that you want the job to be run, in relation to the specified hours: • `*` (Default): The job will be run on all minutes (essentially the job is run continuously, once per minute). • `0-59`: The job will be run on the specified minute or minutes of the hour, where 0 is the first minute of the hour and 59 is the last minute of the hour. Use a comma or a hyphen to separate multiple minutes (hyphen if the hours are contiguous, commas if not). For example, you can enter `0,30` to run at the top of the hour and the half hour, or enter `0-30` to run every minute from the top of the hour to the half hour. **NOTE:** If you specify an hour, then in most cases you should also specify a minute (such as 0 to run the job at the top of the specified hour). If you enter an hour but leave the minutes at the default asterisk, then the job will run every minute in that hour.

If the Active check box for the rule is selected when the job is saved, then Axiom Cost Accounting will calculate the date and time of the first scheduled execution and will place the job on the schedule.

Editing a scheduling rule

You can edit a scheduling rule at any time, to toggle between active and inactive, and to change the start / end dates and recurrence settings.

NOTES:

- If a pending instance of this job is currently on the schedule, and you edit the scheduling rule, the pending instance will be updated to match the new schedule.
- If you inactivate a scheduling rule, any currently scheduled instances of the job will be automatically removed from the schedule.

To edit a scheduling rule:

1. In the **Scheduler** dialog, open a job to edit or create a new one.
2. In the left-hand pane of the job, select **Scheduling Rules**.

   The defined rules display in the right-hand pane of the job.
3. Make any desired changes directly within the scheduling rules grid.

Deleting a scheduling rule

You can delete a scheduling rule at any time. If a job has no active scheduling rules, it will not be processed unless it is manually run.

To delete a scheduling rule:

1. In the **Scheduler** dialog, open a job to edit.
2. Select the **Scheduling Rules** section of the job, and then select the rule that you want to delete.
3. On the **Job** tab of the Scheduler ribbon, in the **Scheduling Rules** group, click **Remove Selected**.

   Alternatively, if you want to delete all scheduling rules for the job, click **Clear All**.

Any jobs in the scheduled jobs queue that were related to the deleted rule(s) are also deleted.

Scheduling rule examples

The following are some example schedules and the rules used to achieve them:

Schedule	Start/End	Day of Week	Hours	Minutes
Weekdays at 11:00 PM	<optional>	1,2,3,4,5	23	0
Every 15 minutes	<optional>	*	*	0,15,30,45
Mondays at 11:30 PM	<optional>	1	23	30
One time (6/30/2019) at 1:30 PM (Option 1)	Start: 06/30/2019 00:00 End: 07/01/2019 00:00	*	13	30
One time (6/30/2019) at 1:30 PM (Option 2)	Start: 06/30/2019 13:30 End: 06/30/2019 13:30	*	*	*
Every Wednesday in July at noon	Start: 07/01/2019 00:00 End: 08/01/2019 00:00	3	12	0
Continuous	<optional>	*	*	*

Setting up email notification for jobs

Scheduler can be configured to send an email notification when a job completes, or when a job has errors. In order for an email to be sent for a particular job, the following must be set up:

- The job must be configured to send a notification on completion or error. The notification settings must include valid To and From email addresses (or use system variables).
- The System.SMTPMessageDelivery system job must be configured with a valid SMTP server for your environment.

When a job creates an email notification, the notification is first saved to the database. When notifications are detected in the database, the System.SMTPMessageDelivery system job is triggered to deliver the notifications.

NOTE: By default, all new Scheduler jobs are configured to send notification on completion, to the user who created the job. You only need to edit these settings if you want to change the default settings.

To configure a job to send email notifications:

1. In the **Scheduler** dialog, open a job to edit or create a new one.
2. In the left-hand side of the job, select **Notification**.
3. In the **Job Notification Level** section, select one of the following:
    - **Send all email notifications**: (Default) An email notification is always sent when the job is executed, regardless of the job status (success, failure, aborted, etc.).
    - **Send email notification only when the job has errors**: An email notification is only sent if the job experiences errors. If the job completes successfully with no errors, no email notification is sent.
    - **None**: No email notifications are sent for this job. The only way to check the status of the job execution is to check the job history.
    - **Send email notification to different email addresses when the job has errors or succeeds**: This option works the same way as **Send all email notifications**, except that a separate email address can be specified to receive the error notifications.
4. In the **Notification Message Content** section, complete the following for the notification email:

Item	Description
To	The email address(es) to receive the notification email. Separate multiple addresses with a semicolon. By default, this is set to notify the user who executed the job, using the system variable `{CurrentUser.EmailAddress}`. When using **Send email notification to different email addresses when the job has errors or succeeds**, this user will be notified if the job completes successfully (including partial success), but not if the job fails. Job failure notifications are sent to the **To (on error)** recipients.

Item	Description
From	The email address that the message is sent from. This can be something like axiomscheduler@company.com, so that the recipient can easily tell that the message has been generated by Scheduler. By default, this is set to the Scheduler "from" email address as defined in the system configuration settings, using the system variable `{Scheduler.FromEmailAddress}`. **NOTE:** For installations that are using subsystems, the system variable `{Scheduler.FromEmailAddress}` may resolve to a subsystem administrator email address instead of the Scheduler "from" email address. For more information, see Using job variables.
Subject	The subject of the message. By default, this is set to "Axiom Scheduler Notification."
User Message	Optional body text for the email. This text is included in addition to the Scheduler auto-generated text regarding the job status.

If **Send email notification to different email addresses when the job has errors or succeeds** is enabled, the following additional options are available:

Item	Description
To (on error)	The email address(es) to receive the notification email when the job result is **Failed**. Separate multiple addresses with a semicolon. This user only receives a notification if the job fails. If the job result is **Success** or **Partial Success**, this user will not receive a notification (only the To user will).
Subject (on error)	The subject of the job failure message. By default, this is set to "Axiom Scheduler Notification."

Job variables can be used in the notification settings. For more information, see Using job variables.

When this job is executed, it will generate an email notification according to the defined settings, and save that notification to the database to await delivery.

Job properties

This topic is a reference for the settings that can be defined for a Scheduler job.

General

This section defines general settings for the job.

Item	Description
Description	Optional. The description of the job. The job description can also be edited in Axiom Explorer, in the Scheduler Jobs Library.
Job Restart Behavior	Specifies whether and how the job should be restarted if it is interrupted prior to completion. Select one of the following: • **Do not reschedule this job.** In this case, you must manually reschedule the job if it needs to be run before its next scheduled execution. • **Restart the job from the first task.** The entire job is run again, even if some of the tasks were completed successfully before the job was interrupted. • **Resume the job beginning with the first uncompleted task.** (Default) The job resumes and only the uncompleted tasks are run. A job would be interrupted if the Scheduler server processing it was restarted, or if the Scheduler service on the server was stopped or restarted, or if the Scheduler server was disabled from the **Servers** tab (**Service > Servers**) of the **Scheduler** dialog.
Job Results Cleanup	Specifies whether historical job results are purged when the job is run. To purge job results: 1. Select **Purge historical job results whenever this job runs**. 2. In **Number of days to keep results for this job**, specify the number of days to keep when purging results. By default this is set to 0, which means all job results will be purged except the result for the current job execution. A day is counted as 24 hours from the time the cleanup task is executed. So if you specify 1 day, and the task is run at 11:00 PM on Tuesday, then all results prior to 11:00 PM Monday are purged. If this option is not selected, then historical job results remain in the database until the system's **Purge System Data** task is run.

Item	Description
Priority Elevation	Specifies the priority of the job in the scheduled jobs queue, within the job's priority category. Select one of the following: • **Default**: (Default) This job is run on a "first come, first served" basis. The total number of jobs that can be run at one time is determined by the configured number of Scheduler threads for the installation. • **Reduced**: The job is designated as a low priority job, and remains at the bottom of the queue until other jobs with Default and Elevated priority have been run. • **Elevated**: The job is designated as a high priority job, and is moved to the top of the queue to be run before Default and Reduced priority jobs. • **Interrupt**: The job is run immediately, regardless of any jobs currently waiting in the scheduled jobs queue, and regardless of whether any Scheduler threads are currently available to run it. If no Scheduler threads are currently available, a new thread is created, even if this exceeds the configured thread limit for the installation. Job execution order also depends on the priority category of a specific job execution. See Processing priority for scheduled jobs.
Mark as System Job	Specifies whether the job is run as a system job. Only administrators can edit this check box. If this check box is selected, the job is run under the "Scheduler Service" system identity instead of a user identity, and the job is run by the system Scheduler server which operates on the Axiom Application Server. Generally, this check box should only be selected for system "support" tasks that should not depend on individual user rights. This check box is not available if the job contains non-system tasks (generally, spreadsheet-related tasks). For more information, see System jobs.

Item	Description
Put the system in 'admin only' mode during this job	If this option is selected, then the system will be placed into administrator-only mode at the start of the job, and then placed back into full access mode when all tasks are completed (including any sub-jobs). This is the same behavior as going to **Manage > Security > System Access** and selecting **Administrators Only**. **NOTES:** • You should make sure that any jobs using admin-only mode do not overlap. For example, imagine that job A starts and places the system in admin-only mode. While job A is still running, job B starts and finishes. If job B also uses admin-only mode, then when job B finishes the system will be placed back into full access mode, meaning the remainder of job A will be processed in full access mode. • Any job using admin-only mode must be run by an administrator. Generally speaking, any job set to run using admin-only mode should be run at a time when no end users will be logged into the system and no other Scheduler jobs will be running.

Job Variables

This tab has two sections for job variables:

- In the **Job values** section at the top of the tab, you can manage user-defined variables for use in the current job.

  To add or remove variables, use the **Add**, **Remove Selected**, or **Clear All** commands in the **Job Variables** group of the **Job** tab. This group is only available when you have selected the **Job Variables** section in the left-hand side of the job.

  When creating user-defined variables, do not add curly brackets to the variable name. Curly brackets are only required when you use the variable in a job or task setting.

- In the **System defined values** section at the bottom of the tab, you can view the system variables available for use in the job.

You can right-click any variable in this section (user-defined or system-defined) and select **Copy variable name to clipboard**. You can then navigate to the setting where you want to use the variable, and then paste it. The variable will be pasted with the necessary curly brackets.

For more information, see Using job variables.

Scheduling Rules

Each row in this section defines a scheduling rule for the job. Jobs will be automatically scheduled according to the settings in this section.

To add or remove scheduling rules, use the **Add**, **Remove Selected**, or **Clear All** commands in the **Scheduling Rules** group of the **Job** tab. This group is only available when you have selected the **Scheduling Rules** section in the left-hand side of the job.

For more information, see Defining scheduling rules for a job.

Item	Description
Active	Specifies whether the scheduling rule is active. If this check box is not selected, then the rule is ignored for purposes of scheduling the job.
Starting On	Optional. Specifies the earliest date and time for the scheduling rule to take effect. If you want the job to run one time only, set **Starting On** and **Ending On** dates to the same date/time.
Ending On	Optional. Specifies the expiration date and time for the scheduling rule. Once this date is past, no further executions will be scheduled for this rule.
Day of Week	Specifies the day(s) of the week that you want the job to be run: • `*` (Default): The job will be run on all days within the start / end range. • `0-6`: The job will be run on the specified day or days, where 0 is Sunday and 6 is Saturday. Use a comma or a hyphen to separate multiple days (hyphen if the days are contiguous, commas if not).
Hours	Specifies the time of day (hours) that you want the job to be run, in relation to the specified days: • `*` (Default): The job will be run on all hours. • `0-23`: The job will be run on the specified hour or hours, where 0 is midnight and 23 is 11:00 PM. Use a comma or a hyphen to separate multiple hours (hyphen if the hours are contiguous, commas if not).
Minutes	Specifies the time of day (minutes) that you want the job to be run, in relation to the specified hours: • `*` (Default): The job will be run on all minutes (essentially the job is run continuously, once per minute). • `0-59`: The job will be run on the specified minute or minutes of the hour, where 0 is the first minute of the hour and 59 is the last minute of the hour. Use a comma or a hyphen to separate multiple minutes (hyphen if the hours are contiguous, commas if not).

Event Handlers

If an event handler is associated with the job, it is listed here. There are two types of event handlers:

- System event handlers, for completing system-triggered tasks.
- User-defined event handlers, for running jobs via RunEvent. See Advanced options.

To add or remove event handlers, use the **Add**, **Remove Selected**, or **Clear All** commands in the **Event Handlers** group of the **Job** tab. This group is only available when you have selected the **Event Handlers** section in the left-hand side of the job.

Item	Description
Active	Specifies whether the event handler is active or not within the current job. If inactive, then actions that trigger the event handler will ignore this job.
Event Name	The name of the event handler. Multiple jobs can have an event handler with the same name; all those jobs will be affected when the event handler is triggered.
Execute As	The user identity under which the job will be run when the event handler is triggered. • **Owner**: For system-managed event handlers, the owner is the system Scheduler identity. For user-defined event handlers, the owner is the user who last saved the job. • **Requester**: For all event handlers, the requester is the user who caused the event handler to be triggered.

Notification

This section defines email notification settings for the job. For more information, see Setting up email notification for jobs.

Job variables can be used in this section. For more information, see Using job variables.

Item	Description
Job Notification Level	Specifies when email notifications are sent for the job. Select one of the following: • **Send all email notifications** (Default) • **Send email notification only when the job has errors** • **None** • **Send email notification to different email addresses when the job has errors or succeeds** If anything other than **None** is selected, then you must complete the remaining fields.
To	The email address(es) to receive the notification email. Separate multiple addresses with a semicolon.

Item	Description
To (on error)	The email address(es) to receive the notification email when the job fails. Separate multiple addresses with a semicolon. Only applies when **Send email notification to different email addresses when the job has errors or succeeds** is enabled.
From	The email address to use as the "From" address for the notification email.
Subject	The subject text for the notification email.
Subject (on error)	The subject text for the notification email when the job fails. Only applies when **Send email notification to different email addresses when the job has errors or succeeds** is enabled.
User Message	Optional. The body text for the notification email. Text entered here will be appended to the body text generated by Scheduler.

Tasks

This section defines the tasks in the job. In the ribbon, task commands are available on the **Job** tab, in the **Tasks** group.

- To add a task, click **Add**.
- To change the order of tasks, select a task and then click **Move Up** or **Move Down**.
- To delete a task, select the task and then click **Remove Selected**.
- To delete all tasks, click **Clear All**.
- To copy a task, right-click the task and then click **Copy**. You can copy the task within the same job, or to another open job in the Scheduler window. Right-click any task (or the **Tasks** section header) and then select **Paste**. The job is pasted underneath the job you right-clicked (or at the end of the list if you right-clicked the **Tasks** section header).
- To rename a task, double-click the task name to make it editable, and then type the new name. For example, if you have a job with multiple File Processing tasks, then you may want to edit the name of each task so that you know which file each task relates to at a glance. (You can also right-click and select **Rename**.)

Tasks are processed in the order they are listed in the job. By default, when you add a new task to a job, it is placed at the bottom of the list. Make sure to move the new job if it should not be processed last.

Tasks can be processed concurrently instead of sequentially if they are configured to be run as a subordinate job within the parent job.

Each task type has its own unique settings in addition to the standard task settings. For more information, see Scheduler Task Reference.

Job Results

Displays historical results for the job. This section is blank if the job has never been run.

Job results may be purged periodically by using the **Job Results Cleanup** option for the job, or by the system **Purge System Data** task.

NOTE: Users with the **Scheduled Jobs User** security permission only see results for jobs that they executed. Administrators see results for all executions.

For more information on job results, see Viewing job results.

Advanced options

Creating event handlers for a job

You can create user-defined event handlers in a job, for the purposes of automatically triggering the job for execution when the event name is called by another feature. Axiom Cost Accounting supports several features that can be used to raise an event:

- The RunEvent function and command
- File Group triggers
- The Raise Event Scheduler task

Event handlers are defined by name. Multiple jobs can have an event handler with the same name. When that event handler is called, it will affect all jobs that contain the event handler with the matching name.

To create an event handler in a job:

1. In the **Scheduler** dialog, open a job to edit or create a new job.
2. In the left-hand side of the job, select **Event Handlers**.
3. On the **Job** tab of the ribbon, in the **Event Handlers** group, click **Add**.

   A new event handler is added to the job.
4. Double-click the **Event Name** field so that the field becomes editable, and then type the desired event handler name.

   For example, if the event handler will be used to trigger Process Plan Files jobs, you might name the event handler ProcessPlanFiles.

   This event name is the name that will be used in features such as RunEvent to trigger this job for execution.
5. In the **Execute As** field, select one of the following to determine the user identity that will be used to run the job when it is executed via the event handler:
   - **Owner**: The job will be run under the identity of the job owner.

     The job owner is the user who last saved the job. If you are not sure who the current job owner is, you can check the **Job Variables** tab. The current job owner is listed in the **System defined values** section.

- **Requester**: The job will be run under the identity of the user who triggered the event handler.

By default, event handlers are set to run as the **Owner**. You should carefully consider this option as it may affect whether the job can be run and how the job is run.

For example, if the event handler is set to **Requester**, but the user who triggered the job does not have access to the file group specified for a Process Plan Files task, then the task will fail.

This may be the desired outcome—you may want the job to be dependent on the user's rights, and therefore you should specify **Requester**. On the other hand, you may want the job to run in the same way every time, regardless of the user that triggers the job. In that case you should specify **Owner**.

By default, the event handler is set to **Active**, which means it will be found by any process that triggers the event handler. If you want to temporarily exclude this job from event handler processing, you can clear the Active check box.

Deleting an event handler

If you no longer need an event handler, you can delete it from the job. Select the event handler and then click **Remove Selected**. You can also **Clear All** to remove all event handlers from the job.

Using job variables

You can use job variables within a Scheduler job, to define the value of the variable when the job is run. Job variables are managed in the **Job Variables** section of the job.

There are two types of variables:

- **User-defined variables:** You can create a variable and then use it within any job or task setting that supports variables, but only within that particular job. The primary use for user-defined variables is to run a job via RunEvent (either the function or the command), and pass in a variable value at that time.
- **System variables:** Axiom Cost Accounting provides a number of system variables that can be used within relevant job and task settings. For example, instead of specifying a "hard-coded" email address for the job notification, you can use a system variable to specify that whoever ran the job should receive the notification.

In all cases, to use a variable within a job or task, enter the variable name into the desired setting, enclosed in curly brackets. For example: {variable}

TIP: If you want to use a variable in a job, you can right-click the variable and then select **Copy variable name to clipboard**. Navigate to the setting where you want to use the variable, and then paste it into the setting (the curly brackets are added automatically).

At the job level, variables can be used in any of the **Notification Message Content** settings in the **Notification** tab. At the task level, in general, variables can be used in any task field that accepts typed user input.

When the job is run, the variable values used for the job display in the job results under **Job Values**, and also in the email notification (if applicable).

User-defined variables

User-defined variables are created in the **Job Variables** tab. You define the name of the variable (without brackets), and if desired, define a default value for the variable.

When the job is run, the user-defined variable will be replaced with a value as follows:

- If the job was scheduled using RunEvent (function or command), and RunEvent sent a name / value pair that matches the name of the job variable, that value is used.
- If the job was scheduled as a result of a file group trigger, and the trigger has a defined variable that matches the name of the job variable, that value is used. Multiple values are returned as a comma-separated list.
- If the job contains a Process Document List task or a Process Plan Files task with a defined post-processing variable that matches the name of a job variable, that value is used after that task has been processed.
- Otherwise, the default value defined in the Job Variables tab is used.

If the value is blank, then the job or task setting using the variable will be evaluated as blank. If the setting cannot be blank, then an error will result when the job is executed.

System variables

The available system variables are listed at the bottom of the **Job Variables** tab. Most of these variables relate to user names and addresses, for use within the job notification settings.

When the job is run, the system variable is replaced with the applicable system value.

The following values are available:

Variable	Description
{CurrentUser.EmailAddress} {CurrentUser.LoginName} {CurrentUser.FullName}	Returns the current user's email address, login name, or full name. The current user is the user identity under which the job is currently being run. Generally, this is the user who executed the job. If the job was executed via an event handler and the event handler is set to owner, then the current user will be the job owner.
{JobOwner.EmailAddress} {JobOwner.LoginName} {JobOwner.FullName}	Returns the job owner's email address, login name, or full name. The job owner is the user who last saved the job.
{Scheduler.ConfiguredFromEmailAddress}	Returns the system's default "from" address, as defined in the system configuration settings.
{Scheduler.FromEmailAddress}	This returns a value as follows: • If the current user belongs to a subsystem, this returns the subsystem administrator's email address. • If the current user does not belong to a subsystem, this returns the default configured "from" address.
{CurrentSubsystem.AdminEmailAddress}	Returns the email address of the subsystem administrator for the subsystem that the current user belongs to. • If the subsystem has multiple administrators, the email is sent to the first administrator. • If the user belongs to multiple subsystems, the first returned subsystem for the user will be used. No specific logic is applied to determine the "correct" subsystem for any particular job. • If the user does not belong to a subsystem, then no email address is returned.

Variable	Description
{EventHandler.EventName}	Returns the name of the event handler that caused the job to be scheduled, if applicable. Otherwise the variable returns blank.
{NotificationAddress}	Returns the notification address defined for the plan codes that triggered a Scheduler job. This variable only applies when the job is executed as a result of a file group trigger, and only if the optional notification address settings are defined for the file group. Otherwise, no email address is returned.
{Task.CurrentIterationValue} {Task.IterationNumber}	Returns the current iteration value and the current iteration number. These variables only apply when using the **Iteration** feature for a task. For more information, see Using iterative task processing.

Processing tasks in parallel

Each Scheduler job can have multiple tasks. By default, each task in the job is processed sequentially, in the order that the tasks are listed in the job.

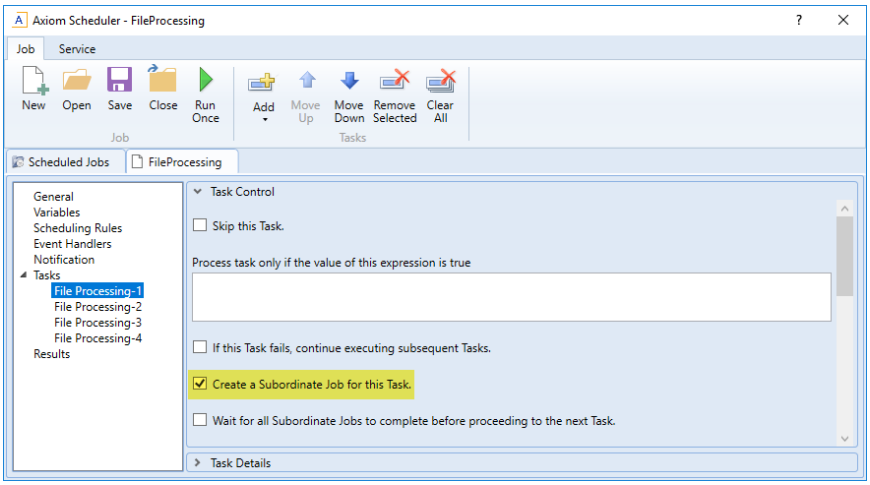
If desired, you can configure tasks so that they are processed concurrently (in parallel) instead of sequentially. If appropriate, this may speed up the processing of the job.

Configuring tasks for parallel processing

In order to process tasks in parallel, the tasks must be configured to run as subordinate jobs (sub-jobs). To do this, edit the following settings in the **Task Control** section for each task:

- Select **Create a Subordinate Job for this Task**.
- Ensure that the following setting is *not* selected: **Wait for all Subordinate Jobs to complete before proceeding to the next Task**.

In the following example, if all four tasks are configured to be run as subordinate jobs, then they can be run in parallel (depending on the available Scheduler threads).



Scheduler task configured to run as a subordinate job to enable parallel processing

How parallel processing works

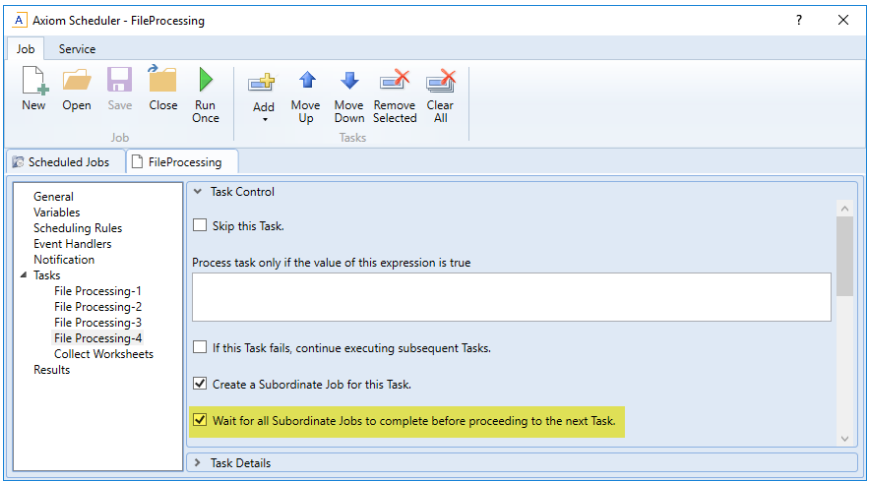
When a task is configured to execute as a subordinate job, then it is not processed within the "parent" job. Instead, a sub-job is created for the task. The sub-job joins the Scheduler queue and is eligible for processing according to the normal Scheduler processing rules. For more information, see Processing priority for scheduled jobs.

For example, imagine that you have a job with four tasks, and these tasks are not dependent on each other. If you use the default settings, Scheduler takes the first task in the list and starts processing. The second task is not started until the first task is complete, and so on.

If instead you configure each task as a sub-job, then when the "parent" job is processed, it will create four sub-jobs. If two Scheduler threads are available for processing, then two of the sub-jobs are processed at the same time. If four Scheduler threads are available, then all four sub-jobs are processed at the same time. Once all of the sub-jobs are complete, the parent job is completed, and its status reflects the overall status of all of the sub-jobs.

If tasks are dependent on each other, then you should not process them as sub-jobs, or you should use the **Wait** setting as appropriate. For example, imagine that the first four tasks in the job can be run in any order, but the fifth task must be processed last. In that case, you can configure the first four tasks to run as sub-jobs, but on the fourth task you must enable **Wait for all Subordinate Jobs to complete before proceeding to the next Task**. This will cause Scheduler to wait for all sub-jobs to finish before it proceeds to the fifth, final task.

In the following example, the file processing tasks are configured as sub-jobs so that they can be run in parallel. The last file processing task is configured to wait, so that all of the file processing tasks will be finished before the file collection task begins.



Scheduler task configured to wait for all subordinate jobs to complete

Using iterative task processing

You can configure a Scheduler task to use iterative processing, so that the task is repeated multiple times using a designated list of values. Each iteration of the task uses a different item in the list, until all items have been processed.

When you enable iterative processing for a task, you define the list of values by specifying a table column and an optional filter. The task will then be processed for each unique item in the table column. You can reference the column values within the task properties by using a built-in Scheduler job variable. As each iteration of the task is processed, the variable is replaced with the column value for the current iteration. Using this approach, the task can dynamically change for each iteration.

For example, you may have an import that you want to perform for four different entities in your organization. The import configuration is exactly the same except that the source file or query is different for each entity. If the import uses entity as a variable, then you can set up a single import task and configure it to iterate over the list of entities. Each iteration uses a different entity name or code, which you can pass into the import variables so that the import uses the correct source file or query for the current entity.

Enabling iterative processing

Iterative processing is enabled in the Task Control properties of the task. Select the task within the Scheduler job, then click **Task Control** to expand that section. Any task can use iterative processing, though it is more useful for certain task types such as Import ETL Package.

Complete the following properties in the **Iteration** section of the Task Control properties.

Item	Description
Iterate this Task	Specifies whether iterative processing is enabled for the task. If enabled, then the task will be performed N times, where N is the number of unique items in the specified iteration column. Job variables can be used to apply the current iteration value and iteration number to the task.
Create a Subordinate Job for each iteration	Specifies whether each iteration is processed as a separate subordinate job. By default, this is disabled, which means that all iterations are processed sequentially within the overall subordinate job created to process the iterations. If enabled, then each iteration is processed as a separate subordinate job, enabling concurrent execution of multiple iterations. This option should only be enabled if the order of iteration processing is not important.
Column	The column that contains the values to iterate over. Use Table.Column syntax to specify the column. Multiple-level lookups can be used. For example, if you specify `Dept.Region`, then the task will be processed once for each unique region value in the column (after applying any filter to limit the list of values).
Group By	Optional. By default, the group by column is the same as the iteration column, so that the task is processed once for each unique value in the iteration column. However, if needed, you can specify a different grouping level. You can use any column or columns that would be valid as the "sum by" level for an Axiom query, where the primary table is the table specified for the iteration column.
Order By	Optional. By default, the values are sorted based on the iteration column, in ascending order. You can specify a different sort column, or use the same sort column but change the order to descending. The sort order is ascending unless the keyword `desc` is used to specify descending order. For example: `Dept.Dept desc`
Filter	Optional. A filter criteria statement to limit the list of values for the iterative processing. You can use any filter that is valid against the source table (the table of the iteration column).

When iterative processing is enabled for a task, the iterations are always processed within a subordinate job. Therefore, enabling the Task Control option of **Create a Subordinate Job for this Task** is unnecessary.

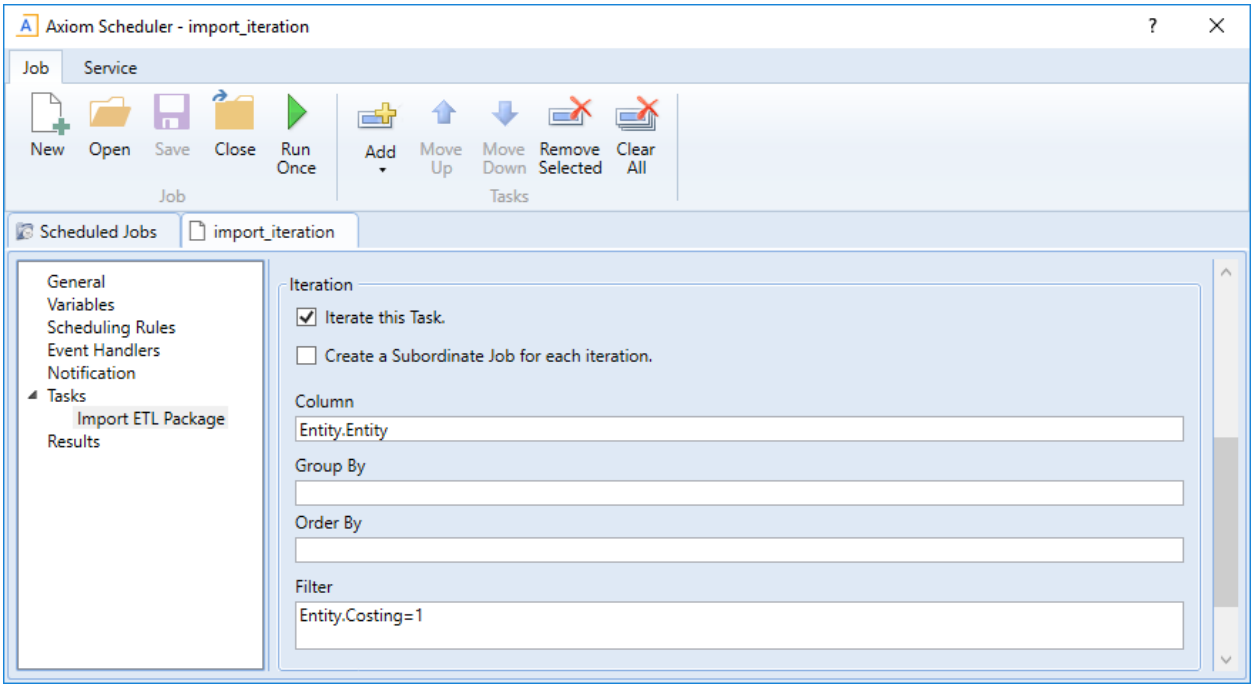
If your job has multiple tasks, and you want the tasks after the iterative task to wait for all iterations to complete before executing, then you must enable the following Task Control option for the iterative task: **Wait for all Subordinate Jobs to complete before proceeding to the next Task**.

Configuring the task to change for each iteration

In order for the Scheduler task to apply the current iteration value to each iteration, you must use the built-in iteration variables within the task. These variables are job variables, and can be used like any other job variable. The following variables are available:

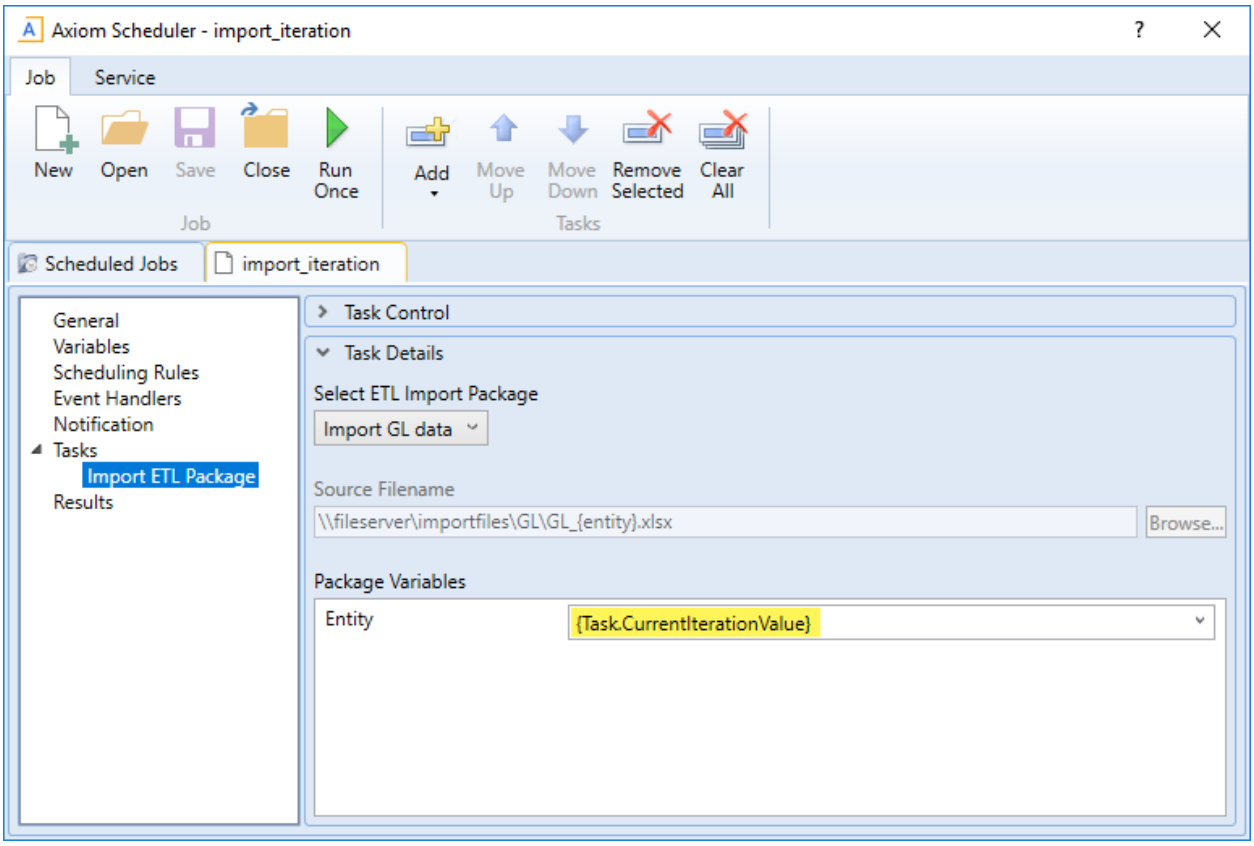
Variable	Description
`{Task.CurrentIterationValue}`	Returns the current value from the iteration list.
`{Task.IterationNumber}`	Returns the number of the current iteration.

To continue the previous example, imagine that you are setting up an import for iterative processing by entity. To define the list of entities, you set up the Iteration settings in the Task Control section like the following:



This example will iterate over the list of entities in the Entities column, limited to only those entities where the Costing column is set to True. If this resolves to 4 entities, then the task will be processed 4 times, once for each entity.

The import is configured with a variable `{Entity}`, which it uses to process the correct entity source file. In order to pass the current task iteration value to the import variable, you can use the job variable `{Task.CurrentIterationValue}` in the import task settings. For example:

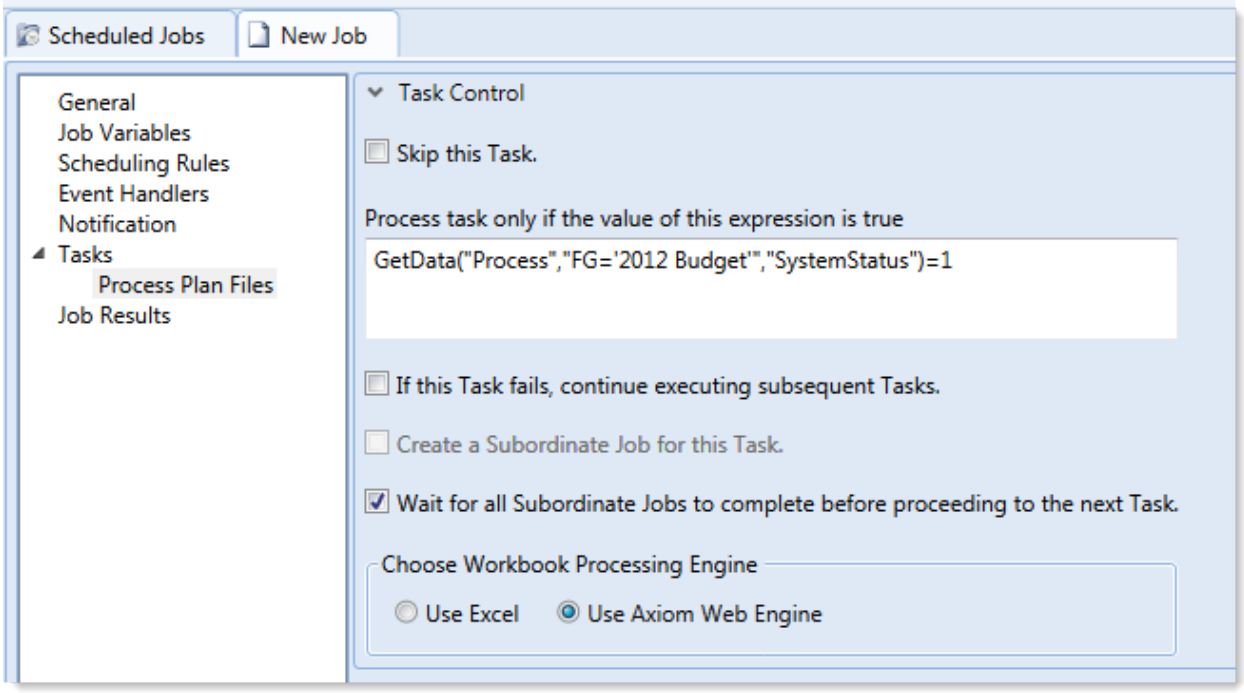


When the first iteration is performed, the `{Task.CurrentIterationValue}` will be resolved as Entity_1, so the import will be processed using Entity_1 as the value for the `{Entity}` import variable. For the second iteration, the value Entity_2 will be used, and so on. Using this approach, the import will be processed for all entities in the iteration column.

Conditionally processing tasks in a job

You can configure a task so that it is only processed if a particular condition is met. This feature is configured in the task settings, in the **Task Control** section, under **Process task only if the value of this expression is true**.

To enable conditional processing, you must specify a logical expression that will resolve to either true or false when the job is executed. If true, then the task is processed as normal. If false, then the task is skipped.



The logical expression is evaluated using an IF function on the Scheduler server as follows:

```
=IF(Expression, 1, 0)
```

You can enter any expression that would be valid in an IF function. You can use Excel functions, Axiom functions, and Scheduler job variables in the expression. If you use a job variable, it must be placed in quotation marks unless you expect the variable value to be resolved and evaluated as a number.

If the task is not processed because the condition resolves to false, this is not considered a failed task. If there are other tasks in the job, they will be processed. If you want an entire job to be conditional, you can do either of the following:

- Repeat the condition in each individual task settings. Keep in mind that the condition will be evaluated for each individual task, which means that if it is possible for the condition to change in between tasks, some tasks might be processed while others aren't.
- Use the condition on a Raise Event task that then triggers another job for processing. For more information, see Raise Event task.

Examples

The following are some example expressions for conditional processing:

```
GetData("Process","FG='2012 Budget'","SystemStatus")=1
```

If this GetData function returns 1, the expression resolves to true and the task is processed. If not, it is false and the task is skipped.

```
AND("{EventHandler.EventName}"="ProcessPlanFiles",{Dept}=1000)
```

If this job was triggered for execution by the ProcessPlanFiles event handler, and if the job variable Dept resolves to 1000, then this expression is true and the task is processed. Note that in the first part of the expression, the event handler variable will return a string value so it must be placed in double quotation marks. In the second part of the expression, the department variable will return a number so it is not placed in quotation marks.

```
AND(Day(Now())<=7,Weekday(Now())=2)
```

This expression will return true if it is the first Monday of the month, otherwise it will return false.

Using RunEvent to execute a Scheduler job

Using RunEvent, you can trigger the execution of a Scheduler job from various contexts, such as within Axiom files, task panes, or Axiom forms. There are two different versions of RunEvent:

- **RunEvent function**: The RunEvent function can be used in Axiom files to trigger the execution of a Scheduler job from a spreadsheet.
- **RunEvent command**: The RunEvent command can be used in task panes or Axiom forms to trigger the execution of a Scheduler job.

Both the function and the command work in the same way and take the same parameters. Some limitations apply depending on the context where RunEvent is being used.

All of the information necessary to run the job is contained within the RunEvent function or command. It is assumed that an administrator (or a power user with the necessary rights) sets up the desired jobs within Scheduler, and then sets up RunEvent in the appropriate context so that end users can trigger it.

The end user who triggers the job using RunEvent does not need to have any Scheduler security permissions. The job itself can be configured to run using the permissions of the job owner or using the permissions of the end user who triggered the job (the requester). If the job is run as the requester, then the end user must have the appropriate permissions to the files impacted by the job (for example to the target file for File Processing, or to the target file group and plan files for Process Plan Files).

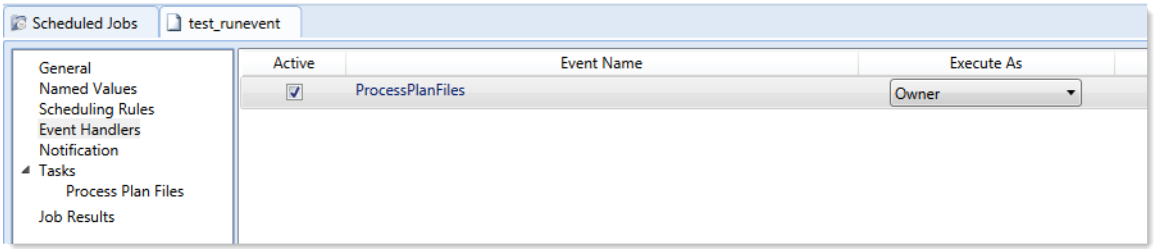
NOTE: You can also use the Raise Event Scheduler task to trigger the execution of a Scheduler job from a different Scheduler job. This works in a similar manner as the RunEvent features.

Setting up a Scheduler job for RunEvent

All uses of RunEvent require the same job setup in Scheduler:

- The job that you want to execute via RunEvent must already be created within Scheduler. When setting up the job, consider items such as the notification settings. Do you want the notifications to go to the user that executed the job, or to the job owner, or both?

- The job must contain an event handler that will be used to trigger the job execution. When creating the event handler, consider whether you want the job to run as the job owner, or as the requester (the user who clicks on the RunEvent function). This may impact email notifications and determines the user rights under which the job will run.



  For more information, see Advanced options.

- Optionally, the job can use variables. Variable values can be defined in the RunEvent function or command and passed to the job. You would do this if aspects of the job need to be dynamic; for example, if you want to use a different filter depending on which user is running the job or based on a user selection in the file. For more information see the *Variable example* section below.

Setting up RunEvent

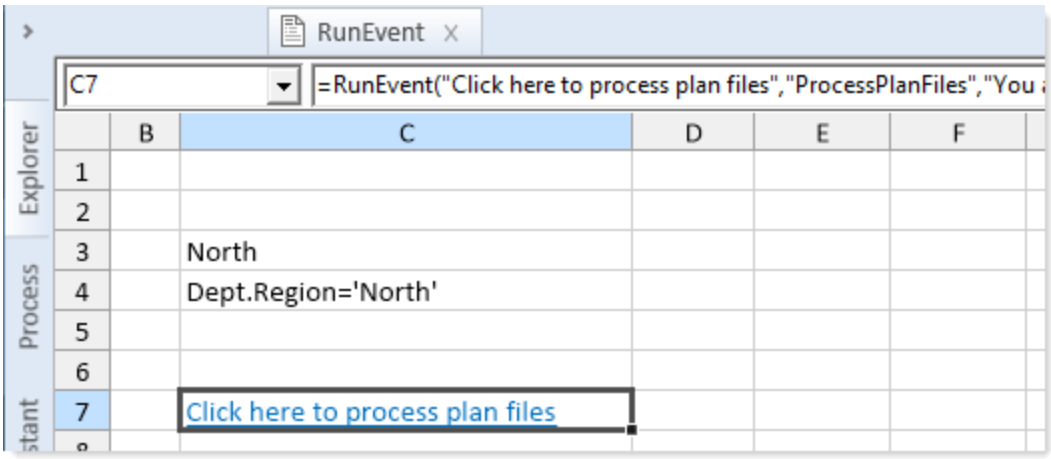
Regardless of the context, RunEvent uses the following properties to trigger Scheduler jobs:

- The event handler name that identifies the Scheduler job(s) to trigger for execution.
- An optional confirmation message to present to the user before proceeding with the event. Not available when using the command within an Axiom form.
- An optional success message to present to the user after the event has been raised.
- If variables are being used, one or more variable names and values to pass to the Scheduler job. This is available in all contexts, however, task panes do not currently support the ability to determine the variable values dynamically.

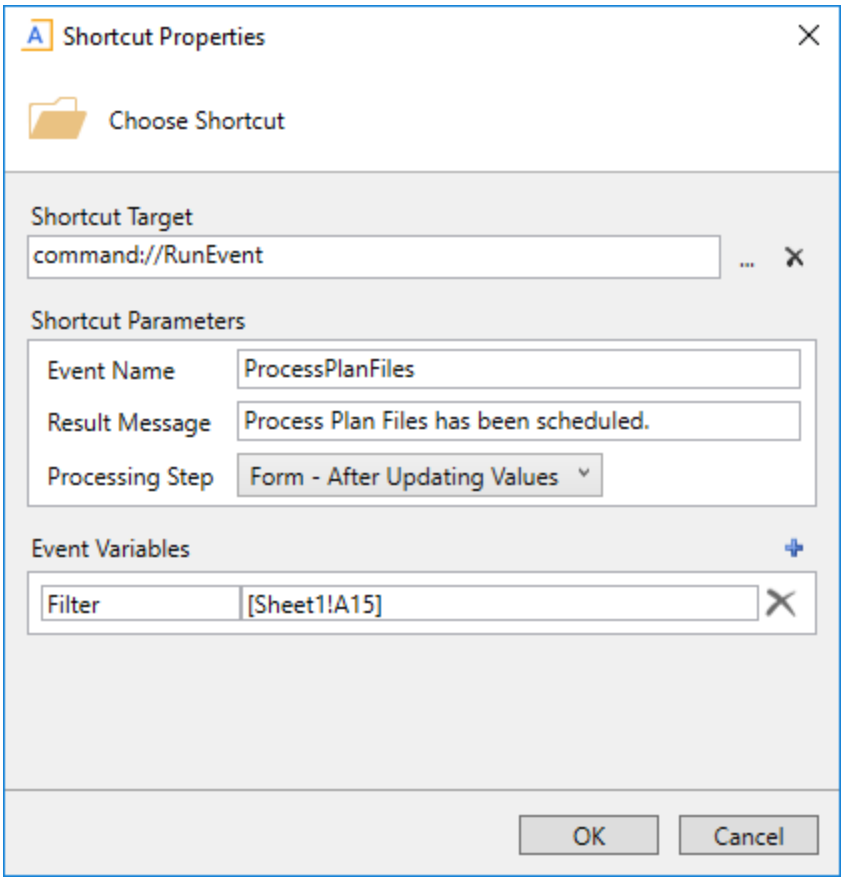
The following shows an example RunEvent function for use in an Axiom file:

```
=RunEvent("Click here to process plan files","ProcessPlanFiles","You are
about to process plan files for the "&C3&" region. Do you want to
continue?",,"filter = "&C4)
```

The first parameter defines the display text for the function, while the second parameter specifies the event handler name. In this example we have also defined a custom confirmation message for the user and a variable value to pass a filter to the job. The following screenshot shows the function in the spreadsheet:



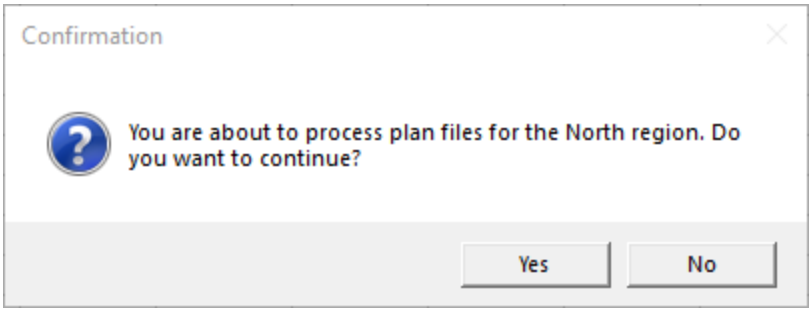
The next screenshot shows a RunEvent command set up on a Button component for an Axiom form. You can see the same event name and the filter variable also being read from a sheet location.



User experience

The user experience for RunEvent depends on the context and whether you are using optional custom messages.

- The user starts the process by doing one of the following:
  - Double-clicking the RunEvent function in the spreadsheet.
  - Clicking the Button component that is configured for RunEvent in the Axiom form.
  - Double-clicking the RunEvent item in the task pane.
- A confirmation prompt displays to the user, asking them to confirm that they want to proceed. The user can click **Yes** to proceed, or **No** to cancel. Default text is used if no custom text is defined in the RunEvent properties.



NOTE: This step does not apply when executing RunEvent from an Axiom form. The Axiom form context does not support a confirmation message. However, you can configure the Button component to display a confirmation message before executing the RunEvent command.

- Axiom Cost Accounting checks all Scheduler jobs to see if any contain an active event handler with the same name as specified within the RunEvent properties. If any are found, they are added to the schedule to be processed as soon as possible, depending on Scheduler thread availability and any higher-priority jobs in the queue.

  It is important to note that RunEvent triggers job execution based on the event handler, not based on specific jobs. If multiple jobs contain an event handler with the specified name, then all of those jobs will be scheduled.

  If variable values are defined in the RunEvent properties, those values are passed to the job. If a variable specified in the RunEvent properties is not used in the job, it is ignored.

- A confirmation message displays to the user as follows:
  - If no jobs were found that contained the specified event handler, the user is notified that no jobs were found.
  - If jobs were placed on the schedule, the user is notified that the specified event was scheduled. Default text is used if no custom text is defined in the RunEvent properties.

NOTE: If executing RunEvent from an Axiom form, this message displays in the bottom left corner of the form, not in a separate message dialog.

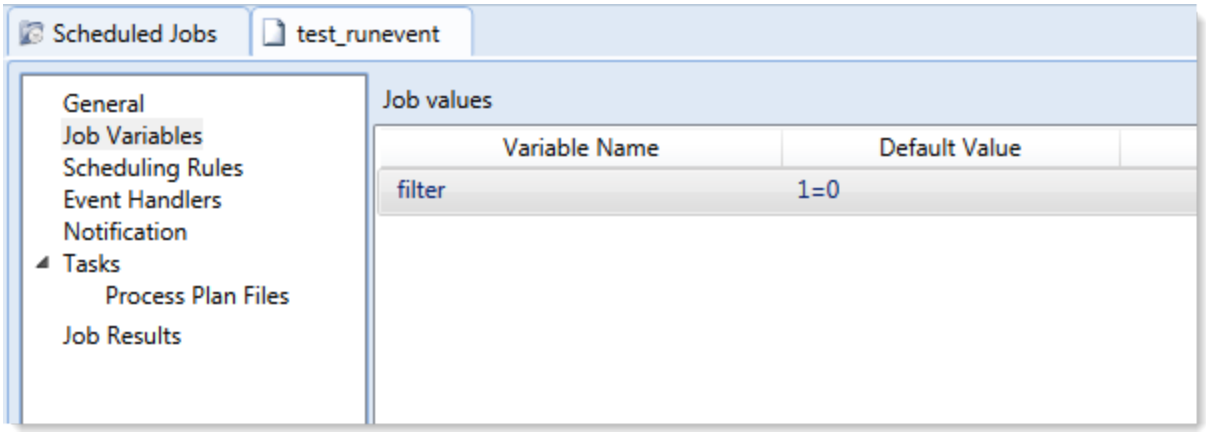
When the job is finished processing, email notifications are sent according to the settings in the job.

Variable example

When using RunEvent to execute a Scheduler job, you can pass a variable value to the job. For example, imagine that you want to execute a Process Plan Files job, and you want to send a filter value to the job.

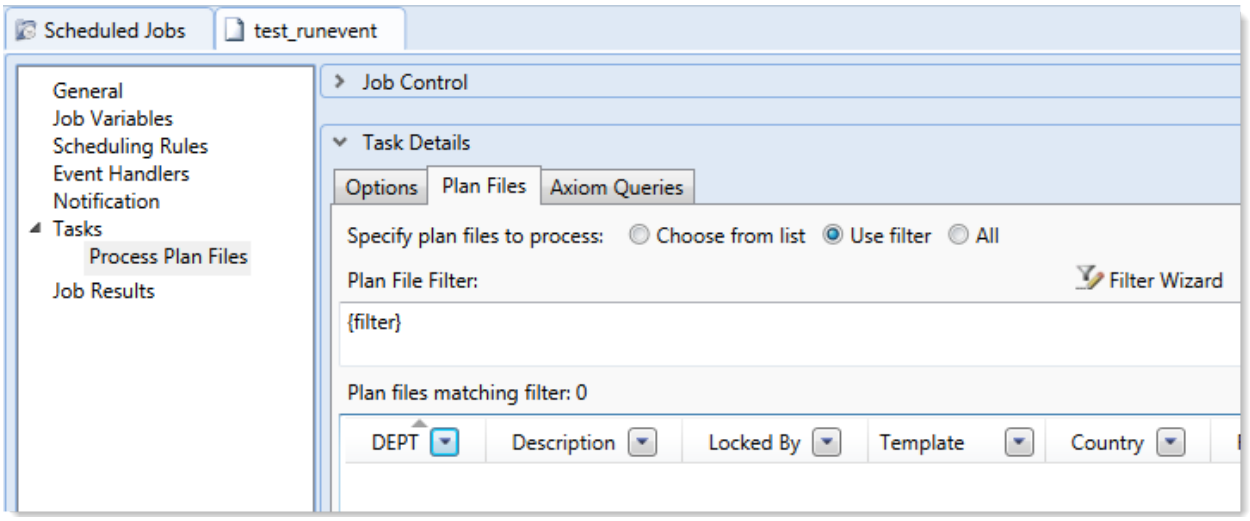
Step 1: Set up the variable in the job

The first step would be to create a job variable in the job, and then use the job variable in the filter setting.



Example job variable

NOTE: In this case, we have defined a default value for the filter variable (1=0) that does not result in any plan files. This is because we do not want to process any plan files unless a filter is provided by RunEvent. If we left the default value blank, that would mean all plan files would be processed if no filter was provided by RunEvent.



Example use of variable in job settings

For more information on Scheduler job variables, see Using job variables.

Step 2: Configure RunEvent to use the Variable

Now that the job is set up to use the filter variable, you must configure RunEvent to pass in a value for that variable. If you are using the RunEvent function in an Axiom file, you use the following syntax within the function parameters:

```
variablename=variablevalue
```

These name / value pairs can be placed in the RunEvent function starting in the fifth parameter of the function. If you have two name / value pairs to pass to the job, you can use the fifth and sixth parameters, and so on.

For example, to pass the filter `DEPT.Region='North'` to the job, the RunEvent function would be constructed as follows:

```
=RunEvent("Double-click to process plan
files","ProcessPlanFiles",,,"filter=dept.region='North'")
```

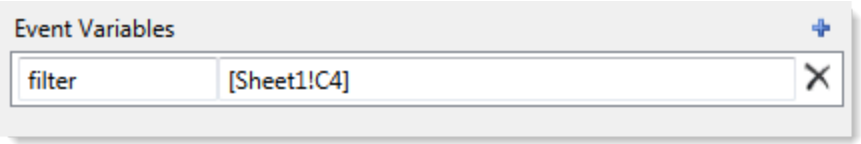
More likely, you would be reading the variable value from another place in the sheet, so the function would look something like:

```
=RunEvent("Double-click to process plan
files","ProcessPlanFiles",,,"filter="&C4)
```

Where the filter value is read from cell C5.

When the job is executed by use of this RunEvent function, the value `DEPT.Region='North'` will be placed in the **Plan File Filter** box of the Process Plan Files task, and the job will be run using that filter.

When using RunEvent in an Axiom form, the variables and their values are defined in the Event Variables section. In this context you place the name of the variable in the left-hand box, and then in the right-hand box you enter the cell reference (in brackets) where the variable value will be read.



The Event Variables section is also present when configuring RunEvent for use in a task pane, however in this context the only option is to "hard-code" the values in the RunEvent properties.

Run another Scheduler job from within a Scheduler job

Scheduler jobs have two ways to run another Scheduler job:

- Raise Event task: This task uses an event handler name to trigger one or more Scheduler jobs for execution. The jobs triggered by the event handler are run independently from the job containing the Raise Event task.
- Run Scheduler Job task: This task runs a specified Scheduler job as a subordinate job within the current "parent" job. Essentially, the tasks in the target job are run within the parent job, which means that other tasks in the parent job can reference the results of those tasks.

The decision of which task to use depends on several factors, but the most important is whether the Scheduler jobs are independent or dependent. If the first job is dependent on the execution of the second job, then you must use the Run Scheduler Job task. When the Raise Event task is used, the triggered jobs are run independently.

The following chart details some comparison points between the two tasks:

Comparison	Raise Event	Run Scheduler Job
Can pass variables to target job	Yes	Yes
Can execute target job as requester or owner	Yes	No
Can wait for target job to complete before continuing	No	Yes
Can use results of target job in subsequent tasks	No	Yes

Using the Raise Event task

The Scheduler Raise Event task is typically used when you need to trigger another job for execution once the current job is complete. The Scheduler job(s) triggered by the event handler are added to the schedule and then executed independently from the current job. For example, you might place the Raise Event task at the end of the task list, so that all tasks in the current job must complete successfully before the Raise Event task is run.

Because the jobs triggered by the event handler are run independently, you cannot perform additional tasks in the current job that depend on the results of the triggered jobs. The current job will not wait for the triggered jobs to be run.

Event handlers can be configured to run a job as either the job owner or as the requester (meaning the user that triggered the event). This allows some additional flexibility in how the triggered jobs are run. For example, you may want to trigger a job that needs to be run using administrator permissions. As long as the event handler is configured to run as job owner (and the owner is an administrator), then that triggered job will always have the necessary permissions, regardless of the user who is running the job with the Raise Event task.

Using the Run Scheduler Job task

The Run Scheduler Job task is typically used when you need to run another job and then perform additional tasks once that job is complete. Because the target job is run as a subordinate job within the "parent" job, the parent job can wait for the "child" job to complete before it continues processing tasks. Later tasks in the parent job can reference the results of the completed child job, such as querying data saved from the child job, processing plan files created by the child job, and so on.

Keep in mind that it is not possible to stop processing tasks in the parent job based on the general success or failure of the child job. Although Scheduler jobs automatically stop processing if a task fails, the task in this case is just the Run Scheduler Job task. As long as the child job can be successfully added to the Scheduler queue for processing, the Run Scheduler Job task will report success. If needed, you can use the option **Process task only if the value of this expression is true** to detect whether a subsequent task in the parent job should be processed. For example, if you know that the child job saves a particular value to the database, you can check for the existence of that value to determine whether to process a task. For more information on using this option, see Conditionally processing tasks in a job.

The child job is run using the same user permissions as the parent job. The user running the parent job must have the appropriate permissions to complete all tasks in both the parent job and the child job.

Chaining multiple Scheduler jobs

You can "chain" multiple Scheduler jobs together using either approach. For example, you may have three Scheduler jobs that you want to run, in a particular order.

You can place multiple Run Scheduler Job tasks in a parent job, where each task triggers a separate job. Because these tasks run as subordinate jobs, and the parent job can wait for each child job to complete, it is easy to run the jobs in order. However, if you want to stop processing the jobs if one fails, there is no built-in way to do that (as discussed in the previous section). You would need to set up the Run Scheduler Job tasks to run or not based on a condition, where the condition tests some result from the previous job.

To chain jobs using Raise Event, the last task in each job can be a Raise Event task. Each job will perform its tasks and then trigger the next job in the chain. When using this approach, the chain automatically stops if failure occurs, because if a task in the job fails then the job stops and will not proceed to the

Raise Event task. The disadvantage of this approach is that the jobs cannot also be run separately, unless you manually disable the Raise Event tasks or configure the Raise Event tasks to not run based on a condition.

Running a job

If a job is saved with an active scheduling rule, then the job is automatically placed on the schedule to be run according to that rule. Each time the job is run according to the rule, it is run as the current job owner (unless it is a system job, in which case it is run as the System identity).

However, you can also choose to run a job manually. If you run a job manually, the job is added to the **Scheduled Jobs** list with a start time of now, to be processed according to its job priority settings. The job will be run using your user identity (again, unless it is a system job).

Running a job manually does not impact any scheduled executions of the job as determined by scheduling rules. For example, if a job is scheduled to be run at 10:00 PM tonight, and you run the job manually at 2:00 PM, the job will still be run as scheduled at 10:00 PM.

To manually run a job:

1. In the Scheduler dialog, in the **Job** tab, click **Open**.

   The **Axiom Explorer** dialog opens, showing the Scheduler Jobs Library only.

2. Select the job and then click **Open**.

   The job opens in the **Scheduler** dialog. Make sure the job is the active tab in the navigation pane (the most recently opened tab is the active tab by default).

3. In the **Job** tab of the ribbon, click **Run Once**.

A confirmation message informs you that the job has been placed on the schedule.

NOTE: When you click **Run Once**, any unsaved changes to the job are automatically saved. This save will designate you as the job owner (if you are not already the job owner).

Managing scheduled jobs

The **Scheduled Jobs** tab of the Scheduler dialog displays all jobs that are scheduled to be processed or are in process. This includes scheduled jobs, jobs executed manually via **Run Now**, and jobs that were triggered for execution via an event handler.

By default, this list displays when you first open Scheduler. If you have changed the view in the dialog, you can return to it by clicking the following:

- On the **Service** tab, in the **Service View** group, click **Scheduled Jobs**.

If a job has a scheduling rule with a recurring schedule, only the first scheduled execution appears in the list. For example, if you have a job that is scheduled to run once a month for a year, you will not see all twelve scheduled executions in the list—you will only see the first scheduled execution. Once that instance has been run, the scheduling rule is re-evaluated and the next scheduled execution appears in the list.

In this tab, you can:

- **Stop a scheduled execution.** If you do not want a scheduled instance to be run, right-click the item and select **Remove from Schedule**. This not only removes the scheduled instance, it also inactivates the associated scheduling rule for the job (if applicable). If you want future scheduled instances of the job to proceed, you must edit the job to re-enable the scheduling rule.
- **Abort an in-process job.** If a job is already running and you want to stop it, right-click the item and select **Abort Working Job**. This will immediately abort the job regardless of what it is currently doing. Keep in mind that depending on the type of job and its stage in the process, this may result in side-effects such as files remaining locked or incomplete processing. No notifications will be sent for the aborted job. Generally, this action should be reserved for situations where a job has gotten "stuck" or was started in error.
- **Reschedule an execution.** To change the scheduled start date/time of a scheduled instance, right-click the item and then select **Reschedule Start Time**. The **Start Time** field in the grid is now editable, and you can type in a new date and/or time.
- **Refresh the list.** On the **Service** tab, in the **Actions** group, click **Refresh**. New scheduled jobs will be added to the list, and **Status** and **Due In** will be updated appropriately.

NOTE: Users with the **Scheduled Jobs User** security permission can only modify jobs that they placed on the schedule. Jobs scheduled by other users are visible, but are grayed out and unavailable for editing. Administrators can view and edit all scheduled jobs.

Scheduled job information

The following information displays for each scheduled job:

Item	Description
ID	The system-generated ID for the job execution. Each scheduled execution of a job has a unique ID. Job results are listed by execution ID.
Job	The name of the job.
User	The user identity that the job will be run as. If the job is a system job, the user is **System**. This is typically the name of the user who placed the job on the schedule, but not always (for example, when using an event handler that is set to run as the job owner instead of as the requester).

Item	Description
Status	Job status is either **Pending** (waiting to be executed) or **Working** (currently being executed).
Server	If a job is currently **Working**, then the server executing the job is listed here. Otherwise, this column is blank.
Priority	The priority category for the job: 1. **Manual**: The job was executed manually. 2. **Event Handler**: The job was executed by a Scheduler event handler. 3. **Scheduled Job**: The scheduled instance of the job results from an active scheduling rule. 4. **Subordinate Job**: The job was generated as a subordinate job, from a currently executing job. The priority category determines how jobs are evaluated for processing order, in conjunction with the job's **Priority Elevation** setting. Manual jobs are highest priority, and subordinate jobs are lowest priority. For more information, see Processing priority for scheduled jobs.
Start Time	The start time of the job. The job is eligible for immediate execution if the start time is now or passed. Jobs may not be executed right at the start time if no Scheduler threads are currently available to execute the job, or if other eligible jobs have higher priority. If the job is on the schedule due to a scheduling rule, the start time is based on the scheduling rule. If the job was manually executed via **Run Now** or triggered by an event handler, the start time is the time the execution was initiated.
Due In	The length of time until the job is due to be processed. For example, if the job is scheduled to run at noon and it is currently 11:50 AM, then the job is due to be run in 10 minutes. This column is intended to make it easy to see when a job will be run, without needing to calculate it based on the start time.

Viewing job results

Once a job has been run, you can view the results in the **Scheduler** dialog. Job results can tell you:

- Whether the job processed successfully or failed
- The process steps performed by the job, if it was successful
- The error message for the job, if it failed
- The date/time when the job started processing and how long it took to process
- The Scheduler server that processed the job

NOTE: Users with the **Scheduled Jobs User** security permission can only see job results for jobs that they executed. Administrators can see job results for all jobs.

To view results for all jobs:

- On the **Service** tab, in the **Service View** group, click **Job Results**.

The **Result History** tab opens, listing a summary of results for all jobs that have started or finished. If you want to see more specific details for a particular job execution, double-click it. This opens the related job to the **Job Results** section, where you can view more details such as the specific error message for a failed execution.

TIP: Alternatively, you can open a job directly, and go to the **Job Results** section to view results for that job only.

System job results

By default, system job results are hidden in the **Result History** tab. System jobs such as the SMTP message delivery job run frequently, and can easily fill up the result history screen, making it difficult to find results for user-initiated jobs.

If you want to view results for system jobs, you can do one of the following:

- At the bottom of the **Result History** tab, clear the **Hide system jobs** check box.
- Open the system job directly, and view its job results within the job. For example, you can go to the **Scheduled Jobs** tab and double-click the **System.SystemDataPurge** job to view all results for that job.

Purging job results

Over time, the job result history can get quite large, so it is recommended to purge the result history periodically. There are two ways to purge result history:

- Each job can be configured to purge its own prior result history when it is run (**Job Results Cleanup**). This setting is located in the **General** section of the job properties. For more information, see Job properties.
- The **System.PurgeSystemData** system job purges result history whenever it is run (by default, once per hour).

When you purge job results, you specify a number of days of history to be kept. For example, you may always want to keep 5 days' worth of job history, and purge any results older than that.

Scheduler Task Reference

Each Scheduler task in a job has two sections of task properties:

- **Task Control**: Common task properties that apply to all task types. For more information, see Task Control properties.
- **Task Details**: Properties specific to the current task type. For more information, see the topics for each individual task type.

The following task types are available:

Task	Description
Active Directory Import	Import users from Active Directory into Axiom Cost Accounting. This task adds new users, and can also disable users that no longer exist in the Active Directory domain.
Collect Worksheets	Collect worksheets from multiple files into a single file.
Copy On Demand Plan Files	Copy plan files from one on-demand file group to another.
Create Plan Files	Create new plan files (same as the **Create Plan Files** utility for file groups).
Echo Task	Test the Scheduler server. This task sends a message to the Scheduler server and asks it to send the message back.
Execute Command Adapter	Execute a command from the Command Library.
Execute SQL Command	Run a SQL statement on an Axiom database.
Export ETL Package	Export data to an external database, using an export utility defined in the Exports Library.
File Processing	Perform file processing actions on a report. You can use the report's native file processing settings, or override the settings.
Import ETL Package	Import data into Axiom Cost Accounting, using an import utility defined in the Imports Library.
Process Document List	Process any set of Axiom files—for example, driver files or report utilities. The task calculates and saves the files, and can also refresh Axiom queries and save data to the database.
Process Plan Files	Process plan files (same as the **Process Plan Files** utility for file groups).
Process Template List	Process a template file. The task runs designated Axiom queries, time-stamps the queries, and saves the template.
Purge System Data	Purge old Scheduler results and system temp tables.
Raise Event	Trigger another Scheduler job for execution, using a named event handler.

Task	Description
Run Scheduler Job	Run another Scheduler job as a subordinate job.
SMTP Message Delivery	Deliver email notifications resulting from Scheduler jobs.
Start Process	Start a process definition for Process Management.
Update Indexes and Constraints	Update the indexes and constraints in your Axiom Cost Accounting database.

Task Control properties

The following task properties are available for all Scheduler task types. To edit these properties, select the task in the Scheduler job, then expand the **Task Control** section.

Item	Description
Skip this Task	If selected, the task will not be run when the job is processed. By default, this option is not selected, which means this task will be run.
Process task only if the value of this expression is true	Optional. Enter a logical expression to conditionally process this task depending on whether the expression resolves to true or false at the time the job is executed. If true, the task is processed as normal. If false, the task is skipped. The logical expression is evaluated by the Scheduler server using an IF function. The expression can be any statement that would be valid within an IF function. You can use Excel functions, Axiom functions, and Scheduler job variables in the expression. If you use a job variable in the expression, you must place the variable in double quotation marks unless you expect it to be resolved and evaluated as a number. For more information, see Conditionally processing tasks in a job.
If this Task fails, continue executing subsequent Tasks	If selected, the job will continue processing even if this task fails. By default, this option is not selected. If a task in a job fails, the job is canceled and no further tasks are processed.
Create a Subordinate Job for this Task	If selected, this task will be processed as a subordinate job to the current job. Selecting this check box enables concurrent processing of different tasks, if the option to **Wait for all Subordinate Jobs to complete before proceeding to the next Task** is not selected. **NOTE:** This option is not available for **Process Plan File** tasks.

Item	Description
Wait for all Subordinate Jobs to complete before proceeding to the next Task	If selected, the job will wait for any subordinate jobs to complete before moving to the next task. If this check box is not selected, and the option **Create a Subordinate Job for this Task** is selected, then tasks can be processed concurrently instead of sequentially. This check box is selected by default for **Plan File Refresh** and **File Processing** tasks. For other task types, this option is not selected by default.
Workbook processing engine to use	This option should always be set to **Axiom Web Engine**. Use of Excel for processing on the Scheduler server is no longer supported. If any tasks in the job involve spreadsheet processing, the spreadsheets are processed using the same spreadsheet emulation engine used by the Windows Client.
Override Log Level for this Task	By default, Scheduler jobs perform logging at the same level that is specified for the application. If necessary, you can override the logging level for a particular task, so that it always runs at a specified logging level. You may want to do this if you encounter performance issues for tasks that generate a lot of logged messages. To do this, select the check box for **Override Log Level for this Task**, then select the desired logging level from the drop-down list. **NOTE:** This option is only available for File Processing tasks.

Iteration

This section can be used to optionally enable iterative processing for the task. For more information, see Using iterative task processing.

Item	Description
Iterate this Task	Specifies whether iterative processing is enabled for the task. If enabled, then the task will be performed N times, where N is the number of unique items in the specified iteration column. Job variables can be used to apply the current iteration value and iteration number to the task.

Item	Description
Create a Subordinate Job for each iteration	Specifies whether each iteration is processed as a separate subordinate job. By default, this is disabled, which means that all iterations are processed sequentially within the overall subordinate job created to process the iterations. If enabled, then each iteration is processed as a separate subordinate job, enabling concurrent execution of multiple iterations. This option should only be enabled if the order of iteration processing is not important.
Column	The column that contains the values to iterate over. Use Table.Column syntax to specify the column. Multiple-level lookups can be used. For example, if you specify `Dept.Region`, then the task will be processed once for each unique region value in the column (after applying any filter to limit the list of values).
Group By	Optional. By default, the group by column is the same as the iteration column, so that the task is processed once for each unique value in the iteration column. However, if needed, you can specify a different grouping level. You can use any column or columns that would be valid as the "sum by" level for an Axiom query, where the primary table is the table specified for the iteration column.
Order By	Optional. By default, the values are sorted based on the iteration column, in ascending order. You can specify a different sort column, or use the same sort column but change the order to descending. The sort order is ascending unless the keyword `desc` is used to specify descending order. For example: `Dept.Dept desc`
Filter	Optional. A filter criteria statement to limit the list of values for the iterative processing. You can use any filter that is valid against the source table (the table of the iteration column).

Active Directory Import task

This task imports users from Active Directory groups into Axiom Cost Accounting security. For more information on using Active Directory integration with Axiom Cost Accounting, see the *Security Guide*.

This task has three tabs of settings: **Source Directory**, **Notification**, and **Preview Import**.

NOTE: The user running this task must be an administrator or have the **Administer Security** permission.

For Cloud Service systems, the Active Directory Import task can import users from your local Active Directory by use of the Axiom Cloud Integration Service. If you have a remote data connection that is enabled for user authentication, this task will use that connection when the job is executed by Scheduler.

Source Directory tab

On this tab, you specify the domain to import from and the groups to import.

Item	Description
Domain or Server	Select either **Domain** or **Server** to specify the source domain for the import. • If you select Domain, enter the name of the domain. • If you select Server, enter the name of the domain controller server. The server option is available in case you are not currently logged into the source domain, and your current domain does not have access to the source domain. In this case, you must use domain credentials in order to access the source domain. Only one domain can be selected per import task. If you want to import users from multiple domains into an Axiom Cost Accounting system, then you must create multiple import tasks.
Credentials	Specifies the credentials to use when accessing Active Directory for the import. Select one of the following: • **Use process credentials**: (Default) Use the credentials of the network service account for Axiom Scheduler Server (on-premise installations) or Axiom Cloud Integration Service (Cloud Service systems). • **Specify domain credentials**: Enter the credentials of a specified domain **User** and **Password**. This option is required if you identified the source domain using the server name instead of the domain name.
Never Enable Users	Specifies whether the import enables imported users as part of the process: • If unchecked (default), then newly imported users are enabled as part of the import. Additionally, any existing imported users who have been changed to disabled are re-enabled. • If checked, then newly imported users are not enabled as part of the import. A security administrator must modify the security settings after the import is complete to enable the new users. Existing imported users retain their current enabled status.

Item	Description
Groups to import	The Active Directory groups for which members will be imported into Axiom Cost Accounting Security. • Click **Add** to select from a list of groups for the specified domain. If the specified domain name is not valid or if Axiom Cost Accounting cannot connect to it, then an error will result when attempting to add groups. • If you need to remove a group, select the group and click **Remove**.
Role Mapping	Click this button to map Active Directory groups to Axiom Cost Accounting security roles and to user types. If a mapping exists for a group, then when users are imported for that group they are automatically assigned to the mapped role. You can map each group to multiple roles. In the **Role Mapping** dialog, click **Add mapping** (the plus icon) to add a role mapping. Then complete the following: • In the **Directory Group** column, select the Active Directory group to be mapped. • In the **Axiom Role** column, select the role to be assigned to users in that group. If you want to map the group to more than one role, add another mapping row. You can select **None** if the users should not be assigned to any role. • In the **User Type** column, select the license type for the imported users. The default license type is **Standard**. If no mappings are defined for a group, then users in that group are not assigned to any roles when they are imported, and the user type is set to Standard. To remove a role mapping, select the mapping in the grid and then click **Remove mapping** (the X icon). If users have already been imported using this role mapping, removing the mapping will not remove the users from the role in subsequent imports. **NOTE:** If a user belongs to multiple imported Active Directory groups, and the groups do not have the same assigned user type, then the user will be assigned one of the user types.

Notification tab

On this tab, you specify users to be notified when changes are made in Axiom Cost Accounting Security due to the import.

Type in one or more email addresses to be notified. Separate multiple addresses with a semi-colon. For example:

```
jdoe@axiomepm.com;jsmith@axiomepm.com
```

When the import task is run, if any users are created or modified in the Axiom Cost Accounting system, an email notification will be sent to the addresses specified here. The email summarizes the changes made. This email notification is independent of any job-level notification settings (which notify based on overall job completion or failure).

We recommend setting up this task-level notification to send emails to the security administrator(s) responsible for maintaining the security settings in Axiom Cost Accounting, so that he or she can define security settings for newly added users, validate changes made to existing users, and perform any other follow-up tasks.

Scheduler job variables can be used in this setting.

Preview Import tab

On this tab, you can preview the import results to test that the import is set up as desired.

To preview the results, click **Preview**. Axiom Cost Accounting processes the import task but does not actually make the changes to the system. Instead, the tab displays a summary of the changes that would result.

The preview shows a list of users that would be added, changed, or disabled.

NOTE: The preview is always executed locally, even for Cloud Service systems. The remote data connection to the Cloud Integration Service is only used when the task is executed by Scheduler.

Collect Worksheets task

This task collects sheets from multiple source workbooks and combines them into a single target workbook. You can then save the target workbook to a specified file location, and/or email the workbook.

NOTE: This task is primarily intended for backward-compatibility only. The main method of performing a file collect operation is to use the file processing feature with the File Processing Scheduler task. For more information on setting up a file collect report using file processing, see the *Axiom File Setup Guide*.

Typically, this task would be used at the end of a job with multiple File Processing tasks, to take the results of those tasks and collect them into a single workbook.

Item	Description
Save or Email Workbook	Specifies the delivery option for the target workbook. Select one of the following: • **Save Workbook**: The target workbook is saved to the specified output folder. • **Email Workbook**: The target workbook is emailed to the specified recipients. The file is not saved anywhere on the file system. • **Save and Email Workbook**: The target workbook is both saved and emailed.

Target Workbook

Complete the following settings to define the target workbook:

Item	Description
Output Folder	The folder location where the target workbook will be saved (if you are saving the workbook). Click the folder icon to select a folder location, or type a folder location. If the specified folder does not already exist, Axiom Cost Accounting attempts to create it. Job variables can be used in this setting.
Output File Name	The name of the target workbook. Job variables can be used in this setting.
File Type	The file type of the target workbook. Select **XLS**, **XLSX**, or **XLSM**. **NOTE:** PDF displays as an option, but it is not supported in this context.

Email Settings

This section only applies if you are emailing the target workbook. The "From" address is always the Scheduler default From address (as defined in the system configuration settings).

Item	Description
To	Enter the email addresses to receive the target workbook via email. Separate multiple addresses with a semicolon.
Subject Line	The subject line for the email.
Body Text	The body text for the email.

Source Workbooks

In this section, you specify one or more source workbooks from which to collect worksheets. Workbooks are identified by folder location. Within a folder location, you can specify one or more workbooks by name, or by using wildcards, or by using *.* to collect all workbooks at the location.

All sheets in each source workbook will be collected. Ideally, you will be collecting from workbooks that only contain relevant sheets (for example, no blank "Sheet2," etc.), and where the sheets have unique names. If multiple workbooks have sheets with the same name, the sheets will be incremented by number in the target workbook.

- To add a workbook, click the Add button. In the **Edit Workbooks Source** dialog, complete the settings as described below, then click **OK** to add the workbook to the list.
- To remove a workbook, select the workbook in the list and then click the Remove button. Only one workbook can be selected at a time.
- To change the order of workbooks, select the workbook in the list and then click the arrow buttons to move the workbook up or down. Source workbooks are processed in the order they are listed in the grid.

Item	Description
Folder Path	The folder location of the source workbook(s). Click the folder icon to select a folder location. **NOTE:** The **Folder Path** location must be accessible by the Scheduler service user account. If you specify a network folder location using the Browse button, the location is automatically entered as a UNC path. If you specify a C: drive location, that will be evaluated as the C: drive of the Scheduler server. Job variables can be used in this setting.
Workbooks	The workbooks from which you want to collect worksheets, within the specified folder path. • Specify *.* if you want to collect all files in the folder path. • Specify individual file names to collect from specific files. Separate multiple file names with semicolons. You can use wildcards (* or ?) to specify groups of files that share naming conventions. For example: `North*.xls` to collect all XLS files where the file name starts with "North". Only files with the following file types are valid to be collected: XLS, XLSX, XLSM. If you are using wildcards, the matches must be valid file types, or else the task will fail with an error. Job variables can be used in this setting.

Once you have saved a source workbook location, you can edit it by double-clicking the row.

Copy On Demand Plan Files task

This task copies on demand plan files from one file group to another. It performs the same actions as the **Copy On Demand Plan Files** command in the Command Library.

This is an advanced feature and should only be used if it is the only way to achieve the desired population of plan files between two related file groups. It is the responsibility of the solution designer to ensure that the copied plan files will behave as expected in the target file group. For example, the plan file must be designed to dynamically save to the appropriate tables and columns within the context of the new file group.

The Copy On Demand Plan Files task uses two tabs to define the properties of the task.

- **Options**: Defines the options to be used for the copy operation
- **Plan Files**: Specifies the plan files to copy

Options tab

The following options are available on the Options tab. Note that all of these options can be changed dynamically by using system variables.

Item	Description
Source File Group	The file group to copy plan files from. Click the folder icon to select a file group. You can select any on-demand file group, or any file group alias that currently points to an on-demand file group.
Destination File Group	The file group to copy plan files to. Click the folder icon to select a file group. You can select any on-demand file group, or any file group alias that currently points to an on-demand file group.
Keep original plan file creator	Specifies whether the plan file creator for the copied plan files is set to the same creator as the original plan files. By default, this option is enabled. If this option is disabled, then the plan file creator for the copied plan files is set to the user identity used by the Scheduler job when it is run.

Item	Description
Use default template	Specifies whether the copied plan files have the option to adopt the default template of the new file group. This is primarily intended to be used when copying plan files to a file group that uses virtual, form-enabled plan files, so that the copied plan files can be converted to virtual files and use the new template. • If disabled (default), then the target file group must contain copies of the original templates that were used to create the plan files from the source file group. If these templates are not present, then the copy process will fail. • If enabled, then the copied plan files will be assigned a template as follows: ◦ If the target file group contains copies of the original templates that were used to create the plan files from the source file group, the copied plan files use those templates. ◦ If the target file group does not contain copies of the original templates, the copied plan files use the default template specified for the target file group in the file group properties. If the target file group does not contain copies of the original templates and does not have a designated default template, then the copy process will fail.
Copy plan file attachments	Specifies whether plan file attachments are copied to the target file group when a plan file is copied. By default, this option is enabled. If this option is disabled, then plan file attachments will not be copied to the target file group.

Item	Description
Save plan files after copy	Specifies whether the new plan files are processed and saved in the target file group after the copy is performed. This is intended to perform a save-to-database within the context of the new file group. By default, this option is disabled. If you enable this option, then after the plan files are copied to the new file group, they are opened, refreshed, and saved (including a save-to-database). The refresh includes all active Axiom queries where **Refresh during document processing** is enabled. Regardless of whether this option is enabled, if it is ever intended to save the copied plan files in the target file group, then they must be designed so that they save data to the appropriate tables after being copied. **NOTES:** • If **Process with Utilities** is enabled for the target file group, then utility processing is performed instead of normal processing. The default data source is used. • If you enable this option but also specify a **Copy data utility**, then the new plan files are not processed and saved. Instead, the designated utility file is processed for each new plan file.
Copy data utility	Optional. Specifies a utility file to process for each copied plan file. You can select any file in the Utilities folder of the target file group, or a file in the Reports Library. The primary purpose of this option is to handle copying virtual plan files between file groups. Because the plan files are virtual, no data exists in the file itself and therefore saving the new plan file will not populate data for the new file group. Instead, you should create a utility file that queries in the necessary data for the original plan file, then saves the necessary data for the new plan file to the appropriate tables for the new file group. Reserved document variables are available to return information in the utility file such as the old plan file code and the new plan file code. For more information, see Copy data utility. **NOTE:** **Save plan files after copy** must be enabled in order to specify a copy data utility. If a utility is specified, then the new plan files are not saved and instead the utility file is processed for each new plan file.
Default Values	Optional. This section can be used to apply default values to any columns in the target plan code table, when the new record is created in the target file group. For more information, see Defining default values.

Plan Files tab

On the **Plan Files** tab, specify the plan files from the source file group that you want to copy to the target file group. There are three different options that you can use to specify the plan files: **Choose from list**, **Use filter**, and **All**.

The most common option when copying plan files using Scheduler is to define a filter. You can dynamically copy a subset of designated plan files using the filter. If the Scheduler task is triggered by using RunEvent, you can pass in the filter from the source of the RunEvent (such as an Axiom form).

Copy a filtered set of plan files

To use a filter to copy a subset of plan files, select **Use Filter**. When the Scheduler task is executed, Axiom Cost Accounting will process only the plan files that meet the filter. You can specify the filter directly, or use a job variable.

To specify the filter, click the Filter Wizard button. You can also manually type a filter criteria statement into the filter box. The filter must use the plan code table of the source file group, or a lookup table. For example: `CapReq2018.Transfer=1`, where CapReq is the plan code table.

Once you have entered a filter, you can click **Refresh plan file list** to show the plan files that currently match the filter. The refresh feature is intended to help you determine whether you have defined the filter correctly.

If you want to set the filter dynamically, you can use the Filter system variable to override the filter defined in the task. This is intended for use when running Scheduler jobs via RunEvent. If a variable value is specified when triggering the event, such as the value `CapReq2018.CapReq IN (45,67,98)`, then that filter statement is used to determine the plan files to be copied instead of the filter defined in the task.

Copy all plan files

To copy all plan files, select **All**. When the Scheduler task is executed, Axiom Cost Accounting will copy all plan files in the file group (except for those hidden via the Show on List column). This is not a common use case for the copy feature, but can be used if needed.

Copy selected plan files

To copy certain plan files, select **Choose from list**, and then select the check boxes for the plan files that you want to copy. When the Scheduler task is executed, Axiom Cost Accounting will copy only the selected plan files. This is not a common use case for the copy feature, but can be used if needed.

NOTE: This option is not available when using a file group alias as the source file group for the task. This is because the alias could change to point to any file group, which could result in a different list of plan files.

Defining default values

When the copy action is performed, the columns for the new record are populated as follows:

- If a value has been defined for a column in the **Default Values** section, that value is used.
- Otherwise, the value from the original record in the source file group is used. This only occurs if the column names match in the source and target tables, and if the column in the target table is a compatible data type to accept the copied value.

If a column exists in the source table but not the target table, that value is ignored and does not cause an error. If a column exists in the target table but not in the source table, then it is only populated during the copy action if a default value has been defined. If the target table contains columns with lookup relationships, those columns must be populated with valid values (either from the original record or by using default values) or else the copy action will fail.

To define default values for the new records:

- Click the plus button + to add a new column/value pair to the **Default Values** section.
- In the left-hand box, type the name of the column in the target plan code table. For example: `SourceID`. Do not use Table.Column syntax.
- In the right-hand box, type the value to be placed in this column. You can enter a "hard-coded" value, or you can enter the name of a column from the source plan code table in brackets to use the value from that column. For example, `[CapID]`. The column reference is only necessary if you want the source column value to be placed in a column that has a different name than the source column. If the columns have the same name, the value will be copied automatically as noted previously in this section.

For both the column name and the value, you can use file group variables via a file group alias. Axiom Cost Accounting looks up the current target of the alias, and finds the current value of the designated variable within that file group. Built-in variables and custom variables can both be used. To reference a variable, use the following syntax:

`{`*`FileGroupAliasName`*`.`*`VariableName`*`}`

For example: `{CP_CurrentYear.FileGroupYear}` returns the file group year for the file group that is currently the target of the CP_CurrentYear alias.

Scheduler job variables can also be used in the column name and in the value.

Overriding task settings using system variables

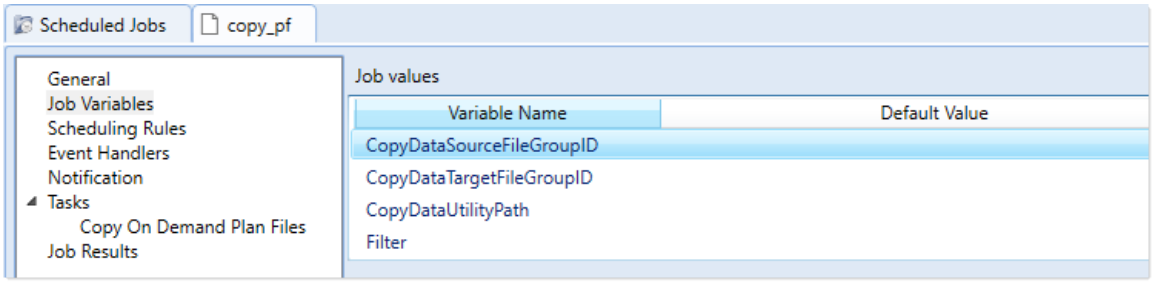
All of the settings for the Copy On Demand Plan Files task can be overridden using system variables. This is intended for use when the task is being triggered by RunEvent (such as from within an Axiom form), and you want to pass in variable values to determine how the task is run.

The variable names for this task are as follows:

Variable	Description
CopyDataSourceFileGroupID	Overrides the **Source File Group**. Must be set to a valid file group ID. File group names or alias names cannot be used.
CopyDataTargetFileGroupID	Overrides the **Destination File Group**. Must be set to a valid file group ID. File group names or alias names cannot be used.
CopyDataUtilityPath	Overrides the **Copy data utility**. Must be set to a valid document path in Axiom Cost Accounting.
Filter	Overrides the **Plan File Filter** to specify the plan files to copy. Must be set to a valid filter criteria statement.
KeepOriginalPlanFileCreator	Overrides the option **Keep original plan file creator**. Must be set to a valid Boolean value (True/False).
UseDefaultTemplate	Overrides the option **Use default template**. Must be set to a valid Boolean value (True/False).
CopyPlanFileAttachments	Overrides the option **Copy plan file attachments**. Must be set to a valid Boolean value (True/False).
SavePlanFilesAfterCopy	Overrides the option **Save plan files after copy**. Must be set to a valid Boolean value (True/False).

To override task properties using these variables:

- Add the variables that you want to use to the **Job Variables** tab. For example, if you want to override the source and target file groups, the copy data utility, and the plan file filter, then add those variables to the Job Variables tab. You do not need to add a variable name if you do not plan to override it.

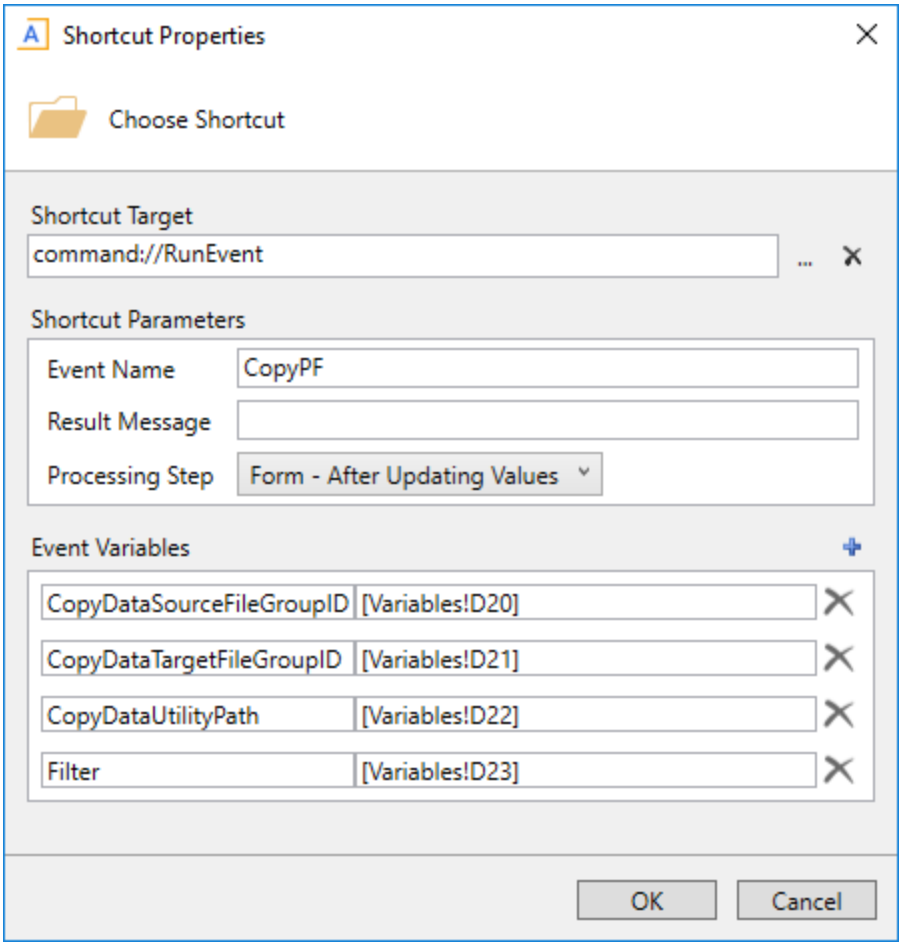


Example Job Variables tab to override certain settings for the copy task

  You do not need to define a default value for the variable. If the value is blank, then the setting defined in the task is used. The corresponding task property will only be overridden if the variable has a defined value.

- You do not need to add the variables to the task properties. The variables automatically overwrite the task properties if they have defined values.

- When configuring RunEvent, define values for the variables as needed. For example, you could have a form where you allow the user to select the source and target file group for the copy action. Based on the user's selected file group names, you can use the GetFileGroupID function to determine the IDs for those file groups. You can then pass those IDs as variable values for the variables CopyDataSourceFileGroupID and CopyDataTargetFileGroupID.



Example RunEvent properties to pass certain variable values to the copy task

Plan file process considerations

If the target file group has an active plan file process, the new plan file is started in that process as part of the plan file creation. The process initiator for the plan file is set as follows:

- If the plan file process has a designated Process Initiator Column, the user listed in that column is the process initiator.
- If the plan file process does not have a Process Initiator Column, or the column value is blank, then:
  - If **Keep original plan file creator** is enabled for the command, then the original plan file creator is the process initiator.
  - Otherwise, the user performing the copy operation is the process initiator.

Copy data utility

If a **Copy data utility** is specified, this processing is performed as follows:

- The selected plan files are first copied to the new file group. If the plan files are virtual, then the placeholder document records are copied instead of physical plan files.
- The utility file is opened once before processing begins. Any data lookups or Axiom queries that are configured to refresh on open are executed at that time.
- The utility file is then iteratively processed for each new plan file as follows:
    - Document variables are set in the utility, and the workbook is calculated.
    - Axiom queries set to **Refresh during document processing** are refreshed.
    - A save-to-database is executed.

The utility file is *not* closed and reopened for each new plan file. All processing occurs within the same file session, similar to when performing multipass file processing.

The following reserved document variables are available to the utility file, to be returned using GetDocumentInfo. These variables return necessary information about the copied plan files and the source and target file groups.

Variable	Description
SourceFileGroupID	The ID of the source file group. You can use this ID in functions such as GetFileGroupVariable—for example, to return the name of the data table to query from the source file group.
SourcePlanCode	The plan code of the original plan file from the source file group. You can use this code to filter Axiom queries to return data for the original plan file.
TargetFileGroupID	The ID of the target file group. You can use this ID in functions such as GetFileGroupVariable—for example, to return the name of the data table to save data to for the target file group.
TargetPlanCode	The plan code of the new plan file in the target file group. You can use this code to save data for the new plan file.

For example, `GetDocumentInfo("Variable","SourceFileGroupID")` returns the ID of the source file group.

Create Plan Files task

This task creates plan files for a file group. It works the same way as the **Create Plan Files** utility that is available from the file group menu.

This task has two tabs of settings in the **Task Details** area: **General** and **Plan Files**.

NOTE: If you are using Create Plan Files to create new on-demand plan files, those plan files will be automatically started in the designated **Plan File Process** for the file group. This only applies when creating a brand new plan file. If an existing plan file is overwritten, its process status will be left as is.

General tab

The following settings are available on the General tab:

Item	Description
Select File Group	The file group for which plan files will be created. You can select any file group or file group alias. **NOTE:** If you select an alias, then you cannot select individual plan files on the **Plan Files** tab. Only the **Use Filter** and **All** options are supported for use with aliases. This is because the alias could change to point to any file group, which could result in a different list of plan files.
Overwrite existing plan files?	By default, this option is not selected, which means that existing plan files will not be overwritten, even if the plan file is selected to be created. If selected, existing plan files will be overwritten.

Plan Files tab

On the Plan Files tab, specify the plan files that you want to create. This tab lists all plan codes that you have the right to access. (If a plan code has been set to **False** in the designated **Show On List Column** for the plan code table, then it is not available in this list.)

You can create plan files in any of the following ways:

- **Create all plan files:** To create all plan files, select **All**. This will cause all plan files to be created, for all existing and future plan codes.

  Alternatively, you can select **Choose from list** and then select the check box in the column header, causing all plan codes to be selected, but then the list of plan codes is fixed and will not adjust for any future changes. For example, if you add a new department in the future, that new department will only be created by this task if you use the **All** option.

- **Create selected plan files:** To create certain plan files, select **Choose from list** and then select the check boxes for the desired plan codes.

  To find the plan files you are looking for, you can sort, filter, and group the list using standard Axiom grid features. You can show additional columns and hide columns by right-clicking in the column header. If you have filtered the list, you can select the check box in the header to select only the plan codes that currently display in the dialog.

  NOTE: This option is not available when using a file group alias as the selected file group for the task. This is because the alias could change to point to any file group, which could result in a different list of plan files.

- **Create a subset of plan files using a filter:** To use a filter to create a subset of plan files, select **Use filter**, and then type a filter into the filter box. You can also use the Filter Wizard to build the filter. The filter must use the plan code table or a reference table that the plan code table links to. For example: `DEPT.Region='West'`.

  Once you have entered a filter, you can click **Refresh plan file list** to show only those plan codes that currently match the filter. This feature is to help you determine whether you have defined the filter as intended. The filter will be applied to the list of plan codes when the Scheduler job is processed, so if changes have been made to the plan code table since then, the actual list of plan files processed will reflect those changes.

  You can also use a job variable for the filter. For example, you can define a job variable named "filter" and then place the text `{filter}` in the filter box. This is intended for use when running Scheduler jobs by using the RunEvent function. If a value is specified in the RunEvent function, such as "Filter=dept.region='west'", then that filter will be used in place of the `{filter}` variable to determine the list of plan files to be created.

  NOTE: If you use a variable, and you leave the default value for that variable blank within the **Job Variables** tab, then all plan codes will be created if no value is passed by the RunEvent function (or if the value is invalid). You may want to define a default filter that results in no values (such as 1=0), so that plan files are only created if a valid filter value is passed.

IMPORTANT: For all of these options, the **Overwrite existing plan files** option on the General tab determines whether all selected plan files are created, or only the plan files that do not already exist.

Echo task

This task is used for testing purposes only, to check whether a Scheduler server is running and operational. The task sends a message to the Scheduler server, and asks it to send the message back (an "echo"). If successful, the message displays in the job results. No other action is performed.

Item	Description
Message to Echo	The message to send to the Scheduler server for testing. Job variables can be used in this setting.
Sleep Time	The time to pause in between message echoes, in seconds. Scheduler will echo the message once, then wait the specified sleep time, then echo the message again.

Execute Command Adapter task

This task executes a selected command from the Command Library.

Task properties

This task has one property named **Command Name** that specifies the command to execute.

To select a command to execute:

1. Click **Edit Command**.
2. In the **Shortcut Properties** dialog, click the browse button **[...]** to the right of the **Shortcut Target** box.
3. In the **Axiom Explorer** dialog, select the desired command from the **Command Library**, then click **Open**.

   This returns you to the Shortcut Properties dialog. The selected command is now listed in the Shortcut Target box, and the Shortcut Parameters section displays the parameters for the command.
4. Complete the **Shortcut Parameters** for the command as needed. The available parameters depend on the selected command.

You can later edit the shortcut parameters or select a different command by clicking **Edit Command**.

Execute SQL Command task

This task runs a SQL statement on an Axiom database. If needed, you can also use this task in a user-defined job to run any valid SQL statement on an Axiom database.

NOTE: The SQL statement in this task will be run as the Axiom database user, regardless of which user executes the job.

This task has the following settings:

Item	Description
Source Axiom Database	Select the database on which to run the SQL statement: • **Current system database**: The database for the current system. • **Current audit database**: The corresponding audit database for the current system.
SQL Command Text	Enter any valid SQL statement to be run against the specified database. To validate the syntax of the SQL statement, click the **Check SQL syntax** button  . Axiom Cost Accounting sends the statement to your database server to see if the statement can be parsed, resulting in either a success message or an error message. Job variables can be used in the SQL statement. The Check SQL syntax button is not available if the statement uses variables.

Export ETL Package task

This task exports data from Axiom Cost Accounting to an external database (same as executing an export from the **Exports Library**).

This task has one setting, **Select ETL Export Package**. This is the name of the export package to process. You can select any export that is defined in the current system.

File Processing task

This task performs file processing on a specified report file or file group utility. The file must already be enabled for file processing. You can use the file processing settings that are already in the file, or you can override any setting.

The following settings must be completed for the task:

Item	Description
File to Process	The report to process for the task. Click the **Browse** button to open the **Axiom Explorer** dialog, and then select a report to process. Only one report can be selected for each File Processing task. If you want to process multiple reports, you can add multiple File Processing tasks to the Scheduler job. **TIP:** Once the file is selected, only the file name displays in the task. If you want to know the folder location of the selected file, hover your cursor over the field. The folder location is listed in the tooltip.

Item	Description
Process Multipass	Specifies whether the report will be run using multipass processing. • If this option is selected, multipass processing is performed. This is equivalent to selecting **File Output > File Processing > Process File Multipass**. • Otherwise, multipass processing is not performed and multipass settings do not display in the task. This is equivalent to selecting **File Output > File Processing > Process File**. **NOTE:** If you select **Process Multipass**, but the file does not have any defined multipass settings, then you must override the blank multipass settings for the file and define them in the equivalent of "advanced mode." If you want to use "basic mode" settings (specify only a source column and Axiom Cost Accounting automatically completes the rest of the settings for you), then you should edit the file to define the basic mode multipass settings so that they can be inherited by the task.
Enable iterative calculation while processing	Specifies whether iterative calculations are enabled for the file during processing. In most cases you will leave this option disabled. If this option is selected, then iterative calculations are enabled for the file during the Axiom query refresh process. The iterative calculation settings are fixed at a maximum of 100 iterations and a maximum change value of .001. For more information on iterative calculations, see the Microsoft Excel Help.

Advanced options

This section only displays if multipass processing is enabled for the task, and the task uses settings that are eligible for parallel processing. Click on the down arrow next to the title to expand the section and view the options.

Parallel processing for file processing tasks is performed based on multipass passes. With certain task settings, multiple passes can be separated into sub-jobs, which can then be processed at the same time (in parallel). This can improve the performance of the task.

For example, imagine that you are multipass processing a file by department. If the task is processed sequentially, then the task would process Dept 100 and finish it, then move to Dept 110 and finish it, etc. When parallel processing is used instead, Depts 100-199 can be separated into one sub-job, Depts 200-299 into another sub-job, etc. Because the sub-jobs are processed in parallel, multiple departments are processed at the same time, so the overall task can complete more quickly.

Item	Description
Maximum Parallel Jobs	The maximum number of subordinate jobs to run in parallel. The default number is 4. This is the total number of sub-jobs that can be run at the same time for this task. Ultimately the number of sub-jobs that are run in parallel depends on the number of Scheduler threads that have been configured for use at your organization, and the number of Scheduler threads that are currently available (threads that are not processing other higher-priority jobs).
Processing Batch Size	The number of multipass passes to include in each sub-job at a time. The default number is 10 for eligible snapshot and export processes, and 7000 for eligible save-to-database processes (save once at end). Passes are determined based on the multipass list of items. For example, if you are processing by department (DEPT.DEPT), then each department is a separate pass. If the batch size is set to 10, then each sub-job would process 10 departments at a time. In most cases, the default settings are sufficient. If you are experiencing lengthy processing times and want to optimize performance, you can adjust this setting as follows: divide the number of passes by the number of available Scheduler threads. For example, if there will be 100 passes and there are 4 Scheduler threads, set the batch size to 25.

NOTES:

- For save processes, only "save once at end" processes are eligible for parallel processing. In this case, the records to be saved to the database are extracted after each pass to a central temporary table. Once all passes are complete, then all records are saved to the database from the temporary table. Save processes where data is saved directly after each pass are not eligible, because these processes may depend on sequential processing.
- There is no way to disable parallel processing if the task is eligible; however, you can adjust the parallel processing settings if desired.

File processing settings

Once you have selected a file to process, the file processing settings from that file display within the task as read-only. You can leave the settings as they are, or you can override any setting.

- To override a setting, select the **Override** check box to the right of the setting. The setting becomes editable, and you can change it. The change only applies to the file processing task—the setting remains unchanged within the file.

- If you override a setting, make sure that any related settings make sense in the context of the change. For example, if **File Generation** is set to **Multiple Output Files**, and you override it to be **Single Output File**, then you should also check the **Sheet Names** setting to make sure that you will end up with unique sheet names within the file.

NOTE: If the target file for the task uses **File Collect** or **Batch** processing, then it is not possible to override the settings on the File Collect Configuration Sheet or the Batch Control Sheet.

For more details on file processing settings, see the *Axiom File Setup Guide*.

Note the following about specific settings for the task:

- The **Output Folder** location must be accessible by the Scheduler service user account. If you specify a network folder location using the Browse button, the location is automatically entered as a UNC path. If you specify a C: drive location, that location will be evaluated as the C: drive of the Scheduler server.
- If the file processing type is **Print**, the Scheduler server(s) must be configured to access the specified printer. This may require the assistance of your IT department.

Job variables can be used in any file processing setting that accepts a typed user input.

Batch variables

If the file has defined batch variables, you can specify variable values to be used for the file processing task. When the task is executed, any specified variable values are temporarily placed within the file, within the designated cell for that variable value. The file can be set up to use the variable value in some way during processing.

Item	Description
Variable Names	The names of the variables, as defined in the File Processing Control Sheet for the source file. If no names are listed, then no variables are defined in the file.
Variable Values	The variable values to be placed within the file when the file processing task is executed.

Job variables can be used in the batch variable settings. For example, a job variable can be used as the value for a batch variable.

Import ETL Package task

This task imports data into Axiom Cost Accounting (same as executing an import from the **Imports** menu).

NOTE: If the import package is configured to **Ignore lookup and key errors**, then if errors are found the execution status of the job will be Partial Success. This will trigger an email notification if the job is configured to notify only on error.

Item	Description
Select ETL Import Package	The import package to process. You can select any import that is defined in the current system.
Source Filename	The path and name of the source file. This option only applies in the following situations: • The import is configured to pull data from a source file (instead of a database table). • The import is configured to prompt the user for the source file during execution. If the import is configured to always use the same source file, then that file displays for reference in the **Source Filename** box, but it is grayed out and cannot be changed. Job variables can be used in this setting.
Package Variables	Specifies values for any variables used in the import package. Variables are listed in the right-hand side of the grid. Use the drop-down list next to the variable name to select from the defined set of choices, or type in a value. Job variables can be used in this setting.

Process Plan Files task

This task processes plan files in a file group. It performs the same actions as the **Process Plan Files** utility available from the file group menu.

The Process Plan Files task uses several tabs to define different options. The available tabs and the options on those tabs depend on the selected **Processing Mode** on the **Options** tab.

- **Options**: Defines the overall processing mode and processing options
- **Plan Files**: Specifies the plan files to process
- **Axiom Queries**: Specifies which Axiom queries to run in plan files (only applies to Normal Processing)
- **Utilities**: Specifies which data source to use for utility processing (only applies to Process with Utilities)
- **Processing Variables**: Defines variables to pass into plan files from Scheduler, and to Scheduler from plan files

Options tab

The following options are available on the Options tab:

Item	Description
Processing Mode	Select the type of processing to perform: • **Normal Processing**: Plan files are opened, refreshed, and saved. You can configure which actions occur. • **Process with Utilities**: A list of utilities is iteratively processed per plan file. Utilities are opened, refreshed with data for each plan code, and saved. This is primarily intended for processing form-enabled plan files with embedded forms. • **Update Persistent Plan Files**: Update existing plan files for text, formatting, or formula fixes. This is an advanced feature. • **Process with Custom Utility**: Plan files are processed using a custom utility provided by Kaufman Hall Software Support. This is an advanced feature. The default processing mode is Normal Processing. However, if the file group has been configured so that utility processing is the default processing mode for that file group, then Process with Utilities is selected by default.
Select File Group	The file group for which plan files will be processed. You can select any file group or file group alias. **NOTES:** • If you select a file group alias, then you cannot select individual plan files on the **Plan Files** tab. Only the **Use Filter** and **All** options are supported for use with aliases. This is because the alias could change to point to any file group, which could result in a different list of plan files. • File group scenarios are not available on the list cannot be processed via Scheduler.
Advanced Options: Worker Batch Size	Optional. Specifies the number of plan files to be processed in each batch. The batch size must be a number between 10 and 100. By default this is left blank, which means that the batch size is automatically calculated based on the number of plan files to be processed divided by the total number of threads on all enabled Scheduler servers. Generally speaking, you should not customize this setting unless you are advised to by Axiom Cost Accounting Support. **NOTE:** Each batch of plan files is processed by a subordinate job. These subordinate jobs are automatically created for the Process Plan Files task and are processed in parallel, dependent on the number of Scheduler threads that are available at any one time.

Options for Normal Processing mode

If Normal Processing is the selected processing mode, the following additional options are available on the Options tab:

Option	Description
Save document after processing	Specifies whether plan files are saved during processing. This option is selected by default. This option does *not* cause a save-to-database to be performed—that option must be selected separately. **NOTES:** • If this option is not selected, then the utility will open the file as read-only and will not attempt to acquire the document lock before processing. • If the file group uses virtual plan files, this option does not apply because the plan files cannot be saved. However, if the option is enabled, Axiom Cost Accounting will attempt to acquire the document lock before processing, which is not necessary. This option should not be enabled when processing virtual plan files.
Run Save To Database on plan files after processing	Specifies whether a save-to-database is performed in plan files during processing. This option is selected by default. This option does *not* cause the file itself to be saved—that option must be selected separately. It is not required to save the file in order to perform a save-to-database.
Create a plan file restore point before processing	If selected, then a plan file restore point will be created before processing begins. This option is not selected by default. Restore points can be used to restore plan files to the state they were in before changes were made. **NOTE:** If the file group uses virtual plan files, this option does not apply. Plan files are not saved and therefore restore points are irrelevant.

Options for Process with Utilities

If **Process with Utilities** is the selected processing mode, there are no additional options on the Options tab.

Plan files are not saved when using Process with Utilities, and plan file restore points are not created. When using this mode, the processing is being performed in the utility files, not in the plan files, so it is not necessary to save the plan files. Additionally, in most cases the plan files used with this mode are virtual form-enabled plan files, so the save and restore options are irrelevant.

Options for Update Persistent Plan Files

If **Update Persistent Plan Files** is the selected processing mode, the following additional option is available on the Options tab:

Option	Description
Report File	Click the Browse button to select the report file that is configured with the PlanFileReconfig_ControlSheet. This file must be saved in the Reports Library. This control sheet contains the settings that will be applied to plan files during processing.

Plan files are always saved when using this processing option, and plan file restore points are always created before processing. A save-to-database is not performed in this mode, so if you need to save data, you should process plan files using Normal Processing after you have verified the results of the plan file update.

Options for Process with Custom Utility

If **Process with Custom Utility** is the selected processing mode, the following additional options are available on the Options tab:

Item	Description
Report File	Click the **Browse** button to select the Microsoft Excel spreadsheet file that contains the VBA custom utility. The file must be saved in the Reports Library.
VBA Module	Select the VBA module to run as part of this utility. The drop-down list shows the VBA modules available in the selected file.
VBA Function	Select the VBA function to run as part of this utility. The drop-down list shows the VBA functions available in the selected module.

Plan files are always saved when using this processing option, and plan file restore points are always created before processing. A save-to-database is not performed in this mode, so if you need to save data, you should process plan files using Normal Processing after you have verified the results of the custom utility processing.

▶ Plan Files tab

On the **Plan Files** tab, specify the plan files that you want to process. There are three different options that you can use to specify the plan files: **Choose from list**, **Use filter**, and **All**. You should use the option that corresponds to how many plan files you want to process—all plan files, or a subset of plan files. If you want to process a subset of plan files, you can select individual files to process or you can use a filter to define the subset.

NOTES:

- If a plan file is locked by another user when the task is executed, then processing for that file will fail. Failures are noted in the result history for the job.
- If a plan file has not yet been created for a particular plan code, then that plan code will not display in this list and will be ignored when processing. Scheduler does not support creating plan files as part of the Process Plan Files task (you must use the separate Create Plan Files task for this purpose).
- If the file group uses a **Show on List** column, then any plan code that is set to **False** will not display in the plan file list and will be ignored when processing.

Process all plan files

To process all plan files, select **All**. The list of all plan files is generated each time the Scheduler task is executed, so that if new plan files have been added then those new plan files will be included in the processing (the reverse is also true if any plan files have been removed).

Alternatively, you can select **Choose from list** and then select the check box in the column header, causing all current plan codes to be selected. However, in this case the list of selected plan codes is fixed and therefore will not automatically adjust for any future changes.

Process selected plan files

To process certain plan files, select **Choose from list**, and then select the check boxes for the plan files that you want to process. When the Scheduler task is executed, Axiom Cost Accounting will process only the selected plan files.

To find the plan files you are looking for, you can sort, filter, and group the list using standard Axiom grid features. You can show additional columns and hide columns by right-clicking in the column header. If you have filtered the list, you can select the check box in the header to select only the plan files that currently display in the dialog.

NOTE: This option is not available when using a file group alias as the selected file group for the task. This is because the alias could change to point to any file group, which could result in a different list of plan files.

Process a filtered set of plan files

To use a filter to process a subset of plan files, select **Use Filter**. When the Scheduler task is executed, Axiom Cost Accounting will process only the plan files that meet the filter.

You can use the Filter Wizard to create the filter, or you can manually type a filter criteria statement into the filter box. The filter must use the plan code table or a lookup table. For example: `DEPT.Region='US West'` where Dept is the plan code table.

Once you have entered a filter, you can click **Refresh plan file list** to show the plan files that currently match the filter. The refresh feature is intended to help you determine whether you have defined the filter correctly.

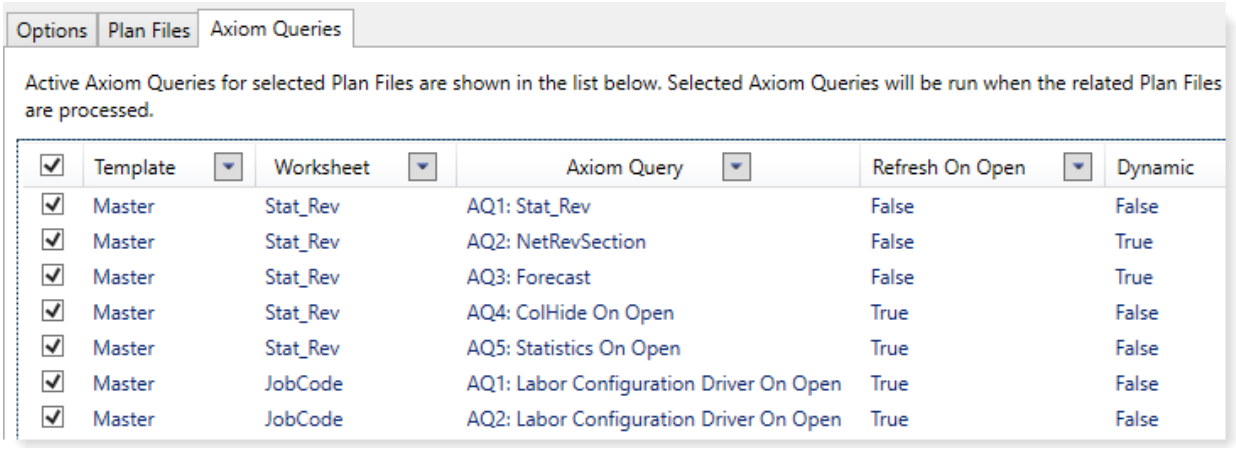
You can also use a job variable for the filter. For example, you can define a job variable named "filter" and then place the text `{filter}` in the filter box. This is intended for use when running Scheduler jobs via RunEvent. If a variable value is specified when the event is triggered, such as the value `dept.region='west'`, then that filter statement will replace the `{filter}` variable and will be used to determine the list of plan files to be processed.

NOTE: If you use a variable, and you leave the default value for that variable blank within the **Job Variables** tab, then all plan codes will be processed if no value is passed by the RunEvent function. You may want to define a default filter that results in no values (such as 1=0), so that plan files are only processed if a valid filter value is passed.

Axiom Queries

On the **Axiom Queries** tab, select the queries that you want to run in the plan files. By default, all listed queries are selected. This tab only applies when using **Normal Processing** mode.

If you do not want to run a particular query, you can clear the check box. You can select or clear individual check boxes, or you can use the check box in the header to select or clear all queries currently displayed in the list. You can sort, filter, and group the list using standard Axiom grid functionality.



Template	Worksheet	Axiom Query	Refresh On Open	Dynamic
Master	Stat_Rev	AQ1: Stat_Rev	False	False
Master	Stat_Rev	AQ2: NetRevSection	False	True
Master	Stat_Rev	AQ3: Forecast	False	True
Master	Stat_Rev	AQ4: ColHide On Open	True	False
Master	Stat_Rev	AQ5: Statistics On Open	True	False
Master	JobCode	AQ1: Labor Configuration Driver On Open	True	False
Master	JobCode	AQ2: Labor Configuration Driver On Open	True	False

Example Axiom Queries tab

The list of Axiom queries is based on the source templates that were used to create the plan files. Only Axiom queries that meet the following criteria are eligible for selection:

- **Active** is set to **On**, or the setting uses a formula.
- **Refresh during document processing** is set to **On**.

If a query uses a formula for the Active setting, this means the query is dynamic and may or may not be run, depending on how the formula resolves in each plan file to be processed. When a particular plan file is processed, each selected query will be evaluated based on the current settings in that plan file. If both **Active** and **Refresh during document processing** are **On** for that plan file, then the query will be run. If either or both settings are **Off** for that plan file, the query will not be run. You can tell whether a query is dynamic or not by looking at the **Dynamic** column in the query list.

If a query is *not* selected on this tab, then that query will not be run in any plan files during processing, regardless of whether **Active** or **Refresh during document processing** are enabled in the plan file.

The plan file selection on the **Plan Files** tab affects the Axiom query list as follows:

- If you have selected individual plan files, then only the eligible queries for the source templates of the selected plan files are shown.
- If you have selected **All** or **Use Filter**, then all eligible queries for all used templates are shown. If the file group has templates that have not been used to create any plan files, then those templates are not included in the list.

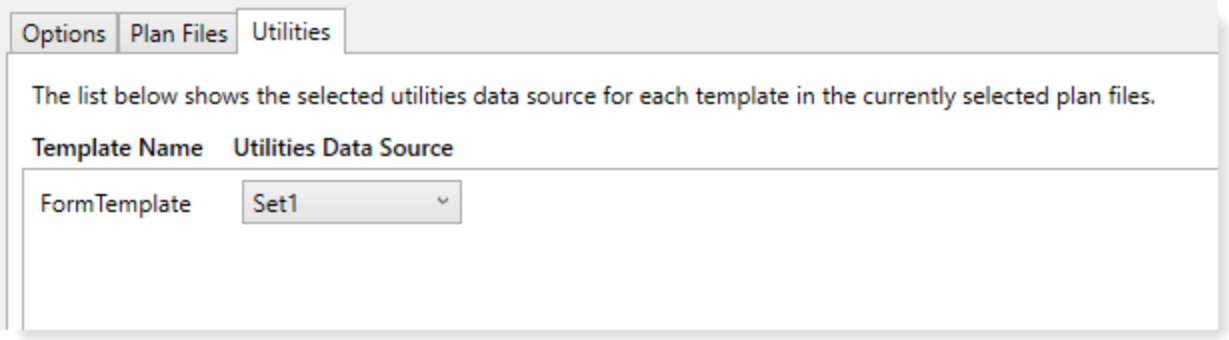
The listed queries are identified by template, worksheet, and query name. The following additional properties are also listed for each query:

- **Refresh On Open**: Indicates whether the Axiom query is configured to refresh automatically when the file is opened. This is for information purposes only, to help you determine whether the query needs to be included in the processing. The Refresh on Open status is ignored by Process Plan Files—if the query is selected it will be run along with the other selected queries, and if it is not selected it will not be run.
- **Dynamic**: Indicates whether the query is dynamically enabled. True means that the query uses a formula for the **Active** setting.

NOTE: If a query is listed on this tab but it is grayed out and unavailable for selection, that means that although the query is active (either directly or dynamically), the query is not eligible to be run using Process Plan Files (because the setting **Refresh during document processing** is set to **Off**). This query is listed for your information only, so that you understand the query cannot be run as part of the process.

Utilities tab

On the **Utilities** tab, select the ProcessPlanFileUtilities data source to use during processing. This data source determines which utility files are processed and the processing order. This tab only applies when using **Process with Utilities** mode.



Example Utilities tab

For each template listed, use the **Utilities Data Source** field to select the data source to use for plan files created from that template.

- If the template only has one data source, that data source is selected.
- If the template has multiple data sources, then the data source marked as the default data source is selected by default. If desired, you can use the drop-down list to select a different data source.

When plan files are processed, Axiom Cost Accounting reads the specified data source in each plan file to determine the utilities to be processed for that plan file.

The plan file selection on the **Plan Files** tab affects the Utilities list as follows:

- If you have selected individual plan files, then only the templates used to create the selected plan files are shown.
- If you have selected **All** or **Use Filter**, then all used templates are shown. If the file group has templates that have not been used to create any plan files, then those templates are not included in the list.

Processing Variables

This tab can be used to define variables to pass into plan files before processing begins, and to pass variables back to the Scheduler job after processing has been performed. This tab is optional and is only used in special situations.

Pre-Processing Document Variables

This section can be used to pass document variables into plan files before processing. This can impact the processing of plan files if the files are configured to use the variable values in some way.

For each pre-processing document variable, you can specify a variable name and a variable value. The plan files must be set up with GetDocumentInfo functions that return the values for the specified variables.

- To add a variable, click the Add button to add a row to the list. Complete the settings for the variable as described below.
- To remove a variable, select the variable in the list and then click the Remove button. Only one variable can be selected at a time.

To edit the variable settings, double-click the applicable cell to make the cell contents editable. When you are finished editing, you can press the Enter key or Tab key to exit the cell, or click outside of the cell.

Item	Description
Variable Name	The name of the variable. Do not enclose the variable name in curly brackets (you are not *using* the variable here, you are defining its value).
Variable Value	The value of the variable. The value can be a "hard-coded" value, or it can be a job variable that will be resolved at time of processing. If you use a job variable to define the value, the job variable must be enclosed in curly brackets.

Pre-Processing Workbook Variables

This section can be used to pass values into plan files before processing. This can impact the processing of plan files if the files are configured to use the values in some way.

For each pre-processing variable, you can specify a workbook location to place the value, and the value to be placed.

Item	Description
Workbook Location	The location in the workbook for the value to be placed. Any existing value in this location will be overwritten for the duration of the processing. If the file is saved as part of the processing, then the value will be saved in the file. The location can be specified using `SheetName!CellRef` syntax (for example: `Report!A13`), or by using a named location in the file.
Formula	The value to be placed in the specified workbook location. The value can be a "hard-coded" value, or a formula, or a job variable that will be resolved at time of processing. If the value is a formula, the formula is placed into the target cell and calculated in the plan file. The formula can be any formula that would be valid within a spreadsheet in the Axiom client. This includes using Excel functions and Axiom functions. The formula can also use job variables, which will be resolved before placing the formula in the target cell.

The specified location and value will apply to all plan files being processed by the task. If you are going to use pre-processing variables, the location should be predefined in the template and therefore available to all plan files built using that template. If the plan files will be built using multiple templates, then all templates should be set up with the same designated location, or you should set up separate processing tasks based on template type.

Post-Processing Workbook Variables

This section can be used to pass a value from plan files back to the Scheduler job after processing has been performed. This can impact the processing of subsequent tasks in the job if those tasks are configured to use the value in some way.

For each post-processing variable, you can specify the location in the workbook to find the value, and the job variable to use that value.

NOTE: If this task processes multiple plan files, the resulting variable value will be from the last file that was processed.

Item	Description
Workbook Location	The location in the workbook to find the value to be passed to Scheduler. This value will become the value for the assigned job variable for the duration of executing the current job (unless a later process within the same job overwrites the value for the same job variable). The location can be specified using `SheetName!CellRef` syntax (for example: `Report!A13`), or by using a named location in the file.
Job Variable	The job variable that you want to use the value in the specified workbook location. Do not enclose the variable name in curly brackets (you are not *using* the variable here, you are simply referencing the variable name). If the job variable does not already exist in the job (on the **Job Variables** tab), then it will be created. However, in most cases you will want the variable to be already set up with a default value, so that the job does not have validation errors that prevent saving.

The specified location and job variable will apply to all plan files being processed by the task. If you are going to use post-processing variables, the location should be predefined in the template and therefore available to all plan files built using that template. If the plan files will be built using multiple templates, then all templates should be set up with the same designated location, or you should set up separate processing tasks based on template type.

Even though the task may process many plan files, only the job variable value from the last-processed plan file will be used. The plan files must be set up so that all plan files result in the same value after processing, or else your results will vary depending on which plan file was the last file to be processed.

Process Document List task

This task processes a user-defined set of documents. The process operation always calculates the files. In addition, you can opt to run Axiom queries in the files, process alerts in the files, and then perform a save-to-database and/or save the files.

You can process any Axiom-managed Excel files by using this task. The primary intent of the task is to process files such as driver files or report utilities. For example, you may be using Axiom queries and GetData functions in your driver files that need to be updated regularly. Rather than opening, refreshing, and saving each driver file, you can use this task to define the set of files and schedule processing.

NOTES:

- Generally speaking, plan files should not be processed using this task. Instead, the Process Plan Files task should be used.
- This task does not perform *file processing* actions on the file. File processing can be set up for report files and driver files, and can be used to perform actions such as file delivery, using standard or multipass processing. If you want to perform file processing using Scheduler, use the File Processing task.

Documents to process

Specify the documents to be processed when the task is run. Documents are processed sequentially in the order listed.


To add a document, click the Add button. In the **Axiom Explorer** dialog, select the file or files that you want to add, and then click **Open**.


To remove a document, select the document in the list and then click the Remove button. Only one document can be selected at a time.

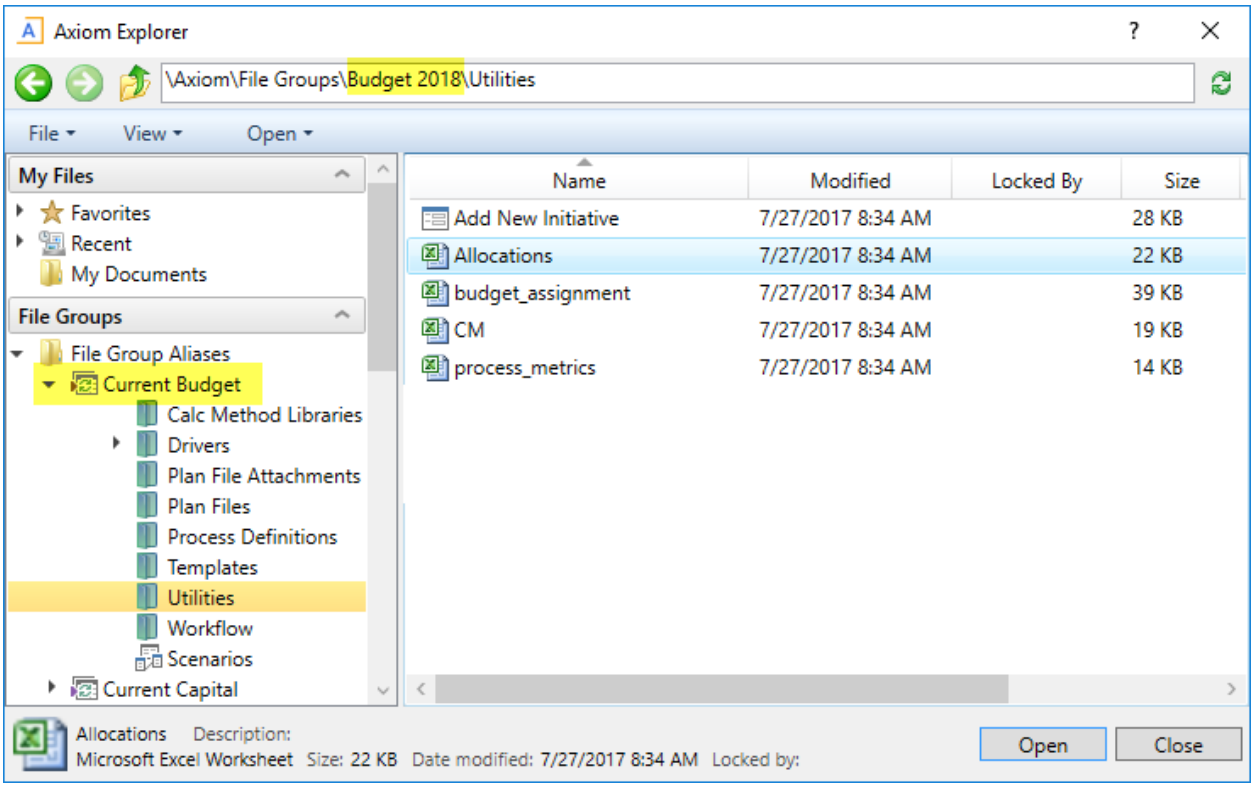
To change the order of documents, select the file in the list and then click the arrow buttons to move the file up or down.

Only Axiom-managed Excel files are valid to be processed in the task.

Selecting a document using a file group alias

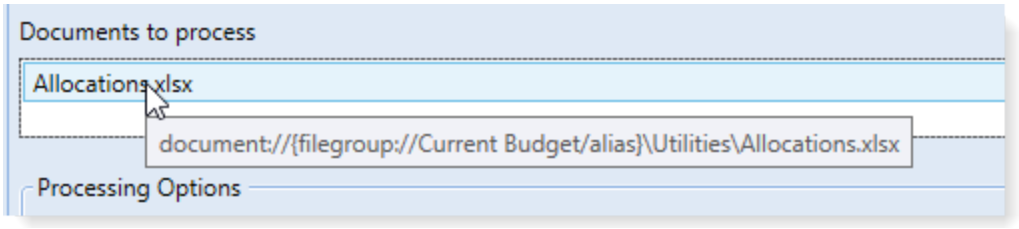
You may want to specify the document to process using a file group alias, so that the task does not have to be manually updated after rolling over to a new file group for a new year of planning. When you are selecting a document in the Axiom Explorer dialog, you can expand the file group alias to see all of the files in the current target of the alias.

For example, in the following screenshot, the file group alias Current Budget is expanded. Because the alias currently points to the file group Budget 2018, the folders and files under the alias are from Budget 2018. When you select a file or folder, you can see the real file path in the top of Axiom Explorer.



Selecting a document to process using a file group alias

When you select a document underneath an alias, the file path is written using alias syntax, so that the Scheduler task will look for the document within the current target of the alias. This path is visible in the tooltip that displays when you hover your cursor over a selected document.



File path using file group alias syntax

When the file group alias is updated to point to a new file group, the Scheduler task will use the file in the new file group automatically. If the file does not exist in the new file group, the task will fail with an error.

Processing Options

By default, both options are selected. Axiom queries are refreshed before the save-to-database occurs.

If neither option is selected, then the files are calculated and then saved.

Item	Description
Perform all enabled Axiom Queries in selected workbooks	If this option is selected, then all eligible Axiom queries in all selected files will be refreshed when the task is run. This option is selected by default. **NOTE:** In order to be eligible for processing, the query must be active, and **Refresh during document processing** must be enabled.
Enable iterative calculation while processing	Specifies whether iterative calculations are enabled for the file during processing. In most cases you will leave this option disabled. If this option is selected, then iterative calculations are enabled for the file during the Axiom query refresh process. The iterative calculation settings are fixed at a maximum of 100 iterations and a maximum change value of .001. For more information on iterative calculations, see the Microsoft Excel Help.
Save document after processing	If selected, then files will be saved after processing. This option is selected by default. This option does *not* cause a save-to-database to be performed—that option must be selected separately. **NOTE:** If this option is not selected, then the utility will open the file as read-only and will not attempt to acquire the document lock before processing.
Run Save To Database on plan files after processing	If selected, then a save-to-database will be performed after processing. This option is selected by default. This option does *not* cause the file itself to be saved—that option must be selected separately. It is not required to save the file in order to perform a save-to-database.
Process alerts in selected workbooks	If selected, then alerts in the file will be processed. The file must contain an Alert Control Sheet and one or more alerts must be defined in the file. If Axiom queries are enabled for processing as well, the queries will be run before alerts are processed.

Pre-Processing Document Variables

This section can be used to pass document variables into the target files before processing. This can impact processing if the files are configured to use the variable values in some way, such as to filter an Axiom query.

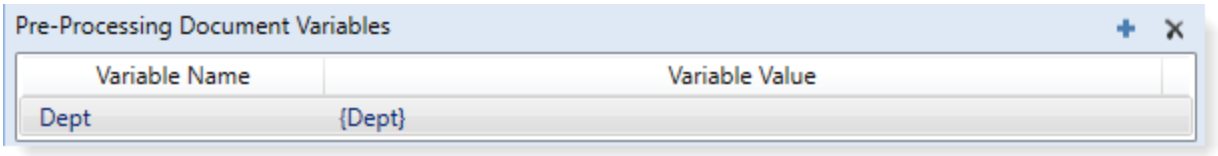
For each pre-processing document variable, you can specify a variable name and a variable value. The target file must be set up with GetDocumentInfo functions that return the values for the specified variables.

- To add a variable, click the Add button to add a row to the list. Complete the settings for the variable as described below.
- To remove a variable, select the variable in the list and then click the Remove button. Only one variable can be selected at a time.

To edit the variable settings, double-click the applicable cell to make the cell contents editable. When you are finished editing, you can press the Enter key or Tab key to exit the cell, or click outside of the cell.

Item	Description
Variable Name	The name of the variable. Do not enclose the variable name in curly brackets (you are not *using* the variable here, you are defining its value).
Variable Value	The value of the variable. The value can be a "hard-coded" value, or it can be a job variable that will be resolved at time of processing. If you use a job variable to define the value, the job variable must be enclosed in curly brackets.

The following example screenshot defines the value for the document variable Dept. The value is defined using the value of a Scheduler job variable `{Dept}`. A value for Dept can be passed into the Scheduler job when the job is started, and then passed into the target file using the document variable.



Pre-Processing Workbook Variables

This section can be used to pass values into the file before processing. This can impact processing if the files are configured to use the values in some way. For each pre-processing variable, you can specify a workbook location to place the value, and the value to be placed.

NOTE: The specified value will be placed in all files listed to process. Therefore, unless all files are set up to use the same location and the same way of deriving the value, you will need to create a separate Process Document List task for each file. If you are not using pre-processing variables, then this does not matter.

- To add a variable, click the Add button to add a row to the list. Complete the settings for the variable as described below.
- To remove a variable, select the variable in the list and then click the Remove button. Only one variable can be selected at a time.
- To change the order of variables, select the variable in the list and then click the arrow buttons to move the variable up or down.

To edit the variable settings, double-click the applicable cell to make the cell contents editable. When you are finished editing, you can press the Enter key or Tab key to exit the cell, or click outside of the cell.

Item	Description
Workbook Location	The location in the workbook for the value to be placed. Any existing value in this location will be overwritten for the duration of the processing. If the file is saved as part of the processing, the value will be saved in the file. The location can be specified using *SheetName*!*CellRef* syntax (for example: Report!A13), or by using a named location in the file.
Formula	The value to be placed in the specified workbook location. The value can be a "hard-coded" value, or a formula, or a job variable that will be resolved at time of processing. If the value is a formula, the formula is placed into the target cell and calculated in the target file. The formula can be any formula that would be valid within a spreadsheet in the Axiom client. This includes using Excel functions and Axiom functions. The formula can also use job variables, which will be resolved before placing the formula in the target cell.

Post-Processing Workbook Variables

This section can be used to pass a value from the file back to Scheduler after processing has been performed. This can impact the processing of subsequent tasks in the job if those tasks are configured to use the value in some way. For each post-processing variable, you can specify the location in the workbook to find the value, and the job variable to use that value.

NOTES:

- If this task processes multiple documents, the resulting variable value will be from the last document processed.
- If the task is run as a sub-job, then the post-processing variable is not passed back to the "parent" job. The task must be executed as a regular task within the job in order to pass the variable value back to the job.

- To add a variable, click the Add button to add a row to the list. Complete the settings for the variable as described below.
- To remove a variable, select the variable in the list and then click the Remove button. Only one variable can be selected at a time.
- To change the order of variables, select the variable in the list and then click the arrow buttons to move the variable up or down.

To edit the variable settings, double-click the applicable cell to make the cell contents editable. When you are finished editing, you can press the Enter key or Tab key to exit the cell, or click outside of the cell.

Item	Description
Workbook Location	The location in the workbook to find the value to be passed to Scheduler. This value will become the value for the assigned job variable for the duration of executing the current job (unless a later process within the same job overwrites the value for the same job variable). The location can be specified using `SheetName!CellRef` syntax (for example: `Report!A13`), or by using a named location in the file.
Job Variable	The job variable that you want to use the value in the specified workbook location. Do not enclose the variable name in curly brackets (you are not *using* the variable here, you are simply referencing the variable name). If the job variable does not already exist in the job (on the **Job Variables** tab), then it will be created when the job is executed. However, in most cases you will want the variable to be already set up with a default value, so that the job does not have validation errors that prevent saving.

Process Template List task

This task processes a user-defined list of file group templates. During processing, any Axiom queries with **Refresh during template processing** enabled are executed and time-stamped, and then the template files are saved.

The primary purpose of this task is to enable use of *time-stamped Axiom queries* with virtual plan files. Because virtual plan files are re-created from template each time they are accessed, Axiom queries cannot be time-stamped within the plan files. Virtual plan files can use the time stamp from the template, but under normal circumstances, Axiom queries are not time-stamped when they are run in templates. However, when Axiom queries are run during template processing, the **Last refresh time** for the query is updated, which means that the queries can be configured to only run if the primary table has changed.

To use this task to enable time-stamped Axiom queries for virtual plan files, do the following:

- In the template, enable **Refresh only if primary table changed since last refresh** and **Refresh during template processing** for the Axiom queries that you want to be time-stamped.

- In Scheduler, create a job with a **Process Template List** task and add the template to the task. Define a scheduling rule for the job as appropriate. For example, you might want the template to be processed nightly.

When the template is processed, the designated Axiom queries will be run if the primary table has changed, and the time stamps are updated. When a virtual plan file that uses this template is opened, the queries will not be run again if the primary table has not changed.

This task should only be used to process Axiom queries that meet the requirements of time-stamped queries.

Templates to process

Specify the templates to be processed when the task is run. Templates are processed sequentially in the order listed. If you have multiple templates to process (in the same or different file groups), you can run them all in the same task.

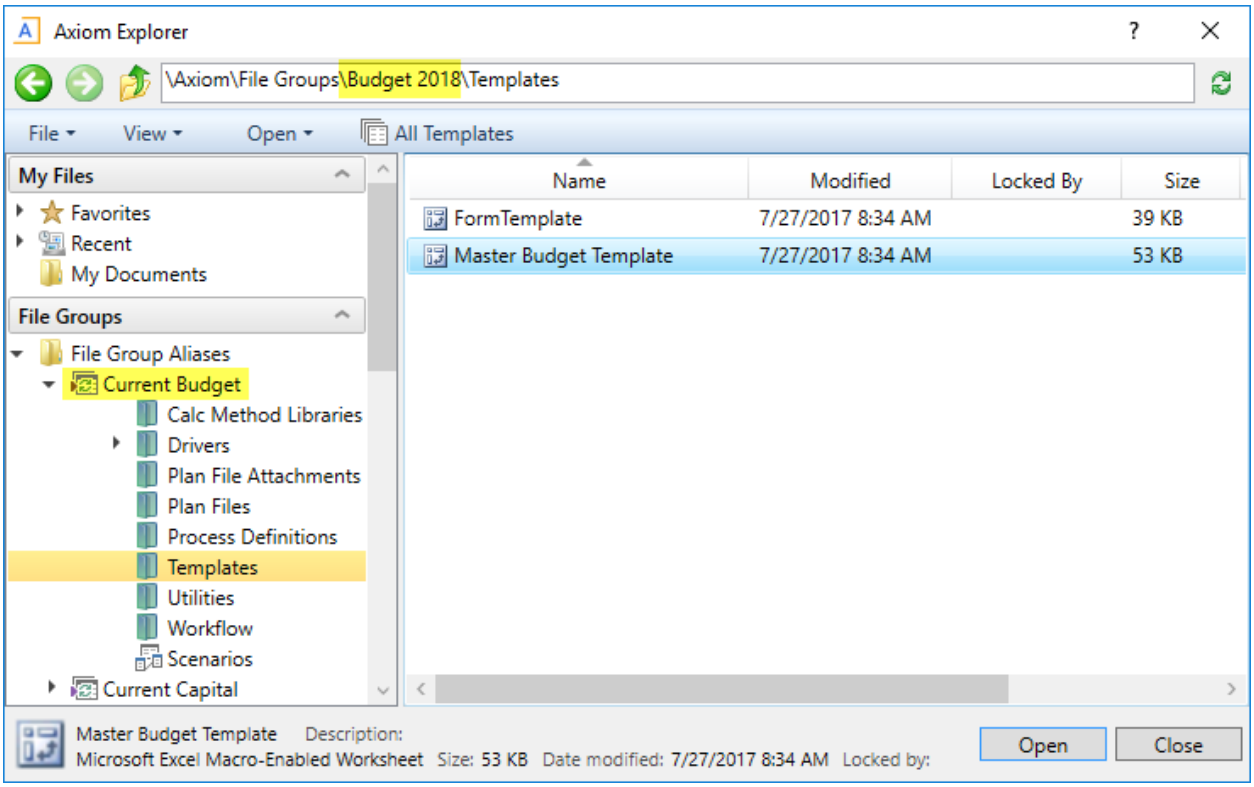
- To add a template, click the Add button. In the **Axiom Explorer** dialog, select the file or files that you want to add, and then click **Open**.
- To remove a template, select the file in the list and then click the Remove button. Only one file can be selected at a time.
- To change the order of templates, select the file in the list and then click the arrow buttons to move the file up or down.

Normal template behavior rules apply during processing. For example, save-to-database and action codes are not run in templates. The only exception to normal template behavior during this task is that any executed Axiom queries will be time stamped.

Selecting a template using a file group alias

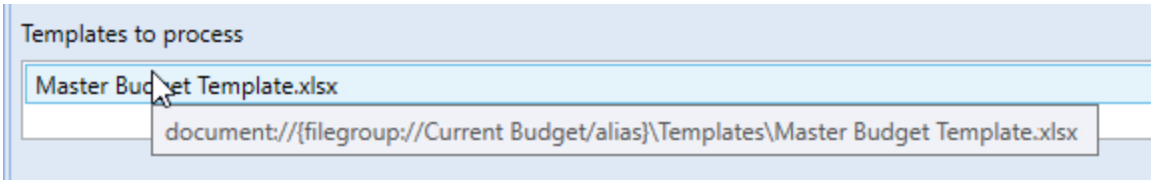
You may want to specify the template to process using a file group alias, so that the task does not have to be manually updated after rolling over to a new file group for a new year of planning. When you are selecting a template in the Axiom Explorer dialog, you can expand the file group alias node to see all of the files in the current target of the alias.

For example, in the following screenshot, the file group alias Current Budget is expanded. Because the alias currently points to the file group Budget 2018, the folders and files under the alias are from Budget 2018. When you select a file or folder, you can see the real file path in the top of Axiom Explorer.



Selecting a template to process using a file group alias

When you select a template underneath an alias, the file path is written using alias syntax, so that the Scheduler task will look for the template within the current target of the alias. This path is visible in the tooltip that displays when you hover your cursor over a selected template.



File path using file group alias syntax

When the file group alias is updated to point to a new file group, the Scheduler task will use the file in the new file group automatically. If the file does not exist in the new file group, the task will fail with an error.

Purge System Data task

The Purge System Data task is intended to clean up old data in your system, to help keep your system running efficiently.

NOTE: Scheduler automatically creates a system job for this task (System.SystemDataPurge), which administrators can edit as needed.

This task purges the following data when it is run:

- Scheduler job result history
- Scheduler and system email notifications
- System temp table data
- Audit history
- Alerts

For each category of data, you can specify a number of days of data to keep when the task is run. All results older than the specified number of days will be deleted. Note that 0 days means that no data is purged for that category.

Section	Item	Description
Scheduler Results	Number of days to keep result history	The number of days of job result history to keep when the task is run. By default, this is set to 15 days.
SMTP Messages	Number of days to keep delivered messages and attachment data	The number of days of delivered message data to keep when the task is run. By default, this is set to 15 days.
Temporary Tables	Number of days to keep temp table data	The number of days of temp table data to keep when the task is run. By default, this is set to 15 days.
Audit History	Number of days to keep system history	The number of days of system audit history to keep when the task is run. By default, this is set to 15 days. "System history" encompasses all audit data—including prior document versions and deleted documents—except table audit data.
Table History	Number of days to keep table history	The number of days of table audit history to keep when the task is run. By default, this is set to 15 days. Table audit data is tracked for tables where **Audited** is set to **True**.
Alerts	Number of days to keep alerts	The number of days of alerts to keep when the task is run. By default, this is set to 60 days.

Job variables can be used in all of these settings.

Each purge routine in the task is limited to purging a specific number of rows at a time (50000). If the number of rows to be purged exceeds this limit, then the excess data is retained until the next time the task is run. If you notice data in the database that you expected to be purged, most likely the amount of data to be purged exceeded the limit, and the data will be purged next time the task is run.

Other purged data

This task also cleans up the following items in your system:

- Deleted columns. When a column is deleted from a table in Axiom Cost Accounting, the column is immediately deleted from the associated view (which prevents it from being accessed in the system), but it remains in the base table. This task finishes the process of removing obsolete columns from the base tables.
- Orphaned user folders. If the system contains any user folders that do not match up with existing users, these folders are deleted. Although user folders are deleted when a user is deleted from security, orphaned user folders can result from other processes, such as migrating a system between different management databases.

These items are not associated with any specific task settings; the delete process is performed whenever the task is executed.

Raise Event task

The Raise Event task can be used to trigger other Scheduler jobs for execution, using a named event handler. This task has one required setting:

Item	Description
Event Name	Enter the name of the event that you want to raise for execution. This name must match a defined event handler name in one or more other Scheduler jobs. When this task is run, it looks for any jobs that contain the specified event handler name. These jobs are added to the schedule and are eligible to be processed immediately, depending on Scheduler thread availability and any other higher-priority jobs already in the queue.

Event Variables

This section can be used to pass variables into the jobs triggered by the event handler. If the jobs are configured to use the variables, these values can impact how the jobs are processed.

- To add a variable, click the Add button to add a row to the list. Complete the settings for the variable as described below.
- To remove a variable, select the variable in the list and then click the Remove button. Only one variable can be selected at a time.

For each variable, you can specify a variable name and a variable value. To edit the variable settings, double-click the applicable cell to make the cell contents editable. When you are finished editing, you can press the Enter key or Tab key to exit the cell, or click outside of the cell.

Item	Description
Variable Name	The name of the variable. Do not enclose the variable name in curly brackets (you are not *using* the variable here, you are defining its value).
Variable Value	The value of the variable. The value can be a "hard-coded" value, or it can be a job variable that will be resolved at time of processing. If you use a job variable to define the value, the job variable must be enclosed in curly brackets.

Run Excel Macro task

This task runs an Excel macro on an Axiom file.

NOTE: This task is no longer supported because it requires Excel processing on the Scheduler server. It is still available on the task list, but cannot be executed.

Please contact Axiom Cost Accounting support if you need assistance with this task.

Item	Description
Workbook Path	The path and name of the file to run the macro on. You can click the **Browse** button to navigate to the file.
Macro Name	The name of the macro to run.
Macro Arguments	If the macro takes arguments, you can enter the argument values here. Click **Add** to add an argument, **Remove** to delete the selected argument, or **Clear** to clear all arguments.

Job variables can be used in all of these settings.

Run Scheduler Job task

This task runs a specified Scheduler job as a subordinate job within the current job. The job containing the Run Scheduler job task is the parent job, and the target job for the task is the child job.

By default, the parent job waits until the child job is complete before continuing to the next task in the parent job. This means that tasks after the Run Scheduler Job task can be reference the results of the child job. For example, the child job may perform a save-to-database. The subsequent tasks in the parent job can access the data saved by the child job.

Task Control options

When you create the Run Scheduler Job task, the options in the **Task Control** section are pre-set as follows:

- The option **Create a Subordinate Job for this Task** is grayed out. This is because the target job is always run as a subordinate job.
- The option **Wait for all Subordinate Jobs to complete before proceeding to the next Task** is enabled by default. This means that tasks after the Run Scheduler Job task can be dependent on the target job and reference the results of that job. If you disable this option, then the parent job will continue to the next task in the job immediately after creating the subordinate job—it will not wait for the subordinate job to complete.

Keep in mind that it is not possible to stop processing tasks in the parent job based on the success or failure of the child job. Although Scheduler jobs automatically stop processing if a task fails, the task in this case is just the Run Scheduler Job task. As long as the child job can be successfully added to the Scheduler queue for processing, the Run Scheduler Job task will report success. The ultimate success or failure of that child job is not reported back to the parent job—the parent job only knows when the child job is started and then stopped.

If needed, you can use the option **Process task only if the value of this expression is true** to detect whether a subsequent task in the parent job should be processed. For example, if you know that the child job saves a particular value to the database, you can check for the existence of that value to determine whether to process the task. For more information on using this option, see Conditionally processing tasks in a job.

Target Scheduler job

In the **Task Details** section, use the Browse button to select the target **Scheduler Job**. You can select any job that you have access to in the Scheduled Jobs Library.

When the Run Scheduler Job task is executed, it creates one or more subordinate jobs as needed to execute the tasks in the target Scheduler job. As long as **Wait for all Subordinate Jobs to complete before proceeding to the next Task** remains enabled in the Task Control options, the parent job waits for all subordinate jobs to be completed before moving on to the next task in the parent job.

NOTE: The user executing the job does not need to have security access to the target Scheduler job for Run Scheduler Job. It is assumed that if the user can execute the parent job, the user should be able to execute the target job.

Child Job Values

If the target job for the Run Scheduler Job task has defined job variables, those variables and their default values are listed in this section. The default values are determined as follows:

- If the parent job and the child job have a variable with the same name, the default value is the value defined in the parent job. This value will be passed to the child job and used when the child job is run.
- Otherwise, the default value is the value defined in the child job.

To override a variable value, select the **Override** check box and then click inside the **Override Value** field to enter a value. You can enter a hard-coded value or use a job variable from the parent job. Enter the variable name in curly brackets to use that variable's value as the override value.

For example, imagine that both the parent job and the child job have a variable of `{Dept}`. In the parent job, the value of `{Dept}` is set to 20000, and in the child job the value is set to 40000. The Run Scheduler Job task will display the parent value of 20000 as the default value, and that value will be used when the child job is executed.

Now imagine that the parent job has a variable of `{StartDept}` set to 20000, and the child job has a variable of `{Dept}` set to 40000. In this case, the Run Scheduler Job task will display the value of `{Dept}` as defined in the child job (40000). If you want to use the parent job value for `{StartDept}` instead, then you must select the Override check box and enter `{StartDept}` as the Override Value. Now the value of `{Dept}` in the child job will be overridden and set to 20000.

SMTP Message Delivery task

This task delivers email notifications for Scheduler jobs.

NOTE: Scheduler automatically creates a system job for this task (System.SMTPMessageDelivery), which administrators can edit as needed.

Item	Description
Server name	The server name of the SMTP email server.
Port number	The port number for the SMTP email server. By default, the port is 587, but you can specify a different port number if needed.
Server requires authentication	Select this check box if the SMTP email server requires authentication. If selected, type a **Username** and **Password**.

Item	Description
Test Mode	Specifies whether the task is run in test mode. If this check box is selected, the task verifies that it can successfully connect to the SMTP server to send email notifications, but no emails are actually sent. For the System.SMTPMessageDelivery job, new systems are automatically set to test mode. If you restore a database, the restore process also sets the system job to test mode. You must disable test mode before any emails will be sent.

Start Process task

This task starts a process for Process Management. You can use this task to automatically start a process at a specific point in time, including recurring schedules (such as to automatically start a monthly process).

This task can be used to start a generic process definition or a plan file process definition.

Item	Description
Process to start	The process definition to start. Click the **Browse** button to select the process definition file. You can select any process definition in the Process Definition Library or in a file group Process Definitions folder.
Restart process if it is already running	Specifies whether the Scheduler task will restart the process if it is already running, or if the process will be left as is. • Select this option if you want to start the target process regardless of whether it is already running. The current process instance will be aborted and a new process instance will start over at step 1. This option is selected by default. • Clear this option if you want to leave the existing process instance running. In this case, the Scheduler task will take no action if the target process is already running.

Scheduler tasks for database maintenance

Scheduler provides several built-in tasks that are intended for database maintenance. By default, these tasks are included in the System.IndexMaintenance job, which runs regularly to maintain your database. However, these tasks can also be added manually to jobs as needed to perform additional database maintenance.

The following database maintenance tasks are available:

- **Rebuild Database Indexes** task
- **Update Database Statistics** task

- **Update Indexes and Constraints** task

All of these tasks are predefined versions of the **Execute SQL Command** task. You can use the **Source Axiom Database** field to specify whether the task is executed against the system database or the audit database.

For the **SQL Command Text**, the actual SQL code used by each task is generated automatically by Axiom Cost Accounting when the task is executed. This ensures that the tasks always use the most current SQL code for each task as defined by Axiom Cost Accounting.

Security

All users of Axiom Cost Accounting must be defined within Security. Within Security, you can:

- Manage users and roles
- Control user access by file group
- Control user access to data in the database
- Control user access to specific features
- Control user access to data imports
- Control user access to files and folders
- Specify files to open on system startup

Security Overview

Using Axiom Cost Accounting Security, you can create users and roles, and assign access rights. This section explains how security is applied in Axiom Cost Accounting.

Users can be created manually within Axiom Cost Accounting, or you can import them from Active Directory. Once a user account is created, you must define the permissions for that user, at the user level or at the role level (or both). The security permissions determine which files, features, and data that the user can access within the Axiom Cost Accounting system.

The following users can access and manage security:

- Users designated as a system **Administrator**. Administrator users have full rights to all areas of the system, including security.
- Users who are granted the **Administer Security** permission. Administer Security users have full rights to security, except for a few features which are limited to administrators-only.
- Users who are assigned as a **Subsystem Admin** for a subsystem. Subsystem administrators can manage users and roles within the subsystem.

Users and roles

To streamline security settings, you can define a number of roles, and then assign users to those roles. Users inherit the security settings defined for their assigned roles. Additionally, Axiom Cost Accounting provides a built-in Everyone role, for security settings that apply to all users.

Systems with installed products may also have roles that are designed for use with the product. These roles are product-controlled and delivered with the product. For example, a system with the Capital Planning product may have roles for Capital Planning Admin and Capital Planning User. You can assign users to these roles based on the level of permissions they need to the product.

The specific way that security settings are inherited depends on the type of setting. Generally, roles grant permissions, they do not deny permissions. For more information, see How role settings are applied to users.

Authentication behavior

There are several options to authenticate users into Axiom Cost Accounting. The basic authentication type is Axiom Prompt authentication, which means that users will be prompted for an Axiom user name and password each time they want to access Axiom Cost Accounting.

If desired you can use an integrated authentication option instead, which means that users are authenticated based on certain supported external credentials—such as the user's Windows domain credentials or LDAP credentials. These options are typically enabled and configured during the installation of Axiom Cost Accounting. For more information, see Axiom Cost Accounting can integrate with your organization's existing network security. You can:.

Security subsystems

If desired, you can create security subsystems and assign users to subsystems. Subsystems allow you to:

- Define a maximum level of permissions for a subset of users. Any user that is assigned to the subsystem cannot be granted rights that exceed the subsystem rights.
- Assign a user as a subsystem administrator, so that the user can manage security permissions for the users and roles that belong to the subsystem.

In systems with installed products, subsystems are used to control access to specific products. These subsystems are product-controlled and delivered with the product. For example, you may have subsystems for Capital Planning and Budget Planning. You can assign users to subsystems based on the specific products they should be able to access.

For more information, see Security Subsystems.

The Security Management dialog

All security settings for Axiom Cost Accounting are controlled in the **Security Management** dialog. To access this dialog:

- On the **Axiom** tab, in the **Administration** group, click **Manage > Security > Security Manager**.

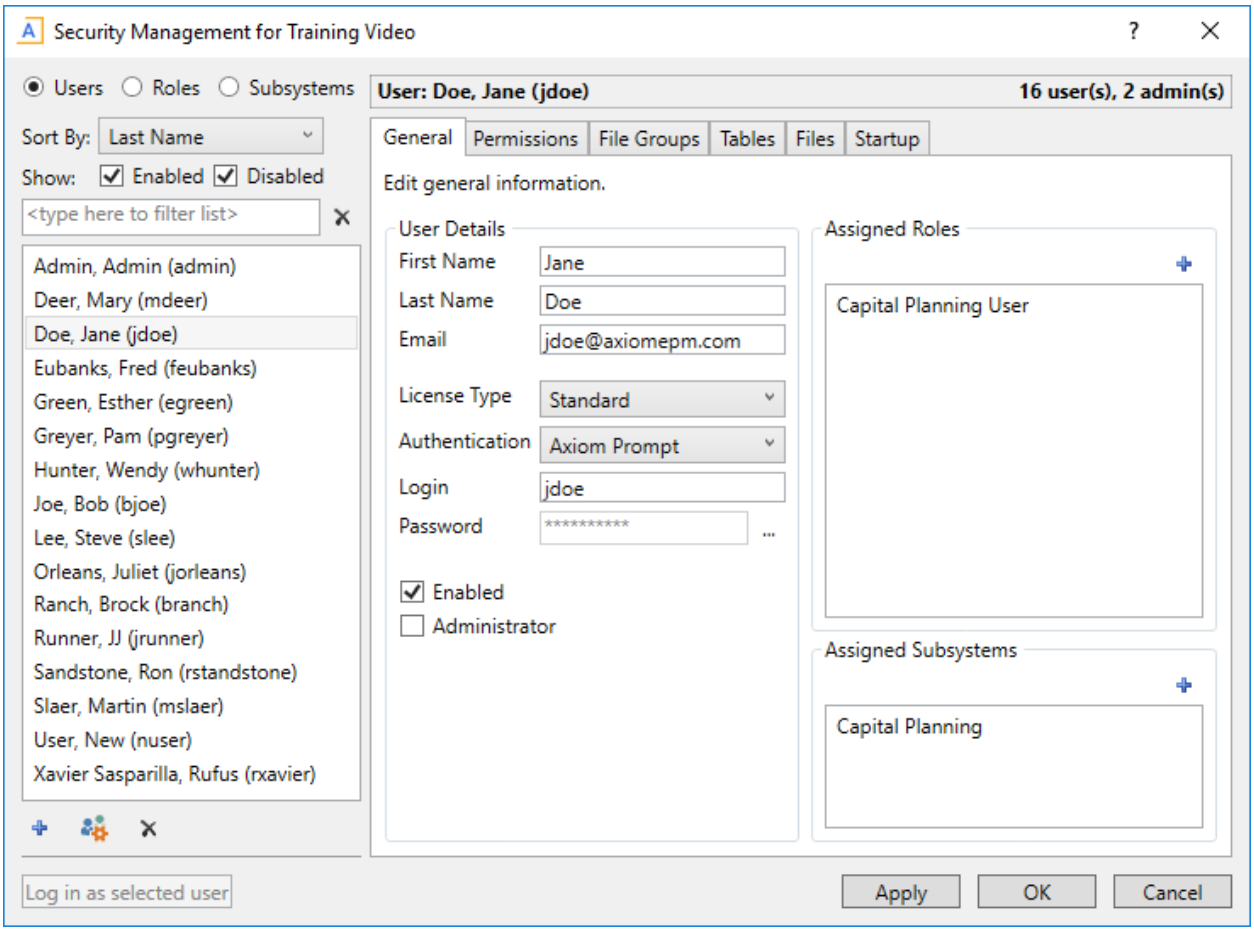
  NOTE: In systems with installed products, this feature may be located on the **Admin** tab. In the **System Management** group, click **Security > Security Manager**.

Only users with the following permissions can access the Security Management dialog:

- System administrators
- Users with the **Administer Security** permission
- Users assigned as a subsystem administrator

Viewing users, roles, and subsystems

Users, roles, and subsystems are listed in the left-hand side of the dialog. To switch between items, select one of the radio buttons at the top of the dialog. By default, users are displayed.



- You can sort the user list by last name, first name, and login name. To change the sort, select the desired option from the **Sort By** list. By default, the list is sorted by last name.
- To search for a particular user, role, or subsystem, type the name into the search box at the top of the list. To clear the search, click the **Clear filter** icon ✕ to the right of the search box. Note that this will search the user's login name as well as first and last name.
- To show or hide users by their enabled status, use the **Enabled** and **Disabled** check boxes. By default, both check boxes are selected which means that all users are shown (enabled and disabled).

When a user, role, or subsystem is selected in the list, the settings for that item display in the right-hand side of the dialog, organized by tabs.

TIP: You can double-click on any user, role, or subsystem name listed in the Assigned Users / Assigned Roles / Assigned Subsystems sections to open that record.

NOTE: Subsystems are optional in systems without installed products. Subsystem features are only available if you have enabled them using the system configuration settings.

Editing security

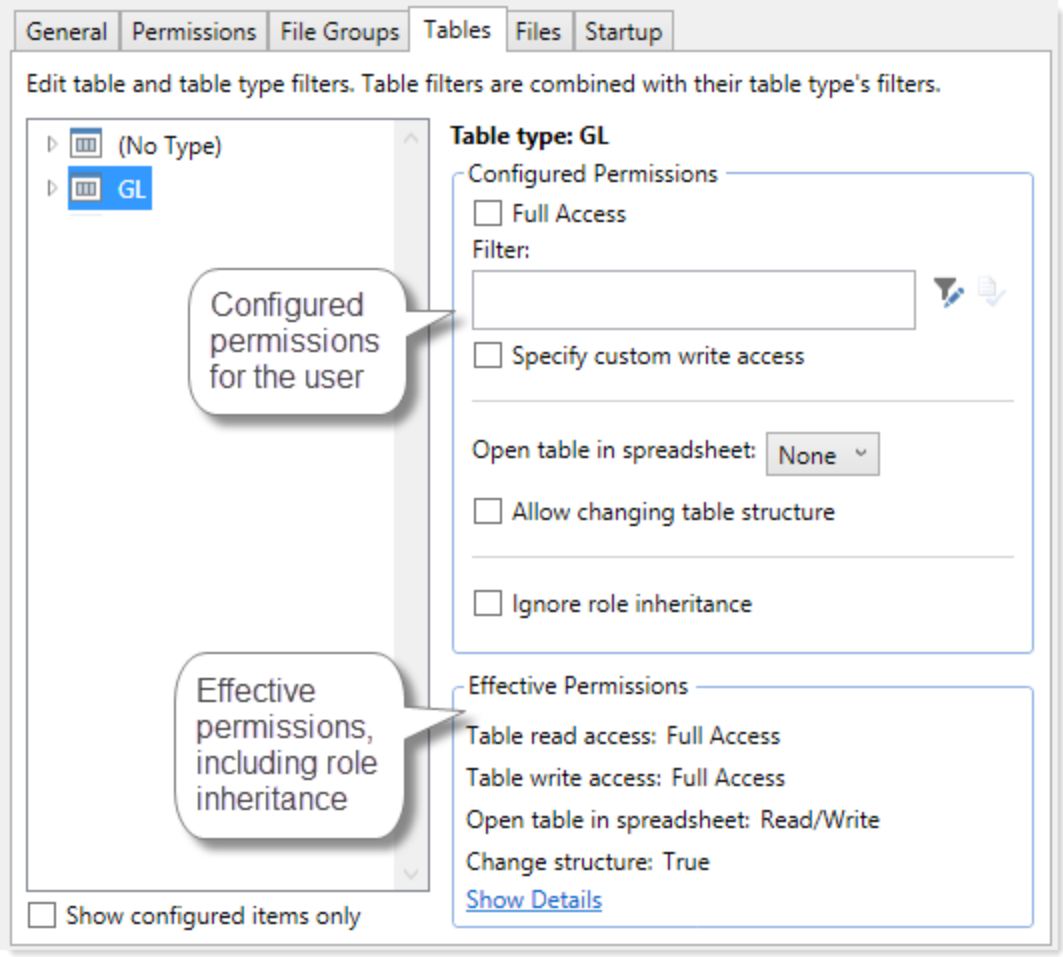
Changes made in the Security Management dialog are reflected in "real-time" within the dialog. If a required setting is missing, a validation message appears in the bottom left of the dialog. You can click on the message to be taken to the applicable setting. This issue must be resolved before you can save any changes.

At any time you can save changes by clicking **Apply** (to leave the dialog open) or **OK** (to close the dialog). In most cases, changed security permissions will be effective within seconds of being saved; the user does not need to log out and log back in before changes are applied.

Effective permissions

Several tabs of the Security Management dialog, such as the **File Groups** tab and the **Tables** tab, display the effective permissions for the user. This is the permission that the user has after applying all of the relevant security settings, including inherited role permissions, subsystem restrictions, and administrator permissions. This allows you to understand exactly what permission the user has.

For example, if you select a table type or a table in the Tables tab, the **Configured Permissions** section displays what permissions have been granted at the user level, and the **Effective Permissions** section displays the actual access rights of the user. In the following example screenshot, although the user herself has no configured access to the table type, her effective permission is full access. This means that either the user is assigned to a role with full access to the table type, or the user has been granted administrator rights. You can see exactly which rights contribute to the effective permissions by clicking the **Show Details** link.



Example effective permissions

As edits are made in the dialog, those changes are reflected in the effective permissions immediately. For example, if you grant a user permission to **Administer Imports**, and then switch to the **Files** tab, the effective permissions for the Imports Library will reflect that the user has full permissions to all imports, even though the change has not yet been saved.

Managing Users and Roles

All users of Axiom Cost Accounting must be defined within security. Users can be assigned access rights on an individual basis, and/or they can be assigned to specific roles and inherit the rights of the role.

The total number of active users that can be defined for your implementation depends on your license agreement with Kaufman Hall. If you have any questions, please contact Kaufman Hall Software Support for assistance.

The total number of available licenses and currently active users are displayed in the upper right-hand corner of the **Security Management** dialog. This area also displays the total number of users who have been granted administrator rights. For example: **20 of 25 licenses in use, 3 admins**.

NOTE: In addition to the Security Management dialog, you can also manage users and roles in bulk via a spreadsheet interface. For more information, see Bulk edit of security.

Managing users

Using the **Security Management** dialog, you can create new users, edit existing users, and delete users. To access this dialog:

- On the **Axiom** tab, in the **Administration** group, click **Manage > Security > Security Manager**.

  NOTE: In systems with installed products, this feature may be located on the **Admin** tab. In the **System Management** group, click **Security > Security Manager**.

To work with users, make sure that **Users** is selected in the top left-hand corner of the dialog. To save changes, click **Apply** (or **OK** if you are finished editing security settings).

NOTE: Subsystem administrators can only work with users that belong to their assigned subsystem. The user list is filtered to only show these users.

Creating users

You can create a new blank user, or you can clone the settings of an existing user. If you clone a user, all of that user's settings are copied to the new user, except for unique personal information (name, email, login, password).

To create a user, click one of the following buttons located underneath the user list:

- To create a new blank user, click **Create user** +.
- To clone an existing user, select that user in the list and then click **Clone user**  .

The new user is added to the list. You can define the security settings for the new user as desired, including assigning the user to one or more roles.

If you are a subsystem administrator, then all users that you create must belong to a subsystem. If you are an administrator for only one subsystem, then any new users are automatically added to that subsystem. If you are an administrator for multiple subsystems, then the user is automatically assigned to one of the subsystems—you can later change the assignment as needed.

Editing user properties

To edit user properties, select a user from the **Users** list, then make any changes to that user. Changes to user settings are applied to that user when the changes are saved.

Deleting users

IMPORTANT: If a user has made any changes to the system or data, deleting the user will have implications on auditing. In order to comply with SOX, HIPAA, and other protocols for standard security practices, it is strongly recommended to *disable* existing user records instead of deleting them. Generally speaking, a user record should only be deleted if it is newly created and has not been used.

To delete a user, select a user from the **Users** list, then click **Delete user** ✕. You are prompted to confirm that you want to delete the user.

If you delete a user, that user is removed from Axiom Cost Accounting security entirely. Alternatively, you can disable a user if you want to keep the user record, but prevent the user from accessing Axiom Cost Accounting. On the **General** tab, clear the **Enabled** check box.

When a user is deleted, the user's associated user folders in `\Axiom\Axiom System\User Folders` are also deleted (such as My Favorites and My Documents) .

NOTE: Only Axiom Support users can delete other Axiom Support users.

Managing roles

Using the **Security Management** dialog, you can create new roles, edit existing roles, and delete roles. To access this dialog:

- On the **Axiom** tab, in the **Administration** group, click **Manage > Security > Security Manager**.

  NOTE: In systems with installed products, this feature may be located on the **Admin** tab. In the **System Management** group, click **Security > Security Manager**.

To work with roles, select **Roles** in the top left-hand corner of the dialog. To save changes, click **Apply** (or **OK** if you are finished editing security settings).

NOTE: Subsystem administrators can only work with roles that belong to their assigned subsystem. The role list is filtered to only show those roles.

Creating roles

You can create a new blank role, or you can clone the settings of an existing role. If you clone a role, all of that role's settings are copied to the new role, including assigned users.

To create a role, click one of the following buttons located underneath the role list:

- To create a new blank role, click **Create role** ✚.
- To clone an existing role, select that role in the list and then click **Clone role**.

The new role is added to the list. You can define the security settings for the new role as desired, and you can assign users to the role.

If you are a subsystem administrator, then all roles that you create must belong to a subsystem. If you are an administrator for only one subsystem, then any new roles are automatically added to that subsystem. If you are an administrator for multiple subsystems, then the role is automatically assigned to one of the subsystems—you can later change the assignment as needed.

Editing roles

To edit a role, select a role from the **Roles** list, then make any changes to that role. Changes to role settings are applied to users who are assigned to that role when the changes are saved.

Deleting roles

To delete a role, select a role from the **Roles** list, then click **Delete role** ✕. You are prompted to confirm that you want to delete the role.

A role cannot be deleted if users are assigned to it.

TIP: If you have a role that you want to delete and many users are assigned to it, you can delete it using the Open Security in Spreadsheet feature. The users will be automatically updated to remove the role assignment. For more information, see Bulk edit of security.

Assigning users to roles

Each user in security can be assigned to one or more roles to define the user's security permissions. Generally speaking, the permissions of each assigned role are combined with any user permissions to result in the most permissive set of rights available to the user. There are some exceptions; for more information see How role settings are applied to users.

Users can be assigned to roles from the user record or from the role record. Users have an **Assigned Roles** section that lists their assigned roles. Roles have an **Assigned Users** section that list their assigned users.

To assign roles to a user from the user record:

1. In the Security Management dialog, select the user.
2. On the **General** tab, in the **Assigned Roles** section, click the **Add** button ✚.
3. Use the **Assign Roles** dialog to assign one or more roles to the user:
   - Use the **Add** and **Remove** buttons to move role names between **Available Roles** and **Assigned Roles**. All roles listed in the Assigned Roles box will be assigned to the user.
   - You can also double-click role names to move them between the boxes.
4. When you have finished assigning roles, click **OK** to close the Assign Roles dialog, and then **Apply** or **OK** to save the changes to the user record.

To assign users to a role from the role record:

1. In the Security Management dialog, select the role.
2. On the **General** tab, in the **Assigned Users** section, click the **Add** button ✚.
3. Use the **Assign Users** dialog to assign one or more users to the role:
   - Use the **Add** and **Remove** buttons to move user names between **Available Users** and **Assigned Users**. All users listed in the Assigned Users box will be assigned to the role.
   - You can also double-click user names to move them between the boxes.
4. When you have finished assigning users, click **OK** to close the Assign Users dialog, and then **Apply** or **OK** to save the changes to the role record.

How role settings are applied to users

Axiom Cost Accounting supports role-based security. Each user can be assigned to one or more roles, and that user inherits the security settings defined for those roles. This topic explains how role-level rights are inherited by individual users.

In general, role rights are additive. Users are granted the most permissive set of rights among their own personal security settings and any roles that they are assigned to. Roles are intended to grant permissions, not deny permissions.

Role inheritance works slightly differently for different areas of security, as detailed in the following sections. When configuring security settings for a user, be sure to review the **Effective Permissions** section that is available in most areas of the dialog. This section displays the user's effective permissions after taking into account all applicable factors, including role inheritance, subsystem restrictions, and administrator status.

NOTE: If subsystems are being used, then role inheritance works in the same way, but users' effective permissions are limited by the subsystem's maximum permissions. For more information, see Security Subsystems.

Permissions

The **Permissions** tab of security defines access rights for specific Axiom Cost Accounting features. By default, users inherit security permissions from any roles that they are assigned to. However, you can override role inheritance for a user on a per permission basis.

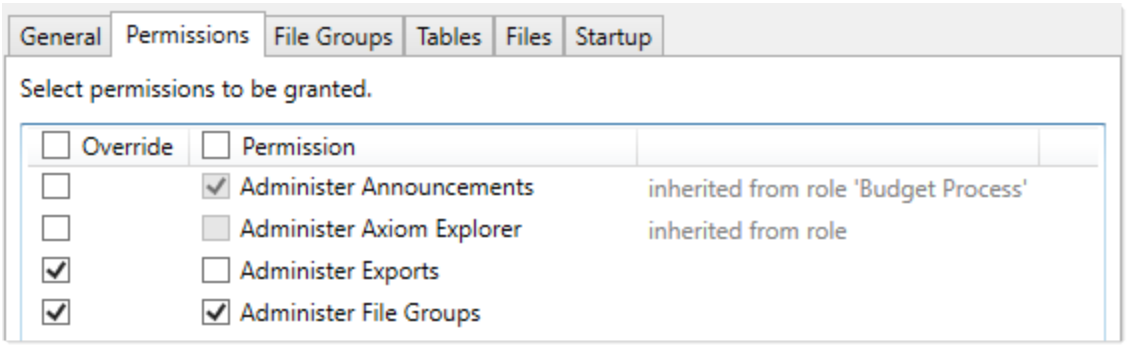
If a permission is set to inherited, then the user is granted the most permissive set of rights among any roles the user is assigned to. For example, imagine the following settings for the **Browse Audit History** permission:

User	Inherited
Role1	Unchecked
Role2	Checked

If the user is assigned to both Role1 and Role2, then the user inherits the permission and can access the audit history for the system.

If instead you select to **Override** a permission for a user, then that permission is no longer inherited from roles. The user is granted or denied the permission based on whether the **Permission** box is checked for the user.

The following screenshot shows what the Permissions tab looks like in all possible states:



Example Permissions tab

In this screenshot, the example permissions are treated as follows:

- **Administer Announcements**: Inherited from role. The Budget Process role grants this permission to the user, so the Permission check box shows as checked, and the role name is listed in the details to the right.
- **Administer Axiom Explorer**: Inherited from role. None of the roles that the user belongs to currently grant this permission, so the Permissions check box shows as unchecked.
- **Administer Exports**: The Override check box is checked, so the user does not inherit this permission from any roles. The Permission check box is not checked, so the user does not have this permission.
- **Administer File Groups**: The Override check box is checked, so the user does not inherit this permission from any roles. The Permission check box is also checked, so the user has this permission.

Startup documents

The **Startup** tab of security specifies files to open when a user starts Axiom Cost Accounting, such as the home page, task panes, and ribbon tabs. Users inherit startup files from roles in addition to their own individually assigned startup files.

Each user can have only one home page. If a user has an individually assigned home page, that file will be used and any role settings are ignored. Otherwise, the user will inherit the home page from a role. If no home page is assigned, the default home page is used.

For more information about startup file inheritance, see Assigning startup files (Startup tab), and review the section for the applicable type of startup file.

File groups

The **File Groups** tab of security defines access rights for plan files in file groups. For file groups, you can configure role inheritance to be handled in a variety of ways. You can specify that role settings are combined with user settings, or that role settings are inherited independently from user settings, or that role settings are ignored entirely and not inherited.

For more information and examples of how role file group permissions apply to users, see Understanding role inheritance options for file group permissions.

All other areas

For all other areas of Security, the user inherits the most permissive set of rights among their own personal security settings and any roles that they are assigned to. This applies to the **Tables** tab and the **Files** tab.

For example, imagine the following access level settings for a report folder:

User	Read-Only
Role1	None
Role2	Read/Write

If the user is assigned to both Role1 and Role2, then the user has Read/Write access to that report folder, because that is the most permissive set of rights available to the user.

Each tab has an **Effective Permissions** section where you can view the rights that the user will be granted after taking into account role inheritance, administrator status, and folder inheritance (where applicable).

NOTES:

- For table access, if both the user and a role have filtered access, the filters are concatenated using OR. So if a user has a table filter of `DEPT.Region='North'` and a role the user is assigned to has a table filter of `DEPT.Region='South'`, then that user's full filter is:

  ```
  DEPT.Region='North' OR DEPT.Region='South'
  ```

  That user has access to data for either the North or South regions.

- For table access, you can choose to ignore role inheritance. If this option is enabled for a user, then any applicable role access settings for the table are not inherited (including the **Full Access** setting) and the only filter applied is the user's filter.

Granting administrator-level permissions

In Security, users can be designated as a system administrator, by enabling the **Administrator** option on the **General** tab.

System administrators have full rights to all features and all data for the system. Although you can configure security settings for administrators, such as to define file access or table filters, these settings will be overridden as long as the Administrator check box is enabled for the user. The Effective Permissions will reflect the user's full access.

Administrator-only features

Administrators have access to all features and files in the current Axiom Cost Accounting system. While non-admin users can be granted access to many features and files, some features are only available to administrators:

- The ability to make another user a system administrator
- The ability to lock non-admin users out of the system, and the ability to log into a locked system
- The ability to restore a deleted file
- The ability to modify system configuration settings using Save Type 4, or using the System Configuration page in the Axiom Web Client
- Access to Scheduler administration features in the Scheduler dialog (such as viewing all job history, managing system jobs and event handlers, managing Scheduler servers, and managing remote data connections)
- Access to system folders in Axiom Explorer (therefore, any file management for system files that cannot be done using system utilities can only be done by administrators)
- Access to certain underlying file group folders such as the Plan Files folder, Plan File Attachments folder, and the Calc Method Libraries folder
- Access to the **Developer > Tools** menu on the Axiom Designer ribbon (though some of the features on this menu are available elsewhere without the administrator restriction)
- Access to the technical administration features in the Axiom Web Client, such as: Reset Services, Rebuild Table Views, System Logs, and Update License
- Ability to create and edit imports that use the current Axiom database as the source data

Security access for non-administrators

If you want a user to be able to access and edit security settings, but you do not want to make the user an administrator, there are two options:

- You can give the user the **Administer Security** permission. Users with this permission can add, edit, and delete users, roles, and subsystems, and can access security tools such as **System Access** and **Logged in Users**.

- If you are using subsystems, you can assign a user as a subsystem administrator. Users with this permission can edit the security settings for users that belong to the subsystem, and can also create and delete users within the subsystem. For more information, see About subsystems.

These users do not have access to the **Administrator** check box in Security. They cannot make themselves or any other user an administrator.

The Everyone role

The Everyone role is a built-in role for each Axiom Cost Accounting system. The purpose of this role is to define security settings that apply to every user in the system. All users automatically belong to the Everyone role.

The Everyone role has the following default settings:

- **Document reference tables.** When a new document reference table is created, the Everyone role is automatically granted full read access to that table. This permission grants all users the right to query the data in document reference tables. In most cases, this is the desired level of rights. If you have some particular document reference tables that you do not want every user to have access to, then you can do one of the following:
    - Modify the Everyone role to remove access to those tables, and instead grant access directly to specific users and roles.

      OR

    - Leave the Everyone role at the default of full access, and instead modify certain users to ignore role inheritance for that table.
- **On-demand file groups.** When a new on-demand file group is created, the Everyone role is automatically granted the **Create New Records** permission for that file group. Effectively, this means that any user who also has access to plan files in the file group will also have permission to create new plan files. If you do not want this behavior—meaning that you want some users to be able to access plan files in the file group without being able to create new plan files—then you can remove the permission from the Everyone role and instead grant it to individual users and roles as needed.
- **Startup task panes.** By default, the Everyone role is configured to open the Explorer and Process task panes on startup, as non-closeable task panes. You can modify the Everyone role to remove any of these task panes, and instead grant access directly to specific users and roles (or do not grant access to anybody, if you do not want to use these task panes at all). Only the Explorer task pane will open automatically for all users; the Process task pane only displays when it is relevant to the user.

  NOTE: In systems with installed products, your Everyone role may have been modified to not open these task panes on startup, and instead open different task panes.

- **Startup ribbon tabs**. By default, the Everyone role is configured to open the Axiom and Axiom Designer ribbon tabs on startup.
    - The Axiom ribbon tab shows for all users and provides the default menu for the Desktop Client. You should not remove this tab from the Everyone role unless you have created one or more custom ribbon tabs that you plan to assign to the necessary users and/or roles instead.
    - The Axiom Designer ribbon tab is limited to administrators only. You can modify the configuration of the startup file so that it displays to other users, or you can remove it from the Everyone role and instead grant access directly to specific users and roles (or do not grant access to anybody, if you do not want to use the ribbon tab at all).

NOTE: In systems with installed products, your Everyone role may have been modified to not open these task panes on startup, and instead open different task panes.

If desired, you can modify the Everyone role to grant additional rights to every user. Any right granted at the Everyone level will be inherited by every user, except for rights that have been overridden at the user level. Subsystem restrictions, if applicable to the user, still apply.

Note the following about the Everyone role:

- The Everyone role cannot be renamed or deleted. The security settings for the role can be modified in either the **Security Management** dialog or by using **Open Security in Spreadsheet**.
- Users cannot be explicitly assigned to the role, nor can they be removed from the role. All users permanently belong to this role.
- The Everyone role is not recognized by GetSecurityInfo("InRole") or when querying security tables via Axiom query. It is assumed that all users belong to the role; therefore it is not listed as a role assignment.

Configuring Security Settings

Security settings for users, roles, and subsystems are organized by tabs in the Security Management dialog. The following tabs are available:

Tab	Description
General	Define general settings such as name and email, as well as role assignments and system access.
Permissions	Set permissions for individual features.
File Groups	Set access rights for file groups.
Tables	Set access rights for tables.
Files	Set access rights for files in the Axiom Cost Accounting file system. This includes reports, imports, task panes, and Scheduler jobs.
Startup	Specify certain files to open automatically on system startup.

Defining user properties (General tab)

The following settings are available for users on the **General** tab.

User Details

Each user has the following general properties:

Item	Description
First Name	The user's first and last name.
Last Name	This information can be referenced by using the function GetUserInfo.
Email	The user's email address. This address is used to send user notifications, such as for process management. This information can be referenced by using the function GetUserInfo.
License Type	The user's license type. By default, users are **Standard** users unless a different user type is selected. Standard users have the potential to access any feature or file in Axiom Cost Accounting, limited by their security permissions. In addition to standard users, the following user types are available: • **Axiom Support** users are intended to allow Axiom Cost Accounting consultants and support representatives to log into your system as part of requested support activities or contracted consulting work. Any user accounts assigned to this license type must log in using Axiom Prompt authentication, and must acknowledge that they are Axiom representatives when they log into the system. **NOTE:** Once a user has been assigned an Axiom Support license, that license can only be removed by another Axiom Support user. • **Viewer** users allow for view-only access to Axiom Cost Accounting. Viewer users can access files as read-only, but they cannot save files or data, and they cannot otherwise perform "change actions" on the files (such as submitting a plan file for process management). Viewer users also cannot perform any administration functions. Security permissions for viewer users can be set as normal, but any settings above read-only access to files will be ignored. The Effective Permissions will note that the user is being limited due to the Viewer license. However, if you switch the user to a Standard license, the settings will be honored. The number of users that can be created and assigned to each license type depends on your Axiom Cost Accounting license.

Item	Description
Authentication	The method used to authenticate the user for access to Axiom Cost Accounting. By default, new users will be assigned to your installation's configured authentication mode; however, this can be changed on a per user basis as needed. • **Axiom Prompt**: Select this option if you want the user to be authenticated by using their Axiom Cost Accounting user name and password. You would use this option if your installation is not configured to enable an external authentication method, or if you are using an external authentication method but you want to create a user who can log in directly. • **Windows User**: Select this option if you want the user to be authenticated based on their Windows credentials. This option is only valid if your installation is configured to enable Windows Authentication. For more information, see Using Windows Authentication. • **LDAP Prompt**: Select this option if you want the user to be authenticated via your LDAP directory. This option is only valid if your installation is configured to enable LDAP Authentication. For more information, see Using LDAP Authentication. • **OpenID**: Select this option if you want the user to be authenticated using an OpenID provider. This option is only valid if your installation is configured to enable OpenID Authentication. For more information, see Using OpenID Authentication. • **SAML**: Select this option if you want the user to be authenticated using a SAML identity provider. This option is only valid if your installation is configured to enable SAML Authentication. For more information, see Using SAML Authentication. • **Unspecified**: This option exists to support backwards-compatibility for systems upgraded from older versions. Upgraded users may be assigned to it, but it cannot be selected otherwise. If you have users assigned to this option, we recommend changing their assignment to the appropriate authentication type.

Item	Description
Login	The user's login name. If the user's authentication type is anything other than Axiom Prompt, then the user's login name must match the user's login name for the designated authentication source (for example, it must match the user's Windows login name when using Windows Authentication). See the information on the appropriate authentication type for login name requirements. For Windows Authentication only, you can validate that the login name matches a user name in one of the allowed domains by clicking the **Validate** icon to the right of the box. A message box will let you know whether the name was found or not. This feature is only available if Windows Authentication is enabled and at least one valid domain name has been specified as an allowed domain. This information can be referenced by using the function GetUserInfo.
Password	The user's Axiom Cost Accounting password. Click the **...** button to the right of the box to set or change the user's password. All users must have a non-blank password. Users can change their own password later from within the application. **NOTES:** • By default, Axiom Cost Accounting enforces a basic set password rules. If desired, you can disable these rules and allow any password. See Enabling password rules. • The Password setting only displays for Axiom Prompt users. For all other authentication types, a randomly generated password will be created for the user and cannot be changed. Users cannot log in with this randomly generated password; they can only log in using their specified authentication type. If you are an administrator and you need to log into Axiom Cost Accounting as another user in order to test that user's security settings, you do not need to know that user's password. For more information, see Testing user security.
Enabled	Specifies whether the user can access Axiom Cost Accounting. If this check box is *not* selected, the user cannot log into any Axiom Cost Accounting system. **NOTE:** System administrators cannot disable other system administrators. The **Administrator** permission must be removed before the user can be disabled.

Item	Description
Locked Out	If a user has become locked out of the system due to exceeding the configured number of failed login attempts, then the system will automatically select this check box. You can clear the lockout by clearing this check box. This setting only displays if you have manually configured a lockout threshold. For more information, please contact Axiom Support. If an administrator becomes locked out, and no other administrator accounts are available to clear the lockout, the Axiom Software Manager can be used to reset the administrator's password and clear the lockout.
Administrator	Specifies whether the user has administrator-level permissions. If this check box is selected, then the user has access to all features and data in the current system. For more information, see Granting administrator-level permissions. **NOTE:** This check box only displays to users who have the **Administrator** permission. In other words, a user cannot make themselves an administrator, they have to be granted the right by a user who is already an administrator.
Directory Sync Enabled	Specifies whether the user will be synched with Active Directory the next time an Active Directory import is performed. This is enabled by default. • If enabled, then the user will be synchronized with Active Directory according to the settings in the Scheduler task for the import. For more information about how this import and synchronization occurs, see How Active Directory user synchronization works. • If disabled, then the user will not be affected by the Active Directory import, even if the user name matches a user name in the import. **NOTE:** This check box only displays if Active Directory import has been enabled for your system.

Assigned Roles

Users can be assigned to one or more roles. If the user is already assigned to roles, those roles are listed here.

- To add a user to a role, click **Add** +. In the **Assign Roles** dialog, you can select roles for the user.
- To remove a user from a role, select the role in the list and then click **Remove** ✕.

Role assignments can be made when editing either the user or the role. Any changes made in one area are automatically applied to the other area.

NOTE: The Everyone role is not listed in the **Assigned Roles** box. All users belong to the Everyone role and cannot be removed; therefore it is not listed as a role assignment.

For more information, see How role settings are applied to users.

Assigned Subsystems

This section only displays if subsystems are enabled for your system. See Security Subsystems.

If you are using subsystems, you can optionally assign the user to one or more subsystems. If the user is already assigned to subsystems, those subsystems are listed here.

- To add a user to a subsystem, click **Add** +. In the **Assign Subsystems** dialog, you can select subsystems for the user.
- To remove a user from a subsystem, select the subsystem in the list and then click **Remove** ✕.

IMPORTANT: If you remove a user from a subsystem, that subsystem's maximum permission limit will no longer apply to that user.

Subsystem assignments can be made when editing either the user or the subsystem. Any changes made in one area are automatically applied to the other area.

NOTE: If you are a subsystem administrator, then all users that you have access to must belong to a subsystem. If you are an administrator for only one subsystem, then any new users you create are automatically added to that subsystem. If you are an administrator for multiple subsystems, then the user is automatically assigned to one of the subsystems; you can change the assignment as needed.

Configuring role properties (General tab)

The following settings are available for roles on the **General** tab.

Role Details

Each role has the following general properties:

Field	Description
Name	The name of the role. **NOTE:** The name of the built-in Everyone role cannot be changed.
Description	A description of the role. The description is for the administrator's use only, to help explain the purpose of the role.

Assigned Users

Multiple users can be assigned to a role. If the role already has assigned users, those users are displayed here.

- To add a user to the role, click **Add** +. In the **Assign Users** dialog, you can select users to add to the role.
- To remove a user from the role, select the user in the list and then click **Remove** ✕.

Role assignments can be made when editing either the user or the role. Any changes made in one area are automatically applied to the other area.

NOTE: This section is not available when editing the built-in Everyone role. All users belong to the Everyone role and cannot be removed.

For more information, see How role settings are applied to users.

Configuring feature permissions (Permissions tab)

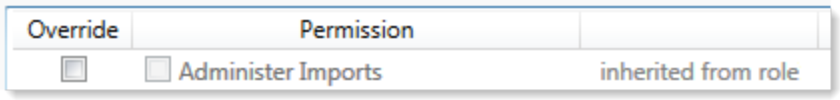
On the **Permissions** tab of the **Security Management** dialog, you can specify which features a user or role has access to. The **Permissions** tab works slightly differently depending on whether you are defining rights for a user or a role.

NOTE: If you are defining permissions for a subsystem, see Defining maximum permissions for subsystems.

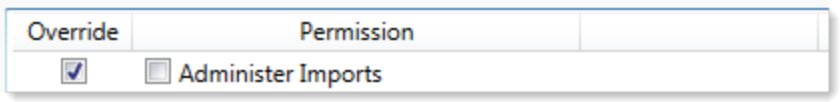
Setting permissions for users

For users, each permission has three available settings:

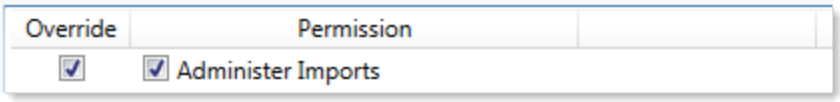
- **Inherited**: The permission is not set for the user. The permission is grayed out and the text "inherited from role" appears to the right of the permission name. If the user is assigned to a role, this permission can be inherited from the role.



- **Denied**: If the **Override** check box is selected, but the **Permission** check box is not selected, this means that the user explicitly does not have access to the feature. The user will not inherit the permission from any roles.



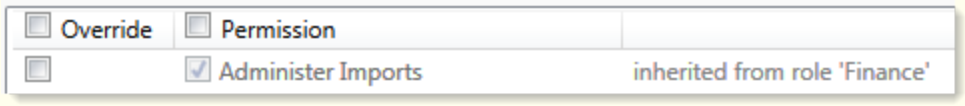
- **Allowed**: If the **Override** check box and the **Permission** check box are selected, this means that the user explicitly has access to the feature, regardless of any role settings.



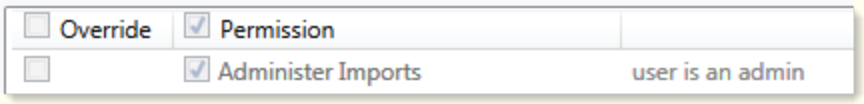
By default, all user permissions are left unset and are inherited from any role assignments. If you want to override role inheritance and explicitly set a permission for the user, then you must select the **Override** check box and then leave the permission unchecked (to deny the permission) or checked (to allow the permission).

NOTES:

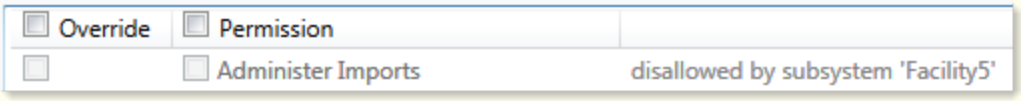
- When a permission is inherited from a role, it displays the effective permission for the user. For example, if a user is assigned to a role that has the **Administer Imports** permission, and that permission is eligible for inheritance, then the check box for that permission displays as grayed out and selected. The name of the role from which the permission is inherited is also listed. For example:



- If a user has administrator rights to the system, that user has all permissions. In this case, the permissions list is grayed out and cannot be edited, and all permissions display as selected. The text "user is an admin" displays next to the permission names.



- If the user belongs to a subsystem, and the subsystem settings do not allow a particular permission to be granted to users in the subsystem, then the permission is grayed out and cannot be edited. The text "disallowed by subsystem" (including the subsystem name) displays next to the permission name.



Setting permissions for roles

For roles, the **Permission** box for each permission is either checked or unchecked. If a permission is checked for a role, then users who have that permission set to "inherited" will inherit rights to that permission when they are assigned to that role.

Permissions

The following permissions are available:

Permission	Description
Administer Announcements	The user has rights to create, edit, and delete announcements and announcement categories. The user must have access to a form-enabled file with an Announcements component in order to use this permission.

Permission	Description
Administer Axiom Explorer	The user has rights to access Axiom Explorer (**Administration > Manage > Axiom Explorer**). The user's other security permissions determine what folders they can view within this dialog and what actions they can perform on them. **NOTE:** This permission has no impact on the availability of the Explorer task pane. Any user can use the Explorer task pane.
Administer Exports	The user has rights to create exports in the Exports Library. The user must also have read/write permissions to at least one folder within the Exports Library (as configured on the **Files** tab), or else they will have no place to save their created exports. Execute permissions are also managed on the Files tab.
Administer File Groups	The user has general administrative rights to *all* file groups. The user can: • Create and delete file groups • Edit file group settings • Clone file groups • Manage scenarios for file groups • Manage restore points for file groups • Manage categories for file groups • Manage file group aliases • Use the Delete Plan Files command to delete any plan file from an on-demand file group **NOTE:** Generally speaking, this permission does not grant access to any files within the file groups, such as plan files, templates, and drivers. The user must be granted access to these files separately if the user is expected to manage or use these files. There are two exceptions: the user can delete any on-demand plan file using Delete Plan Files, and the user can restore any plan file when using restore points.
Administer Imports	The user has rights to create imports (**Administration > Manage > Imports**). The user must also have read/write permissions to at least one folder within the Imports Library (as configured on the **Files** tab), or else they will have no place to save their created imports. Execute permissions are also managed on the Files tab.
Administer Locked Items	The user has rights to remove locks on documents, tables, and save data locks. The list of locked items is limited to the files and tables that the user has some level of access to. The user cannot see or unlock items that the user does not have access to.

Permission	Description
Administer Picklists	The user can administer picklist tables using the Web Client Table Manager. The user can create new picklist tables. For existing picklist tables, the user can edit table properties and delete tables (as long as the user has at least read-only permission to the table, otherwise the table does not display in the table manager). Administer Picklist users do not gain access to the table administration features in the Desktop Client.
Administer Security	The user has rights to access and edit security settings (**Administration > Manage > Security > Security Manager**) for the current system. The user can also access security-related tools such as **System Access** and **Logged in Users**. The **Administrator** check box is not available to users with this permission.
Administer Tables	The user has general table administration permissions. The user can: • Create and delete tables • Edit table structure • Open tables using Open Table in Spreadsheet • Use other table utilities available on the table administration menu (**Administration > Tables > Table Administration** The user's read and write filters (as set on the **Tables** tab) are honored for purposes of viewing and saving table data.
Administer Task Panes	The user has rights to create and edit task panes and ribbon tabs, as allowed by the user's folder / file access rights defined for the Task Panes Library and the Ribbon Tabs Library (as set on the **Files** tab).
Administer Updates	The user has rights to download and apply updates to the Axiom Cost Accounting installation (**Administration > Manage > Software Updates** and the equivalent Web Client page).
Administer Workflow	The user has rights to manage workflows using the Workflow Manager (**Administration > Manage > Workflow**). This permission is restricted based on file group access rights (meaning, the user can only manage workflows for file groups that the user has rights to access). **NOTE:** This permission is only visible in systems where the system configuration setting **EnableLegacyWorkflowEngine** is set to True. This should only be the case in older systems that have not yet had the opportunity to migrate their existing workflows to plan file processes.

Permission	Description
Browse Audit History	The user has rights to view audit history for the system (**Administration > Manage > Audit History** and the equivalent Web Client page). **NOTE:** Users with this permission can see audit records for all changes, including changes made to tables that the user does not otherwise have access to. Use caution in granting this permission.
Remove Protection	The user has rights to remove workbook and worksheet protections (**Advanced > Protect > Workbook** and **Worksheet**), for any Axiom file that the user can access. **NOTE:** Alternatively, you can grant unprotect rights for individual report files and folders on the **Files** tab, or for plan files on the **File Groups** tab.
Scheduled Jobs User	The user has rights to access the Scheduler dialog for the purposes of working with scheduled jobs. The user can create jobs, edit jobs, run jobs, and delete jobs, as allowed by the user's folder and file access rights defined for the Scheduled Jobs Library (as configured on the **Files** tab of Security). For example, you might create a sub-folder for each user and only grant the user rights to that folder. The user can view the results of jobs that the user has executed. Other job history is not available to the user. The user cannot manage Scheduler servers, edit system jobs, or use other Scheduler administration features. **NOTE:** Generally speaking, task-level security is not applied to users with this permission, within the context of Scheduler. However, file-level rights are enforced. For example, the user can create and/or run a Process Plan Files task within a Scheduler job, even if the user does not have the Process Plan Files permission. But within that task, the user can only process file groups and plan files that the user otherwise has access to.
User Documents Folder Access	The user has rights to the My Documents folder in their My Files section. The user can save files to My Documents. The user has read/write access over any file saved to this area. Typically this permission is only granted to power users who may need a place to save their own "personal" reports or an area to temporarily save "in progress" files. Administrators can access any user's My Documents folder. Other users cannot access it. **NOTE:** If a user has this permission and then later it is removed, the user's existing My Documents folder is not deleted; it is simply hidden from the user in Explorer dialogs. If desired, an administrator can delete the folder in `\Axiom\Axiom System\User Folders`.

NOTE: If a user does not have rights to a feature, the menu item associated with that feature does not show on that user's ribbon tabs or other applicable areas.

Configuring file group permissions (File Groups tab)

On the **File Groups** tab of the **Security Management** dialog, you can manage user access to plan files and to file group features. On this tab, you can specify the following:

- Which plan files a user can access
- The level of access to those plan files (read-only or read/write)
- What features are available in those plan files (such as saving data or inserting calc methods)
- Which file group administration features the user can access (such as Create Plan Files or Process Plan Files)

NOTES:

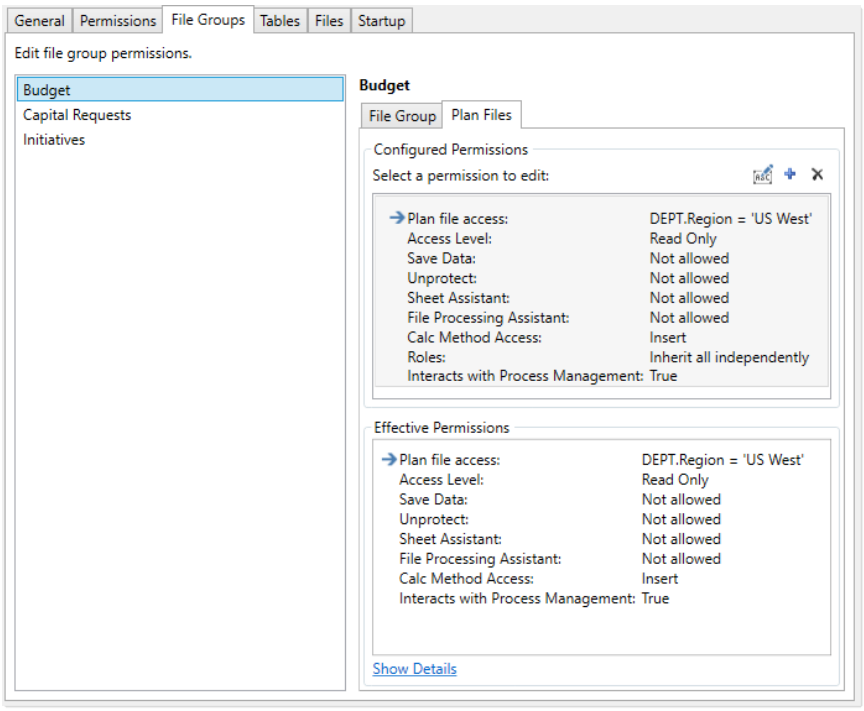
- The settings on this tab do not apply to administrators. Administrators have access to all plan files and all file group features.
- If you are defining permissions for a subsystem, see Defining maximum permissions for subsystems.

IMPORTANT: This tab does not control access to other files in a file group, such as templates, drivers and utilities. To give users access to these files, use the **Files** tab.

File group permissions

The settings on the **File Group** tab define permissions for each file group. The left-hand side lists the available file groups for the system. When you select a file group in the list, you can define the security settings for the user or role using the two sub-tabs on the right-hand side.

- **File Group**: Manage access to file group administration features such as Create Plan Files and Process Plan Files. This tab can be ignored for most end users.
- **Plan Files**: Manage access to plan files. It is necessary to configure access on this tab if you want the user to have any access to plan files in the file group.



Example File Groups tab, configuring permissions to plan files

File groups are listed by display name, followed by the file group code in parentheses. If the name of the file group is different than the display name, that name is also displayed in the parentheses.

The **Effective Permissions** section displays the full permissions of the user, taking into account any inherited role rights and other settings such as administrator rights.

NOTE: If a non-admin user has no effective permissions for a file group (either on the **File Groups** tab or on the **Files** tab), then that user cannot see the file group in Axiom Explorer, the Axiom ribbon tab, and other lists of file groups.

File Group tab

Use the **File Group** tab to configure user access to administration features for the file group. This tab is optional and can be ignored for most end users.

To grant a user access to one of these features, select the check box. By default, all check boxes on this tab are not selected, which means the user does not have access to any of these features.

Item	Description
Modify File Group	This permission grants general administrative rights to the file group. The user can: • Edit the file group settings • Clone the file group • Manage scenarios for the file group • Manage restore points for the file group
Create Plan Files	The user can create plan files for the file group, using the **Create Plan Files** feature. This permission is limited to those plan files where the user has read/write access, as defined in the **File Groups** tab of Security. This permission also grants access to the **Copy Plan Files** feature for standard file groups, which can be used in certain specialized configurations to copy plan files from one file group to another. In this case the user must have read/write access and **Create Plan Files** permission to the target file group. **NOTE:** If the file group is an on-demand file group, then users do *not* need this permission in order to create new plan files "on demand." Instead, users need the **Create New Records** permission.
Create New Records	The user can create new plan files for the on-demand file group. This process includes creating a new identity record in the plan code table and then creating a plan file for that record using either its assigned template or by copying an existing plan file (when using the **Clone selected item** feature). This permission only applies to on-demand file groups. By default, this permission is automatically enabled on the Everyone role when a new on-demand file group is created. This means that any user with at least **Read-Only** access to plan files in this file group will also have the ability to create new plan files. (This includes plan file permission sets with the potential to be elevated to read-only access or higher, due to the **Interacts with Process Management** permission.) If you do not want all users with access to the file group to be able to create new plan files, then you can remove the permission from the Everyone role and instead grant it to individual users and roles.
Process Plan Files	The user can process plan files for the file group, using the **Process Plan Files** feature. This permission is limited to plan files where the user has at least read-only access, as defined in the **File Groups** tab of Security. The user can run Axiom queries and save data as part of the process, but the user can only save the file if they have read/write access to it.

Item	Description
Run Axiom Queries	The user can refresh Axiom queries in plan files, using the **Refresh** feature. By default, non-admin users cannot use the **Refresh** feature in plan files. If you have a plan file design where users should be able to refresh the queries in the file as needed, then you should enable this permission. **NOTES:** • This permission does not apply to "refresh on open" Axiom queries, or to queries run using the RunAxiomQueryBlock function. These queries will always run, regardless of whether the user has this permission. • This permission does not apply to form-enabled plan files (when viewed as an Axiom form). Axiom queries in form-enabled plan files will refresh according to the standard form refresh behavior, regardless of whether the user has this permission.
Manage Calc Methods	The user can perform all management activities for calc method libraries in the file group, including adding new calc methods, editing calc methods, deleting calc methods, as well as use any other calc method features available on the **CM Library** menu. The user can also insert or change calc methods in any file group files that the user has access to, and can override any calc method controls.

Plan Files tab

Use the **Plan Files** tab to configure user access to plan files for the file group. Each plan file *permission set* defines the following:

- The plan files that the permission set applies to (all plan files or a filtered subset)
- The permissions to be applied to those plan files (such as: access level, ability to save data, and calc method permissions)
- The role inheritance to be applied to the permission set (none, combine, or independent)

Users can have multiple permission sets per file group—for example, to define read/write access to one set of plan files and read-only access to another set of plan files. These permission sets can be configured for the user directly or inherited from one or more roles. Roles can only have one defined permission set per file group.

You can add, edit, and delete permission sets as follows:

- To add the first permission set for a user or a role, click **Add a Permission**.
- To add an additional permission set for a user, click the plus icon + .
- To edit a permission set, double-click it. You can also select it and then click the edit icon .
- To delete a permission set, select it and then click the delete icon ✕.

NOTES:

- If a user has no configured permission sets, the user will inherit role permissions using independent inheritance. Each role's permissions will be inherited as a separate unit. For more information on role inheritance behavior for file groups, see Understanding role inheritance options for file group permissions.
- If a user has multiple configured permission sets, only the first permission set displays in **Open Security in Spreadsheet**.

When creating or editing a permission set, the **Plan File Permission** dialog opens. Within this dialog, you can configure all permissions relating to this permission set.

Item	Description
File access level	The level of access that the user or role has to the plan files covered by this permission set. Select from one of the following: • **No Access**: The user or role has no access to plan files. The No Access option is intended to be used in conjunction with **Interacts with Process Management** and/or with **Combine** role inheritance. You can define other permissions for the plan files, and those permissions will apply when the user's access level is elevated due to process management, or combined with another permission set to result in a higher level of access. • **Read Only**: The user or role has read-only access to plan files. • **Read/Write**: The user or role has read/write access to plan files in the file group. **NOTES:** • The ability to save data to the database from within a file is controlled separately, using the **Allow Save Data** permission. • If you are using process management with this file group, select the level of access that you want the user to have when they are NOT the current stage owner. For example, you may want the user to have no access if they are not the stage owner, or read-only access. If **Interacts with Process Management** is enabled, then process management will "elevate" user permissions as appropriate so that they can complete process tasks. • If the file group uses virtual plan files and read/write access is granted, then the file opens as if it were read/write, but the ability to save the file is suppressed.

Item	Description
Allow Save Data	Select this check box if you want the user or role to be able to save data to the database from the plan files covered by this permission set. **NOTES:** • If you are using process management to manage access to plan files, you do NOT need to select this option. As long as **Interacts with Process Management** is enabled, the plan file process will "elevate" the user's permissions as needed, including the ability to save data to the database. Generally you would only enable **Allow Save Data** for a user if you want the user to be able to save the data at all times, regardless of process step ownership. • If a user has **Read Only** access and **Allow Save Data**, then the user will be able to save data to the database but not save changes to the file. Generally this configuration would only be used with form-enabled plan files. Users with this combination of rights can save data from the file at any time, regardless of whether the file is locked to another user. • In most cases, this option is only selected if the user also has **Read/Write** access to the file group, so that file changes and data changes can be saved in sync.
Allow Calc Method Insert	Select this check box if you want the user or role to be able to insert calc methods into plan files. This option enables or disables the user's overall ability to insert calc methods. Within individual templates/plan files, calc method controls can be used to further control which calc methods can be inserted and where they can be inserted. It is valid to select this option even if the user has **No Access** or **Read Only** access to plan files, if the user's access will be elevated by process management or combined with another permission set. It is also valid to insert calc methods in read-only plan files when using form-enabled plan files. **NOTE:** This setting does not apply if the user has been granted the **Manage Calc Methods** permission. Users with this permission can perform any calc method action in any plan file that they have access to within the file group.

Item	Description
Allow Calc Method Change	Select this check box if you want the user or role to be able to change methodologies in the plan file by overwriting one calc method with another. This option enables or disables the user's overall ability to change calc methods. Within individual templates/plan files, calc method controls can be used to further control which calc methods can be used to overwrite and where overwrite is allowed. It is valid to select this option even if the user has **No Access** or **Read Only** access to plan files, if the user's access will be elevated by process management or combined with another permission set. **NOTE:** This setting does not apply if the user has been granted the **Manage Calc Methods** permission. Users with this permission can perform any calc method action in any plan file that they have access to within the file group.
Allow Unprotect	Select this check box if you want the user or role to be able to unprotect the worksheet and workbook within plan files. If enabled, the user will have access to the **Protect** toggles in the **Advanced** group on the Axiom ribbon. This option should only be granted in special situations. Normally, end users are not allowed to unprotect plan files.
Allow Sheet Assistant	Select this check box if you want the user or role to see the Sheet Assistant. Generally, you should only expose the Sheet Assistant if the user is expected to edit file settings, including Axiom query settings. Enabling this permission also has the following impacts: • The user has access to the Control Sheet. The Control Sheet is hidden by default in plan files but the user can unhide it via the Sheet Assistant. • The Drilling Control Sheet will not be hidden if the user has the Sheet Assistant permission. • If the user has read/write permission and the Sheet Assistant permission, then the user can enable forms for the file and can see the Form Assistant and Form Control Sheet. • The Data Source Assistant is also available if the Sheet Assistant is available. If this check box is not selected, then the user cannot see the Sheet Assistant or the other related items as described above. This option should only be granted in special situations. Normally, end users are not allowed to edit settings in plan files.

Item	Description
Allow File Processing	Select this check box if you want the user or role to be able to perform file processing on the file. If selected, then the user has access to file processing features, including the File Processing button on the menu and the File Processing task pane. The related control sheets will also be visible to the user. If this check box is not selected, then the user cannot perform file processing actions and cannot see the related menu items, task panes, or control sheets. This option should only be granted in special situations. Normally, end users do not perform file processing in plan files.
Apply settings to	Select one of the following to determine the plan files that this permission set applies to: • **All Plan Files**: The configured permissions apply to all plan files in the file group. • **Filtered Plan Files**: The configured permissions apply to a subset of plan files in the file group, as defined using a filter. For more information on defining a plan file filter, see Defining plan file filters.
Interacts with Process Management	This option specifies whether this permission set interacts with plan file processes in process management (or the legacy workflow feature). It is enabled by default for users, and disabled by default for roles. Enabling this option has the following effects, for plan files covered by this permission set: • When a user is a step owner in a plan file process, their plan file permissions will be "elevated" as needed to complete the current process task. For example, the user will be elevated to **Read/Write** and **Allow Save Data** for an Edit Plan File step. If this option is not enabled, then the user's permissions will be left as is, which may result in the user being unable to complete the process task. • If the ownership assignment is through a role, enabling this option tells the process to consider this permission set when evaluating which role members should be step owners. If this option is not enabled, then this permission set will be ignored by the plan file process.

Settings for users only

The following settings apply only to users, not to roles. These settings specify how the user will inherit file group rights from any roles that the user is assigned to. For more information, see Understanding role inheritance options for file group permissions.

Item	Description
Role Inheritance	Specify how the user will inherit file group permissions from roles: • **None**: The user will not inherit file group permissions from roles. Only the user's configured permissions will be applied. Role permissions will be ignored. • **Combine**: The user's permissions and any role permissions will be combined, so that the user will be granted the most permissive set of rights among all the plan file access settings. Using the **Role(s)** setting, you can specify whether this applies to all roles that the user belongs to, or only a specific role. • **Independent** (default): The user will inherit permissions from roles, but the user's configured permissions and the role's inherited permissions will be applied separately. Using the **Role(s)** setting, you can specify whether this applies to all roles that the user belongs to, or only a specific role.
Role(s)	Select which roles the role inheritance settings apply to. This setting only applies if the role inheritance is set to **Combine** or **Independent**. • If you select **(all roles)**, then the specified inheritance settings apply to all roles that the user belongs to. This is the default setting. • If you select a particular role, then the specified inheritance settings apply to only that particular role. If the user belongs to other roles, and those other roles are not selected in additional file group permission sets for the user, then those role permissions are ignored.

Defining plan file filters

To define a filter to control access to plan files, select the **Filtered Plan Files** option and then use the Filter Wizard to construct the filter. (You can also type a filter directly into the filter box.) The filter must be based on the plan code table for the file group, or on a reference table that the plan code table links to. When using the Filter Wizard, the wizard only displays the eligible tables.

After defining a filter, you can validate it by clicking the **Validate filter** button. This check is to ensure that the filter syntax is valid. You can test to make sure that a file group filter is operating as you expect by logging in as the user (or as a user assigned to the role) and checking to see which plan files display in the **Open Plan Files** dialog for the file group.

Filter variables can be used in plan file filters, to set a filter that is based on a user's login name (see example below) or on another related user property. This is useful to be able to set a filter at the role level, yet resolve the filter dynamically for each user in the role. For more information, see Filter variables.

NOTE: You can leave the filter blank only if you are using **Combine** role inheritance. This assumes that either the user or the role has a filter that will apply after the permissions are combined. If the filter remains blank after inheritance, then the user will have no access to plan files.

Example filters

```
DEPT.Dept IN (200,400)
```

This example limits the user to accessing plan files for departments 200 and 400.

```
DEPT.Region='North'
```

This example limits the user to accessing plan files for departments assigned to the North region.

```
DEPT.Owner='{CurrentUser.LoginName}'
```

This example limits the user to accessing plan files for departments that are assigned to that user (by the presence of the user's login name in the Owner column). This type of filter would most likely be set on a role, so that the filter could be set once yet resolve dynamically for each user in the role. For example, for user JDoe, this filter would resolve as `DEPT.Owner='JDoe'`.

Configuring plan file security for use with plan file processes

This section provides basic guidelines for setting user permissions when you intend to use a plan file process (process management) with the file group. There are many nuances to file group security settings and how they can interact with plan file processes, especially if you are using advanced security configurations such as multiple permission sets for plan files or the combine option for role inheritance. If you need assistance in determining the best configuration for your system, please contact Axiom Cost Accounting Support.

NOTE: The same guidelines apply if you are using the legacy workflow feature instead of process management.

The **Interacts with Process Management** setting for plan files is the key security permission for use with plan file processes. Enabling this option for a plan file permission set has the following effects:

- When the user is a step owner in an active plan file process, their plan file permissions will be "elevated" as needed to complete the current task. For example, the user will be elevated to **Read/Write** and **Allow Save Data** for an Edit Plan File step in a process. If this option is not enabled, then the user's permissions will be left as is, which may result in the user being unable to complete the task.
- If the ownership assignment is through a role, enabling this option tells the process to consider this permission set when evaluating which role members should be step owners. If this option is not enabled, then this permission set will be ignored by the process.

Example user permissions for use with a plan file process

The first step in configuring plan file permissions for use with a process is deciding what level of permissions that you want the user to have when the user is *not* a process step owner. This is the user's base level of security permissions that they will always have. As long as **Interacts with Process Management** is also enabled, the process will elevate the user's permissions to the appropriate level when the user is a step owner.

NOTE: All of the example permission sets below assume that the user's plan file filter includes the plan file where the user is assigned as a step owner. The user must have a configured or inherited permission set that includes this plan file. The plan file process cannot not grant permissions to plan files, they can only elevate existing permissions to those files.

No Access	If you want a user to have no access to the plan file when the user is not a process step owner, then set the permissions as follows: • **File Access Level**: No Access • **Allow Save Data**: Unchecked • **Interacts with Process Management**: Checked When the user is a step owner, the process will elevate the user's permissions as appropriate.
Read-Only Access	If you want a user to have read-only access to the plan file when the user is not a process step owner, then set the permissions as follows: • **File Access Level**: Read-Only • **Allow Save Data**: Unchecked • **Interacts with Process Management**: Checked When the user is a step owner, the process will elevate the user's permissions as appropriate.
Full Access	If you want a user to have full edit rights to the plan file when the user is not a process step owner, then set the permissions as follows: • **File Access Level**: Read/Write • **Allow Save Data**: Checked • **Interacts with Process Management**: Checked (if ownership comes via role assignment) If the user will be directly assigned as a step owner, then it is not required to enable **Interacts with Process Management** because the user already has the full permissions that could be granted by the process. However, if the user's ownership comes through a role assignment, then you must enable **Interacts with Process Management** to signal that this user should be made one of the step owners.

These permissions can be set at the user level, or at the role level, or at some combination of the two (if using **Combine** role inheritance). All other plan file permissions can be enabled or not as appropriate for the user. In some cases those other permissions will only be relevant when the user's access level has been elevated by the process. For example, if the user has **No Access** plus **Allow Calc Method Insert**, then the ability to insert calc methods is only relevant when the user is a step owner (because otherwise they will be unable to see or open the plan file).

Enabling Interacts with Process Management at the user level

When creating new permission sets for users, **Interacts with Process Management** is enabled by default. It is recommended to leave this option enabled for users. Generally speaking, you should only disable the option if *both* of the following apply:

- The user already has the necessary permissions for process step ownership.

  AND

- The user does not need to be granted ownership via a role.

You can also disable the option if you want to ensure that the user's permissions are never impacted by a plan file process (for this permission set). However, even if you do not plan to use a plan file process with the file group, it is still recommended to leave **Interacts with Process Management** enabled, in case you change your mind in the future. The option has no effect if the file group has no plan file processes.

Enabling Interacts with Process Management at the role level

When creating new permission sets for roles, **Interacts with Process Management** is disabled by default. You should consider whether to enable the option or leave it disabled, based on how you are granting permissions to users and how you are assigning step owners. Keep in mind the following:

- If ownership assignments are made through a role, then users who belong to the role must have permission to the plan file *and* **Interacts with Process Management** enabled in order to be a step owner. However, these permissions can come from any permission set for the user; they do not need to be granted through the role used as the ownership assignment.
- If these plan file permissions are granted at the user level (or inherited by the user through a different role) then there is no need to enable **Interacts with Process Management** for the role that will be used as the assignment.
- However, if the role being used as the assignment is also the primary means by which users are granted plan file permissions, then **Interacts with Process Management** should be enabled for the role so that users inherit that setting as well.

Generally speaking, if the only purpose of the role is to define a pool of users for process ownership assignments, then you should leave the option disabled and instead rely on the individual user permissions to determine the ultimate step ownership.

NOTE: It is not required to enable this permission for a role in order to assign the role as a step owner in a plan file process. The assigned role simply defines the pool of users that are available to become step owners; the role itself is not required to have any particular permissions.

Understanding role inheritance options for file group permissions

Role inheritance for file group permissions is handled differently than in other areas of Security. For each set of permissions defined for a user on the **File Groups** tab, you can specify whether role permissions are inherited and how they are inherited.

File group permissions have three different role inheritance options:

- None
- Combine
- Independent

By default, if no file group permissions are configured for a user, the role inheritance is set to independent. This means that users will inherit file group settings from all roles that they are assigned to, but those inherited settings will be applied independently instead of merged.

The following sections explain how each role inheritance option works.

No inheritance

The **None** option means that no role inheritance applies. Role settings are ignored for this particular permission set. If the user only has one permission set, then role settings are ignored entirely (for settings on the **File Groups** tab).

The following is an example of how file group settings are treated with no inheritance, assuming that the user belongs to the role:

File Group Settings	User Configured Settings	Role Configured Settings	User Effective Permissions
File Access Level	Read Only	Read/Write	Read Only
Allow Save Data	Unchecked	Checked	Unchecked
Allow Calc Method Insert	Checked	Checked	Checked
Allow Calc Method Change	Unchecked	Checked	Unchecked
Apply settings to	Filtered Plan Files: DEPT.Region='North'	Filtered Plan Files: DEPT.Region='South'	Filtered Plan Files: DEPT.Region='North'

In this example, the role settings are ignored, and the user has only his or her configured permissions.

Combine inheritance

The **Combine** option means that the user's permissions are combined with role permissions. The user is granted the most permissive rights as defined for either the user or the role, on a per permission basis.

The following is an example of how file group settings are treated with combine inheritance, assuming that the user belongs to the role:

File Group Settings	User Configured Settings	Role Configured Settings	User Effective Permissions
File Access Level	Read Only	Read/Write	Read/Write
Allow Save Data	Unchecked	Checked	Checked
Allow Calc Method Insert	Checked	Checked	Checked
Allow Calc Method Change	Unchecked	Checked	Checked
Apply settings to	Filtered Plan Files: DEPT.Region='North'	Filtered Plan Files: DEPT.Region='South'	Filtered Plan Files: (DEPT.Region='North') OR (DEPT.Region='South')

In this example, the user and role permissions are combined, and the user is granted the most permissive set of rights available for each individual setting.

When you select combine inheritance, you can choose to combine with all roles that the user is assigned to, or to combine with a specific role. For example, imagine that the user belongs to role A and role B, and the permissions are as follows:

File Group Settings	User Configured Settings	Role A Configured Settings	Role B Configured Settings
File Access Level	Read Only	Read/Write	Read Only
Allow Save Data	Unchecked	Checked	Unchecked
Allow Calc Method Insert	Checked	Checked	Unchecked
Allow Calc Method Change	Unchecked	Checked	Unchecked
Apply settings to	Filtered Plan Files: DEPT.Region='North'	Filtered Plan Files: DEPT.Region='South'	Filtered Plan Files: DEPT.Country='France'

In this case, the effective permissions of the user depend on whether the combine inheritance is set to all roles, or to a specific role:

File Group Settings	Combine: All Roles	Combine: Role A	Combine: Role B
File Access Level	Read/Write	Read/Write	Read Only
Allow Save Data	Checked	Checked	Unchecked
Allow Calc Method Insert	Checked	Checked	Checked
Allow Calc Method Change	Checked	Checked	Unchecked
Apply settings to	Filtered Plan Files: (DEPT.Region='North') OR (DEPT.Region='South') OR (DEPT.Country='France')	Filtered Plan Files: (DEPT.Region='North') OR (DEPT.Region='South')	Filtered Plan Files: (DEPT.Region='North') OR (DEPT.Country='France')

When combined with all roles, the user is granted the most permissive set of rights across all of the roles. When combined with only one of the roles, the second role is effectively ignored. Unless the user has another set of permissions that allows inheritance from the second role, the user will not inherit any file group settings from the second role.

Independent inheritance

The **Independent** option means that the user inherits permissions from roles, but the role permissions are applied independently from the user's configured permissions. The user and role permissions are not merged, as they are when using the combine option. The user effectively has two sets of permissions: one set based on the user's configured permissions, and one set based on the role's inherited permission. Additionally, if the user belongs to multiple roles, each role's permissions are inherited independently from each other (assuming that the independent inheritance is set to apply to "all roles").

The following is an example of how file group settings are treated with independent inheritance, assuming that the user belongs to the role:

File Group Settings	User Configured Settings	Role Configured Settings
File Access Level	Read Only	Read/Write
Allow Save Data	Unchecked	Checked
Allow Calc Method Insert	Checked	Checked
Allow Calc Method Change	Unchecked	Checked
Apply settings to	Filtered Plan Files: DEPT.Region='North'	Filtered Plan Files: DEPT.Region='South'

In this example, the user's effective permissions are the same as the user configured permissions and the role configured permission, except applied separately. When the user accesses a plan file that belongs to the North region, it will be read only, and the user will not be able to change calc methods. When the user accesses a plan file that belongs to the South region, it will be read/write, and the user has all of the other plan file permissions as defined for the role.

If there is any overlap between the two independent permissions, then the user will be granted the most permissive set of rights for the area of overlap only. In the above example the filters cannot overlap, but imagine that the user and role filters were instead something like the following:

User Filter: DEPT >= 5000 and DEPT < 6000

Role Filters: DEPT >= 4000 and DEPT < 6000

In this case, the role permissions alone would apply to any departments from 4000 up to 4999. Where the permissions overlap, for departments 5000 to 5999, the user and role permissions would be combined.

NOTE: If you use independent inheritance with a specific role instead of all roles, that configuration blocks inheritance from all other roles unless the user has another permission set that allows the inheritance from the other roles.

Multiple permission sets

For each file group, a user can have multiple sets of permissions that apply to the plan files in that file group. This allows you to define different permissions for different subsets of files. For example, you might want to give a user full read/write access to plan files belonging to the North region, but only read access to plan files belonging to the South region. In this case, you can create two sets of permissions for the user.

If a user has multiple permission sets, each permission set has its own role inheritance settings. For example, you may want to define filters at the user level, but define other access rights at the role level, as shown in the following example:

User Permission Set 1, Combine: Role A

File Group Settings	User Configured Settings (Set 1)	Role A Configured Settings	User Effective Permissions (Combine: Role A)
File Access Level	None	Read/Write	Read/Write
Allow Save Data	Unchecked	Checked	Checked
Allow Calc Method Insert	Unchecked	Checked	Checked
Allow Calc Method Change	Unchecked	Checked	Checked

File Group Settings	User Configured Settings (Set 1)	Role A Configured Settings	User Effective Permissions (Combine: Role A)
Apply settings to	Filtered Plan Files: DEPT.Region='North'	Filtered Plan Files: <Blank Filter>	Filtered Plan Files: DEPT.Region='North'

User Permission Set 2, Combine: Role B

File Group Settings	User Configured Settings (Set 2)	Role B Configured Settings	User Effective Permissions (Combine: Role B)
File Access Level	None	Read Only	Read Only
Allow Save Data	Unchecked	Unchecked	Unchecked
Allow Calc Method Insert	Unchecked	Checked	Checked
Allow Calc Method Change	Unchecked	Unchecked	Unchecked
Apply settings to	Filtered Plan Files: DEPT.Region='South'	Filtered Plan Files: <Blank Filter>	Filtered Plan Files: DEPT.Region='South'

The ability to define multiple permission sets with separate inheritance settings is a very flexible feature, able to meet a wide variety of security needs. When using multiple permission sets, keep in mind that it is possible to configure settings that cancel out or contradict the settings of another set.

For example, if you configure one permission set with no role inheritance, and then you configure a second permission set with independent inheritance, then the no inheritance setting on the first set is pointless (since you are already independently inheriting all role settings from the second set). On the other hand, it can be meaningful to have no inheritance on the first permission set, and then combine inheritance on the second permission set (for either all roles or a specific role). Make sure that you understand the purpose of each permission set, and check the effective permissions section for the user to ensure that permissions are being inherited as intended.

Configuring table permissions (Tables tab)

On the **Tables** tab of the **Security Management** dialog, you can manage user access to tables. You can control what data a user can query from a table (*read access*), and what data a user can save to a table (*write access*).

Table access can be managed at the table level and at the table type level. By default, users have the following permissions:

- All table types, and stand-alone data tables and reference tables, start at "no access" for both read and write. You must configure access to these table types and tables on a per user or role basis. If access is defined for a table type, then any tables added to the table type will automatically inherit that access.
- All document reference tables are automatically set to full read access, via the Everyone role.

NOTES:

- If a user is an administrator, the settings on this tab are ignored. Administrators can access data in all tables.
- If you are defining permissions for a subsystem, see Defining maximum permissions for subsystems.

Understanding table permissions

This section explains how the table access settings in Security work.

Read access and write access

Each table and table type can have read access permissions and write access permissions.

- *Read access* defines what data a user can query from a table—for example, via a GetData function or by running an Axiom query. For each table or table type, a user can have no read access, full read access, or filtered read access.
- *Write access* defines what data a user can save to a table. For most users this means via a Save Type 1 process set up in a plan file or a report, but it also applies to Open Table in Spreadsheet (if the user has access to it). For each table or table type, a user can have no write access, full write access, or filtered write access.

  NOTE: Table write access does not apply to document reference tables (Save Type 3). Document reference tables can only be created and edited via a source document; therefore the ability to write data to the table is controlled by the user's access rights to the source document. Also, write access is ignored for import packages—if the user has execute rights to an import, then they can save the imported data to the specified destination table, regardless of their write access to that table.

By default, the write access for a table or table type is set to the same level as the read access. If that is the desired level of access, then you only need to configure the read access; the write access will be automatically set. You can see this inheritance for the write access in the **Effective Permissions** box after you set the read access.

However, if you want differing levels of read and write access for a table or table type, then you must select the **Specify custom write access** check box, and then configure the specific write access.

For example, imagine the following settings for the table GL2019:

If the read access is set to...	And the write access is set to...	The user's permission is...
Full Access	(Default)	Read: Full Access Write: Full Access
Filter: DEPT.Region='North'	(Default)	Read: DEPT.Region='North' Write: DEPT.Region='North'
Full Access	Specify custom write access: Filter: DEPT.Region='North'	Read: Full Access Write: DEPT.Region='North'
Full Access	Specify custom write access: Filter: <Blank Filter>	Read: Full Access Write: No Access
No Access	Specify custom write access: Full Access	Read: No Access Write: Full Access

NOTES:

- For reference tables, the read access settings are only applied when the reference table is queried directly—for example, when viewing the reference table using **Open Table in Spreadsheet**, or when the reference table is the *primary* table of an Axiom query. The read access settings defined on a reference table are not applied when queries are made against a data table that joins to the reference table.

  Therefore if you want to restrict access to *data*, the filter must be defined on the data table or its table type. For example, if you want to restrict a user to only viewing planning data for the North region, then you must define that filter on the data table or the table type, not on the DEPT reference table.

- Read filters are not applied to data that already exists in a spreadsheet. For example, when the administrator runs the **Process Plan Files** utility to process Axiom queries in plan files, the plan files are populated with data according to the administrator's data rights. When individual users open these plan files, they see all of the data that was populated into the spreadsheet. The read filters of the individual users would only be applied if the users processed Axiom queries by using the Refresh feature. If you would like to limit data access in plan files, you can consider dynamically hiding sheets that you do not want particular users to access.

- Keep in mind that just because a user has write access to a table, it does not mean that the user actually has the means to save any data. For example, in order for a user to save data to a table from a plan file, the user must have access rights to the plan file, and the permission to save data from the file, and the file must be configured to save data to the table. If a user does not have access to files and/or features that facilitate saving data to the database, then the user cannot save any data, regardless of his or her write access permissions.

How table type access and table access combine

Tables inherit any rights set at the table type level, and then combine that access with any rights set at the table level, resulting in the most permissive set of rights for the table.

- If a table type is set to full or filtered access, then all tables in that table type inherit the full or filtered access. You cannot "override" the table type setting at the table level to deny access to a specific table in the table type. You can set individual tables to have more permissive access than the table type, but not less permissive.
- If desired, you can leave the table type access unset, and instead configure access at the table level. The user will be granted whatever access is set at the table level.
- If access filters are set at both the table type level and the table level, the filters are concatenated using OR (meaning the filters are combined to result in the most permissive set of rights for the table).

For example, imagine a table type of GL, which contains a table named GL2019:

If the table type GL is set to...	And the table GL2019 is set to...	The user's permission is...
Full Access	No Access (nothing is configured)	Full Access
Full Access	DEPT.Region='North'	Full Access
No Access (nothing is configured)	DEPT.Region='North'	DEPT.Region='North'
DEPT.Region='South'	Full Access	Full Access
DEPT.Region='South'	DEPT.Region='North'	(DEPT.Region='South') OR (DEPT.Region='North')

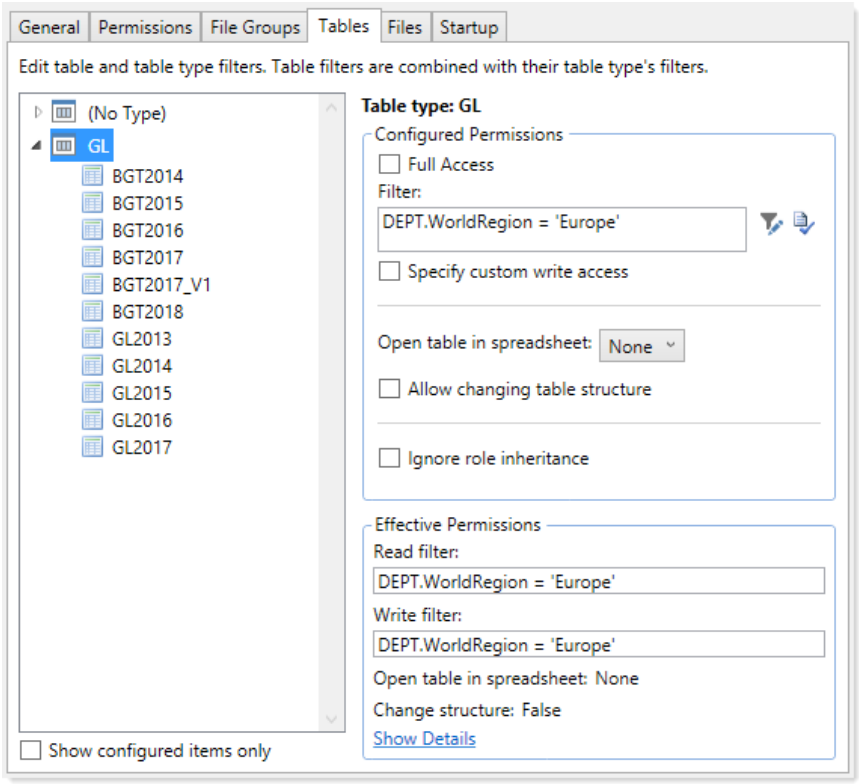
Tables that do not belong to a table type only have their individual table access rights.

Table visibility to users

If a user does not have any read access to a table, then that table will not display in lists of tables throughout the system, such as in the Sheet Assistant, or the Filter Wizard. Table Library folders and table types will only display if the user has read access to at least one table within the folder or the table type. (Exception: if the user has the Administer Tables permission, then that user will see all Table Library folders and table types for the purposes of creating new tables.)

Table permissions

The settings on the **Tables** tab define access for each table or table type. The left-hand side of the tab lists the available tables in the system, organized by table type. Tables that do not belong to a table type are listed under **(No Type)**. When you select a table or a table type in the list, you can configure the security settings for the user or role within the **Configured Permissions** section in the right-hand side of the tab.



Example Tables tab

The **Effective Permissions** section displays the full permissions of the user for the selected item, taking into account any rights inherited from the table type or a role, and other settings such as administrator rights or subsystem restrictions. Make sure to check this section to ensure that users are being granted rights as you expect.

Because table permissions can be set at any point in the treeview, it can be difficult to later tell which items have been configured. To change the view to only show items with configured permissions, select the check box for **Show configured items only**. If the treeview is blank after selecting this check box, this means that the user or role has no configured permissions.

NOTE: By default, the Everyone role grants all users full read access to document reference tables. Any changes made to document reference tables in the **Tables** tab will not apply to users unless you modify the Everyone role to remove full access (or unless you configure the user to ignore role inheritance for that table).

Read access settings

The following settings apply to all tables and table types, to define read access to data. By default, the write access is automatically set to the same level as the read access. If that is the desired level of access, then you do not need to do anything further to configure write access for a table or table type.

Item	Description
Full access (Full read access)	Select this check box if you want the user or role to have full access to the table or table type. By default, this check box grants full read and write access. If you want to configure write access separately, then you must enable the separate option to **Specify custom write access**. Selecting that option exposes additional settings for write access, and renames this check box to **Full read access**. **NOTE:** If you are defining access for a table that belongs to a table type, and full access has already been granted at the table type level, then this check box is effectively ignored. However, the setting will be stored at the table level and could apply in the future if the table type access is ever changed, or if the table is removed from the table type. Be sure to check the **Effective Permissions** section of the dialog to see what level of access is being granted due to inheritance.
Filter (Read filter)	If you want the user or role to have filtered access to the table or table type, specify the filter. For example: • `ACCT.Acct>10000` restricts the user to only accessing data for accounts over 10000. • `DEPT.Dept=100` restricts the user to only accessing data for department 100. • `DEPT.Region='North'` restricts the user to only accessing data for departments assigned to the North region. By default, the filter applies to both read and write access. If you want to configure write access separately, then you must enable the separate option to **Specify custom write access**. Selecting that option exposes additional settings for write access, and renames this option to **Read filter**. **NOTE:** If you are defining a filter for a table that belongs to a table type, the filter will be concatenated to the table type filter using OR. If full access has been granted at the table type level, then the table level filter is effectively ignored. However, the filter will be stored for the table and could apply in the future if the table type access is ever changed, or if the table is removed from the table type. Be sure to check the **Effective Permissions** section of the dialog to see what level of access is being granted due to inheritance.

To define a filter for a table or table type, type the filter into the **Filter** box, or use the Filter Wizard. Note the following:

- If the filter is for a table type, the filter should be based on key columns that are common to all tables in the table type (using either the key column itself, or a column in the lookup table that the key column links to). For example, if the GL table type has two required key columns, ACCT and DEPT, then you can create a table type filter that uses one or both of these columns, or one that uses grouping columns in the associated reference tables. Filters using any other columns may be invalid.
- If the table type has required columns, then any filter defined must be based on those required columns. If the required columns do not have lookups, then no valid filters can be defined.
- When selecting key columns in the Filter Wizard, the Filter Wizard automatically uses the lookup column in the reference table instead of the column in the data table. For example, if you select the column Acct in the GL2019 data table, the filter wizard automatically uses `ACCT.ACCT` in the filter (instead of `GL2019.ACCT`).

After defining a filter, you can validate the filter syntax by clicking the **Validate filter** button.

IMPORTANT: If you define a write filter on a reference table, then any columns used in the filter must also be included in the save definition when saving to that table using Save Type 1. For example, if the table is DEPT and the filter uses DEPT.Region, then the Region column must be included in the save definition in order for the user to save data.

Write access settings

The following settings only apply if you want to configure write access at a different level than the read access.

NOTE: Write access settings do not apply to document reference tables. Document reference tables are only created and edited via a source document; therefore the ability to write data to the table is controlled by the user's access rights to the document.

Item	Description
Specify custom write access	Select this check box if you want to configure write access at a different level than the read access. When this check box is selected, two additional settings become available in the dialog to set the write access: **Full write access** and **Write filter**. If you want the user to have no write access to the table, then select this check box and ignore the other write access settings. If **Full write access** is unchecked and **Write filter** is blank, then the user has no write access.

Item	Description
Full write access	Select this check box if you want the user or role to have full write access to the table or table type. **NOTE:** If you are defining access for a table that belongs to a table type, and full access has already been granted at the table type level, then this check box is effectively ignored. However, the setting will be stored at the table level and could apply in the future if the table type access is ever changed, or if the table is removed from the table type. Be sure to check the **Effective Permissions** section of the dialog to see what level of access is being granted due to inheritance.
Write filter	If you want the user or role to have filtered write access to the table or table type, specify the filter. For example: • `ACCT.Acct>10000` restricts the user to only saving data for accounts over 10000. • `DEPT.Dept=100` restricts the user to only saving data for department 100. • `DEPT.Region='North'` restricts the user to only saving data for departments assigned to the North region. **NOTE:** If you are defining a filter for a table that belongs to a table type, the filter will be concatenated to the table type filter using OR. If full access has been granted at the table type level, then the table level filter is effectively ignored. However, the filter will be stored for the table and could apply in the future if the table type access is ever changed, or if the table is removed from the table type. Be sure to check the **Effective Permissions** section of the dialog to see what level of access is being granted due to inheritance.

To define a filter for a table or table type, type the filter into the **Filter** box, or use the Filter Wizard . Note the following:

- If the filter is for a table type, the filter should be based on key columns that are common to all tables in the table type (using either the key column itself, or a column in the lookup table that the key column links to). For example, if the GL table type has two required key columns, ACCT and DEPT, then you can create a table type filter that uses one or both of these columns, or one that uses grouping columns in the associated reference tables. Filters using any other columns may be invalid.
- If the table type has required columns, then any filter defined must be based on those required columns. If the required columns do not have lookups, then no valid filters can be defined.
- When selecting key columns in the Filter Wizard, the Filter Wizard automatically uses the lookup column in the reference table instead of the column in the data table. For example, if you select the column Acct in the GL2019 data table, the filter wizard automatically uses `ACCT.ACCT` in the filter (instead of `GL2019.ACCT`).

After defining a filter, you can validate the filter syntax by clicking the **Validate filter** button .

IMPORTANT: If you define a write filter on a reference table, then any columns used in the filter must also be included in the save definition when saving to that table using Save Type 1. For example, if the table is DEPT and the filter uses DEPT.Region, then the Region column must be included in the save definition in order for the user to save data.

Other table permissions

The following permissions can also be defined for tables and table types:

Item	Description
Open Table in Spreadsheet	This option specifies whether the user can view the table in Open Table in Spreadsheet, and at what level of access. Select one of the following: • **None** (default): The user cannot view the table in Open Table in Spreadsheet. • **Read-Only**: The user can view the table as read-only in Open Table in Spreadsheet. • **Read/Write**: The user can view the table as read/write in Open Table in Spreadsheet. Granting this permission gives the user access to the Table Library, so that the user can launch Open Table in Spreadsheet for the table. This permission does not apply to document reference tables. Document reference tables cannot be opened via Open Table in Spreadsheet. This permission can only be assigned if the user has read or read/write permission to the table data (either configured on the user or inherited from a role). If the user inherits Open Table in Spreadsheet permission from a role but does not have any corresponding access to table data, then the permission will be ignored. If the user is granted read/write access to Open Table in Spreadsheet but only has read access to the table, then the spreadsheet access will be limited to read-only.

Item	Description
Allow changing table structure	Select this check box if you want the user to be able to edit the table structure and table properties. If selected, then the user can open the **Edit Table** dialog for the table. The user can add, modify, and delete table columns, as well as modify other table properties. Granting this permission gives the user access to the Table Library, so that the user can launch **Edit table structure** for the table. By default this option is not selected, which means the user cannot edit the table structure or table properties. This permission does not apply to document reference tables. The table structure of document reference tables is controlled via the source file. This permission can be granted regardless of whether the user has access to the table data.
Ignore role inheritance	Select this check box if you do not want the user to inherit table access settings from a role (including the Everyone role). • If selected, then only the user's individual settings will be used to determine access to data in the table or table type. • If this check box is not selected, then the user will be granted the most permissive set of rights among the user's configured settings and any roles that the user belongs to. If both the user and a role have filtered access, then the filters are concatenated using OR.

Restricting access to document reference tables

By default, all users have full read access to document reference tables, via the Everyone role. In most cases this is the desirable level of access. However, in some cases you may need to restrict access to a subset of users. To restrict access to a document reference table, you must do the following:

- In the Everyone role, clear the **Full Access** check box for the table. Now no non-admin users have access to the table.
- For each individual user or role that you want to grant full or filtered access to the table, modify the table access settings as desired.

TIP: Alternatively, you could leave the Everyone role at full access, and then modify specific users to **Ignore role inheritance** for the table. Those users would then have no access to the table.

Write access settings do not apply to document reference tables. Document reference tables are only created and edited via a source document; therefore the ability to write data to the table is controlled by the user's access rights to the document.

NOTE: If you have restricted access to a document reference table created by a driver file, keep in mind that your security changes will not be cloned when the file group is cloned. This is because the table itself is not cloned; the driver file is. If you want to apply the same changes to the new table created by the new driver file, then you will need to manually configure access to this table after processing the drivers for the new file group.

Configuring file access (Files tab)

On the **Files** tab of the **Security Management** dialog, you can control access to files in the Axiom Cost Accounting file system. The following areas can be controlled:

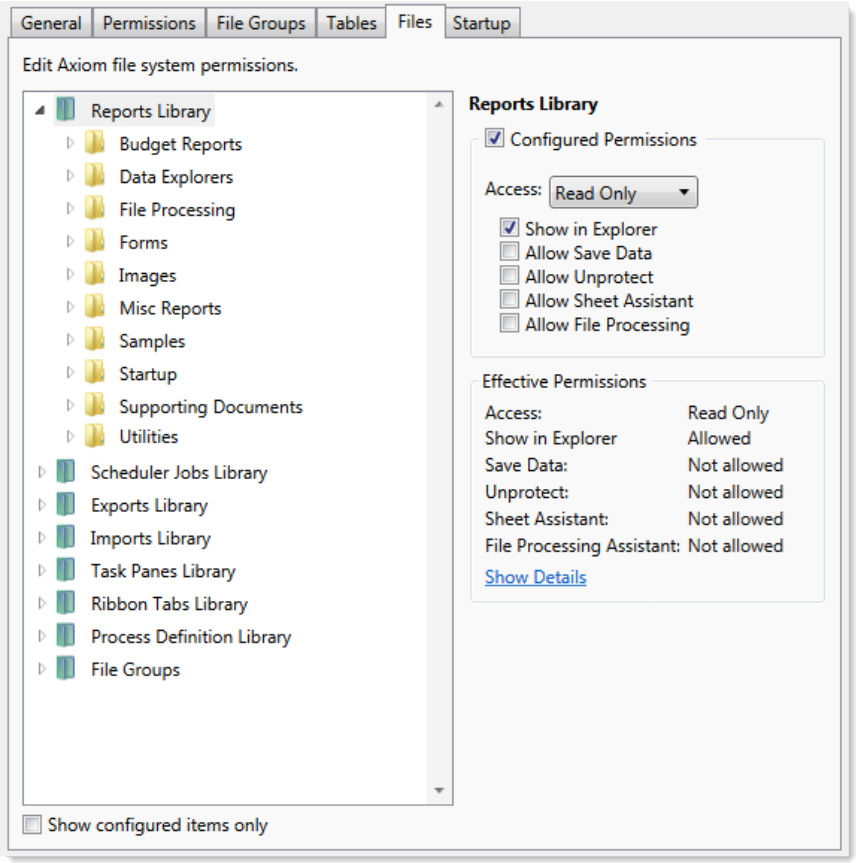
- The Reports Library
- The Data Diagrams Library
- The Filter Library
- The Imports Library and the Exports Library
- The Process Definitions Library
- The Scheduler Jobs Library
- The Task Panes Library
- The Ribbon Tabs Library
- Certain supporting files for file groups: Templates, Drivers, Utilities, and Process Definitions

NOTES:

- File permissions do not apply to users with administrator rights. Administrators always have full access to all files.
- File permissions must be defined within the Security Management dialog. The bulk editing tool Open Security in Spreadsheet does not support configuring file and folder permissions.
- If you are defining file permissions for a subsystem, see Defining maximum permissions for subsystems.

Configuring file permissions

The left-hand side of the **Files** tab displays the available folders and files. When you select a folder or a file in the list, you can define the security settings for the user or role within the **Configured Permissions** section in the right-hand side of the tab.



Example Files tab

File permissions can be set at the folder level and at the file level. By default, all sub-folders and files underneath a parent folder inherit the rights of the parent folder, unless rights are explicitly set for the sub-folder or file.

You can set permissions at the library level and then override those permissions for specific sub-folders and files as needed, or you can set permissions for specific sub-folders and files only.

By default, each user or role has no access to any files or folders on this tab. You must define file permissions for each user or role.

To configure permissions to a file or folder:

1. Select the file or folder in the treeview, and then select **Configured Permissions**.

   If this check box is selected for a sub-folder or a specific file, the sub-folder or file will no longer inherit any permissions set for the parent folder. You can clear the check box, and the sub-folder or file will once again inherit permissions from the parent folder.

2. Select the applicable permission options as desired.

   Each type of file (reports, import, etc.) has slightly different security settings that can be defined on this tab. For more information on the file-specific options, see the detailed sections.

If a new folder or file is added to any library, a user will have access to it if the folder or file is placed underneath an existing parent folder that the user has rights to. For example, if a user has rights to the entire Reports Library, that user will have access to any new folders and files added to the Reports Library. If a user only has rights to a specific sub-folder in the Reports Library, that user will have access to new folders and files added to that sub-folder.

The **Effective Permissions** section displays the full permissions of the user, taking into account any inherited role rights, and other settings such as administrator rights. This section also takes into account rights that are inherited from a parent folder.

NOTE: Because file permissions can be set at any point in the treeview, it can be difficult to later tell which items have been configured. To change the view to only show items with configured permissions, select the check box for **Show configured items only**. If the treeview is blank after selecting this check box, this means that the user or role has no configured permissions.

Reports Library

The following permissions can be set for files in the Reports Library:

Option	Description
Access	Select one of the following: • **No Access**: The user or role cannot access the folder or file. • **Read Only**: The user or role has read-only access to the folder or file. Users with read-only access to reports can open and refresh reports, but cannot save changes. If read access is set at the folder level, users cannot save new reports to that folder. • **Read/Write**: The user or role has read/write access to the folder or file. If the item is a file, the user can save changes to the file. If the item is a folder, the user can also save new files to the folder, create sub-folders, and delete and rename files and folders.

Option	Description
Show in Explorer	Select this check box if you want the file to display in the Explorer task pane and other "Explorer views" of the file library (such as Axiom Explorer, libraries displayed on the ribbon menu, and libraries displayed when saving files). This check box becomes selected by default when you assign an access level of Read Only or higher. If this check box is cleared, and the user has Read Only access or higher, then the file does not display in Explorer views but the user can still open the file if the user has access to a feature that indirectly opens the file. This includes features such as custom drilling, GetDocument functions, and file shortcuts in task panes and ribbon tabs. The idea is that the user never needs to directly open the file from a folder structure, but the user needs access to the file in order to use these other features. If the user's access level is No Access, then this setting is ignored. For example, you might clear this check box for the target report of a custom drill. The user only needs to be able to access this report when performing a custom drill on the source file. Displaying the file in the Reports Library would just clutter the list of files because the user never needs to open the file from that location. **NOTE:** The **Reports Library** dialog (accessible from **Reports > All Reports**) does not honor this permission. If a user has at least read-only access to a report, it will show in this dialog, regardless of the Show in Explorer permission.
Allow Save Data	Select this check box if you want the user or role to be able to save data to the database for the folder or file. If a report is set up to use Save Type 1, 3, or 4, the user will be able to save data to the database. If this check box is not selected, then the user cannot save data to the database from the report. **NOTE:** If a user has **Read Only** access and **Allow Save Data**, then the user will be able to save data to the database but not save changes to the file. Note that users with this combination of rights can save data from the file at any time, regardless of whether the file is locked to another user.

Option	Description
Allow Unprotect	Select this check box if you want the user or role to be able to remove workbook and/or worksheet protection for this folder or file. Users with this permission can use the **Advanced > Protect** options on the ribbon to remove workbook or worksheet protection from Axiom files. **IMPORTANT:** If you enable this permission at the folder level, then the user will be able to unprotect any file that they save to the folder (assuming that the user has read/write access to the folder). **NOTE:** This setting is ignored for users with the **Remove Protection** permission on the **Permissions** tab; those users can remove protection for any file.
Allow Sheet Assistant	Select this check box if you want the user or role to see the Sheet Assistant. Generally, you should only expose the Sheet Assistant if the user is expected to edit file settings, including Axiom query settings. Enabling this permission also has the following impacts: • The user has access to the Control Sheet. If the Control Sheet is hidden in the document, the user can make it visible by double-clicking any field name in the Sheet Assistant. • If the user has read / write permission and the Sheet Assistant permission, then the user can enable forms for the file and can see the Form Assistant and Form Control Sheet. • The Drilling Control Sheet, if present in the file, is not hidden if the user has the Sheet Assistant permission. • The Data Source Assistant is also available if the Sheet Assistant is available. If this check box is not selected, then the user cannot see the Sheet Assistant or the other related items as described above.
Allow File Processing	Select this check box if you want the user or role to be able to perform file processing on the file. If selected, then the user has access to file processing features, including the File Processing button on the menu and the File Processing task pane. The related control sheets will also be visible to the user. If this check box is not selected, then the user cannot perform file processing actions and cannot see the related menu items, task panes, or control sheets.

NOTE: If a user does not have access to any report files or folders, then the Reports menu item does not display on the menu, and the user cannot create reports.

Filter Library

The following permissions can be set for files in the Filter Library:

Option	Description
Access	Select one of the following: • **No Access**: The user or role cannot access the folder or filter. • **Read Only**: The user or role has read-only access to the folder or filter. Users with read-only access to saved filters can load those filters into the Filter Wizard for use. If read access is set at the folder level, users cannot save new filters to that folder. • **Read/Write**: The user or role has read/write access to the folder or filter. If the item is a filter, the user can save changes to the filter. If the item is a folder, the user can also save new filters to the folder, create sub-folders, and delete and rename filters and folders.
Show in Explorer	Select this check box if you want the file to display in the Explorer task pane and other "Explorer views" of the file library (such as Axiom Explorer, libraries displayed on the ribbon menu, and libraries displayed when saving files). This check box becomes selected by default when you assign an access level of Read Only or higher. If this check box is cleared, and the user has Read Only access or higher, then the file does not display in Explorer views but the user can still open the file if the user has access to a feature that indirectly opens the file. This includes features such as custom drilling, GetDocument functions, and file shortcuts in task panes and ribbon tabs. The idea is that the user never needs to directly open the file from a folder structure, but the user needs access to the file in order to use these other features. If the user's access level is No Access, then this setting is ignored.

Scheduler Jobs Library

NOTE: Users must also have the **Scheduled Jobs User** permission (on the **Permissions** tab) in order to access any files in the Scheduler Jobs Library.

The following permissions can be set for files in the Scheduler Jobs Library:

Option	Description
Access	Select one of the following: • **No Access**: The user or role cannot access the folder or file. • **Read Only**: The user or role has read-only access to the folder or file. Users with read-only access to Scheduler jobs can open jobs and can manually execute jobs, but cannot save changes. If read access is set at the folder level, users cannot save new jobs to that folder. • **Read/Write**: The user or role has read/write access to the folder or file. If the item is a file, the user can save changes to the file. If the item is a folder, the user can also save new files to the folder, create sub-folders, and delete and rename files and folders.
Show in Explorer	Select this check box if you want the file to display in the Explorer task pane and other "Explorer views" of the file library (such as Axiom Explorer, libraries displayed on the ribbon menu, and libraries displayed when saving files). This check box becomes selected by default when you assign an access level of Read Only or higher. If this check box is cleared, and the user has Read Only access or higher, then the file does not display in Explorer views but the user can still open the file if the user has access to a feature that indirectly opens the file. This includes features such as custom drilling, GetDocument functions, and file shortcuts in task panes and ribbon tabs. The idea is that the user never needs to directly open the file from a folder structure, but the user needs access to the file in order to use these other features. If the user's access level is No Access, then this setting is ignored. For example, you might clear this check box if a user needs to be able to open a Scheduler job from a shortcut in a task pane, but otherwise the user does not need to be able to browse to it in the Scheduler Jobs Library.

Exports Library

The following permissions can be set for files in the Exports Library:

Option	Description
Access	Select one of the following: • **No Access**: The user or role cannot open the folder or file (however, they can execute the export, if they have the separate Execute permission). • **Read Only**: The user or role has read-only access to the folder or file. Users with read-only access to exports can open export files to view the settings, but they cannot edit the settings. • **Read/Write**: The user or role has read/write access to the folder or file. If the item is a file, the user can save changes to the file. If the item is a folder, the user can also save new files to the folder, create sub-folders, and delete and rename files and folders. **NOTE:** Read/write access to the Exports Library does not allow the user to create exports. Export creation is controlled by the **Administer Exports** permission on the **Permissions** tab.
Execute	Select this check box to give the user execute permissions to the folder or file. Users with execute permissions can run the export. **NOTE:** Table read permissions are honored for export packages. When the user executes the export, the user's permission to the table will determine the eligible data to export. If the user does not have access to the table at all, then no data will be exported.

Option	Description
Show in Explorer	Select this check box if you want the file to display in the Explorer task pane and other "Explorer views" of the file library (such as Axiom Explorer, libraries displayed on the ribbon menu, and libraries displayed when saving files). This check box becomes selected by default when you assign an access level of Read Only or higher. If this check box is cleared, and the user has Read Only access or higher, then the file does not display in Explorer views but the user can still open the file if the user has access to a feature that indirectly opens the file. This includes features such as custom drilling, GetDocument functions, and file shortcuts in task panes and ribbon tabs. The idea is that the user never needs to directly open the file from a folder structure, but the user needs access to the file in order to use these other features. For example, you might clear this check box if a user needs to be able to execute an export from a shortcut in a task pane, but otherwise the user does not need to be able to browse to it in the Exports Library. **NOTE:** If a user has Execute permissions but No Access to the export file, then you should select this check box if you want the export to display in the Export Library. When using this configuration, the user can double-click the file to open the Execute dialog only. If, however, the user will only execute the export from links in a task pane or other predefined links, then you can leave this option cleared.

NOTE: The export access permission and the execute permission are independent. A user can have no access to an export file but still be given execute permissions. Similarly, a user can have read/write access to the export settings, but not be able to execute it.

Imports Library

The following permissions can be set for files in the Imports Library:

Option	Description
Access	Select one of the following: • **No Access**: The user or role cannot access the folder or file (however, they can execute the import, if they have the separate Execute permission). • **Read Only**: The user or role has read-only access to the folder or file. Users with read-only access to imports can open import files to view the settings, but they cannot edit the settings. • **Read/Write**: The user or role has read/write access to the folder or file. If the item is a file, the user can save changes to the file. If the item is a folder, the user can also save new files to the folder, create sub-folders, and delete and rename files and folders. **NOTE:** Read/write access to the Imports Library alone does not allow the user to create new imports. The user must also have the **Administer Imports** permission on the **Permissions** tab.
Execute	Select this check box to give the user execute permissions to the folder or file. Users with execute permissions can run the import. **NOTE:** Table write permissions are ignored for import packages. If a user has execute rights to an import, then the imported data will be saved to the configured destination table, regardless of the user's write access to that table.
Show in Explorer	Select this check box if you want the file to display in the Explorer task pane and other "Explorer views" of the file library (such as Axiom Explorer, libraries displayed on the ribbon menu, and libraries displayed when saving files). This check box becomes selected by default when you assign an access level of Read Only or higher. If this check box is cleared, and the user has Read Only access or higher, then the file does not display in Explorer views but the user can still open the file if the user has access to a feature that indirectly opens the file. This includes features such as custom drilling, GetDocument functions, and file shortcuts in task panes and ribbon tabs. The idea is that the user never needs to directly open the file from a folder structure, but the user needs access to the file in order to use these other features. If the user's access level is No Access, then this setting is ignored. **NOTE:** If a user has Execute permissions but No Access to the import file, then you should select this check box if you want the import to display in the Import Library. When using this configuration, the user can double-click the file to open the Execute dialog only. If, however, the user will only execute the import from links in a task pane or other predefined links, then you can leave this option cleared.

NOTES:

- The import access permission and the execute permission are independent. A user can have no access to an import file but still be given execute permissions. Similarly, a user can have read/write access to the import settings, but not be able to execute it.
- The Import Errors folder is system-maintained and therefore does not display in this dialog. You cannot manually grant or deny access to this folder or the error files within it; access is automatically granted based on access to the import that generated the error.
- If an import uses an Axiom database as its source, then non-administrators cannot view or edit that import regardless of their access rights granted here. However, non-administrators can execute the import if they have that permission.

Task Panes Library

The following permissions can be set for files in the Task Panes Library:

Option	Description
Access	Select one of the following: • **No Access**: The user or role cannot access the folder or file. • **Read Only**: The user or role has read-only access to the folder or file. Users with read-only access to task panes can view and use task panes but cannot save changes. If read access is set at the folder level, users cannot save new task panes to that folder. • **Read/Write**: The user or role has read/write access to the folder or file. If the item is a file, the user can save changes to the file. If the item is a folder, the user can also save new files to the folder, create sub-folders, and delete and rename files and folders. **NOTE:** Users must also have the **Administer Task Panes** permission (on the **Permissions** tab) in order to create or edit task panes.

Option	Description
Show in Explorer	Select this check box if you want the file to display in the Explorer task pane and other "Explorer views" of the file library (such as Axiom Explorer, libraries displayed on the ribbon menu, and libraries displayed when saving files). This check box becomes selected by default when you assign an access level of Read Only or higher. If this check box is cleared, and the user has Read Only access or higher, then the file does not display in Explorer views but the user can still open the file if the user has access to a feature that indirectly opens the file. This includes features such as custom drilling, GetDocument functions, and file shortcuts in task panes and ribbon tabs. The idea is that the user never needs to directly open the file from a folder structure, but the user needs access to the file in order to use these other features. If the user's access level is No Access, then this setting is ignored. For example, you might clear this check box if a user needs to be able to open an associated task pane for a file, but otherwise the user does not need to be able to open the task pane from the Task Panes Library.

NOTES:

- Task panes can contain shortcuts to various files and system features. The ability of a user to open a file or use a feature from the task pane depends on the user's permission for that file or feature.
- Users do not need to have access permission to a task pane in order to open it at startup. If a user is assigned a task pane on the Startup tab of security, it will always open as read-only at startup, regardless of the user's access permission.
- By default, the Axiom ribbon tab does not contain any command to open task panes. If a user has rights to a file in the Task Panes Library, then in order to see and open this file manually the user must have access to either the Explorer task pane or the Axiom Explorer dialog, or you must include access to the task pane within another custom task pane or ribbon tab file that is assigned as a startup file to the user. For example, you might create a custom task pane that includes a link to the Task Panes Library, and if a user has file access rights to any task panes they could be launched from this location. Users only gain access to the **Manage > Task Panes** menu item if they have the **Administer Task Panes** security permission.

Ribbon Tabs Library

The following permissions can be set for files in the Ribbon Tabs Library:

Option	Description
Access	Select one of the following: • **No Access**: The user or role cannot access the folder or file. • **Read Only**: The user or role has read-only access to the folder or file. Users with read-only access to task panes can view ribbon tab files but cannot save changes. If read access is set at the folder level, users cannot save new ribbon tab files to that folder. • **Read/Write**: The user or role has read/write access to the folder or file. If the item is a file, the user can save changes to the file. If the item is a folder, the user can also save new files to the folder, create sub-folders, and delete and rename files and folders. **NOTE:** Users must also have the **Administer Task Panes** permission (on the **Permissions** tab) in order to create or edit task panes.
Show in Explorer	Select this check box if you want the file to display in the Explorer task pane and other "Explorer views" of the file library (such as Axiom Explorer, libraries displayed on the ribbon menu, and libraries displayed when saving files). This check box becomes selected by default when you assign an access level of Read Only or higher. If this check box is cleared, and the user has Read Only access or higher, then the file does not display in Explorer views but the user can still open the file if the user has access to a feature that indirectly opens the file. This includes features such as custom drilling, GetDocument functions, and file shortcuts in task panes and ribbon tabs. The idea is that the user never needs to directly open the file from a folder structure, but the user needs access to the file in order to use these other features. If the user's access level is No Access, then this setting is ignored. This setting does not have much use for ribbon tab files because ribbon tabs are typically configured as startup files for end users, and end users do not need access permission to be able to open the file at startup.

NOTES:

- Users do *not* need to have access permission to a ribbon tab in order to open it at startup. If a user is assigned a ribbon tab on the Startup tab of security, it will always open as read-only at startup, regardless of the user's access permission.
- In general, there is no need to grant end users access to the Ribbon Tabs Library unless the user needs to be able to create and edit ribbon tabs. If a user opens a ribbon tab file directly from the Ribbon Tabs Library, it will always open in the editor, not in the application ribbon. There is no way to open a ribbon tab file on demand and have it display in the application ribbon.

Process Definition Library

The following permissions can be set for files in the Process Definition Library:

Option	Description
Access	Select one of the following: • **No Access**: The user or role cannot access the folder or file. • **Read Only**: The user or role has read-only access to the folder or file. Users with read-only access to the file can open the process definition from the Explorer task pane and view the settings. • **Read/Write**: The user or role has read/write access to the folder or file. If the item is a file, the user can save changes to the file. If the item is a folder, the user can also save new files to the folder, create sub-folders, and delete and rename files and folders. Users with read/write access cannot start or stop the process, they can only edit the process definition settings.

Option	Description
Show in Explorer	Select this check box if you want the file to display in the Explorer task pane and other "Explorer views" of the file library (such as Axiom Explorer, libraries displayed on the ribbon menu, and libraries displayed when saving files). This check box becomes selected by default when you assign an access level of Read Only or higher. If this check box is cleared, and the user has Read Only access or higher, then the file does not display in Explorer views but the user can still open the file if the user has access to a feature that indirectly opens the file. This includes features such as custom drilling, GetDocument functions, and file shortcuts in task panes and ribbon tabs. The idea is that the user never needs to directly open the file from a folder structure, but the user needs access to the file in order to use these other features. If the user's access level is No Access, then this setting is ignored. For example, you might clear this check box if a user needs to be able to open a process definition from a shortcut in a task pane, but otherwise the user does not need to be able to browse to it in the Process Definition Library.

Data Diagrams Library

The following permissions can be set for files in the Data Diagrams Library:

Option	Description
Access	Select one of the following: • **No Access**: The user or role cannot access the folder or file. • **Read Only**: The user or role has read-only access to the folder or file. • **Read/Write**: The user or role has read/write access to the folder or file. If the item is a file, the user can save changes to the file. If the item is a folder, the user can also save new files to the folder, create sub-folders, and delete and rename files and folders.

Option	Description
Show in Explorer	Select this check box if you want the file to display in the Explorer task pane and other "Explorer views" of the file library (such as Axiom Explorer, libraries displayed on the ribbon menu, and libraries displayed when saving files). This check box becomes selected by default when you assign an access level of Read Only or higher. If this check box is cleared, and the user has Read Only access or higher, then the file does not display in Explorer views but the user can still open the file if the user has access to a feature that indirectly opens the file. This includes features such as custom drilling, GetDocument functions, and file shortcuts in task panes and ribbon tabs. The idea is that the user never needs to directly open the file from a folder structure, but the user needs access to the file in order to use these other features. If the user's access level is No Access, then this setting is ignored. For example, you might clear this check box if a user needs to be able to open a data diagram from a shortcut in a task pane, but otherwise the user does not need to be able to browse to it in the Data Diagrams Library.

File Groups

The following permissions can be set for certain files and folders in file groups. Each file group is listed separately in this section, with sub-folders for Templates, Drivers, Utilities, and Process Definitions.

NOTE: Permissions cannot be set at the file group level and inherited by the folders. Each folder must be configured separately.

Option	Description
Access	Select one of the following: • **Hidden**: The user or role cannot access the folder or file. • **Read Only**: The user or role has read-only access to the folder or file. Users with read-only access to files can open and refresh those files, but cannot save changes. If read access is set at the folder level, users cannot save new files to that folder. • **Read/Write**: The user or role has read/write access to the folder or file. If the item is a file, the user can save changes to the file. If the item is a folder, the user can also save new files to the folder, create sub-folders, and delete and rename files and folders.

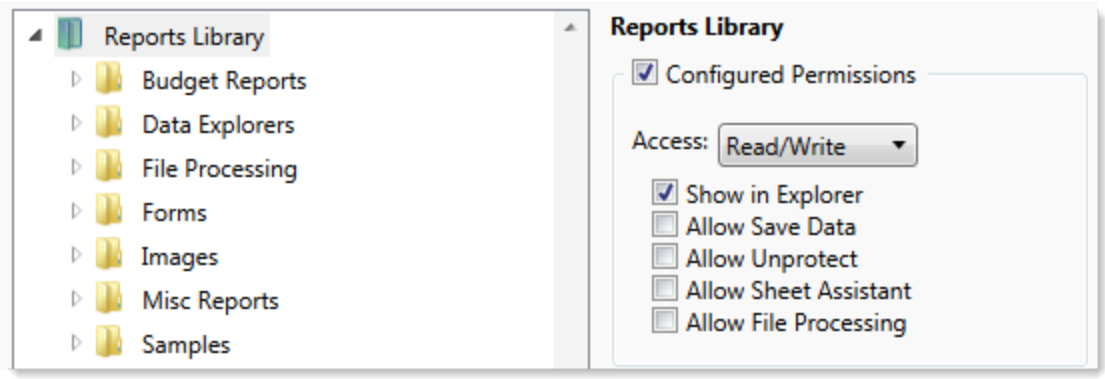
Option	Description
Show in Explorer	Select this check box if you want the file to display in the Explorer task pane and other "Explorer views" of the file library (such as Axiom Explorer, libraries displayed on the ribbon menu, and libraries displayed when saving files). This check box becomes selected by default when you assign an access level of Read Only or higher. If this check box is cleared, and the user has Read Only access or higher, then the file does not display in Explorer views but the user can still open the file if the user has access to a feature that indirectly opens the file. This includes features such as custom drilling, GetDocument functions, and file shortcuts in task panes and ribbon tabs. The idea is that the user never needs to directly open the file from a folder structure, but the user needs access to the file in order to use these other features. If the user's access level is No Access, then this setting is ignored. For example, you might clear this check box if a user needs to be able to open the file from a shortcut in a task pane, but otherwise the user does not need to be able to browse to it in the Explorer task pane.
Allow Save Data	Select this check box if you want the user or role to be able to save data to the database for the folder or file. If a file is set up to use Save Type 1, 3, or 4, the user will be able to save data to the database. If this check box is not selected, then the user cannot save data to the database from the report. **NOTES:** • If a user has **Read Only** access and **Allow Save Data**, then the user will be able to save data to the database but not save changes to the file. Note that users with this combination of rights can save data from the file at any time, regardless of whether the file is locked to another user. • This permission is ignored for template files and does not apply to process definitions. Save-to-database processes do not run within file group templates.

Option	Description
Allow Unprotect	Select this check box if you want the user or role to be able to remove workbook and/or worksheet protection for this folder or file. Users with this permission can use the **Advanced** > **Protect** options on the ribbon to remove workbook or worksheet protection from Axiom files. **IMPORTANT:** If you enable this permission at the folder level, then the user will be able to unprotect any file that they save to the folder (assuming that the user has read/write access to the folder). **NOTES:** • This setting is ignored for users with the **Remove Protection** permission on the **Permissions** tab; those users can remove protection for any file. • This setting does not apply to process definitions.
Allow Sheet Assistant	Select this check box if you want the user or role to see the Sheet Assistant. Generally, you should only expose the Sheet Assistant if the user is expected to edit file settings, including Axiom query settings. Enabling this permission also has the following impacts: • The user has access to the Control Sheet. If the Control Sheet is hidden in the document, the user can make it visible by double-clicking any field name in the Sheet Assistant. • If the user has read / write permission and the Sheet Assistant permission, then the user can enable forms for the file and can see the Form Assistant and Form Control Sheet. • The Drilling Control Sheet, if present in the file, is not hidden if the user has the Sheet Assistant permission. • The Data Source Assistant is also available if the Sheet Assistant is available. If this check box is not selected, then the user cannot see the Sheet Assistant or the other related items as described above. **NOTE:** This setting does not apply to process definitions. Also, control sheets are not hidden in template files.
Allow File Processing	Select this check box if you want the user or role to be able to perform file processing on the file. If selected, then the user has access to file processing features, including the File Processing button on the menu and the File Processing task pane. The related control sheets will also be visible to the user. If this check box is not selected, then the user cannot perform file processing actions and cannot see the related menu items, task panes, or control sheets. **NOTE:** This setting does not apply to process definitions.

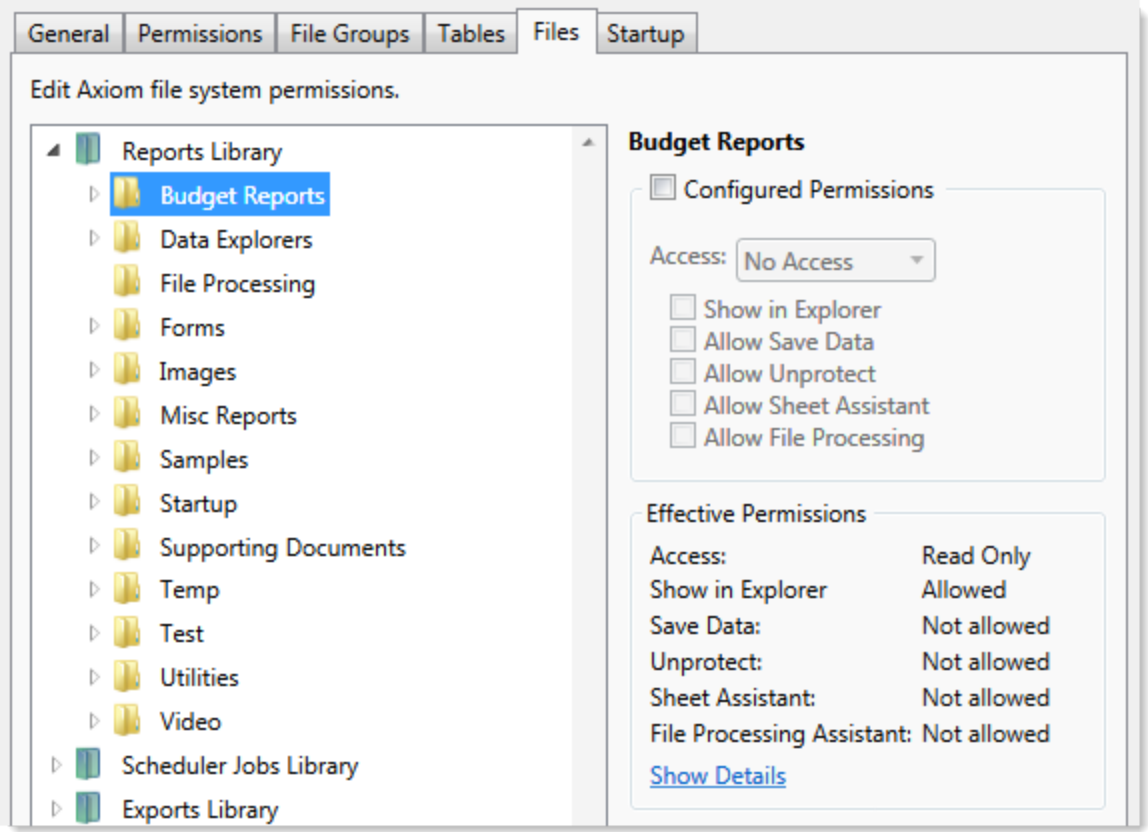
File permission examples

The following examples use the Reports Library, but the concept of folder inheritance applies to all files on the Files tab.

If a user has read/write access to the Reports Library, that user can access and save files anywhere in the library, unless a different level of access is explicitly set for a sub-folder or a file. For example:

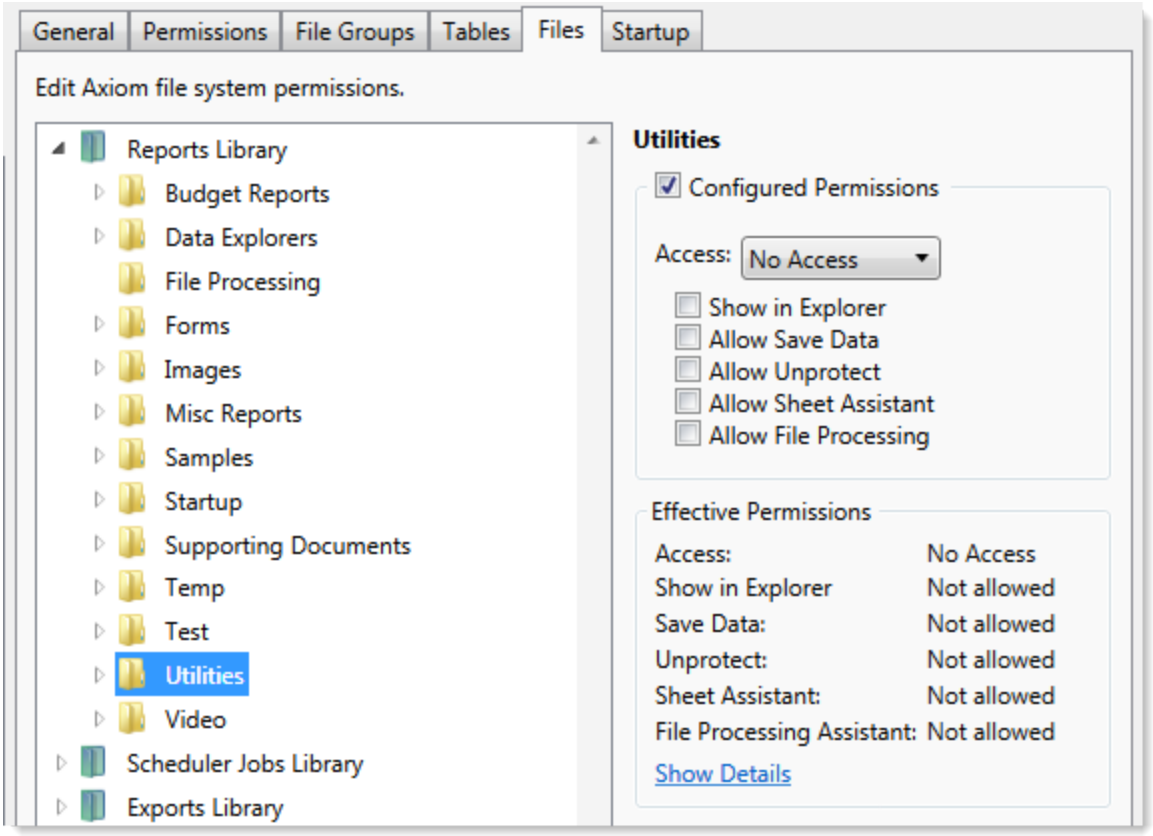


Sub-folders and files inherit the rights defined for the parent folder, unless permissions are explicitly set for the sub-folder or file. When you select a sub-folder or file in the folder tree, you can tell if it is inheriting permissions by whether the **Configured permission** check box is selected. If this check box is not selected, then the folder or file is inheriting permissions, and you can view the inherited permissions in the **Effective Permissions** section.



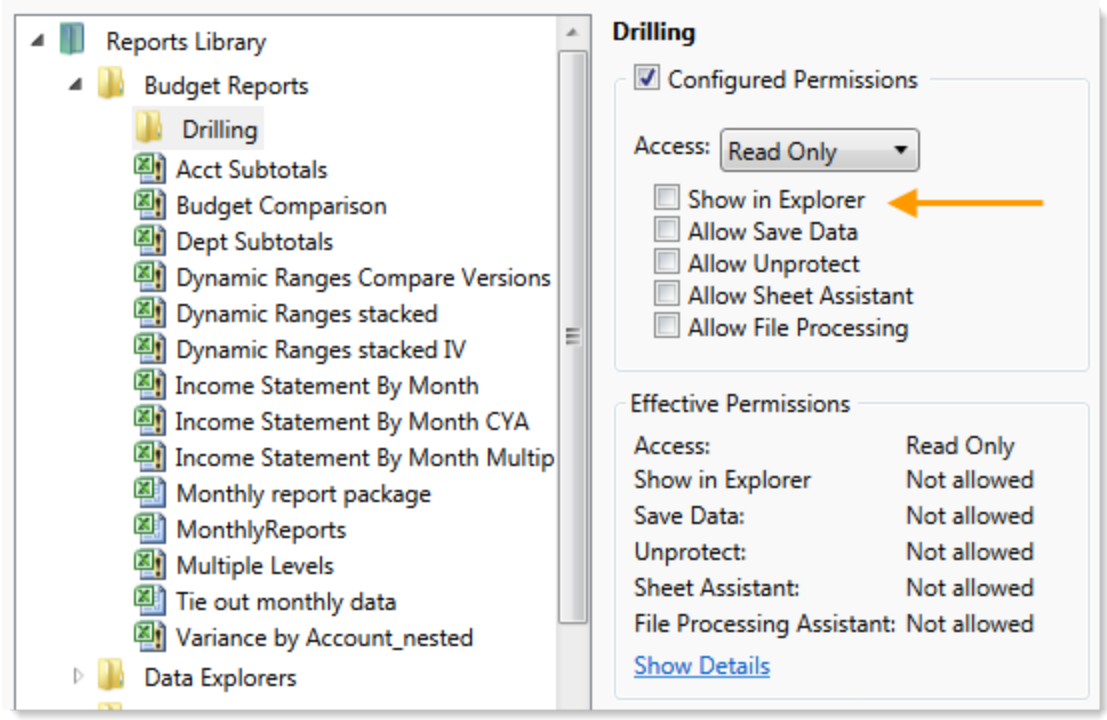
NOTE: The effective permissions also take into account role inheritance and administrator rights (if applicable). Therefore, the sub-folder or file might show a different level of permissions than its parent folder, if it is inheriting from a role.

If rights are set at the library level, but you want to set a different level of rights for a specific folder or file, select **Configured permission** for that folder or file and define the desired level of rights. In the following example, the user has read/write access to the Reports Library, but no access to the **Utilities** sub-folder.



Note that if the user was assigned to a role that had access to the Utilities folder, then the user would be granted that level of access even though the folder is explicitly hidden for the user. Users are granted the highest level of file permissions allowed by their user rights and assigned roles. You cannot override role inheritance for report file access.

It is also possible to grant a user access to a file or folder, but hide that file/folder in the user's Explorer task pane and other "Explorer views." In the following example, the **Drilling** sub-folder contains drill target files. The user needs read-only access to the files in order to perform the drill, but otherwise the user never needs to open the files directly or see the files in their Reports Library. By clearing the **Show in Explorer** option, this folder and its files will not display to the user.



Assigning startup files (Startup tab)

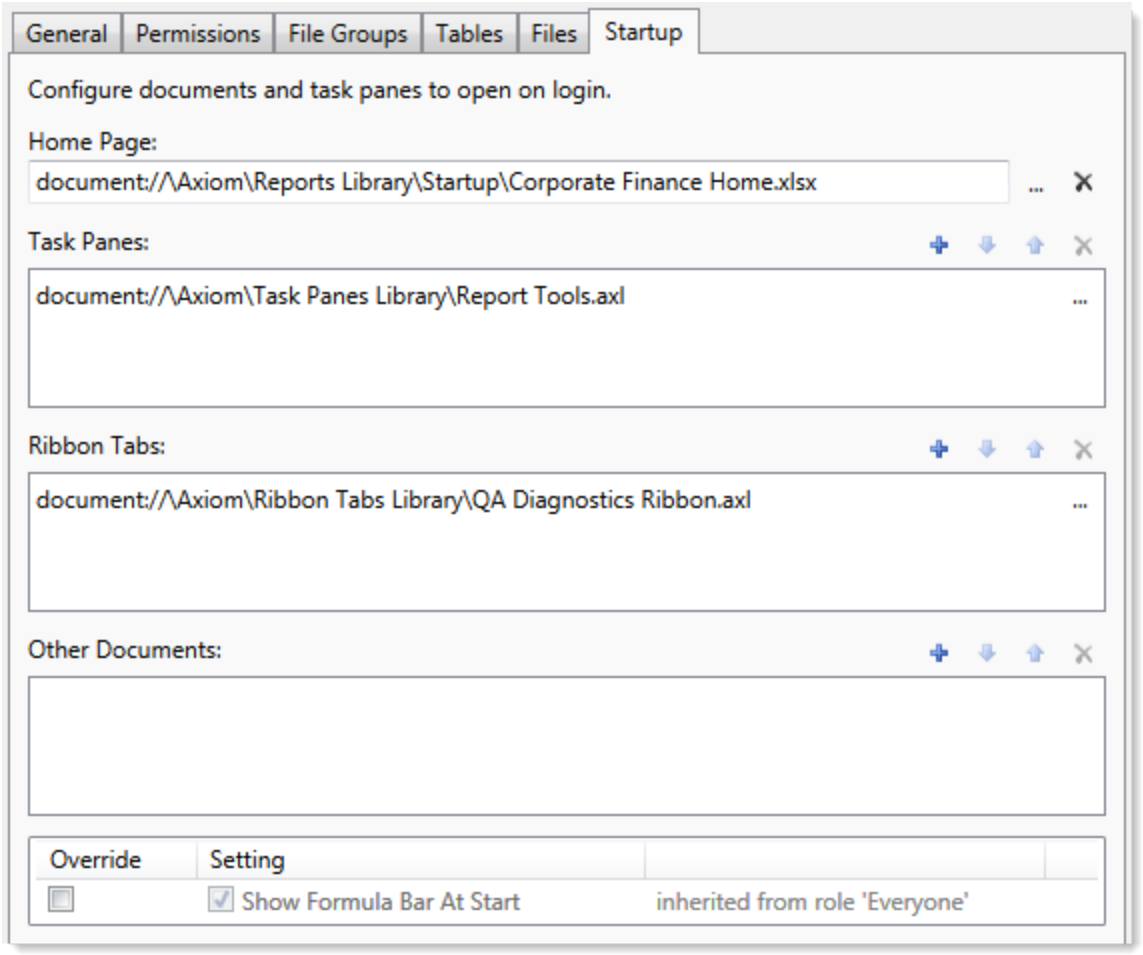
On the **Startup** tab of the **Security Management** dialog, you can specify which files to open automatically when a user logs into the system. You can also configure certain startup options.

Startup files are assigned using the following categories:

- **Home Page**: You can assign an alternate home page for a user or role.
- **Task Panes**: You can assign custom task panes to open on startup.
- **Ribbon Tabs**: You can assign custom ribbon tabs to open on startup.
- **Other Documents**: You can assign additional reports (regular or form-enabled) to open on startup.

NOTE: Startup files are stored by document ID. If you subsequently change the name of a startup file or move it to a different location, the startup configuration will still work. If the file is deleted, the startup item will simply be ignored; it will not cause an error on startup.

Startup files only apply when using the Excel Client or the Windows Client, with one exception: if the assigned home page is an Axiom form, that page will also display as the user's home page when accessing forms in the Web Client.



Example Startup tab

Assigning home pages

You can optionally assign home pages on a user or role basis. If a home page is specified in Security, this file will be used instead of the default files in the Startup folders. You can use any Axiom report (including web reports and Axiom forms), or any normal Excel file stored in the Reports Library.

You can assign each user or role a "global" home page to be used in all clients. You can also override this assignment to show a different home page in the Desktop Client (Excel Client or Windows Client).

The home page is always opened as read-only. The user does not need to be granted permissions to the file in order to open it on startup.

To assign a home page to a user or role:

1. On the **Startup** tab of the **Security Management** dialog, click the **[...]** button to the right of either of the following fields:

Item	Description
Home Page	This "global" home page is used in all clients, unless a Desktop Client Home Page is also specified. If you want this home page to display in the Web Client, the selected file must be web-enabled (either an Axiom form or a web report). If the file is not web-enabled, then the assignment will be ignored for purposes of the Web Client.
Desktop Client Home Page	This home page is used in the Desktop Client only (Windows Client or Excel Client), overriding the Home Page assignment.

The **Shortcut Properties** dialog opens so that you can select a file.

2. To specify the file, click the **[...]** button to the right of the **Shortcut Target** box. In the **Choose Document** dialog, select the desired file from the Reports Library, then click **OK**.
3. Once the file has been selected, specify any of the following optional **Shortcut Parameters**:

Item	Description
Axiom Tab Name	An alternate name to display on the file tab. By default, the tab name is "Home".
Quick Filter	A Quick Filter to apply to the file. The Quick Filter must be a valid filter criteria statement. Once the file is opened, users can clear the filter using the Quick Filter option on the ribbon. **NOTE:** Queries in the target file must be configured to refresh on open, in order for the filter to be applied to the data when the file is opened. This option does not apply to web reports.
Non-closeable	Specifies whether the user can close the file once it has been opened. By default, this is not enabled, which means the file is closeable. If a user closes the home page, they can reopen it using the **Show Home** button on the default Axiom ribbon tab. You might enable this option if you have defined a custom ribbon tab for end users that does not contain the Show Home button. This ensures that users will always have access to the home page by preventing them from closing it.
View As Form	Select this option to open the report as an Axiom form. This option only applies if the report is form-enabled.

4. Click **OK**.

The selected file displays in the **Home Page** box.

You can change the home page assignment at any time, or remove the assignment by clicking the delete ✕ button.

Home page priority order

When a user logs into an Axiom Cost Accounting client, their home page is determined using the following priority order. If the first item on the list is defined, then that file is used, otherwise the next item on the list is used, and so on.

Desktop Client (Excel and Windows)

1. Security-assigned home page at the user level
2. Security-assigned home page for a role the user belongs to (excluding the Everyone role)

   NOTE: If a user belongs to multiple roles, and more than one role has an assigned home page, the home page of the "first" role is used (determined alphabetically by role name).

3. Security-assigned home page for the Everyone role

   Axiom Cost Accounting first cycles through items 1-3 looking for a **Desktop Client Home Page** assignment. If no assignment is found, Axiom Cost Accounting cycles through items 1-3 again, this time looking for a **Home Page** assignment. If no security home page is found, Axiom Cost Accounting continues to the next item.

4. Default home page in the Axiom System directory
   - In the Windows Client, Axiom Cost Accounting checks `\Startup\Home\Windows Client` first, then moves on to `\Startup\Home`.
   - In the Desktop Client, Axiom Cost Accounting checks `\Startup\Home\Excel Client` first, then moves on to `\Startup\Home`.

If no valid home pages are found for the Desktop Client, a blank spreadsheet is used.

Web Client

1. Product-assigned home page

   This item only applies in systems with installed products. If a product area in the Web Client has a designated home page, that home page takes precedence over all other home page assignments. When the user logs into the Web Client, they see the home page for their default product area.

2. Security-assigned home page at the user level
3. Security-assigned home page for a role the user belongs to (excluding the Everyone role)

   NOTE: If a user belongs to multiple roles, and more than one role has an assigned home page, the home page of the "first" role is used (determined alphabetically by role name).

4. Security-assigned home page for the Everyone role

   For the Web Client, only the **Home Page** assignment is considered for items 1-3. The **Desktop Client Home Page** is ignored. The Home Page assignment must be a web-enabled file in order to be used as the Web Client home page. If no valid assignment is present in Security, Axiom Cost Accounting continues to the next item.

5. Default home page in the Axiom System directory

   In the Web Client, Axiom Cost Accounting checks `\Startup\Home\Web Client` for a web-enabled file, and uses that file as the home page if present. The `\Startup\Home` directory is ignored in this case, even if the file in that directory is web-enabled. If no valid home page is present in the Axiom System directory, Axiom Cost Accounting continues to the next item.

6. Default Web Client home page provided by Axiom Software

   This page displays the user's notifications and web favorites. This built-in page is only used as the home page if no other home page assignment is found.

Assigning startup task panes

You can assign one or more custom task panes to display automatically when a user logs into the system. Typically, these settings are defined at the role level rather than at the user level—either on the Everyone role to display for all users, or on your organization's defined roles.

Users do not need to have file permissions to access the task panes that are designated to open on startup. Because of this, in most cases you should use the **Non-Closeable** option to specify that the task pane cannot be closed. This will ensure that the task pane is always available to the user. Otherwise, the user could close the task pane and then have no way to open it again, because they do not have access to the file itself.

Users inherit any task panes defined for roles that they are assigned to, in addition to their own assigned task panes. Task panes are opened in the following order:

- Task panes defined for the Everyone role, in the order specified on the Everyone role
- Task panes defined for roles (multiple roles sorted in alphabetical order), in the order specified for the role
- Task panes defined for the user, in the order specified for the user

If a single task pane is listed in more than one place, it is only opened once, the first time it is listed.

NOTES:

- The startup task pane settings do not control the display of system-controlled task panes such as the Sheet Assistant or File Processing. These task panes display dynamically when they are relevant to the current context, if the user has the appropriate rights.
- By default, the Everyone role is configured to open the following built-in task panes on startup: Explorer and Process. These task panes are not system-controlled; if desired you can change their security settings or remove the task panes entirely. For more information, see the discussion on built-in task panes and ribbon tabs in the *System Administration Guide*.

To assign startup task panes to a user or role:

1. On the **Startup** tab of the **Security Management** dialog, click the plus + button at the top of the **Task Panes** box.

   The **Shortcut Properties** dialog opens.

2. To specify the task pane, click the **...** button to the right of the **Shortcut Target** box. In the **Choose Document** dialog, select the desired task pane from the Task Panes Library and then click **OK**.

3. Once the task pane has been selected, specify any of the following optional **Shortcut Parameters**:

Item	Description
Axiom Tab Name	Define an alternate tab name for the task pane (by default, the tab name is the file name).
Non-closeable	Select this option to prevent the user from closing the task pane. This option should be selected for startup task panes if users do not otherwise have access to the task pane. Most end users are not granted access to the Task Panes Library and therefore they only see task panes that are configured to open on startup. In this case, if the user closes the task pane, they will have no way to reopen it (other than to exit the system and then log in again). Preventing users from closing the task pane ensures that it will always be available.

4. Click **OK**. The selected file displays in the **Task Panes** box.

You can repeat this process for as many custom task panes that you want to assign to the user or role.

Once one or more task panes have been assigned, you can modify the assignments as follows:

- To adjust the order of multiple assigned task panes, select the task pane that you want to move and then use the arrow buttons to move it up or down.
- To delete an assigned task pane, select the task pane in the list and then click the **Delete** ✕ button.
- To edit the shortcut parameters of an assigned task pane, double-click the task pane in the list to reopen the **Shortcut Properties** dialog.

Assigning startup ribbon tabs

You can assign one or more custom ribbon tabs to display automatically when a user logs into the system. Typically, these settings are defined at the role level rather than at the user level—either on the Everyone role to display for all users, or on your organization's defined roles.

Keep in mind that just because a ribbon tab is opened at startup does not necessarily mean it will display to the user. You can configure certain ribbon tab options that further control the display. For example, you can specify that a particular ribbon tab only displays if the user is an administrator, or if the current file is a plan file. These options make it easier to configure a ribbon tab for the Everyone role, yet still dynamically control the display so that only the users who need the ribbon tab can see it.

Users do not need to have file permissions to access the ribbon tabs that are designated to open on startup. Startup is the only time that ribbon tabs can be opened in the ribbon, so in general there is no reason to give end users file permissions to these files except for the small handful of users who need to create and edit the ribbon tabs.

Users inherit any ribbon tabs defined for roles that they are assigned to, in addition to their own assigned ribbon tabs. Ribbon tabs are opened in the following order:

- Ribbon tabs defined for the Everyone role, in the order specified on the Everyone role
- Ribbon tabs defined for roles (multiple roles sorted in alphabetical order), in the order specified for the role
- Ribbon tabs defined for the user, in the order specified for the user

Custom ribbon tabs display before (to the left of) any Excel ribbon tabs. In the case of the Windows Client, custom ribbon tabs display before the Home tab.

If a single ribbon tab is listed multiple times, it is only opened once, the first time it is listed.

NOTE: By default, the Everyone role is configured to display two built-in ribbon tabs: Axiom and Axiom Designer. These ribbon tabs are not system-controlled; if desired you can change the security settings for these tabs, customize the tab contents, or remove the tabs entirely. For more information, see the discussion on built-in task panes and ribbon tabs in the *System Administration Guide*.

To assign startup ribbon tabs to a user or role:

1. On the **Startup** tab of the **Security Management** dialog, click the plus **+** button at the top of the **Ribbon Tabs** box.

   The **Shortcut Properties** dialog opens.

2. To specify the ribbon tab, click the **...** button to the right of the **Shortcut Target** box. In the **Choose Document** dialog, select the desired ribbon tab from the Ribbon Tabs Library and then click **OK**.

3. Once the ribbon tab has been selected, specify any of the following optional **Shortcut Parameters**:

Item	Description
Axiom Tab Name	Optional. Define an alternate tab name for the ribbon tab (by default, the tab name is the file name).
Requires Admin	Select this check box if the ribbon tab should only be visible if the user is an administrator. In general, this option is only used if you are assigning a ribbon tab for the Everyone role, but you want to limit the display to administrators.
Requires Sheet Assistant	Select this check box if the ribbon tab should only be visible if the user has Sheet Assistant permission to the current file. This option can be used to dynamically display a ribbon tab that contains tools appropriate for file designers. Keep in mind that the ribbon tab will dynamically show and hide as the user changes the current file (assuming the user only has Sheet Assistant permission to certain files).
Visible for doc type	Optional. Select a document type if the ribbon tab should only be visible when the current file is a certain type of file. You can specify **Plan File**, **Template**, or **Report**. By default, this option is set to **All**, which means the ribbon tab displays for all file types (assuming it is otherwise eligible to display). If you specify a document type, keep in mind that the ribbon tab will dynamically show and hide as the user switches between different documents. This may be confusing to the user if the ribbon tab is not very obviously designed for a particular document type.

4. Click **OK**. The selected file displays in the **Ribbon Tabs** box.

You can repeat this process for as many custom ribbon tabs that you want to assign to the user or role.

Once one or more ribbon tabs have been assigned, you can modify the assignments as follows:

- To adjust the order of multiple assigned ribbon tabs, select the ribbon tab that you want to move and then use the arrow buttons to move it up or down.
- To delete an assigned ribbon tab, select the ribbon tab in the list and then click the **Delete** ✕ button.
- To edit the shortcut parameters of an assigned ribbon tab, double-click the ribbon tab in the list to reopen the **Shortcut Properties** dialog.

Assigning other startup documents

You can assign other documents to open automatically when a user logs into the Axiom Cost Accounting Desktop Client. These documents are opened in addition to the home file. You can select any Axiom report (including web reports and Axiom forms) or any normal Excel file stored in the Reports Library.

There is no limit on the number of files that can be opened at startup, however, many files or large files may slow performance and cause delays starting Axiom Cost Accounting.

If a document is assigned to open on startup, then it will always open on startup as read-only, regardless of the user's file permissions for that document. The user does not need to have permission to access the file otherwise.

Users inherit any documents defined for roles that they are assigned to, in addition to their own assigned documents. Documents are opened in the following order:

- Documents defined for the Everyone role, in the order specified on the Everyone role
- Documents defined for roles (multiple roles sorted in alphabetical order), in the order specified for the role
- Documents defined for the user, in the order specified for the user

If a single document is listed in more than one place, it is only opened once, the first time it is listed. Note that the home page is always the first document opened.

To assign other startup documents to a user or role:

1. On the **Startup** tab of the **Security Management** dialog, click the plus + button at the top of the **Other Documents** box.

   The **Shortcut Properties** dialog opens.

2. To specify the document, click the **...** button to the right of the **Shortcut Target** box. In the **Choose Document** dialog, select the desired file from the Task Panes Library and then click **OK**.

3. Once the document has been selected, specify any of the following optional **Shortcut Parameters**:

Item	Description
Axiom Tab Name	An alternate name to display on the file tab. By default, the tab name is the file name. If the file is an Axiom form or a web report, then this tab name is only used when launching the Windows Client, and causes the file to open within the application instead of the browser.

Item	Description
Quick Filter	A Quick Filter to apply to the file. The Quick Filter must be a valid filter criteria statement. Once the file is opened, users can clear the filter using the Quick Filter option on the ribbon. **NOTE:** The target file must be refreshed in order for the filter to be applied to the data. One or both of the following settings should be enabled in the file: • **Refresh all Axiom functions on open** (if the file uses functions to return data instead of an Axiom query) • **Refresh data on file open** (for the applicable Axiom queries) This option only applies to Axiom spreadsheet reports and Axiom forms.
Non-closeable	Specifies whether the user can close the file once it has been opened. By default, this is not enabled, which means the file is closeable. You may want to enable this option if users do not otherwise have access to the file. In this case, if the user closes the file, they will have no way to reopen it (other than to exit the system and then log in again). Preventing users from closing the file ensures that it will always be available. You would only do this if the file is something that users need to see throughout their session. If the file is simply informational and users don't need to see it again once they have viewed it, then you probably want to let users close the file.
View As Form	Select this option to open the report as an Axiom form. This option only applies if the report is form-enabled.

4. Click **OK**. The selected file displays in the **Other Documents** box.

You can repeat this process for as many additional documents that you want to assign to the user or role.

Once one or more documents have been assigned, you can modify the assignments as follows:

- To adjust the order of multiple assigned documents, select the document that you want to move and then use the arrow buttons to move it up or down.
- To delete an assigned document, select the document in the list and then click the **Delete** ✕ button.
- To edit the shortcut parameters of an assigned document, double-click the document in the list to reopen the **Shortcut Properties** dialog.

NOTE: When a user launches the Excel Client, any web-enabled startup documents other than the Home file will be opened in the browser instead of within the Excel Client. In the Windows Client, if you define an **Axiom Tab Name** for the web-enabled document, it will open within the application instead within the browser.

Assigning startup options

You can configure startup options that impact how Axiom Cost Accounting displays when a user logs in. These options are listed at the bottom of the **Startup** tab of the **Security Management** dialog, underneath the assigned startup files. You can set these startup options at the user level or at the role level.

Currently there is only one startup option that can be set:

- **Show Formula Bar At Start**

If this option is enabled, then the formula bar automatically shows when a user logs into the Axiom Cost Accounting Excel Client or the Windows Client. If this option is disabled, then the formula bar is hidden.

Users can still toggle the formula bar shown or hidden using the **Formula Bar** check box on the **Axiom** ribbon tab. This startup option simply determines the initial state of the formula bar when the user logs in; it does not prevent the user from changing that state later.

By default, all users are set to show the formula bar at start, via the Everyone role. If you want to change this behavior, you have several options:

- You can override the behavior for specific users by clicking the **Override** check box and then clearing the check box for **Show Formula Bar At Start**. This means that the formula bar will be hidden at start for this user.
- You can clear the **Show Formula Bar At Start** check box for the Everyone role, and then set the option as desired for specific users and roles.

NOTE: It is not possible to leave the option enabled for the Everyone role and then override it by role. If you want some roles to show the formula bar and others to hide it, then you must disable the option on the Everyone role and then enable or disable it as appropriate for your other roles.

This setting is always enabled for admin users and cannot be disabled. However, for admin users only, Axiom Cost Accounting will remember the last state of the formula bar and apply that on startup, disregarding this setting.

Security Subsystems

Security subsystems allow you to define groups of users to be managed as a distinct "subset" of users within the system. Using subsystems, you can:

- Define a group of users to belong to the subsystem and be limited to a certain maximum level of permissions. When you create a subsystem, you are essentially drawing a permissions boundary that users who belong to the subsystem cannot cross.
- Assign one or more subsystem administrators who can manage security for the users that belong to the subsystem. This allows you to give certain users the right to manage other users' permissions, without needing to grant them full administrator rights or even full security administration rights.

Subsystems are *not* an alternative to roles. Roles grant permissions as a group; roles cannot be used to deny permissions or to grant user management rights. Subsystems are intended for situations where you need to create independently-managed user groups that work within the same system but only need access to specific defined areas of that system. Roles can then be used to grant permissions within the limits of the subsystem.

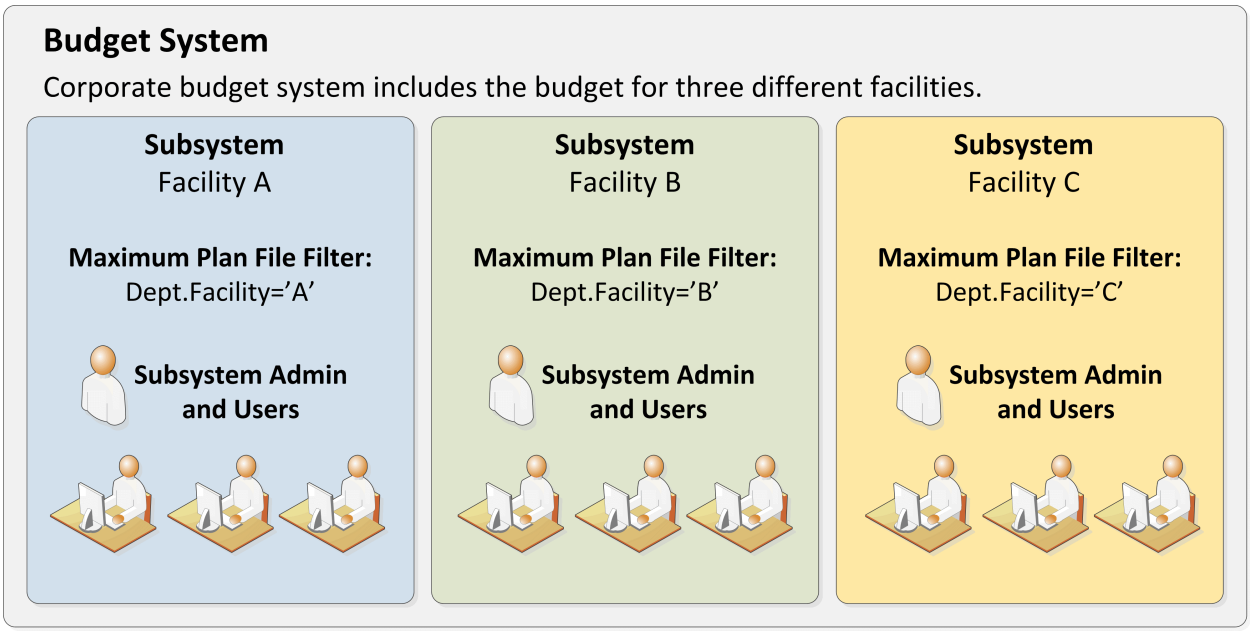
NOTE: Subsystems are optional in systems without installed products. Subsystem features are only available if you have enabled them using the system configuration settings.

About subsystems

Subsystems are used to create distinct groups of users who need to be restricted to a certain maximum level of access. When you create a subsystem, you define:

- The maximum permissions for the subsystem. Using the standard security permission settings, you specify the maximum level of permissions that any user who belongs to this subsystem can have.
- The users who belong to the subsystem. The permissions for these users cannot exceed the subsystem maximum permissions. Roles can also optionally belong to a subsystem, and will be limited to the subsystem maximum permissions.
- The subsystem administrators. Subsystem administrators can access Axiom Cost Accounting security for purposes of managing users and roles that belong to the subsystem.

For example, imagine that your organization has three different facilities, and you budget for all of these facilities within the same Axiom Cost Accounting system. Each facility has a set of users, and you want to limit those users to a specific set of plan files and reports. You also want to allow the finance manager of each facility to control the user rights for their facility, but you do not want to make them full system administrators.



Example system with subsystems

You could use subsystems for this configuration as follows:

- Create a subsystem for each of the facilities. You can assign existing users to the subsystem, and/or the subsystem administrator can create users for the subsystem.
- Within each subsystem, specify the maximum level of user rights for that facility. This would include plan file access filters to restrict the set of plan files in a file group, and folder permissions for the Reports Library (for example, each facility might have their own folder in the Reports Library, and you would grant each subsystem permission to only the appropriate folder).
- Within each subsystem, assign the facility's finance manager as the subsystem administrator. That user could then manage the rights for each user in the subsystem, including granting the users rights to the necessary plan files and reports (either individually or by using roles). The users can have a lower level of rights than what is allowed by the subsystem, but they cannot have a higher level.

Each user can belong to one or more subsystems. If a user belongs to multiple subsystems, the limits for each subsystem will be applied independently (in other words, using OR to concatenate the restrictions where applicable instead of AND).

In systems with installed products, subsystems are used to control access to specific products. These subsystems are product-controlled and delivered with the product. For example, you may have subsystems for Capital Planning and Budget Planning. You can assign users to subsystems based on the specific products they should be able to access.

About subsystem administrators

When a user is assigned as a subsystem administrator, that user can access security for the purposes of managing users and roles that belong to the subsystem.

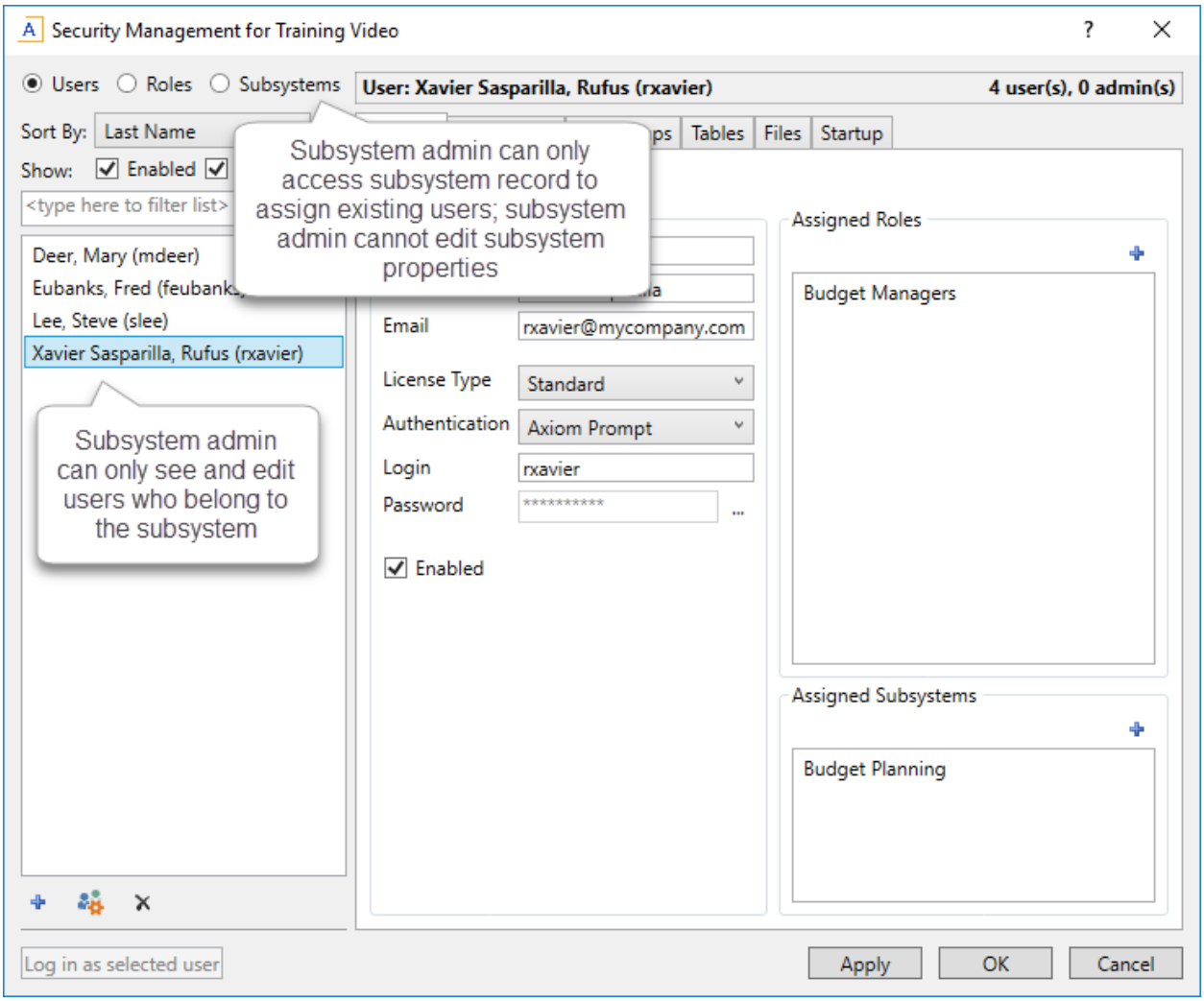
Subsystem administrators are not administrator-level users. The behavior is similar to being granted the **Administer Security** permission, except that the subsystem administrator can only work with users and roles within the subsystem.

Subsystem administrators can do the following:

- Create, edit, and delete users and roles within the subsystem. The subsystem administrator can also assign existing users to the subsystem.
- Assign roles to users in the subsystem. The users can be assigned to subsystem-specific roles or to "global" roles (roles that do not belong to any subsystem).
- Remove locks held by users in the subsystem. This applies to document and table locks, and save data locks, where the subsystem administrator has some level of access to the locked item.
- Use **Log in as selected user** to test the permissions of any user in the subsystem by logging in as that user. (Note that if a system administrator is assigned to the subsystem, the subsystem administrator cannot log in as that user.)

Subsystem administrators cannot edit the subsystem settings, except to assign users and roles to the subsystem. It is assumed that the subsystem is created by a system administrator (or delivered as part of an installed product), and then the subsystem administrator simply manages the users and roles within that predefined framework.

The subsystem administrator can be any user. The subsystem administrator may belong to the subsystem as a user if desired, but that is not a requirement. If the subsystem administrator is also a member of the subsystem, then the subsystem administrator can edit his or her own user permissions, but overall those permissions are restricted by the limits of the subsystem.



Example Security dialog for a subsystem administrator

About subsystems and roles

Subsystems can be used in conjunction with roles. You can assign a user to a subsystem, and then assign the user to one or more roles to grant security permissions. These permissions are then limited by the subsystem boundaries.

There are two ways that you can use roles with subsystems:

- You can assign subsystem users to "global" roles, meaning standard roles that don't belong to a subsystem. These roles can contain users that belong to any subsystem. The role permissions are inherited "as is" by the user and then the user's effective permissions are restricted by their assigned subsystem.
- You can assign a role to a subsystem, and then assign users in the subsystem to the role. In this case, only users who also belong to the subsystem can belong to the role. Also, the role permissions are restricted by the assigned subsystem before the user inherits the permissions.

Subsystem-specific roles are recommended if users may belong to multiple subsystems, due to the small but crucial difference in how role inheritance and subsystem restrictions interact. Also, subsystem administrators can create and edit subsystem-specific roles, which provides the subsystem administrator with greater control over the use of roles with their subsystem users. When using global roles, subsystem administrators can only assign users to the role, they cannot edit the role or see the role's permissions.

Role inheritance and subsystems

If each user only belongs to one subsystem, then there is no difference in the effective permissions when users inherit permissions from global roles or from subsystem-specific roles. However, if a user can belong to multiple subsystems, then the effective permissions can vary depending on which type of role is used.

To illustrate this difference, consider the following plan file filter settings for a file group:

User configured permission:	No Access
Role configured permission:	All Plan Files
Subsystem maximum permission:	DEPT.Facility=5

In this configuration, it doesn't matter whether the role is global or whether it belongs to the subsystem. In both cases, the user will ultimately be restricted to plan files that are assigned to Facility 5. If the role is global, then the subsystem restriction of Facility 5 will be applied to the user after the role inheritance. If the role belongs to a subsystem, then the Facility 5 restriction will be applied to the role before the permissions are inherited. Either way, the end result of the effective permission is the same.

Now consider what can happen if the role is global and the user belongs to two subsystems instead of just one:

User configured permission:	No Access
Role configured permission:	All Plan Files
Subsystem 1 maximum permission:	DEPT.Facility=5
Subsystem 2 maximum permission:	All Plan Files

In this configuration, the user inherits the permission from the global role before the subsystem restrictions are applied to the user. So the user's starting permission is All Plan Files. Because the user's multiple subsystem restrictions are combined using OR, the ultimate subsystem restriction is Dept.Facility=5 OR All Plan Files (which effectively means no restriction—the combined subsystem maximum permission allows access to all plan files). Together with the inherited role permission, this means the user has access to all plan files.

The organization may have intended the user to have access to all plan files. The user belongs to Subsystem 2 and that subsystem allows access to all plan files, so it is a valid result if the user is assigned to a role that grants access to all plan files. However, a potential issue may arise if the role assignment was made by the Subsystem 1 administrator. This subsystem administrator may not know that the user also belongs to Subsystem 2 and/or may not know that Subsystem 2 has a maximum permission of All Plan Files. The Subsystem 1 administrator can only consider the impact of his or her subsystem's restrictions, which would limit the user to plan files from Facility 5. The granting of all plan files via the Subsystem 2 maximum permission may be unintentional.

So if subsystem administrators are managing role assignments and users can belong to multiple subsystems, the only way to ensure that permissions are limited by each respective subsystem is to use subsystem-specific roles instead of global roles. For example, consider the following configuration where the user belongs to multiple subsystems and is assigned to subsystem-specific roles:

User configured permission:	No Access
Role configured permission (Subsystem 1):	All Plan Files
Role configured permission (Subsystem 2):	No Access
Subsystem 1 maximum permission:	DEPT.Facility=5
Subsystem 2 maximum permission:	All Plan Files

Now the role filters are limited by the subsystem restrictions *before* the user inherits permissions from the roles. This gets resolved as follows:

- Subsystem 1 role permission of All Plan Files is restricted by the Subsystem 1 maximum permission of Dept.Facility=5. The user can access only those plan files that belong to Facility 5.
- Subsystem 2 role permission of No Access needs no further resolution—the user is not granted access to any plan files via this subsystem.
- So even though the user's combined subsystem restriction is the same as in the previous example, this is no longer an issue because the role permissions are restricted by their respective subsystems before being inherited by the user. In this case this means the user is only granted the plan file access from the Subsystem 1 role, meaning the user only has access to plan files for Facility 5.

Now imagine the same permissions except that the role configured permission for Subsystem 2 is Dept.VP='Smith' instead of No Access. Now the user's effective permission is as follows:

```
(DEPT.VP='Smith') OR (DEPT.Facility=5)
```

This means the user can access any plan files from Facility 5, and any plan files where the assigned VP is Smith.

Managing subsystems

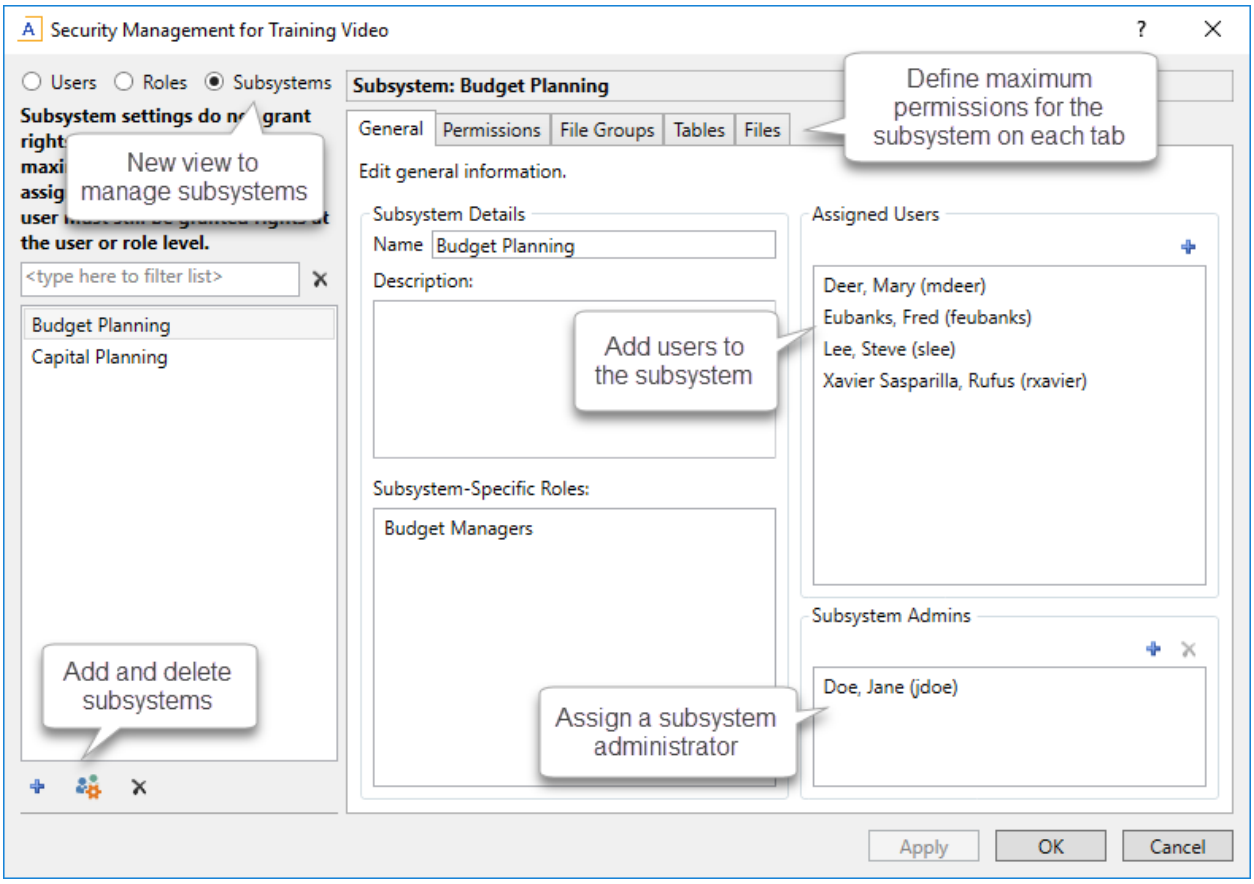
Using the **Security Management** dialog, you can create new subsystems, edit existing subsystems, and delete subsystems. To access this dialog:

- On the **Axiom** tab, in the **Administration** group, click **Manage > Security > Security Manager**.

  NOTE: In systems with installed products, this feature may be located on the **Admin** tab. In the **System Management** group, click **Security > Security Manager**.

To work with subsystems, select **Subsystems** in the top left-hand corner of the dialog.

NOTE: Only administrators and users with the **Administer Security** permission can create, edit, and delete subsystems. Subsystem administrators are limited to viewing the **General** tab of the subsystem only, for purposes of assigning existing users to the subsystem.



Security dialog with subsystems enabled

To save changes, click **Apply** (or **OK** if you are finished editing security settings).

Creating subsystems

You can create a new blank subsystem, or you can clone the settings of an existing subsystem. If you clone a subsystem, all of that subsystem's settings are copied to the new subsystem, *except* for assigned users.

To create a subsystem, click one of the following buttons located underneath the subsystem list:

- To create a new blank subsystem, click **Create subsystem** .
- To clone an existing subsystem, select that subsystem in the list and then click **Clone subsystem** .

The new subsystem is added to the list. You can define the settings for the new subsystem as desired, and you can assign users and roles to the subsystem. You can also assign a user as a subsystem administrator, to manage the users within the subsystem.

For more information on completing subsystem settings, see:

- Defining subsystem properties (General tab)
- Defining maximum permissions for subsystems

Editing subsystems

To edit a subsystem, select a subsystem from the **Subsystems** list, then make any changes to that subsystem. Changes to subsystem settings take effect when the changes are saved.

Deleting subsystems

To delete a subsystem, select a subsystem from the **Subsystems** list, then click **Delete subsystem** . You are prompted to confirm that you want to delete the subsystem.

A subsystem cannot be deleted if users are assigned to it.

Defining subsystem properties (General tab)

The following settings are available for subsystems on the **General** tab.

Subsystem Details

Each subsystem has the following general properties:

Item	Description
Name	The name of the subsystem.
Description	A description of the subsystem.

Subsystem-Specific Roles

Multiple roles can be assigned to a subsystem. If the subsystem already has assigned roles, those roles are displayed here.

It is not possible to assign roles from the subsystem record. Roles can be assigned to subsystems from the role record, using the **Subsystem** box. See Managing subsystem roles.

Assigned Users

Multiple users can be assigned to a subsystem. If the subsystem already has assigned users, those users are displayed here.

Subsystem assignments can be made when editing either the user or the subsystem. See Managing subsystem users.

Subsystem Admins

One or more users can be assigned as a subsystem administrator. Only administrators and users with the **Administer Security** permission can assign or remove a subsystem administrator. Subsystem administrators do not see this section when they view the subsystem record.

- To assign a user as a subsystem administrator, click **Add** +. In the **Assign Users** dialog, you can select one or more users to add as a subsystem administrator.

  Assigning a user as a subsystem administrator does not automatically add the user to the subsystem. Subsystem administrators are not required to belong to the subsystem. However, if you want the user to also belong to the subsystem, then you must separately assign the user to the subsystem.

- To remove a user as a subsystem administrator, select the user in the list and then click **Remove** ✕. You can select and remove multiple users at once.

Subsystem administrators can access the **Security Management** dialog for the purposes of managing users for the subsystem. Subsystem administrators do not otherwise have administrator-level permissions. For more information on subsystem administration rights, see About subsystem administrators.

Defining maximum permissions for subsystems

When defining security settings for a subsystem, you are defining the maximum permission that any user who belongs to the subsystem can have. Users are not granted these permissions by the subsystem; they are restricted to having this level of permission or less. Generally this means that you must define the maximum desired settings on each tab of the dialog, or else no users in the subsystem can have access to the features controlled by that tab.

You can imagine the subsystem permissions as defining an outer boundary of user rights. Users that belong to the subsystem can be assigned to roles and can be granted individual permissions as normal. Any user permissions that fall within the subsystem boundary will be given to the user. Any user permissions that fall outside of the subsystem boundary will be ignored.

At minimum, you must define settings on the following tabs:

- **File Groups** tab, to specify which file groups the subsystem can access and the maximum allowed access.
- **Tables** tab, to specify which tables the subsystem can access and the maximum allowed access.
- **Files** tab, to specify which folders and files the subsystem can access and the maximum allowed access. In most cases this will include defining access permissions to reports. Optionally, you can grant access to scheduler jobs, task panes, and imports.

If users in the subsystem will not need any special permissions, then you can ignore the **Permissions** tab. Otherwise, you must define the maximum allowed access on that tab.

NOTES:

- If a user belongs to more than one subsystem, then the allowed permissions in one subsystem may exceed the permissions allowed in another subsystem. In this case the permissions "boundary" is the combination of the subsystems, where the user is granted the more permissive boundary (not restricted to the less permissive boundary). In this circumstance, you may find it useful to use subsystem-specific roles to grant permissions to users instead of "global" roles.
- If a system administrator is assigned to a subsystem, the administrator permission takes precedence over the subsystem limitation. Subsystem limitations do not apply to system administrators.

Permissions tab

Select the check boxes for the permissions that you want to be available to users in the subsystem.

For example, if you know that some users in the subsystem need to have access to Scheduler, then you must select the **Scheduled Jobs User** permission for the subsystem. The users' individual permissions and role inheritance will determine which users in the subsystem actually have the **Scheduled Jobs User** permission.

If no users in the subsystem need to have any of these permissions, then you can leave the entire tab unchecked.

NOTE: In most cases, you should *not* select the **Administer Security** permission for a subsystem. If a subsystem user is granted this permission, they will be able to manage all users and roles in the system, not just the subsystem users and roles. Subsystem administrators do not need to be granted this separate permission in order to manage the users in the subsystem.

File Groups tab

For subsystems, you can define a single permission set for each file group. This maximum permission set will be applied against all permission sets defined for the user and inherited from the user's roles. If no permission set is defined for a file group, then the subsystem does not allow access to that file group.

If you want the users in the subsystem to be able to access plan files in a particular file group, then you must create a permission set and configure it as follows:

- Set the file access level to the highest level that you need to make available to users in the subsystem. Typically this means setting the access to at least **Read-Only**. You must also specify whether the subsystem has access to **Allow Save Data**, **Allow Calc Method Insert**, and **Allow Calc Method Change**. Remember that if you are using process management to manage access to plan files, then you do not need to select Allow Save Data because the plan file process will automatically elevate user permissions as necessary.

  NOTE: The setting **Interacts with Process Management** is not available to subsystem permissions. There is no way to disable process interaction at the subsystem level.

- Apply the permission settings to the maximum group of plan files that you need to make available to users in the subsystem.

  You must either select **All plan files** or specify a plan file filter. For example, if you specify a filter such as `DEPT.Facility=5`, then users in this subsystem can only access plan files for facility 5. Any user or role permission that falls outside of that filter is ignored.

  If the subsystem has a plan file filter, and a user in the subsystem is assigned a plan file filter (either individually or via a role), then the subsystem filter and the user filter are concatenated using AND. This restricts the user to only accessing files that match both the user filter and the subsystem filter. For example, if the subsystem filter is `DEPT.Facility=5` and the user filter is `DEPT.VP='Jones'`, then the user can only access plan files that are assigned to VP Jones AND which belong to facility 5.

NOTE: The **Create New Records** maximum permission is enabled by default for on-demand file groups. This is set automatically on the subsystem whenever a new on-demand file group is created. Also, when you create a new subsystem, this permission is automatically set for any existing on-demand file groups. This behavior is to enable the default permissions for on-demand file groups, which are automatically set to allow creating new records via the Everyone role.

Tables tab

If you want the users in the subsystem to be able to access data in particular tables, then you must define access for the table (at either the table or table type level).

When granting access, you must define the maximum level of access needed for the subsystem. For example, if some users in the subsystem need full access to the GL table type, but other users need filtered access, then you must set the GL table type to full access. The users' individual rights and role inheritance will determine their actual level of rights within this boundary.

If a subsystem has a table filter, and a user in the subsystem is assigned a table filter (either individually or via a role), then the subsystem filter and the user filter are concatenated using AND. This restricts the user to only accessing data that matches both the user filter and the subsystem filter. For example, if the subsystem filter is `DEPT.Facility=5` and the user filter is `DEPT.VP='Jones'`, then the user can only access data for VP Jones within facility 5.

NOTE: The default maximum permission for document reference tables is full access. This is set automatically in the subsystem whenever a new document reference table is created. Also, when you create a new subsystem, the maximum permission is automatically set for any existing document reference tables. This behavior is to enable the default permissions for document reference tables, which are automatically set to full access via the Everyone role.

Files tab

If you want users in the subsystem to be able to access a particular folder or file, then you must define access to those folders / files.

NOTE: Remember that users do not need to be granted access to files that are configured as startup files. If the user or role is assigned a file to open on startup, that file will be opened as a startup file, regardless of whether the subsystem allows access to that file.

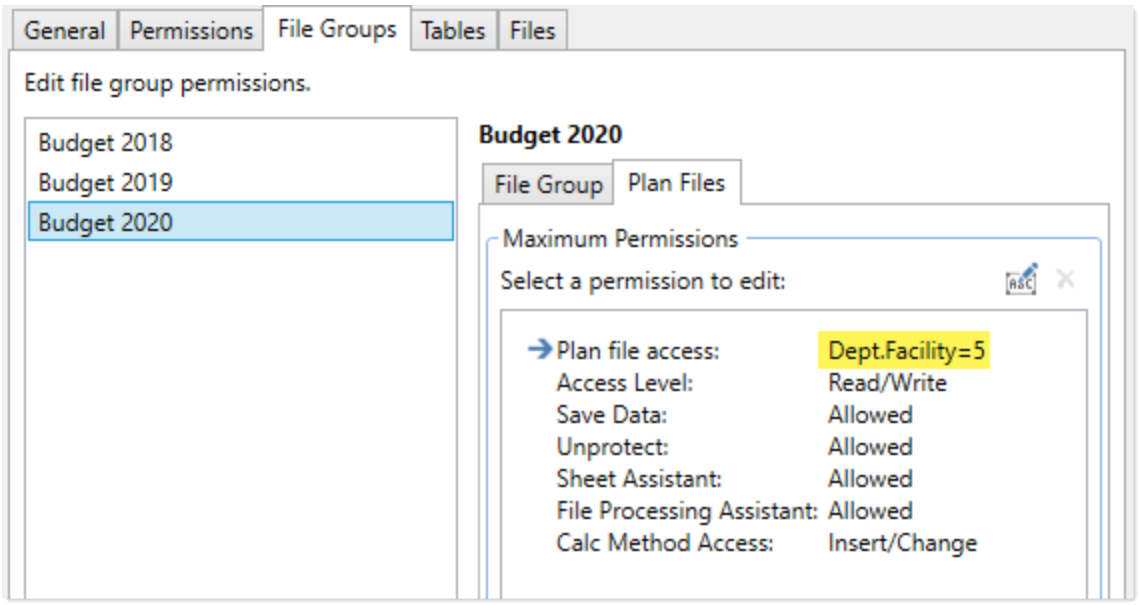
Remember that subfolders and files will inherit any permission set at a "parent" folder level (unless permission is explicitly set for the lower level). For this reason, the effective permissions section displays for the subsystem, so that you can select a folder or file and see any inherited permissions for that item.

Where applicable, you should attempt to specify permissions at a level that accommodates ongoing folder and file additions. For example, if each subsystem will have its own reports folder and that is the maximum access required, then you can define access for just that folder. If the subsystem needs access throughout the Reports Library, then you most likely want to define the maximum access at the Reports Library level (perhaps also explicitly blocking access to certain subfolders and files). The users' individual rights and role inheritance will determine their actual level of rights within this boundary.

Example

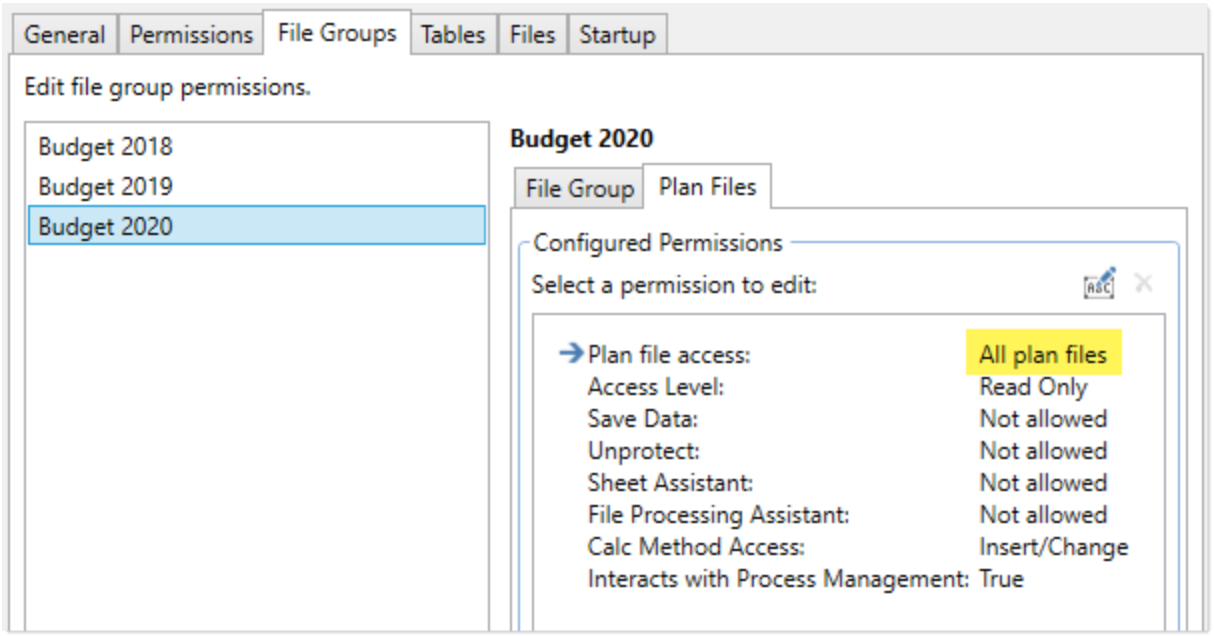
This example illustrates how subsystem maximum permissions limit users who are assigned to the subsystem.

The following screenshot shows file group maximum permissions for a subsystem named Facility 5. For file group Budget 2020, the subsystem is limited by the following filter: `DEPT.Facility=5`. Users who belong to this subsystem can only access plan files that are assigned to Facility 5.



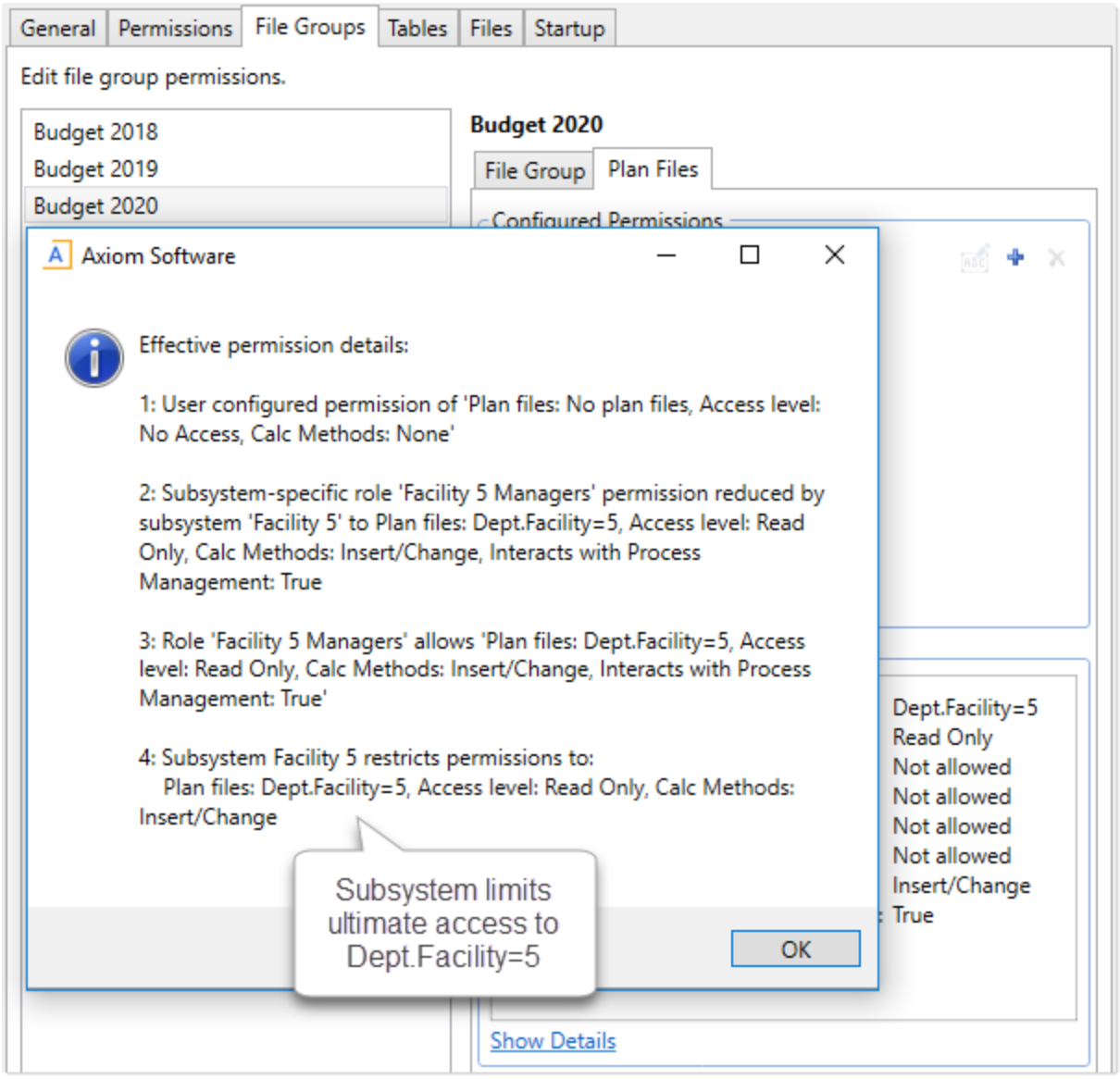
Subsystem maximum permissions

Subsystem settings do not grant any permissions; they only define a maximum boundary of permissions. Therefore users assigned to the subsystem must also be assigned to roles or be granted their own individual security permissions. Imagine that some users belonging to the Facility 5 subsystem are also assigned to the Facility 5 Managers role. This role grants access to all plan files within file group Budget 2020.



Role permissions

Although the role grants access to all plan files, the subsystem is limited to DEPT.Facility=5. The users in the subsystem cannot have greater permission than what is allowed by the subsystem (assuming the users only belong to one subsystem). Therefore the effective permission for this user is DEPT.Facility=5.



User effective permissions once roles and subsystems are applied

Managing subsystem roles

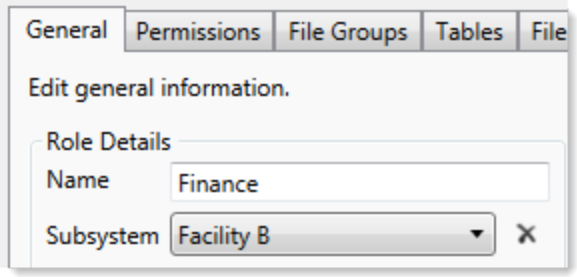
You can create new roles for a subsystem, and you can assign existing roles to a subsystem. When a role belongs to a subsystem, the role permissions are restricted by the subsystem boundaries, and all users in the role must also belong to the subsystem.

When assigning subsystem users to roles, you can use the subsystem roles or you can use "global" roles (that do not belong to the subsystem). For more information on the difference in behavior, see About subsystems and roles.

The subsystem settings should be completed before assigning any roles (unless the roles do not contain any users yet), to ensure that all desired subsystem restrictions are in place before any subsystem users log in.

Assigning a role to a subsystem

When you create or edit a role, you can assign it to a particular subsystem. Use the **Subsystem** drop-down list on the **General** tab to assign the role to a subsystem.



- This assignment can only be made on the role record. The **Subsystem-Specific Roles** section on the subsystem record is for information only; assignment changes cannot be made there.
- Only administrators and users with the **Administer Security** permission can assign an existing role to a subsystem. If the role already has assigned users who do not belong to the subsystem when the role is assigned to the subsystem, then a validation error displays in the Security Management dialog. All users in the role must belong to the subsystem in order to assign the role to the subsystem.
- Subsystem administrators can create new roles for the subsystem. When a subsystem administrator creates a new role, it is automatically assigned to the subsystem when it is created. If the subsystem administrator manages multiple subsystems, then the role's subsystem assignment can be changed to any of those subsystems.
- Only administrators and users with the **Administer Security** permission can remove a role from a subsystem. Click the **Remove** button to clear the assigned subsystem.

Managing subsystem users

You can create new users for a subsystem, and you can assign existing users to a subsystem. When a user belongs to a subsystem, the user's permissions are limited according to the subsystem boundaries. Users can belong to multiple subsystems.

The subsystem settings should be completed before assigning any users, to ensure that all desired subsystem restrictions are in place before any subsystem users log in.

If the subsystem feature is enabled, then all non-administrator users must be assigned to a subsystem. If a user does not belong to a subsystem, then that user will be blocked from logging in (unless the user is an administrator, a subsystem administrator, or a user with the **Manage Security** permission). This requirement is intended to help ensure that all non-administrator users have a subsystem limit applied to their security permissions.

Assigning existing users to a subsystem

Administrators and users with the **Administer Security** permission can assign existing users to a subsystem from either the user record or the subsystem record. Any changes made in one area are automatically applied to the other area.

- From the subsystem record, on the **General** tab, click the **Add** + button in the **Assigned Users** section to add a user to the subsystem.
- From the user record, on the **General** tab, click the **Add** + button in the **Assigned Subsystems** section to assign the user to a subsystem.

Subsystem administrators can assign existing users to a subsystem, but only from the subsystem record. This is because subsystem administrators cannot see user records for users that do not already belong to the subsystem.

Creating new users for a subsystem

Subsystem administrators can create new users for use in a subsystem. When the new user is created, the user is automatically assigned to the subsystem.

If the subsystem administrator manages multiple subsystems then one of those subsystems will be assigned at random when the user is created. Once the user has been saved, the subsystem administrator can edit the user to change the subsystem assignment as needed.

When creating a new user, administrators and users with the **Administer Security** permission must save the new user before they are able to assign the user to a subsystem. The **Assigned Subsystems** box is not editable until the user has been saved.

Removing a user from a subsystem

Administrators, users with the **Administer Security** permission, and subsystem administrators can remove a user from a subsystem. This can be done from either the user record or the subsystem record.

- From the subsystem record, on the **General** tab, select one or more users in the **Assigned Users** section and then click the **Remove** ✕ button.
- From the user record, on the **General** tab, select one or more subsystems in the **Assigned Subsystems** section and then click the **Remove** ✕ button.

If a non-admin user is removed from all subsystems, then that user will no longer be able to log into Axiom Cost Accounting. The user must be assigned to a subsystem or granted administrator-level permissions before they are able to log in again.

Bulk edit of security

You can manage users, roles, and subsystems in bulk by using the **Open Security in Spreadsheet** feature. You can edit, add, and delete multiple users, roles, and subsystems simultaneously within a spreadsheet interface.

Only users with access to security can use this feature: administrators, users with the **Administer Security** permission, and subsystem administrators. The spreadsheet is limited as appropriate depending on the user's rights.

The following items *cannot* be edited in the spreadsheet interface; you must use the Security Management dialog for these items:

- File and folder access to any Axiom library (settings defined in the **Files** tab)
- Startup documents (settings defined in the **Startup** tab)

Opening security in a spreadsheet

To manage security in a spreadsheet:

1. On the **Axiom** tab, in the **Administration** group, click **Security > Open in Spreadsheet**.

   NOTE: In systems with installed products, this feature may be located on the **Admin** tab. In the **System Management** group, click **Security > Open in Spreadsheet**.

   The **Open Security in Spreadsheet** dialog opens.

2. At the top of the dialog, specify how you want users and roles presented in the spreadsheet:
   - **Horizontally** (default): Users, roles, and subsystems are displayed horizontally across columns. The security settings are displayed in rows.
   - **Vertically**: Users, roles, and subsystems are displayed vertically down rows. The security settings are displayed in columns.
3. Optional. If you want to limit the security settings that display in the spreadsheet, modify the check boxes in the **Select items to include** section.

   For example, you might only want to work with a particular file group or table type. General user and role properties (such as name, email, etc.) are always included in the spreadsheet.

   Clear the check boxes for any items that you do not want to display in the spreadsheet. You can select or clear items by major category (File Groups, Tables, etc.), or you can expand the major categories to select or clear the individual items (such as individual file groups).

4. Optional. If you want to filter the users that display in the spreadsheet, select the **Filter users** check box. By default, the spreadsheet displays all users, roles, and subsystems for the current system.

   If **Filter users** is checked, you can specify the following options to filter users:

Item	Description
Include users who are	Select the following options to include those users in the spreadsheet: • **Enabled** users • **Disabled** users By default, both options are selected, which means that both enabled and disabled users will be included in the spreadsheet. If both options are cleared, then only roles (and subsystems, if applicable) will be included in the spreadsheet.
Include users in these roles	If you want to only view users that belong to specific roles, select the check boxes for those roles. You can also choose to view users who do not belong to any roles. You can use the **Select All** and **Clear All** links to select or clear all roles. This selection also limits the role records that will be included in the spreadsheet.
Include users from these subsystems	If you want to only view users that belong to specific subsystems, select the check boxes for those subsystems. You can also choose to view users who do not belong to any subsystems. You can use the **Select All** and **Clear All** links to select or clear all roles. This also limits the subsystem records that will be included in the spreadsheet. This option only displays if subsystems are enabled for your system.

   Selections from multiple categories will be combined. For example, if you select role Finance and subsystem 5, then the spreadsheet will contain all users that are in *either* the Finance role or subsystem 5 (*not* users who only belong to subsystem 5 and the Finance role).

5. Click **OK**.

The spreadsheet opens with the selected security options.

Example security spreadsheet (horizontal orientation)

Editing existing records

To edit the settings for a user, role, or subsystem, make changes directly in the spreadsheet. See the following section *Security settings in the spreadsheet interface* for more information on editing settings within the spreadsheet interface.

NOTE: You cannot edit user login names or role and subsystem names within the spreadsheet interface. If the name is changed, it will be saved as a new record, and the existing record will be unchanged.

For subsystem administrators, only users and roles that belong to their assigned subsystems are brought into the spreadsheet. Subsystem settings are not brought into the spreadsheet.

Adding new records

You can add new users, roles, and subsystems within the spreadsheet interface.

To add a new user, type the new user's login name in an empty cell in row 1 or column A (depending on the spreadsheet orientation), and then complete the desired security settings for that user. Note the following:

- Last name, first name, and email address are required for new users. If these items are blank, a save error will result. Other user properties such as license type and authentication type will use the same default values as when adding a new user in the Security Management dialog.
- You can type a password or leave the password blank. If left blank, the user will be assigned a randomly generated password.

To add a new role, type the role name in an empty cell in row 1 or column A (depending on the spreadsheet orientation), prefixed by "role:". For example, type `role:MyRole`. If the name is not prefixed by "role:", then it will be interpreted as a user login name. Note the following:

- No other settings are required to save a role.
- To assign users to the new role within the spreadsheet interface, you must add the role name to each individual user. There is no option to add users directly to the role record, like you can within the Security Management dialog.

NOTE: Adding subsystems works the same way as adding roles, except the subsystem name must be prefixed by "subsystem:". For example, `subsystem:MySubsystem`.

When adding new users, roles, or subsystems to the spreadsheet, all settings must be typed (or copied and pasted from other records). Drop-down lists are only available when editing existing records. For more information on the valid inputs for the settings, see the following section *Security settings in the spreadsheet interface*.

Users who are subsystem administrators can only create new users and roles. The new users and roles must be assigned to their subsystem.

Deleting records

You can delete users, roles, and subsystems within the spreadsheet interface. To delete a user or role, set **Delete** to **Yes**.

NOTE: When editing security in a spreadsheet, you can delete a role or a subsystem regardless of whether any users are assigned to it. The users will be updated to remove the assignment.

Users who are subsystem administrators can only delete users and roles that belong to their subsystem.

Saving changes

To save changes made in the spreadsheet:

- On the **Axiom** tab, in the **File Options** group, click **Save**.

A confirmation prompt lists the number of users, roles, and subsystems that you are about to update, create, or delete.

Settings are validated before the save occurs. If errors are found, they are displayed in the **Save Errors** pane. Any errors must be resolved before the save can occur.

After a successful save, you will be prompted to refresh the spreadsheet to bring in the most recent data.

Security settings in the spreadsheet interface

The following is a reference for completing or editing security settings via the spreadsheet interface.

NOTES:

- If an item is not explicitly discussed here, its input is the same as in the Security Management dialog. This section only discusses items that are completed differently than in the Security Management dialog.
- Most check boxes in the Security Management dialog correspond to TRUE (checked) and FALSE (unchecked) in the spreadsheet interface. Any deviations are noted in the following table.

For more information on the purpose of each security setting, see Security settings for users, roles, and subsystems are organized by tabs in the Security Management dialog. The following tabs are available:.

Item	Description
Login, role, or subsystem	The user's login name, the role's name, or the subsystem's name. Role names must be prefixed by `role:`. Subsystem names must be prefixed by `subsystem:`. For example, to create a role named Finance, type `role:Finance`. If users have been imported from Active Directory, those user names are prefixed with the Active Directory domain. For example: Corporate\JDoe. **NOTE:** You cannot rename existing records using the spreadsheet interface. If a name is changed, it is interpreted as a new record.
Delete	Select **Yes** if you want to delete the record. Otherwise, leave the default of **No**.
General	This section works the same way as the Security Management dialog, with the following exceptions: • **Role assignments**: For users, you can view and edit the list of roles that the user is assigned to. Each role name is separated by a semicolon. (The same thing applies to subsystem assignments if subsystems are enabled.) • **User assignments**: For roles, you cannot view or edit the list of assigned users in this interface. If you want to view all users assigned to a role or edit this list from the role perspective, then you must use the Security Management dialog. **NOTE:** The password display is always blank. You can change a user's password by entering a new password. When you save and then refresh the spreadsheet, the password field will return to blank.
Permissions	For users, specify one of the following: • **Inherit**: The user will inherit the permission from any role assignments. • **True**: The user is explicitly granted this permission; role inheritance is ignored. • **False**: The user is explicitly denied this permission; role inheritance is ignored. For roles and subsystems, specify either **True** or **False**.

Item	Description
File Groups	This section works the same way as the Security Management dialog, with the following exceptions: • ***FGName* [calc method permission]**: This item combines the Allow Calc Method Insert and Allow Calc Method Change options from the Security Management dialog. Valid entries are **Insert**, **Change**, or **Insert/Change**. • ***FGName* [create new records]**: This item is listed for all file groups, but only applies to on-demand file groups. A save error will result if this item is set to TRUE for a standard file group. • If a user has multiple permission sets, only the first set can be edited within the spreadsheet interface.
Tables and Table Types	These sections work the same way as the Security Management dialog. All table types are listed first, followed by all individual tables.

Security tools

Axiom Cost Accounting provides security tools to control and monitor user access to Axiom Cost Accounting.

Viewing the list of logged in users

Administrators can view a list of users who are currently logged into the system. For example, you may want to check to make sure that nobody is logged into the system before performing actions such as system upgrades.

For each user that is currently logged in, the list displays information such as:

- Full name and user name (login name)
- Email address
- Computer where the user is logged in
- Date and time the user logged in
- Date and time of the user's last activity during the session

The list of logged in users is for information purposes only—you can see whether any users are logged in, but you cannot manually log them off and end their sessions.

NOTE: Axiom Cost Accounting maintains a log of all login attempts, including failed logins. Currently there is no user interface to view this information, but it can be accessed directly in the system database in the SystemAccess table. For assistance, please contact Axiom Cost Accounting Support.

To view the list of logged in users:

- On the **Axiom** tab, in the **Administration** group, click **Manage > Security > Logged in Users**.

  NOTE: In systems with installed products, this feature may be located on the **Admin** tab. In the **System Management** group, click **Security > Logged in Users**.

The **Currently Logged In Users** dialog opens, listing the users who are logged into this system. You can sort and filter the list using standard Axiom grid functionality.

Orphaned session records

When a user logs off normally, their session record is removed from the **Logged in Users** list. If a user's session ends unexpectedly—for example, due to a software crash or shutting down the computer without logging off—then the session record will be removed from the list after a few minutes, once the session no longer "reports back" to the Axiom Application Server.

NOTE: For Web Client sessions, closing the browser window does not automatically log out the user. In this case, the orphaned Web Client sessions will be automatically removed from the list in a few minutes as described above.

Axiom Cost Accounting does not automatically remove any session records based solely on time logged in. As long as the session remains connected and continues to report back to the application server, the session will continue to be listed indefinitely.

Removing session records

If desired, you can manually remove any logged in records by selecting the record in the list and clicking **Remove**. This simply removes the record from the list; it has no impact on any user's session. If a user is actually logged on and you remove their session record, the user will remain logged on.

In most cases this action should not be necessary, because sessions that are truly invalid will be automatically removed from the list in a few minutes as described above.

Enabling password rules

By default, Axiom Cost Accounting enforces a basic set of password rules. These rules apply to users assigned to Axiom Prompt authentication.

The built-in password rules are as follows:

- Must be at least 8 characters long
- Must contain at least 1 upper-case letter and at least 1 lower-case letter
- Must contain at least 1 non-alphabetic character (a number or a symbol)

The password rules are only enforced when creating new passwords. If any existing passwords do not meet these rules, those passwords will continue to be valid.

When the password rules are enabled, a **Generate Password** link is available on the **Set Password** dialog so that you can generate a random password that meets these rules. (This feature is not available if the password rules are changed from the built-in rules; see the note below.)

Password rules are enabled or disabled by using the system configuration property **EnablePasswordPolicy**. This setting is **True** by default. If you do not want to apply these rules, you can disable the setting by changing it to **False**, which means that any password is considered valid. You can do this by using the Software Manager, or by using a Save Type 4 report that has been set up to modify the system configuration table. Only administrators can modify system configuration settings.

NOTE: The system configuration settings contain two additional options related to EnablePasswordPolicy. **PasswordRegularExpression** defines the password rules, and **InvalidPasswordMessage** defines the error message displayed if a new password does not meet the rules. Axiom Cost Accounting does not currently provide a methodology for clients to change the password rules from the built-in rules, therefore, these two options should not be changed from their default settings. If you have a need to use different password rules, please contact Axiom Cost Accounting support for assistance.

Testing user security

Administrators and other users who manage security may need to log into Axiom Cost Accounting as other users, in order to test security permissions. For example, you may define a table access filter for a particular security role. In order to test that the filter is providing access to table data as expected, you can log in as a non-admin user who belongs to that role.

Using the Security Management dialog, you can "log in as" another user, for the purposes of testing their security settings.

To log in as a different user:

1. On the **Axiom** tab, in the **Administration** group, click **Manage > Security > Security Manager**.

   NOTE: In systems with installed products, this feature may be located on the **Admin** tab. In the **System Management** group, click **Security > Security Manager**.

2. In the **Security Management** dialog, select the user whom you want to log in as. The following limitations apply:
   - Subsystem administrators can only log in as users who belong to their subsystem.
   - If a user is an administrator, subsystem administrators and users with the Administer Security permission cannot log in as that user.
   - The "log in as" feature cannot be used with users who are Axiom Support users.
3. In the lower left-hand corner, click **Log in as selected user**.

A new instance of Axiom Cost Accounting is launched, and you are automatically logged in as the selected user—you do not need to input a user name and password. The client version for the instance is whichever client version you are currently using (Excel Client or Windows Client).

Creating a permission report

You can create a report that details the effective security permissions for each user, for a particular file group or for all tables. This report may be useful for auditing purposes and for reviewing permissions to make sure they are set as intended.

The report is created as an Excel file. Once it is created, you can print it, or save it locally or within the Axiom file system as needed.

Only administrators and users with the **Administer Security** permission can create a permission report. Subsystem administrators do not have access to this feature.

File group permission report

The file group permission report is created on a per file group basis. When you create the report, you specify which file group you want to report on.

Each user defined in the system has at least one row in the report:

- If the user is an administrator, then the user has one row with a notation of: **(Admin-Full Access)**.
- If the user has no access to the file group, then the user has one row with a notation of: **(No Access)**.
- If the user has access to all plan files in the file group via a single permission, then the user has one row with a notation of: **All Plan Files**.
- In all other cases, the user has multiple rows in the report—one row for each individual plan file that they have access to. Each row details the user's permissions to that particular plan code, including the access level, calc method permissions, ability to save data, etc.

For example, if a non-admin user with access to the file group has permission to 3 plan files, then there will be 3 rows in the report for that user, one for each plan file.

The permissions displayed in the report are the full effective permissions of the user, taking into account all factors such as admin status, role inheritance, multiple file group permission sets, and subsystem restrictions.

NOTE: Permissions granted by process ownership are not reflected in this report. Users may be temporarily "elevated" to read/write and save data status when they are the assigned owner of an active process task for a particular plan file.

To create a file group permission report:

1. On the **Axiom** tab, in the **Administration** group, click **Manage > Security > File Group Permission Report**.

   NOTE: In systems with installed products, this feature may be located on the **Admin** tab. In the **System Management** group, click **Security > File Group Permission Report**.

2. In the **Permission Report** dialog, select the file group for which you want to create the report, and then click **OK**.

The report opens as an Excel spreadsheet file. The file group it was generated for and the current date/time are noted at the top of the report. Excel's auto-filtering is automatically applied to the columns to make it easier to sort and filter the data.

Table permission report

The table permission report details user permissions per table. All tables are included in the report; it is not possible to filter by a particular table or table type.

Each user defined in the system has at least one row in the report:

- If the user has full access to all tables, then the user has one row with a notation of: **(Full access to all tables)**.
- If the user has no access to any tables, then the user has one row with a notation of: **(No access to any tables)**.

  NOTE: It would be a rare situation for a user to have no access to any tables, because by default all users are granted access to document reference tables using the Everyone role.

- In all other cases, the user has multiple rows in the report—one row for each table that they have access to. Each row details the user's read and write permissions to that particular table. If a table is not listed, then the user does not have access to that table.

For example, if a user has access to 5 tables, then there will be 5 rows in the report for that user, one for each table.

The permissions displayed in the report are the full effective permissions of the user, taking into account all factors such as admin status, role inheritance, table type inheritance, and subsystem restrictions.

To create a table permission report:

- On the **Axiom** tab, in the **Administration** group, click **Manage > Security > Table Permission Report**.

  NOTE: In systems with installed products, this feature may be located on the **Admin** tab. In the **System Management** group, click **Security > File Group Permission Report**.

The report opens as an Excel spreadsheet file. The current date/time are noted at the top of the report. Excel's auto-filtering is automatically applied to the columns to make it easier to sort and filter the data.

Security Integration

Axiom Cost Accounting can integrate with your organization's existing network security. You can:

- Enable Windows Authentication for user authentication against your Windows domain, including the option to import users from Active Directory.
- Enable LDAP Authentication for user authentication against your LDAP server.
- Enable SAML Authentication for user authentication against a SAML identity provider.
- Enable OpenID Authentication for user authentication against an OpenID provider.

NOTE: This guide discusses how to set up and use security integration features once they have been enabled for your system. For information on enabling the associated system configuration settings, see the *System Administration Guide*.

Using Windows Authentication

You can enable Windows Authentication for a system, to authenticate users based on their Windows domain credentials.

Windows Authentication behavior

When the Axiom Cost Accounting login screen displays, users must enter their Windows user name, domain, and password. If the domain is an allowed domain and the Windows user name matches a user name in Axiom Cost Accounting, then the credentials are passed to Windows for authentication into Axiom Cost Accounting.

If the Windows Authentication configuration for Axiom Cost Accounting only allows one domain, then that domain is assumed for authentication and users do not need to specify it when logging in. If multiple domains are allowed, then the domain must be specified in one of the following ways:

- The user must include the domain with their user name, such as: *DomainName**UserName*.
- The user must specify the appropriate domain using the **Domain** selection list on the login screen. This is an optional setting that can be enabled for your installation. For more information, see Domain selection list.

Users must enter their credentials each time they log in, unless they select **Remember me** to store their credentials for future use. For more information, see Remember me.

Setting up Windows Authentication

The following summarizes the setup process for Windows Authentication.

1. Windows Authentication must be enabled for the system.

For on-premise systems, Windows Authentication can be enabled during the Axiom Application Server installation. If it was not enabled during the installation, you can configure it later using either of the following options:

- Use the **Configure Authentication Methods** page of the Axiom Software Manager. For more information, see the *Installation Guide*.
- Use a Save Type 4 report to modify the applicable system configuration settings (**WindowsAuthEnabled** and **WindowsAuthAllowedDomains**).

When you enable Windows Authentication, you must specify the valid domains for authentication. You can specify multiple domains, separated by commas. You can also choose to enable Active Directory Synchronization if you want to import and synchronize users from Active Directory (for more information, see Synchronizing users with Active Directory).

For cloud systems, Kaufman Hall Software Support will enable Windows Authentication for you as part of the system setup, if that is your chosen authentication method.

2. In security, Axiom Cost Accounting users must be set up as follows to support Windows Authentication:
   - The user's Axiom Cost Accounting login name must match their Windows login name.
   - The user's **Authentication** method must be set to **Windows User**. This is the default setting for new users if Windows Authentication is enabled for your installation.

   If users are imported from Active Directory, then they will automatically be created with the appropriate login name and authentication type.
3. Cloud systems have the following additional requirements:
   - Installation of the Cloud Integration Service is required to enable the cloud system to communicate with your local Windows domain, to validate user credentials. For information on installing the Cloud Integration Service, see the *Cloud Service Technical Guide* and contact Kaufman Hall Software Support as needed.
   - A remote data connection must be created in Scheduler, with the option **Use for authentication service** enabled.

All users who are assigned to the Windows Authentication method will be authenticated based on their Windows credentials. This is the only way that these users can log in—they cannot log in using an internal Axiom Cost Accounting password.

If you need to test the security settings of a Windows Authentication user, you can use the **Log in as selected user** feature to log in to Axiom Cost Accounting as that user. For more information, see Testing user security.

Synchronizing users with Active Directory

You can import users from Active Directory, to automatically create users within Axiom Cost Accounting and assign them to the appropriate roles. Subsequent imports can be used to create new users and synchronize previously imported users.

Active Directory synchronization can only be used in conjunction with Windows Authentication. For more information, see Using Windows Authentication.

To set up Active Directory synchronization:

1. Enable Active Directory synchronization for your system.

   For on-premise systems, Active Directory synchronization can be enabled during the Axiom Application Server installation. If it was not enabled during the installation, you can configure it later using either of the following options:

   - Use the **Configure Authentication Methods** page of the Axiom Software Manager. For more information, see the *Installation Guide*.
   - Use a Save Type 4 report to modify the applicable system configuration setting (**WindowsAuthUserSyncEnabled**).

   For cloud systems, Kaufman Hall Software Support can enable Active Directory synchronization for your system.

2. Create a job in Scheduler with an **Active Directory Import** task, and schedule the job to run periodically as needed for your environment.

   Each import task can import users from a single Active Directory domain into the current Axiom Cost Accounting system. The import task specifies the Active Directory domain and groups to import, role mappings, and notification settings. If you need to import from multiple Active Directory domains, then you must create an import task for each domain.

When the Scheduler job is run, new users are created as needed and existing users are synchronized with Active Directory.

Creating a Scheduler job to import users from Active Directory

Once Active Directory synchronization has been enabled for your system, you must create a Scheduler job in order to import users from Active Directory into Axiom Cost Accounting.

The Scheduler job must contain an Active Directory Import task. Each import task can import users from a single Active Directory domain into the current Axiom Cost Accounting system. The import task specifies the Active Directory domain and groups to import, and role mappings for those groups. When setting up the job, you can configure a scheduling rule so that it runs nightly, weekly, or whatever frequency is appropriate for your organization.

If you need to import users from multiple Active Directory domains, then you must create an import task for each domain. You can create a single Scheduler job with multiple import tasks, or you can separate the import tasks into multiple Scheduler jobs. If all of the import tasks can use the same schedule, then it is easiest to create a single job with multiple tasks.

For Cloud Service systems, the Active Directory Import task can import users from your local Active Directory by use of the Axiom Cloud Integration Service. If you have a remote data connection that is enabled for user authentication, this task will use that connection when the job is executed by Scheduler.

Before you begin

Before creating the job, you should make sure you are prepared with the following information:

- **The name of your Active Directory domain, or the server name that hosts Active Directory.** You will need to specify one of these to identify the source domain for the import.
- **The user credentials to use to access Active Directory.** You can specify a user name and password, or you can use the credentials of the Axiom service that is performing the process.
- **The groups to import from Active Directory.** You must know the names of the groups that you want to import from Active Directory. All users in the selected groups will be imported into Axiom Cost Accounting. If you do not have groups that exactly correspond with the users that you want to create in Axiom Cost Accounting, you may need to work with your Information Technology department to create new groups or refine existing groups.
- **The Axiom Cost Accounting roles, subsystems, user license types, and authentication types for each imported group.** When users are imported, they can be automatically assigned to one or more roles and subsystems in Axiom Cost Accounting, and assigned a user license type and an authentication type. Make sure you know which options to use.

Creating the job

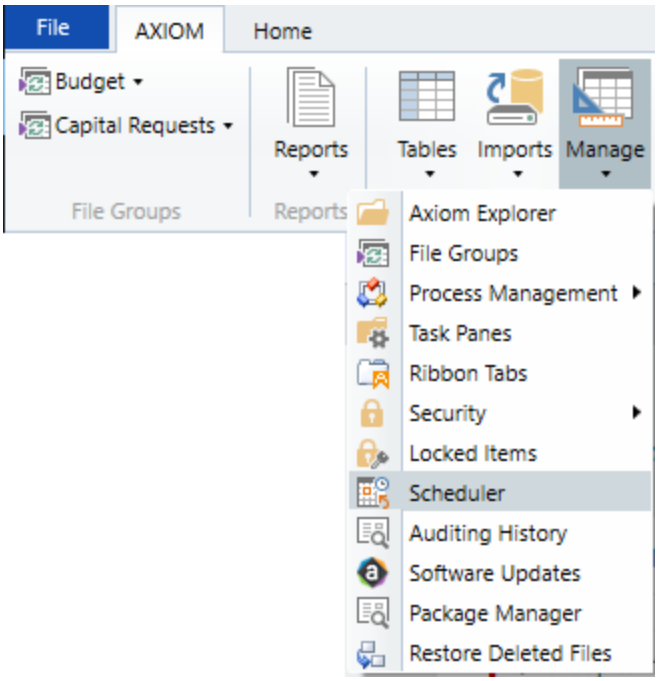
In order to create a Scheduler job, you must be an administrator or have the **Scheduled Jobs User** security permission. Non-admin users must also have read/write access to at least one folder in the Scheduler Jobs Library.

Scheduler jobs can only be created in the Desktop Client. Although you can view the status of existing jobs in the Web Client, you cannot create new jobs in that environment.

IMPORTANT: The Active Directory Import task can only be executed by a user who has permission to create users in security—an administrator, a subsystem administrator, or a user with the **Administer Security** permission. If you plan to schedule the job for automated execution, the job owner must have the required permissions to execute the task. The job owner is the user who last saved the job. Effectively, this means that the job must be created by a user with the required permissions. If the job is created by a user who does not have the required permissions, then the job must be saved by a user with the required permissions in order to re-set the job owner. You can see the current job owner for the job in the **Job Variables** section of the job properties.

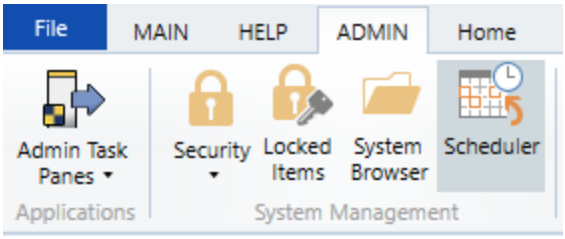
To create an Active Directory Import job in Scheduler:

1. On the **Axiom** tab, in the **Administration** group, click **Manage > Scheduler**.



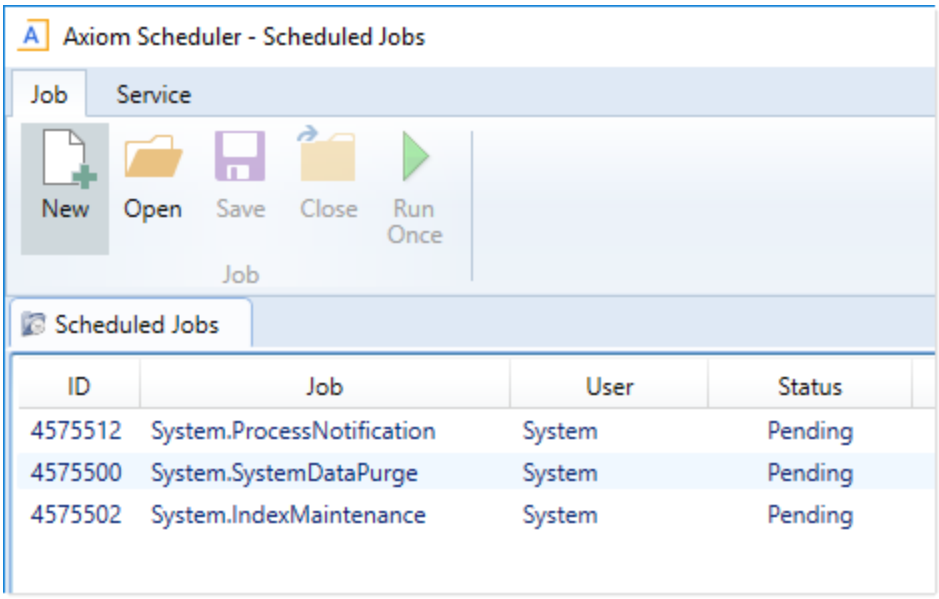
Scheduler on default Axiom ribbon tab

In systems with installed products, this feature may be located on the **Admin** tab. In the **System Management** group, click **Scheduler**.



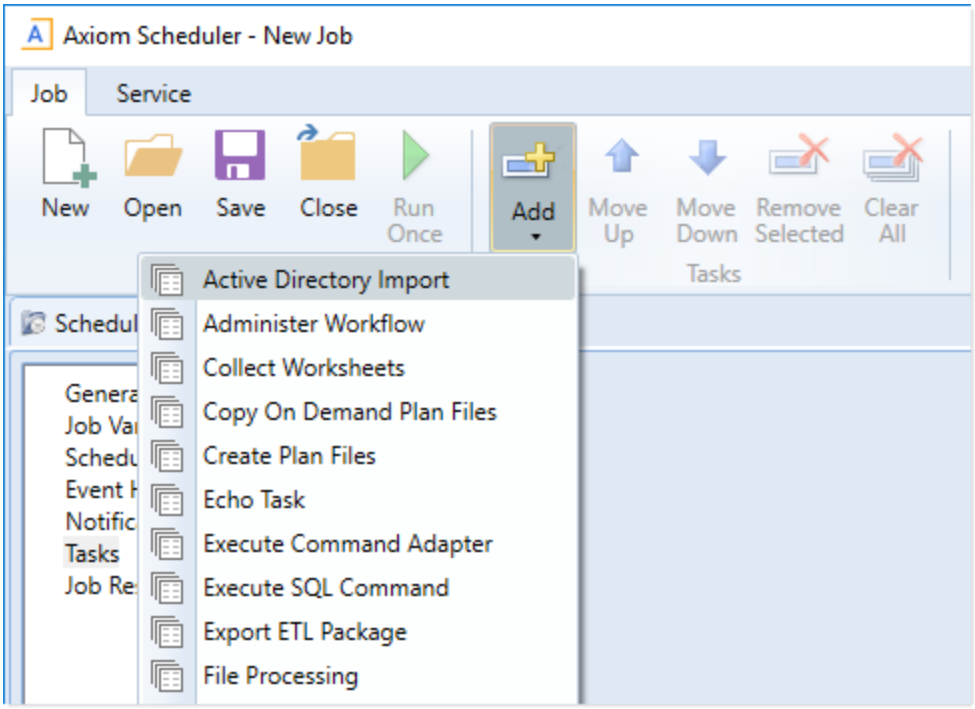
Scheduler on Admin tab (example product ribbon)

2. In the **Scheduler** dialog, click **New**.



A new job is opened in the dialog, with a tab name of **New Job**.

3. Click **Add** > **Active Directory Import** to add the task to the new job.

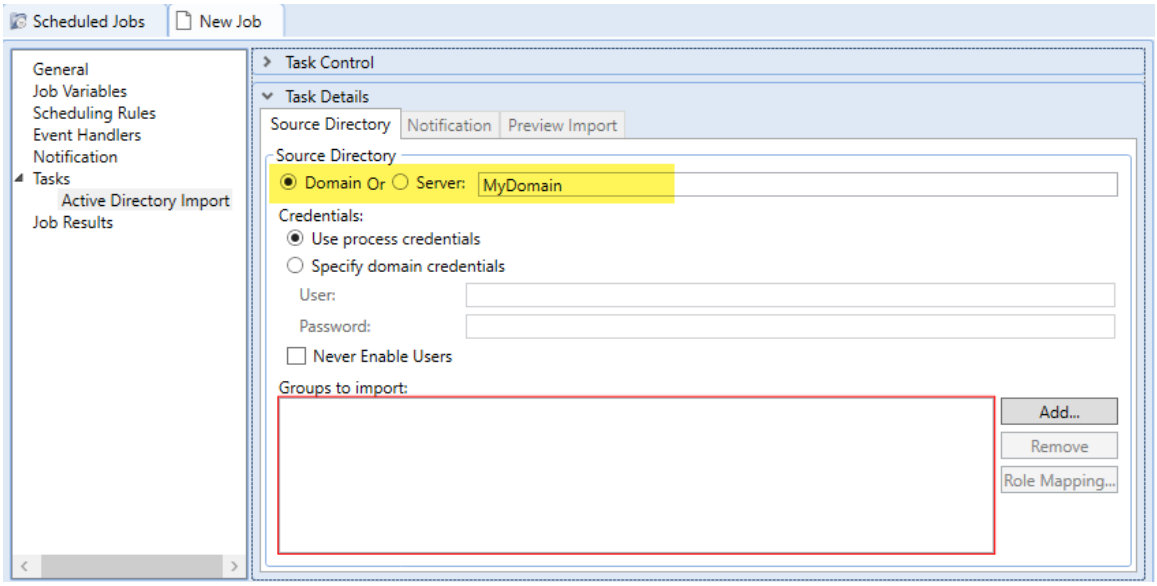


The task is added to the job, and you can now configure the task properties. In the **Task Details** section, the task has three tabs: **Source Directory**, **Notification**, and **Preview Import**.

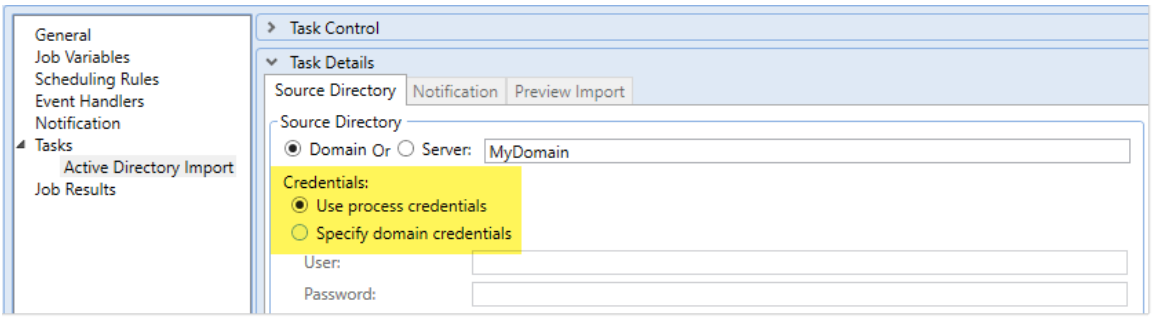
4. On the **Source Directory** tab of the Task Details, select either **Domain** or **Server** to specify the source domain for the import.
    - If you select Domain, enter the name of the domain.
    - If you select Server, enter the name of the domain controller server.

    The server option is available in case you are not currently logged into the source domain, and your current domain does not have access to the source domain. In this case, you must use domain credentials in order to access the source domain.

    Only one domain can be selected per import task. If you want to import users from multiple domains into an Axiom Cost Accounting system, then you must create multiple import tasks.

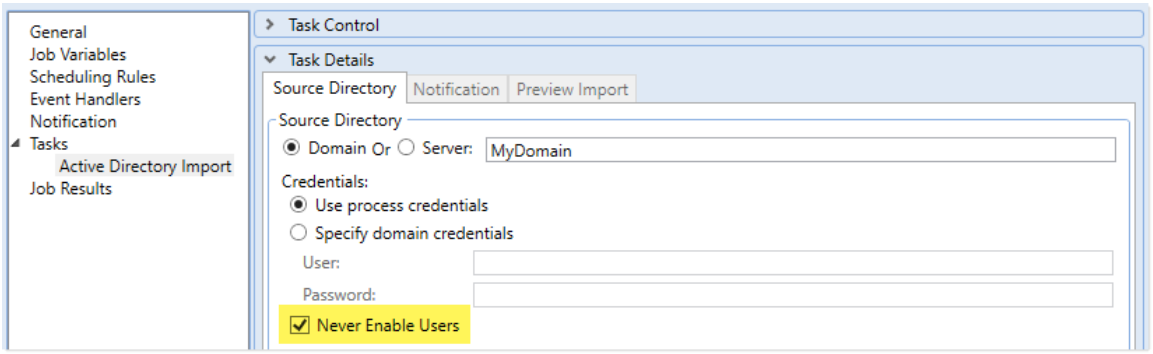


5. For **Credentials**, specify the user credentials to use when accessing Active Directory for the import. Select one of the following:
    - **Use process credentials**: (Default) Use the credentials of the network service account for Axiom Scheduler Server (on-premise installations) or Axiom Cloud Integration Service (Cloud Service systems).
    - **Specify domain credentials**: Enter the credentials of a specified domain **User** and **Password**. This option is required if you identified the source domain using the server name instead of the domain name.

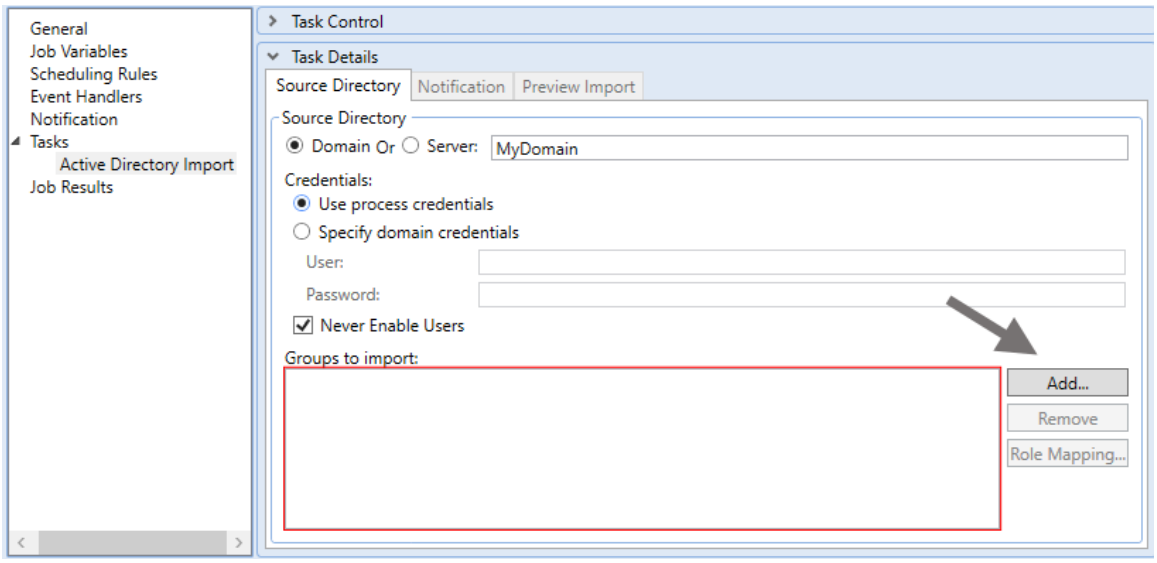


6. If you do not want new and synchronized users to be automatically enabled by the import, select **Never Enable Users**. This option works as follows:
    - If unchecked (default), then newly imported users are enabled as part of the import. Additionally, any existing imported users who have been changed to disabled are re-enabled.
    - If checked, then newly imported users are not enabled as part of the import. A security administrator must modify the security settings after the import is complete to enable the new users. Existing imported users retain their current enabled status.

    We recommend enabling this option because in most cases it is necessary for a security administrator to make further changes to security settings before the user account is fully ready for use. Additionally, if your system uses subsystems, any newly imported users will not be able to log in anyway, since the import does not assign users to a subsystem.

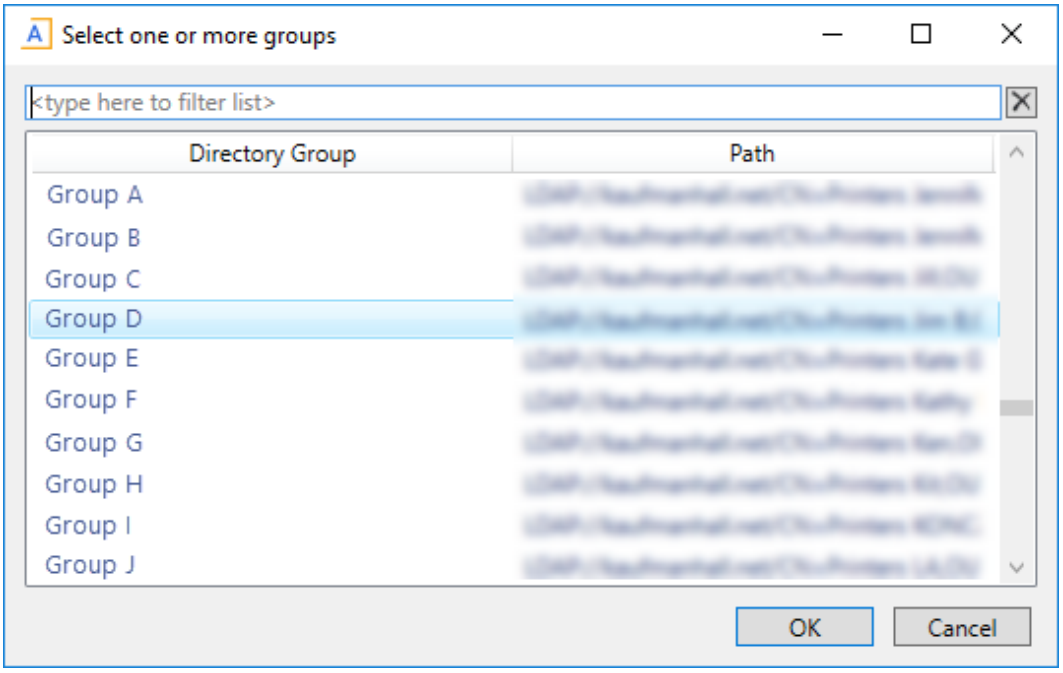


7. In the **Groups to import** section, click **Add** to select one or more groups to import.



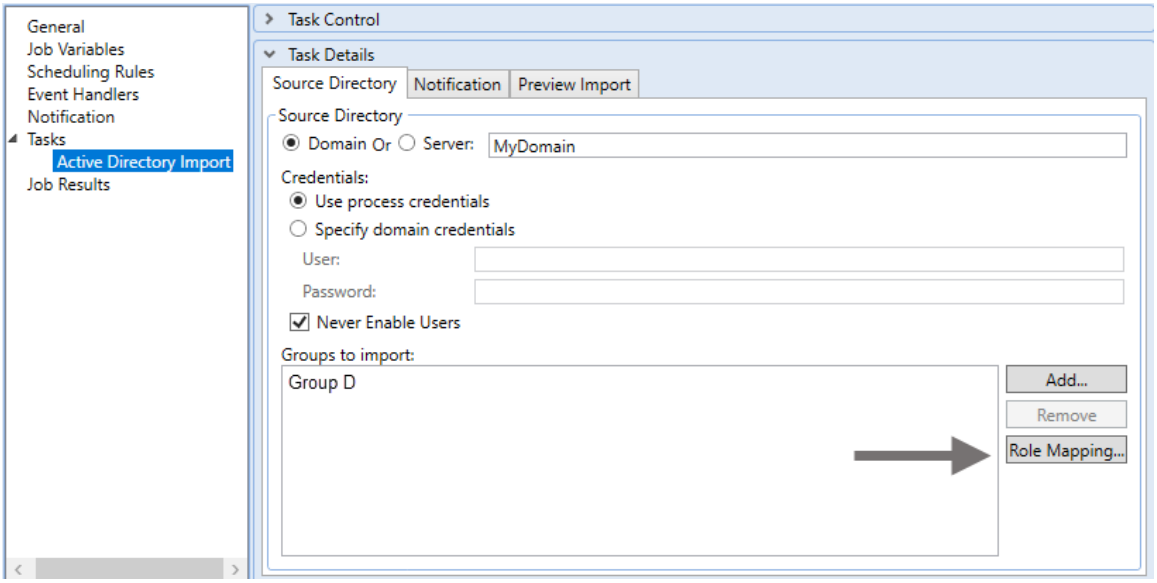
The **Select Groups** dialog opens, displaying a list of groups from the source domain.

- Select the group or groups that you want to add, and then click **OK**. You can use the search box at the top of the dialog to find a group by name. You can use the SHIFT or CTRL keys to select multiple groups in the list.

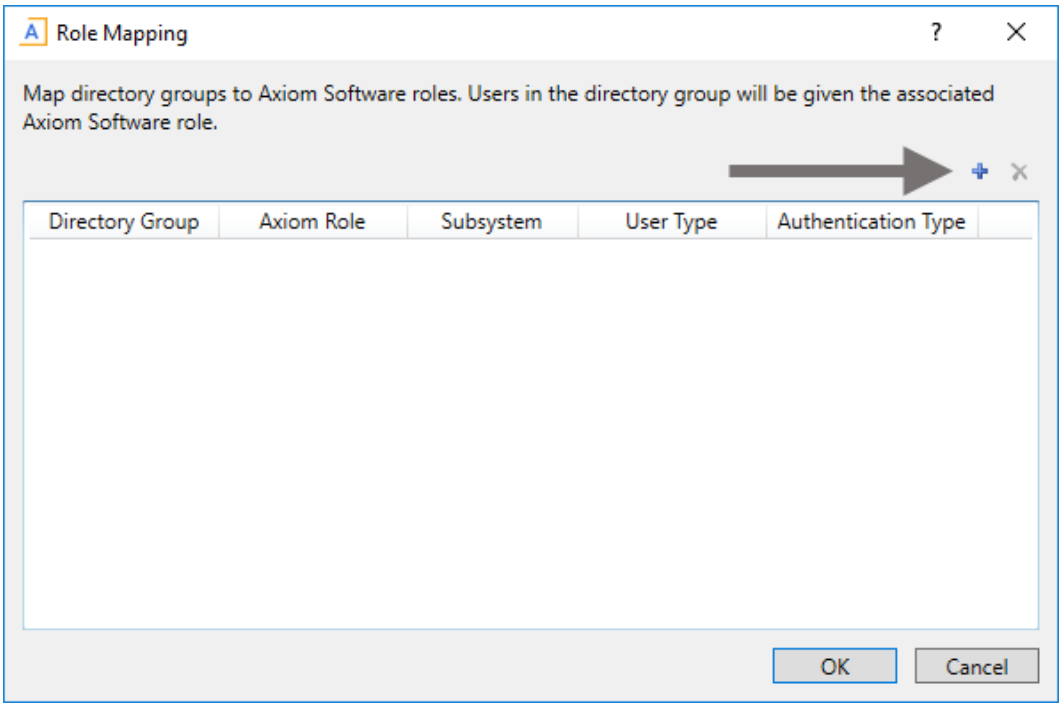


- The selected group(s) display in the **Groups to import** box. If you have added a group by mistake, you can select it and click **Remove**.

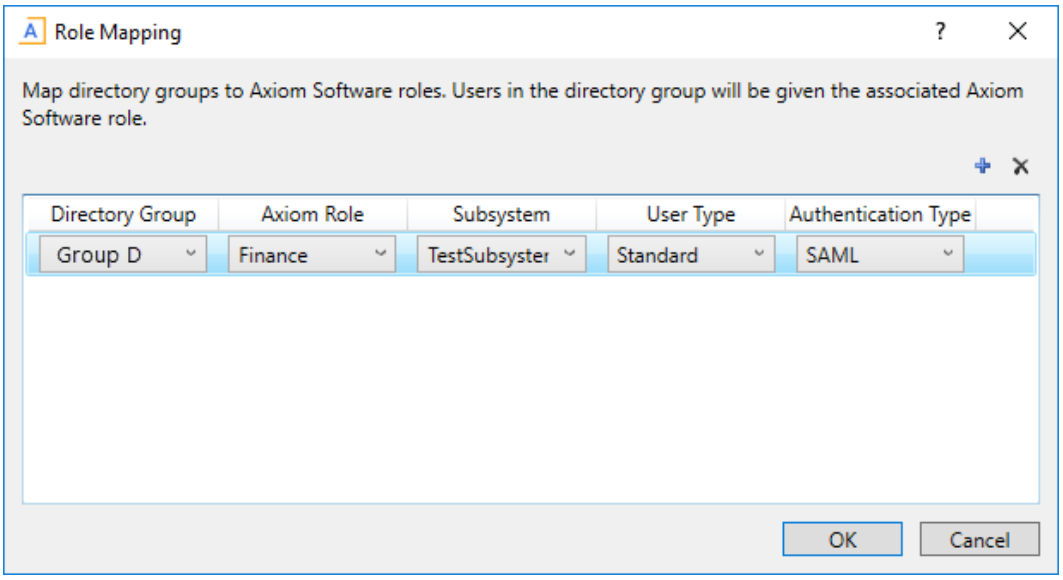
8. In the **Groups to import** section, click **Role Mapping** to define the role mappings for each selected group:



- In the **Role Mapping** dialog, click the **Add mapping** icon ✚ in the top right to add a mapping row to the dialog.



- In the mapping row, select a **Directory Group** to map, then select the following:
  - The **Axiom Role** that you want the users to belong to.
  - The **Subsystem** that you want the users to belong to. This option is only present if subsystems are enabled for your system.
  - The **User Type** for the users. This means license type, such as a **Standard** license or a **Viewer** license.
  - The **Authentication Type** for the users, **Windows User** or **SAML**. If you want to use a different authentication type, then you must update the users after importing to assign them to the desired authentication type. You may be able to create a Save Type 4 report to Axiom.Principals to update the users, and process that report within the same Scheduler job, after the Active Directory import task is performed.



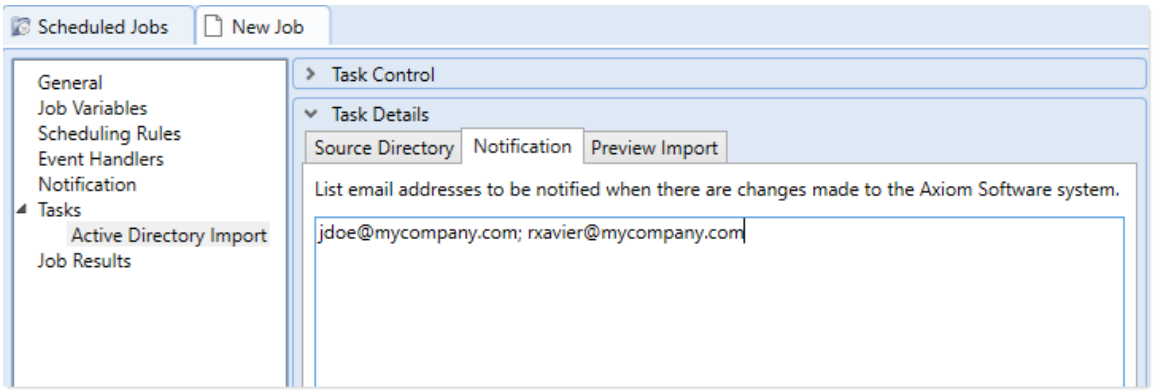
- Repeat these steps for each group to be imported. If you want the users in a group to belong to more than one role and/or subsystem, you can create multiple mapping rows for that group. If you need to remove a mapping row, select it and then click the **Remove mapping** icon ✕ in the top right of the dialog.
- When you are finished defining mappings, click **OK** to return to the Scheduler task properties.

The defined role mappings do not display in the **Groups to import** box. If you want to review or edit the role mappings, click **Role Mapping**.

NOTES:

- If a group has multiple mapping rows to assign the users to multiple roles and/or subsystems, then the specified user type and authentication type should be the same on each row. If the user type or authentication type is different, then the entry on the last processed mapping will be used. Role mappings are processed in role ID order.
- If a group has no defined role mappings, then the users will not be assigned to any roles or subsystems. If the import creates new users without role mappings, the assigned user type is Standard and the assigned authentication type is Windows User.

9. On the **Notification** tab of the Task Details, enter one or more email addresses to send a notification when users have been added or synchronized due to running the Active Directory Import task. Separate multiple addresses with a semi-colon.

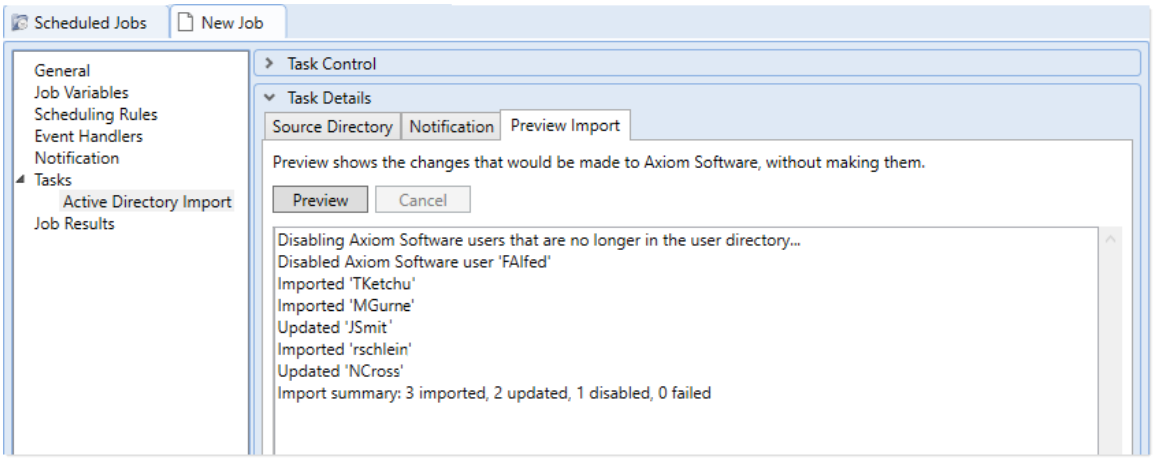


When the import task is run, if any users are created or modified in the Axiom Cost Accounting system, an email notification will be sent to the addresses specified here. The email summarizes the changes made. This email notification is independent of any job-level notification settings (which notify based on overall job completion or failure).

We recommend setting up this task-level notification to send emails to the security administrator (s) responsible for maintaining the security settings in Axiom Cost Accounting, so that he or she can define security settings for newly added users, validate changes made to existing users, and perform any other follow-up tasks.

10. On the **Preview Import** tab of the Task Details, click **Preview** to see the changes that will be made to Axiom Cost Accounting Security when the Active Directory Import task is run.

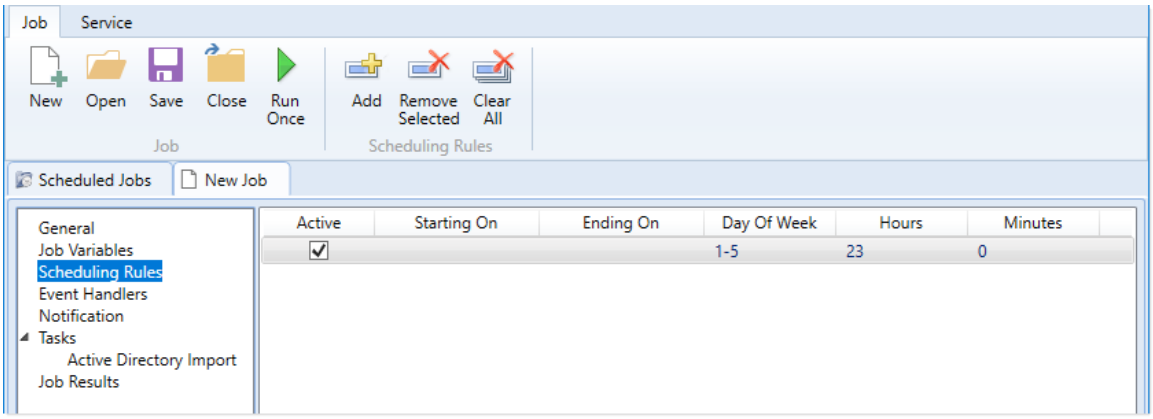
    The preview feature is intended to help you verify that you have set up the task correctly. If the reported changes are not as you expect, then you can review and adjust the task settings as needed. No changes are made to security when preview is run.



This completes the settings for the Active Directory Import task. However, there are a few general job properties that should also be reviewed and completed as needed.

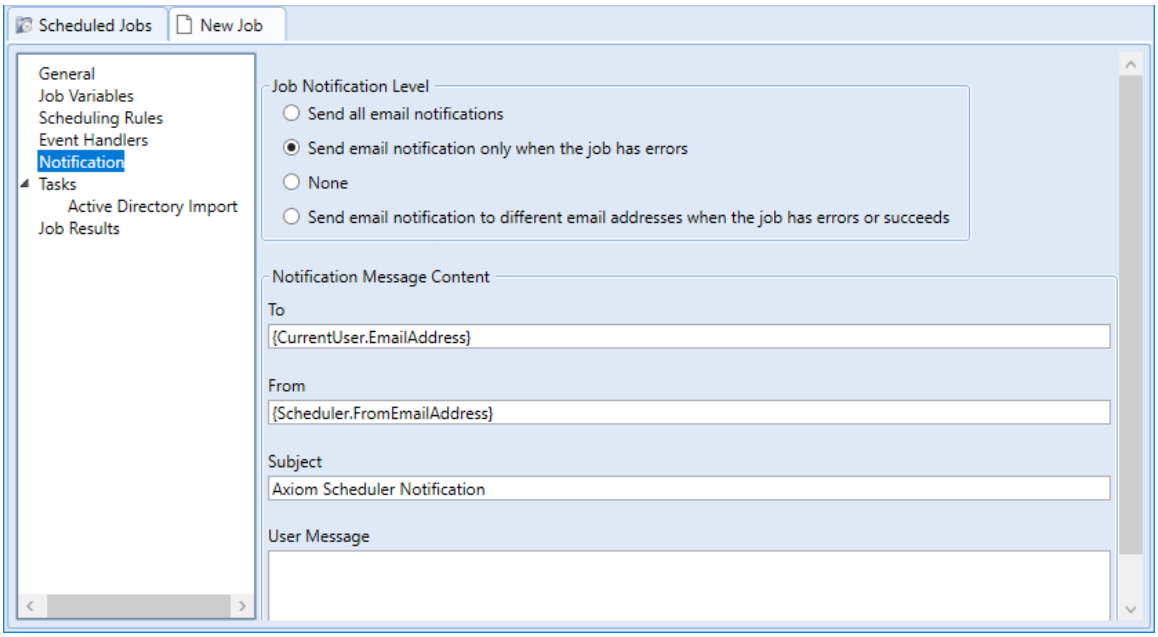
11. In the left-hand pane, click **Scheduling Rules**. Using this section, you can define a scheduling rule so that the job runs automatically as needed. Typically, organizations want the Active Directory Import task to run regularly so that users are kept in sync.

    Click **Add** to add a scheduling rule to the job, and then complete the rule as needed based on your desired schedule. In the following example, this job will run Monday through Friday at 11:00PM.



12. In the left-hand pane, click **Notification**. Using this section, you can configure the notification settings for the overall Scheduler job. The job-level notifications are intended to inform interested parties when the job completes successfully or has errors. These notifications do not contain any information about user changes to Axiom Cost Accounting Security—to inform someone about specific user changes, you must use the task-level notification settings as described in step 9.

    By default, jobs are configured to send a notification whenever the job is run (**Send all email notifications**). You can change the **Job Notification Level** as needed, and you can modify the recipients, subject, and message. In the following example, a notification is only sent when the job has errors.



13. Complete any other job or task properties as needed. In most cases, the default settings are sufficient.
14. Click **Save**. You can define a name for the job and save it to the desired location in the Scheduler Jobs Library.

Once you save the job with an active scheduling rule, the job is immediately added to the schedule to await the first scheduled execution time. You can see this scheduled instance on the **Scheduled Jobs** tab.

You can also run the job manually as needed by opening the job and clicking **Run Once**. Note that when using Run Once, the job runs as the current user instead of the job owner, so you must have the required permissions to perform the import.

For more information on what happens when the Active Directory Import task is run, see How Active Directory user synchronization works.

How Active Directory user synchronization works

This topic describes how new users are created and how existing users are updated when an Active Directory Import job runs in Scheduler.

NOTE: The Active Directory domain name is always used to determine matching users for purposes of the Active Directory import. If a user name matches but the domain does not, that user is not considered to be a matching user.

Creating new users via Active Directory import

For each unique user name in the import, Axiom Cost Accounting looks for a matching user name in Axiom Cost Accounting Security. If no match is found, then a new user is created. If a match is found, then the user synchronization behavior applies as detailed in the following section.

New users are created with the following user properties:

- Login (from Active Directory)
- Domain (from Active Directory)
- First name (from Active Directory)
- Last name (from Active Directory)
- Email address (from Active Directory)
- License Type (from Scheduler task settings)
- Authentication (from Scheduler task settings)
- Enabled (from Scheduler task settings)
- Assigned Roles (from Scheduler task settings)
- Assigned Subsystems (from Scheduler task settings)
- Directory Sync Enabled (assumed as enabled)

NOTE: The imported user's domain does not display in the Security dialog, but it is stored in the database and can be reported upon by use of an Axiom query to the Axiom.Principals table. The relevant domain also displays before each user name when using Open Security in Spreadsheet. The domain is stored in case of a situation where two users with the same user name are imported from different domains.

Synchronizing users via Active Directory import

If a user name in the Active Directory import matches an existing user name in Axiom Cost Accounting security, then that user will be updated ONLY if the **Directory Sync Enabled** check box remains selected for the matching user. Matching users are updated as follows:

- **User Properties**: If the first name, last name, or email address has changed in Active Directory, it is updated in Axiom Cost Accounting.
- **User License Type**: If the assigned user license type for the Active Directory group has changed, then the license type is updated in Axiom Cost Accounting.
- **Authentication Type**: If the assigned authentication type for the Active Directory group has changed, then the authentication type is updated in Axiom Cost Accounting.

- **Role and Subsystem Assignments**: The user's role and subsystem assignments are updated as follows:
    - If a role or subsystem assignment has been added for the Active Directory group, the user is assigned to that role or subsystem.
    - If a role or subsystem assignment has been removed from the Active Directory group, the user is only removed from the role or subsystem if another group is mapped to that same role or subsystem (and the user does not also belong to that other group). If the previously assigned role or subsystem is not present in the mappings at all, then the user is not removed from the role or subsystem.
    - If the user no longer belongs to the Active Directory group, and that group's role or subsystem mappings still exist, then the user is removed from those roles and subsystems (unless the user belongs to another Active Directory group in the import that is mapped to the same roles and subsystems).
- **Disabled Users**: If the user is disabled in Active Directory, then the user is disabled in Axiom Cost Accounting. If the user is disabled in Axiom Cost Accounting but enabled in Active Directory, then the user will either be re-enabled or left as disabled depending on whether **Never Enable Users** is checked in the Scheduler task settings.

If the **Directory Sync Enabled** check box is cleared for the matching user, then that user will be ignored by the Active Directory synchronization process and left as is.

If the **Directory Sync Enabled** check box is selected for a user and that user does NOT match a user name in the Active Directory import, then the user is disabled. If you still need the user account, you can re-enable the user and clear the Directory Sync Enabled check box so that the user will be ignored by future imports.

NOTES:

- Role mappings are processed in role ID order. If a group has multiple mappings, and the user license type or authentication type does not match on all of the mappings, then users in the group will be assigned to the license type and authentication type associated with the last-processed role.
- If a role mapping uses a subsystem-specific role, users will be assigned to that role regardless of whether they also belong to the associated subsystem. This creates an invalid security configuration that must be corrected after the import.

Editing imported users

Once an imported user has been created in Axiom Cost Accounting, you can edit the user's permissions in Security as appropriate.

You can assign the user to additional roles and/or subsystems, and those additional assignments will persist through subsequent imports. However, if the user is part of an import that contains a mapping with those roles or subsystems, and the user is not in the group affected by that mapping, then the user will be removed from those roles or subsystems.

You can edit user properties such as name, email, and authentication type, however, these changes will be overwritten the next time the Active Directory import task is run, assuming that **Directory Sync Enabled** is still checked for the user.

If you do not want the user to be synchronized with Active Directory anymore, but you still want the user to be active in Axiom Cost Accounting, then you should clear the **Directory Sync Enabled** check box for the user. Once this option is disabled, the user will be ignored by the import and will be treated like a manually created user.

Treatment of manually created users

If Active Directory Import is enabled for your system, you can still manually create users and exclude them from the Active Directory import and synchronization process by clearing the **Directory Sync Enabled** check box for the user. The user will be ignored by any future Active Directory Import jobs.

If you manually create a user and leave the **Directory Sync Enabled** check box selected, then the user will be treated as follows the next time an Active Directory Import job is run:

- If the user matches a user name in the Active Directory import, then the user will remain active and will be synchronized with Active Directory.
- If the user does not match a user name in the Active Directory import, then the user will be disabled.

Using LDAP Authentication

You can enable LDAP Authentication for Axiom Cost Accounting, so that users are authenticated against your LDAP server when launching Axiom Cost Accounting.

NOTE: LDAP Authentication is not supported for use with Axiom cloud service systems.

LDAP Authentication behavior

When the Axiom Cost Accounting login screen displays, users must enter their LDAP user name (with or without the suffix) and their LDAP password. If the LDAP user name matches a user name in Axiom Cost Accounting, then the credentials are passed to LDAP for authentication into Axiom Cost Accounting.

If the LDAP Authentication configuration for Axiom Cost Accounting only allows one LDAP suffix, then that suffix will be used for all LDAP authentication. The user can include the suffix or not when logging in, and the Axiom user name can contain the suffix or not. Axiom will automatically append the suffix as needed when sending the credentials to LDAP for authentication. However, if multiple suffixes are allowed, then the suffix must be specified using any of the following approaches:

- The user must specify the appropriate suffix using the **Domain** selection list. This is an optional login setting that can be enabled for your installation. For more information, see Domain selection list.
- The user must include the suffix as part of their user name when logging in.
- The user names in Axiom Cost Accounting must include the appropriate suffix for each user.

Users must enter their credentials each time they log in, unless they select **Remember me** to store their credentials for future use. For more information, see Remember me.

Setting up LDAP Authentication

The following summarizes the setup process for LDAP Authentication.

To set up LDAP Authentication:

1. LDAP Authentication must be enabled for the system.

   LDAP Authentication can be enabled during the Axiom Application Server installation. If it was not enabled during the installation, you can configure it later using the **Configure Authentication Methods** page of the Axiom Software Manager. For more information, see the *Installation Guide*.

   When you enable LDAP Authentication, you must specify the connection string to the LDAP server, as well as a user name and password for the connection. You must also specify the allowed suffix(es) for user names.

2. In security, Axiom Cost Accounting users must be set up as follows to support LDAP Authentication:
   - The user's Axiom Cost Accounting login name must match their LDAP login name.

     The user name can contain the LDAP suffix or not as desired. Note that the user name must include the suffix if there is a naming conflict with another user who is configured with a different authentication type (or with a different LDAP suffix). For example, if you have an Axiom Prompt user jdoe, and you have an LDAP user jdoe, then the LDAP user must include the suffix on their user name to differentiate the two users.

   - The user's **Authentication** method must be set to **LDAP Prompt**. This is the default setting for new users if your installation is enabled for LDAP Authentication.

All users who are assigned to the LDAP authentication type will be authenticated by your designated LDAP directory. This is the only way that these users can log in—they cannot log in using an internal Axiom Cost Accounting password.

If you need to test the security settings of an LDAP authentication user, you can use the **Log in as selected user** feature to log in to Axiom Cost Accounting as that user. For more information, see Testing user security.

Using SAML Authentication

You can enable SAML Authentication for Axiom Cost Accounting, so that users are authenticated based on a designated identity provider (such as Shibboleth or Windows Active Directory Federation Services). This option is only supported for use with Axiom Cloud Service systems.

SAML Authentication behavior

SAML Authentication (Security Assertion Markup Language) is a web-based authentication method. Users access Axiom Cost Accounting by going to the Axiom Web Client in a browser. Users must enter their user name and password for their identity provider. Once they are authenticated, if the user name matches a user name in Axiom Cost Accounting, then the user can access the Axiom Web Client or install / launch the Axiom Excel Client or Windows Client from the web page.

Users assigned to SAML Authentication can only access Axiom Cost Accounting from the web. The Excel Client and Windows Client cannot subsequently be launched using a shortcut on the user's computer; the user must continue to log into the Axiom Web Client in order to start the Desktop Client. When using SAML Authentication, you may want to configure the Axiom Application Server installation so that no shortcuts are placed on user computers during the client installation, since users will not be able to use these shortcuts.

NOTE: SAML Authentication is not supported for use with the iPad app.

Setting up SAML Authentication

The following summarizes the setup process for SAML Authentication.

1. SAML Authentication must be enabled for the system.

   For cloud systems, Kaufman Hall Software Support will enable SAML Authentication for you as part of the system setup, if that is your chosen authentication method.

2. Complete any additional configuration requirements to enable SAML Authentication.

   SAML Authentication requires additional setup steps. These steps differ depending on the designated identity provider. Please contact Kaufman Hall Software Support for assistance in completing the SAML Authentication setup.

3. In security, Axiom Cost Accounting users must be set up as follows to support SAML Authentication:

   - The user's Axiom Cost Accounting login name must match their login name for the SAML identity provider (with or without an @suffix as appropriate).

- The user's **Authentication** method must be set to **SAML**.

If you need to test the security settings of a SAML Authentication user, you can use the **Log in as selected user** feature to log in to Axiom Cost Accounting as that user. For more information, see Testing user security.

Logging in as an Axiom Prompt user when SAML Authentication is enabled

You can also set up **Axiom Prompt** users when SAML Authentication is enabled, such as to allow Kaufman Hall Software Support to access the system without giving them credentials for the SAML identity provider. These users must go a special area of the web site in order to log in:

`https://`*`ServerName`*`/Axiom/Home/Login`

Where *ServerName* is the name of your Axiom Application Server and Axiom is the name of the virtual directory.

Using OpenID Authentication

You can enable OpenID Authentication for Axiom Cost Accounting, so that users are authenticated based on a designated OpenID provider (such as Google OpenID Connect).

OpenID Authentication behavior

OpenID Authentication is a web-based authentication method. Users access Axiom Cost Accounting by going to the Axiom Web Client in a browser. Users must enter their user name and password for their OpenID provider. Once they are authenticated, if the user name matches a user name in Axiom Cost Accounting, then the user can access the Axiom Web Client or install / launch the Axiom Excel Client or Windows Client from the web page.

Users assigned to OpenID Authentication can only access Axiom Cost Accounting from the web. The Excel Client and Windows Client cannot subsequently be launched using a shortcut on the user's computer; the user must continue to log into the Axiom Web Client in order to start the Desktop Client. When using OpenID Authentication, you may want to configure the Axiom Application Server installation so that no shortcuts are placed on user computers during the client installation, since users will not be able to use these shortcuts.

NOTE: OpenID Authentication is not supported for use with the iPad app.

Setting up OpenID Authentication

The following summarizes the setup process for OpenID Authentication.

1. OpenID Authentication must be enabled for the system.

For on-premise systems, OpenID Authentication can be enabled during the Axiom Application Server installation. If you did not enable it during the original installation, you can use Repair to change the installation to enable it. For more information, see the *Installation Guide*.

When you enable OpenID Authentication for Axiom Cost Accounting, you must specify the Client ID and Client Secret for your OpenID provider.

For cloud systems, Kaufman Hall Software Support will enable OpenID Authentication for you as part of the system setup, if that is your chosen authentication method.

2. Complete any additional configuration requirements to enable OpenID Authentication.

   At minimum, you must configure the OpenID provider with the redirect URI to the Axiom Cost Accounting login page (such as `<URLtoAxiom>/openid/login`). Other setup steps may be necessary, depending on your particular configuration. Please contact Kaufman Hall Software Support as needed for assistance in completing the OpenID Authentication setup.

3. In security, Axiom Cost Accounting users must be set up as follows to support OpenID Authentication:
   - The user's Axiom Cost Accounting login name must match their login name for the OpenID provider, including the @suffix.
   - The user's **Authentication** method must be set to **OpenID**.

If you are an administrator and you need to test the security settings of an OpenID Authentication user, you can use the **Log in as selected user** feature to log in to Axiom Cost Accounting as that user. For more information, see Testing user security.

Logging in as an Axiom Prompt user when OpenID Authentication is enabled

You can also set up **Axiom Prompt** users when OpenID Authentication is enabled, such as to allow Kaufman Hall Software Support to access the system without giving them credentials for the OpenID identity provider. These users must go a special area of the web site in order to log in:

`https://ServerName/Axiom/Home/Login`

Where *ServerName* is the name of your Axiom Application Server and Axiom is the name of the virtual directory.

Login behavior options

The following options apply to all authentication types except SAML and OpenID Authentication.

Domain selection list

When a user logs in, Axiom Cost Accounting looks for a matching user name within Axiom security and applies the specified authentication type for that user. For LDAP Authentication and Windows Authentication, if only one allowed domain or suffix is specified, that information can be assumed and

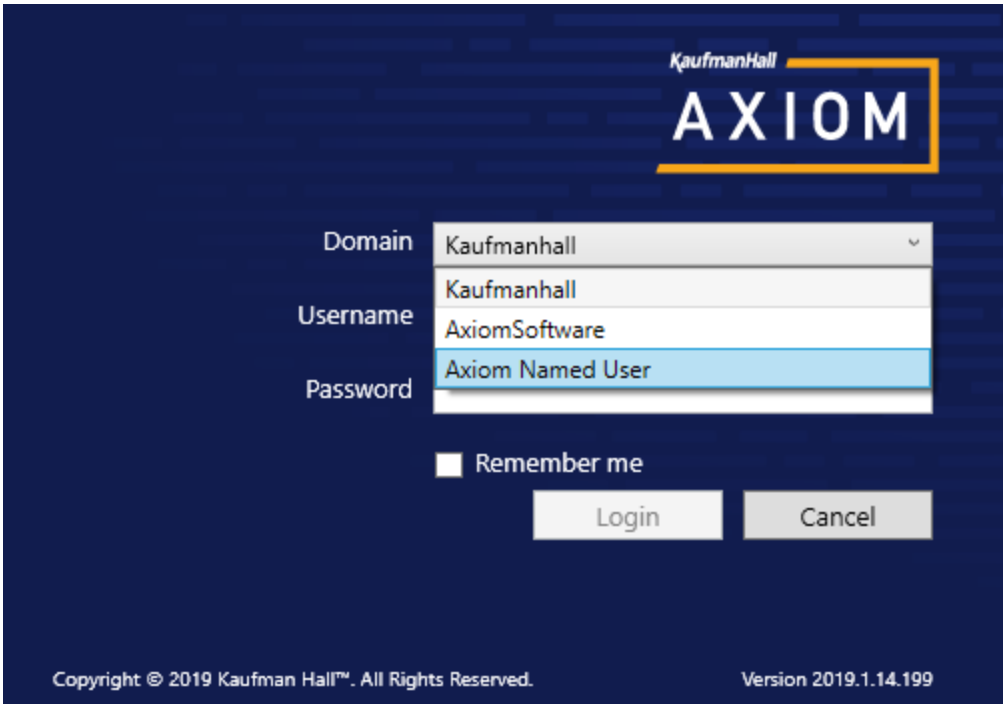
the user does not need to include it when logging in. If multiple domains or suffixes are specified, then the user must include that information as part of their user name. For example: *DomainName**UserName* for Windows Authentication.

Alternatively, you can configure your system so that all users must specify their authentication type / domain when logging into Axiom Cost Accounting, using the **Domain** selection list. The Domain selection list displays the following:

- **Axiom Named User** (for Axiom Prompt login)
- Each allowed Windows Authentication domain (if Windows Authentication is enabled for the installation)
- Each allowed LDAP suffix (if LDAP Authentication is enabled for the installation)

When the Domain selection list is enabled, the user must make the appropriate selection in order to log in. For example, a Windows Authentication user must select their Windows domain name. Because it is specified separately, the domain or suffix does not need to be added to the user name, even when there are multiple allowed domains or suffixes.

The following screenshot shows an example of the Domain selection list. In this example, the installation has enabled Windows Authentication with two allowed domains. The two domain names display on the selection list as well as the choice to log in as an Axiom Named User.



The Domain selection list can be enabled or disabled using the **AuthenticationDomainSelectionListRequired** system configuration setting. By default this is set to False,

which means the Domain selection list only displays if your system contains duplicate user names that require the domain to be specified to differentiate those users. If you set this to True, then the Domain selection list displays at all times.

If the Domain selection list is enabled, and if Windows Authentication is enabled for the installation, then by default the user's current domain will be selected in the list (if that domain is one of the allowed domains). Otherwise, the first option in the list is selected by default. Options are ordered as follows: LDAP suffixes, Windows domains, Axiom Named User.

Remember me

Users can optionally select **Remember me** at the login screen to store their Axiom Cost Accounting authentication for future use. This information is encrypted and only applies to the current user for the current machine. The next time the user starts Axiom Cost Accounting on the current machine, they will not be prompted to log in.

Although all Axiom Cost Accounting clients have a Remember Me check box on the login screen, note that the remembered status is stored separately for access to the Web Client versus the Desktop Client. For example, a user can choose Remember Me when logging into the Excel Client, and then that user will not be prompted when subsequently accessing either the Excel Client or the Windows Client. However, if the user attempts to access the Web Client, they will be prompted for credentials (and can then choose to be separately remembered for the Web Client).

NOTE: Logging out of a client will clear the remembered status for that client type. Although the Excel Client and Windows Client do not have an explicit log out feature, logging out of the Word or PowerPoint add-in will clear the remembered status for the Desktop Client (but only if you are not also currently logged into another instance of the Desktop Client).

If you do not want users to have access to the Remember Me option, so that they must log in each time, then you can disable the feature by setting the system configuration setting **ShowRememberMe** to **False**. This will hide the option from the various login screens. Keep in mind that if a user has already used the Remember Me option, hiding the setting will not clear the user's stored credentials. The user will continue to be remembered until they log out and cause their credentials to be cleared.

Filters

This section contains reference information for creating filter criteria statements. Security settings for file groups and tables can use filters to determine access.

Filter criteria syntax

Several areas of Axiom Cost Accounting use criteria statements to define a set of data. The syntax for these criteria statement is as follows:

```
Table.Column='Value'
```

- *Table* is the name of the database table.
- *Column* is the name of the column in the database table.
- *Value* is the value in the column.

If the column is String, Date, or DateTime, the value must be placed in single quotation marks as shown above. If the column is Numeric, Integer (all types), Identity, or Boolean, then the quotation marks are omitted.

For example:

- To filter data by regions, the filter criteria statement might be: `DEPT.Region='North'`. This would limit data to only those departments that are assigned to region North in the Region column.
- To filter data by a single department, the filter criteria statement might be: `DEPT.Dept=100`. This would limit data to only department 100.

If the table portion of the syntax is omitted, then the table is assumed based on the current context. For example, if the filter is used in an Axiom query, then the primary table for the Axiom query is assumed. If the current context supports *column-only syntax*, and the specified column is a validated key column, then the lookup table is assumed.

Operators

The criteria statement operator can be one of the following: =, >,<,<>,<=,>=. Greater than or less than statements can only be used with numeric values. For example:

```
ACCT.Acct>1000
```

SQL IN and LIKE syntax can also be used. For example:

```
DEPT.Region IN ('North','South')
```

Compound criteria statements

You can use `AND` and `OR` to combine multiple criteria statements. If you are creating long compound criteria statements with multiple ANDs or ORs, you can use parentheses to group statements and eliminate ambiguity. For example:

```
(DEPT.Region='North' OR DEPT.Region='South') AND (ACCT.Acct=100 OR
ACCT.Acct=200)
```

NOTES:

- When filtering on multiple values in the same column, you must use OR to join the statements, not AND. In the example above, if the statement was instead `DEPT.Region='North' AND DEPT.Region='South'`, that statement would return no data because no single department belongs to both the North and South regions. When you use OR, the statement will return departments that belong to either the North or the South regions.
- Alternatively, you can use the SQL IN syntax to create a compound statement for values in the same column. For example, the statement `DEPT.Region='North' OR DEPT.Region='South'` can also be written as `DEPT.Region IN ('North','South')`. The Filter Wizard uses IN syntax by default.

Using criteria statements in functions

If you are using a criteria statement in a function, such as GetData, you must place the entire criteria statement in double quotation marks. For example:

```
=GetData("Bud1","DEPT.Region='North'","GL1")
```

You can also place the criteria statement in a cell and then use a cell reference in the function. In this case, you do not need to use double quotation marks in the function, unless you are concatenating text and cell reference contents within the function.

Referencing blank values in filters

If a string column contains a blank value, you may want to create a filter that includes or excludes records with these blank values. For SQL Server, the blank value is stored as an empty string. This empty string is indicated with empty quotation marks in the filter. For example: `ACCT.CMAssign=''` or `ACCT.CMAssign<>''`

If you use the Filter Wizard to construct the filter, it will automatically use the appropriate syntax.

Referencing values with apostrophes in filters

If a string column contains a value with an apostrophe (such as O'Connor), then that apostrophe must be escaped with another apostrophe so that it is not read as the closing apostrophe for the filter criteria statement. For example:

`Dept.VP='O'Connor'`

Invalid. This construction does not work because Axiom Cost Accounting reads it as Dept.VP='O' and then does not know what to do with the rest of the text.

`Dept.VP='O''Connor'`

Valid. The extra apostrophe tells Axiom Cost Accounting that the apostrophe is part of the string value and is not the closing apostrophe.

NOTE: This syntax must use two apostrophe characters in sequence and *not* a double quotation mark. If you create the filter using the Filter Wizard, Axiom Cost Accounting will construct the appropriate syntax for you.

Referencing Date or DateTime values in filters

If your locale uses a date format where the first value is the day, filters using that date or date-time value will not process correctly. Instead, the date or date-time value must be in standard format. Standard format is `YYYY-MM-DDTHH:MM:SS` for DateTime and `YYYY-MM-DD` for Date.

If you use the Filter Wizard to construct the filter, it will automatically convert the date or date-time value to the appropriate syntax.

Filter variables

Axiom Cost Accounting provides a set of filter variables that can be used in filter criteria statements throughout the software. Currently, these variables allow filtering based on the current user.

For example, you may have a column on a plan code table such as Dept.Owner, which contains user login names. When setting up plan file filters in security, you want each user to have a filter such as `Dept.Owner='UserName'`. Without using variables, you would need to set up each user with a user-level filter such as `Dept.Owner='JDoe'`, `Dept.Owner='RSandstone'`, and so on. With variables, you can instead set up a single role-level filter such as `Dept.Owner='{CurrentUser.LoginName}'`. For each user in the role, this filter will be resolved using that user's login name.

Filter variables can be used in any place that takes a filter criteria statement. For example, you can use the variables to impact data queries in places such as Sheet Filters, Axiom query filters, Web Report data source filters, Quick Filter, and GetData functions. You can also use the variables in utilities such as Process Plan Files and Create Plan Files.

To use a filter variable, place the variable in curly brackets within the filter criteria statement. All other filter rules still apply—for example, if the variable will resolve to a string value such as a user name, the variable must be placed in single quotation marks. The filter must result in a valid filter criteria statement once the variable is resolved to its current value.

Variable	Resolved Value
{CurrentUser.EmailAddress}	The email address of the current user.
{CurrentUser.FirstName}	The first name of the current user.
{CurrentUser.LastName}	The last name of the current user.
{CurrentUser.LoginName}	The login name of the current user.
{CurrentUser.PrincipalID}	The database ID of the current user.
{CurrentUser.QualifiedLoginName}	The qualified login name of the current user (domain\username). If the user does not have a defined domain, the regular login name is used.