Administrator's Guide

Axiom Rolling Forecasting
Version 2020.1

AXIOM

10 S. Wacker Dr, Suite 3375
Skokie, IL 60077
(847) 441-0022
www.syntellis.com

info@syntellis.com

Version: 2020.1

Updated: 10/12/2020

Contents

Welcome to Axiom Rolling Forecasting

Axiom Rolling Forecasting is an alternative to traditional budgeting that has gained widespread acceptance among leading organizations in multiple industries. Rolling forecasting is a more dynamic planning approach that either compliments your annual budget planning process or replaces the traditional annual budget.

When performing annual budgeting, your organization can spend a lot of time and energy creating a budget that is usually out-of-date before the process is completed. In contrast, Axiom Rolling Forecasting allows you to incorporate previously unknown assumptions, new initiatives and other changes on a quarterly basis. A monthly/quarterly forecasting approach allows your organization to navigate an environment of constant change with a more nimble, dynamic, and fluid process. This allows you to adjust for factors that you might not have known three months ago. Moving from or complimenting the annual budget process to rolling forecasts allows you greater flexibility in responding to fluid situations.

Advantages of rolling forecasting include:

- A much quicker, less time-consuming process than traditional budgeting.
- The ability to respond to changes in a timelier (monthly/quarterly) manner vs. annual budget process.
- Keeping projections more in line with recent actuals.
- Focus on continuous improvement in key metrics.

The Axiom Rolling Forecasting process takes your actual data and rolls it horizontally into quarters, projecting out the quarters for the next two to three years. This process also provides you the flexibility to roll up your organizational structure vertically into forecast categories, such as Radiology, Surgery, and so on instead of individual departments and grouping your account structure into income statement categories (For example, Salaries, Supplies, Purchased Services, and so on).

While Axiom Software is flexible and powerful enough to support any approach to financial management, the real value of the software comes from Syntellis's library of healthcare-specific templates, reports, and utilities. Based on our 25+ years of experience as trusted advisors to healthcare institutions, these tools can help your organization establish and maintain the solid financial foundation necessary to fulfill its mission.

Axiom Rolling Forecasting is supported by a team of specialists, who together have helped hundreds of healthcare organizations apply our solutions to meet their strategic and financial goals. During implementation, a Syntellis Implementation Consultant will help you configure the application to match your organization's structure and preferences. Afterward, feel free to contact Syntellis Support if you encounter any difficulties or unanticipated situations while using the software.

What is covered in this document

This manual covers the Axiom Rolling Forecasting features and is written for users assigned the Axiom Rolling Forecasting Administrator role. This is an individual in your organization that is tasked with configuring, maintaining, and controlling other users' access to the Axiom Rolling Forecasting-related features and data.

As an Axiom Rolling Forecasting Administrator, you have access to features and menus that are unavailable to regular end users such as department managers, non-finance executives, and other stakeholders. In some cases, the same screen or workbook might display slightly different in your interface than it would for an end-user.

This manual covers the Axiom Rolling Forecasting features and is written for users assigned the Rolling Forecasting Analyst role. As an Axiom Rolling Forecasting Analyst, you have access to some administration features and menus that are unavailable to regular end users such as department managers, non-finance executives, and other stakeholders. This includes Axiom Explorer, file groups, exports and imports, and the Scheduler. You also have access to all of the Rolling Forecasting reports.

This manual is written for end users (non-administrators) and covers the Axiom Rolling Forecasting features. As an end user, you can view plan files and the following reports:

- Monthly analysis reports and financial statements
- Quarterly analysis reports, financial statements, and scenarios
- Variance comment inputs and review

What's new

Welcome to Version 2020.1 of Axiom Rolling Forecasting!

There are no new features for this release.

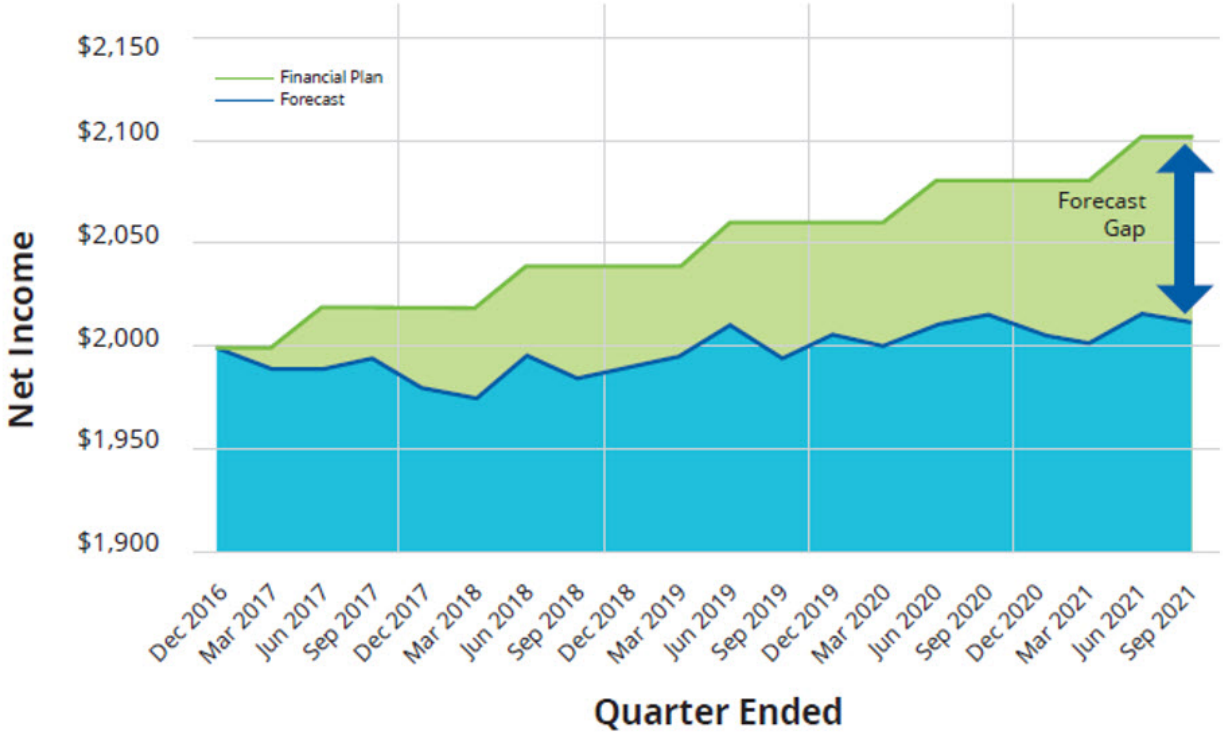
Understanding the Rolling Forecasting process

The Rolling Forecasting process generates forecasts for the next six to twelve quarters (two to three years or up to 36 months) using common budget and forecast techniques. Forecasts are calculated using historical relationships to project the financial results of operations given current operating relationships.

The Rolling Forecasting works as follows:

- The forecast is compared to the long-term financial plan as well as other targets.
- The resulting gap is analyzed to identify what changes in operations are necessary to move the forecast so that it more closely matches the financial plan.
    - Understand how your organization operates.
    - Identify what needs to change today to close the gap.

The following is an example of a gap analysis graph:



The individuals who will interact with the Axiom Rolling Forecasting most often include:

- **Rolling Forecasting Group Managers** – Develop and update rolling forecasts to meet targets based on the long-term financial plan as well as provide explanations for any significant variances.
- **Vice Presidents/Executives** – Review reports and analyses of Rolling Forecasting data to help inform strategic decision-making.

If your organization is new to the Rolling Forecasting process, you may encounter some resistance when implementing the process as it represents a radical change in approach and philosophy. A few questions and considerations:

- Is there executive support for Rolling Forecasting?
- Have you discussed what it means for your organization to not have a detailed monthly budget if you are replacing the annual budgeting process?

- Are there debt covenant or other requirements for a detailed budget?
    - If you need a budget, it could be the annual plan from your long-range financial plan.
    - Will industry benchmarks need to replace budget targets for biweekly/daily productivity?
- Do you have an extremely detailed budget process?
- Have you embarked upon a process improvement journey using such techniques as Lean Accounting Total Quality Management, Kaizen, or Deming approaches?
- Have you introduced the concept of rate per unit to the management staff?
- Does the management staff have an understanding of fixed and variable cost?
    - Flexible budget is a great tool to increase a manager's financial IQ.
- Are you interested in a monthly forecast to the end of the current fiscal year or a quarterly forecast over a 12-quarter or 36-month time horizon?
    - The CY Forecast utility is a good first step to organizational readiness for rolling forecasting.

2

Getting Started

This section provides information on the basics of using Axiom Rolling Forecasting, such as:

- General system navigation and user interface
- Using spreadsheet plan files and report files from an end user perspective
- Using general Axiom spreadsheet file features such as views, snapshots, and printing
- Viewing data using web-friendly reporting tools such as Web Reports and Data Explorer

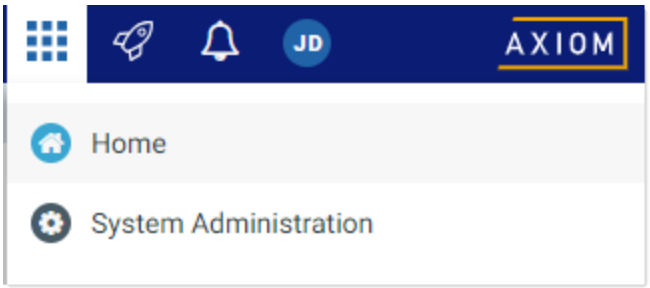
This section is intended for all users who are getting started with Axiom Rolling Forecasting. For end users, this section provides an ongoing reference for file-related tasks.

Home page

All users have a home page that opens automatically when you log into Axiom Rolling Forecasting. Depending on your system, the Web Client home page may be one of the following:

- A product-specific home page for an installed Axiom Rolling Forecasting product
- A custom home page created specifically for your organization
- The default Axiom Rolling Forecasting home page

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

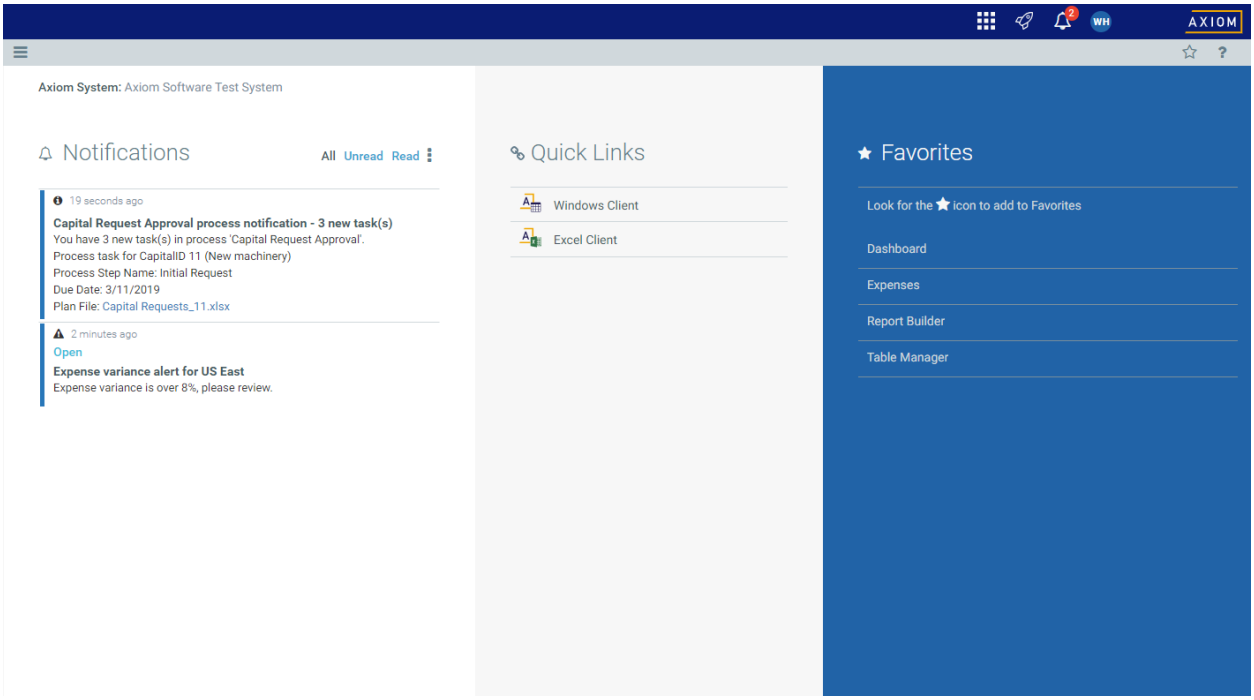


Home option on Area menu

If you are in a system with installed products, the Area 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 assigned browser-based home page, then the Web Client displays a default home page. The default home page displays notifications, favorites, and quick links.



Example default home page

This default home page can also be accessed (by any user) by going to the following URL:

Example On-Premise URL

`http://ServerName/Axiom/Home/Launchpage`

Where *ServerName* is the name of the Axiom Application Server, and Axiom is the default name of the virtual directory.

Example Cloud System URL

`https://ClientName.axiom.cloud/Home/Launchpage`

Where *ClientName* is the name of your Axiom Cloud Service system.

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.

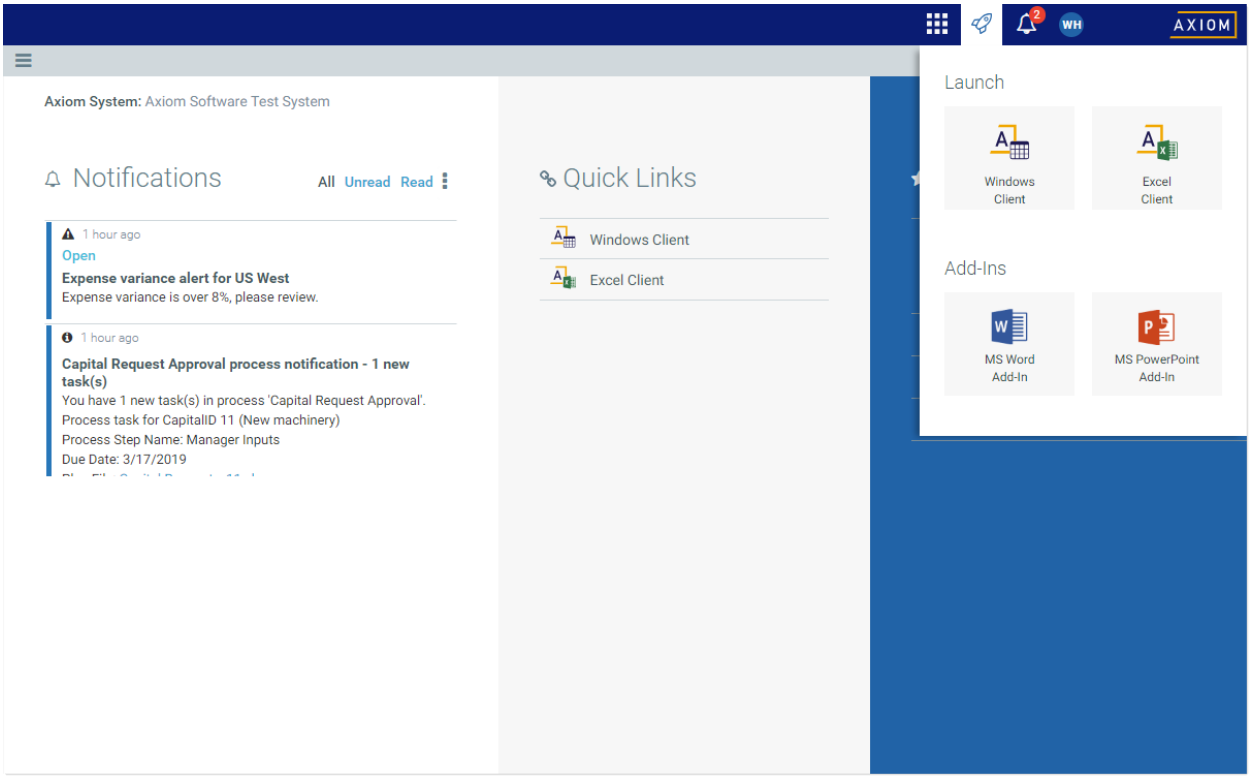
Launching Axiom Rolling Forecasting applications

You can launch various Axiom Rolling Forecasting 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).
- For systems using SAML or OpenID authentication, this is the only option for users to launch installed applications. SAML and OpenID authentication require users to be authenticated using the Web Client before they can launch a desktop application.
- 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.



Quick Launch menu

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.

If the client is not already installed on the current workstation, clicking the icon will initiate the install and then launch the client. If the client is already installed, clicking the link will launch the client. You must be using Microsoft Edge or Internet Explorer 11 (or higher) to perform these actions. Other browsers may be able to install and launch the client if a ClickOnce extension is applied to the browser.

The appropriate client to use depends on your organization's preferences and on your user role. Your organization will provide instruction as to which client you should use.

For more information on installing the Windows Client and Excel Client, including prerequisites and configuration details, see the Installation Guide (on-premise systems) or the Cloud Service Technical Guide (cloud service systems). Some software prerequisites can be downloaded and installed from the Web Client. You can access the prerequisites download page from the Axiom Rolling Forecasting About box.

NOTE: The default home page also contains links to launch the Windows Client or the Excel Client.

Launching add-ins

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

Item	Description
MS Word Add-In	Launches the Axiom Rolling Forecasting Add-In for Microsoft Word.
MS PowerPoint Add-In	Launches the Axiom Rolling Forecasting Add-In for Microsoft PowerPoint.

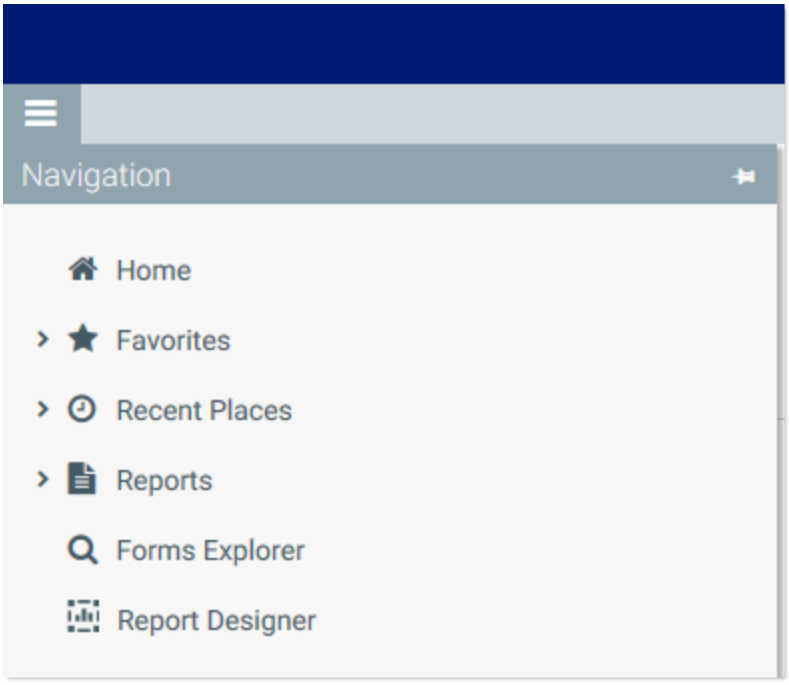
NOTE: One or both add-ins may not display in the menu, depending on your organization's preferences.

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

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 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 Rolling Forecasting 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 Designer. The standard navigation links can be customized, so each client's system may look different. Navigation links can only be customized by administrators using the Desktop Client.
System Administration	The system administration links show when you are in the System Administration area, and provide access to features such as the Table Manager, Audit Manager, and software updates.

Area	Description
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.

Viewing system information

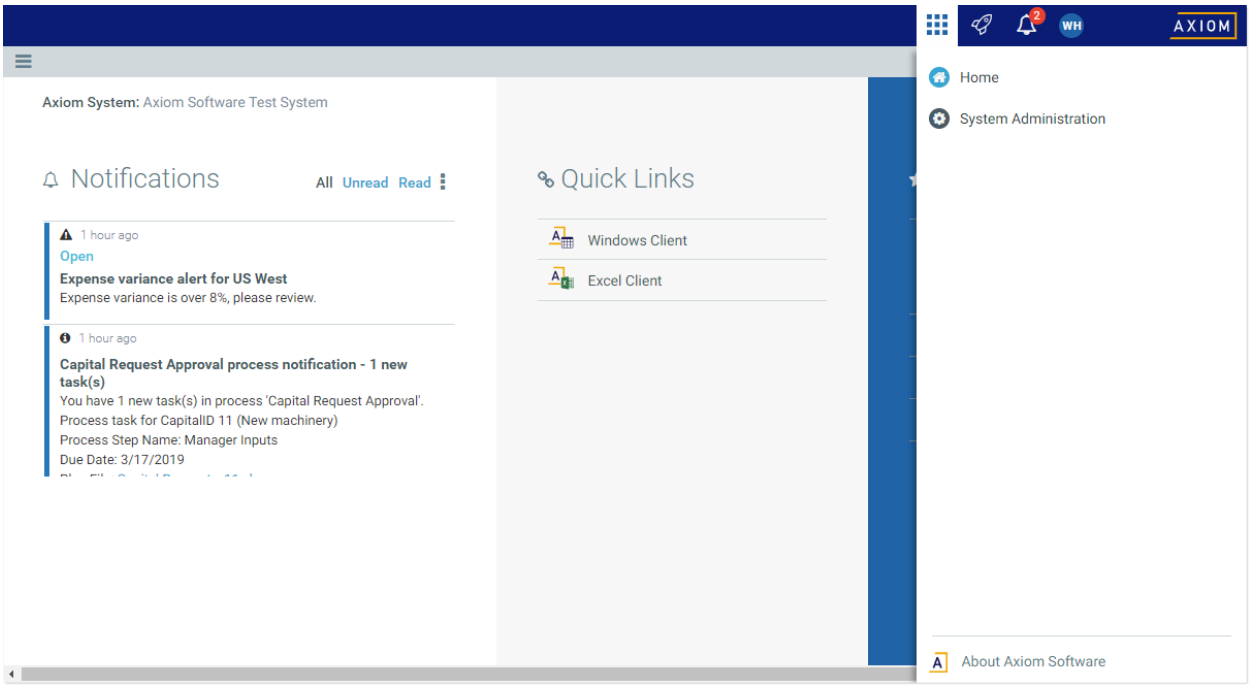
Use the Axiom Software About box to see information about your current system, such as:

- Axiom Rolling Forecasting version number
- Product version numbers
- System name
- Application server URL

The About box also contains a link to download software prerequisites, if necessary for installation of the Desktop Client.

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**.



About Axiom Software at bottom of Area menu

Getting to know the interface

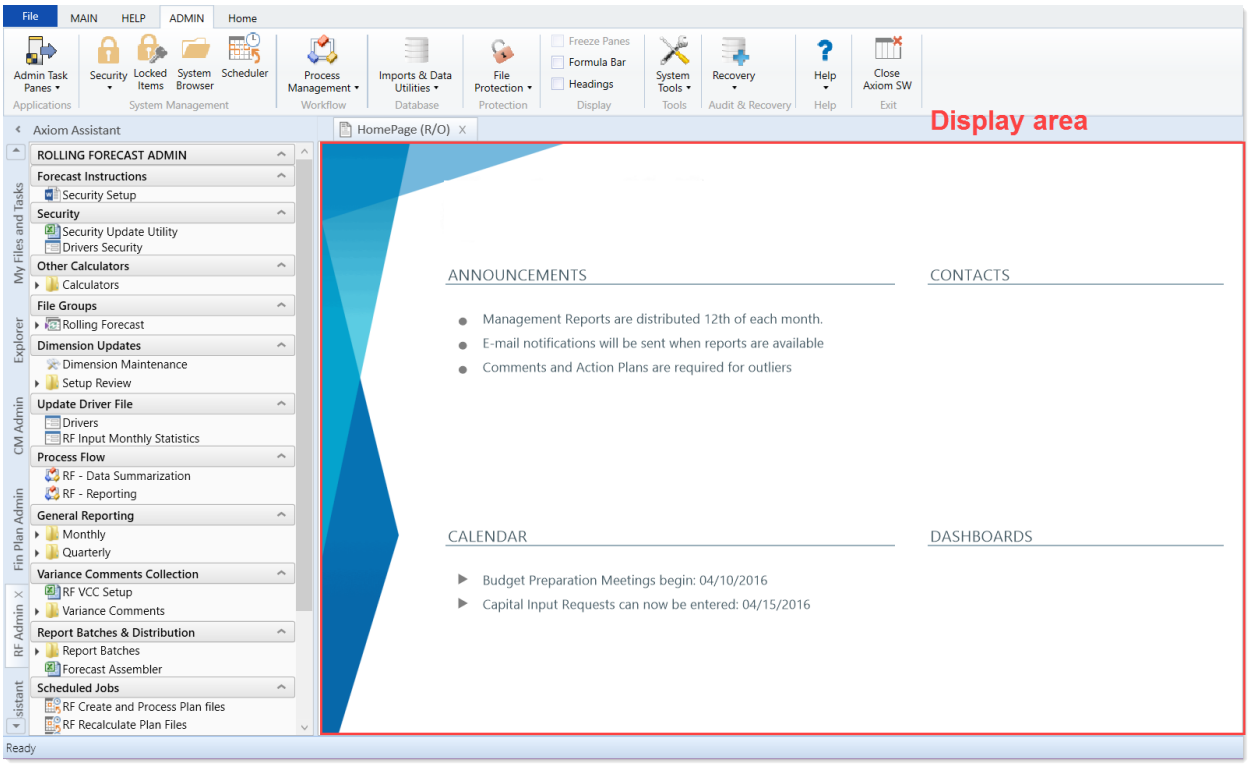
All Axiom Software products share a common interface and make use of many of the same features.

NOTE: The interface elements referenced in this section can vary depending on if or how your organization customizes them. This means that topics in this manual may reference features that do not display in your task panes, which means they may not be available for you to use. Contact your Axiom administrator for more information.

The interface includes several sections, including:

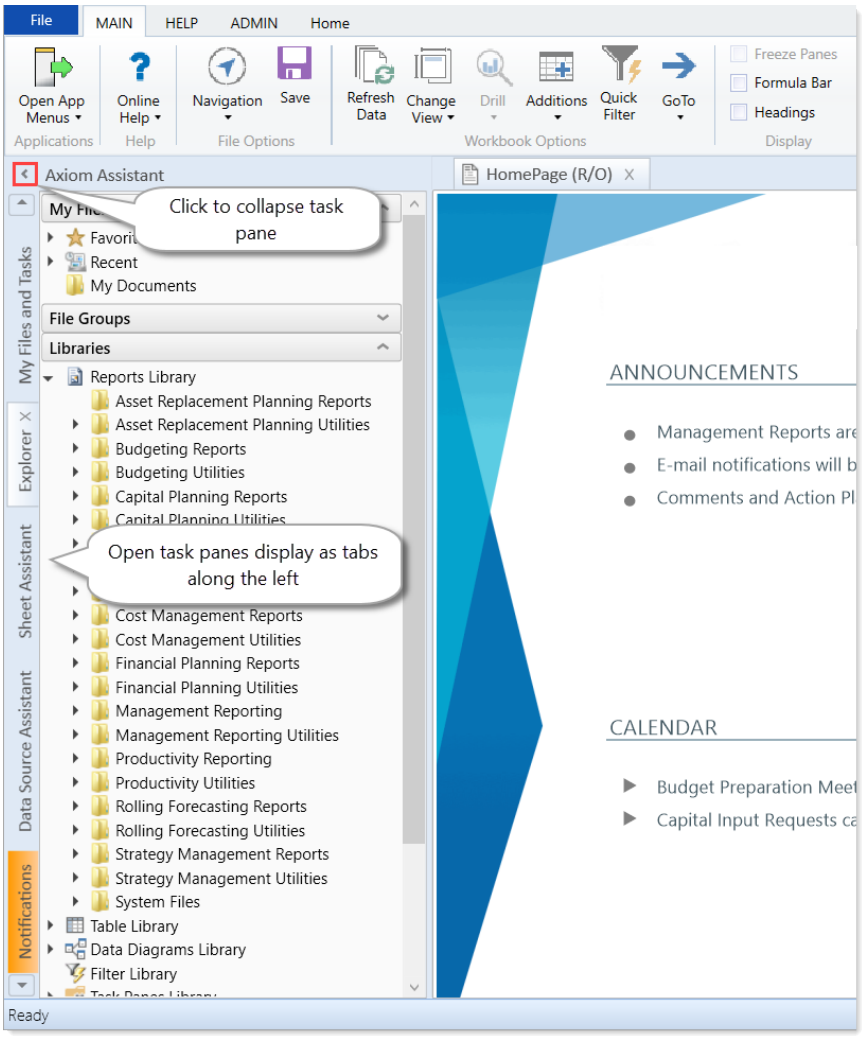
Display area

The main display area of Axiom Rolling Forecasting displays the open files. By default, it shows the Syntellis 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.

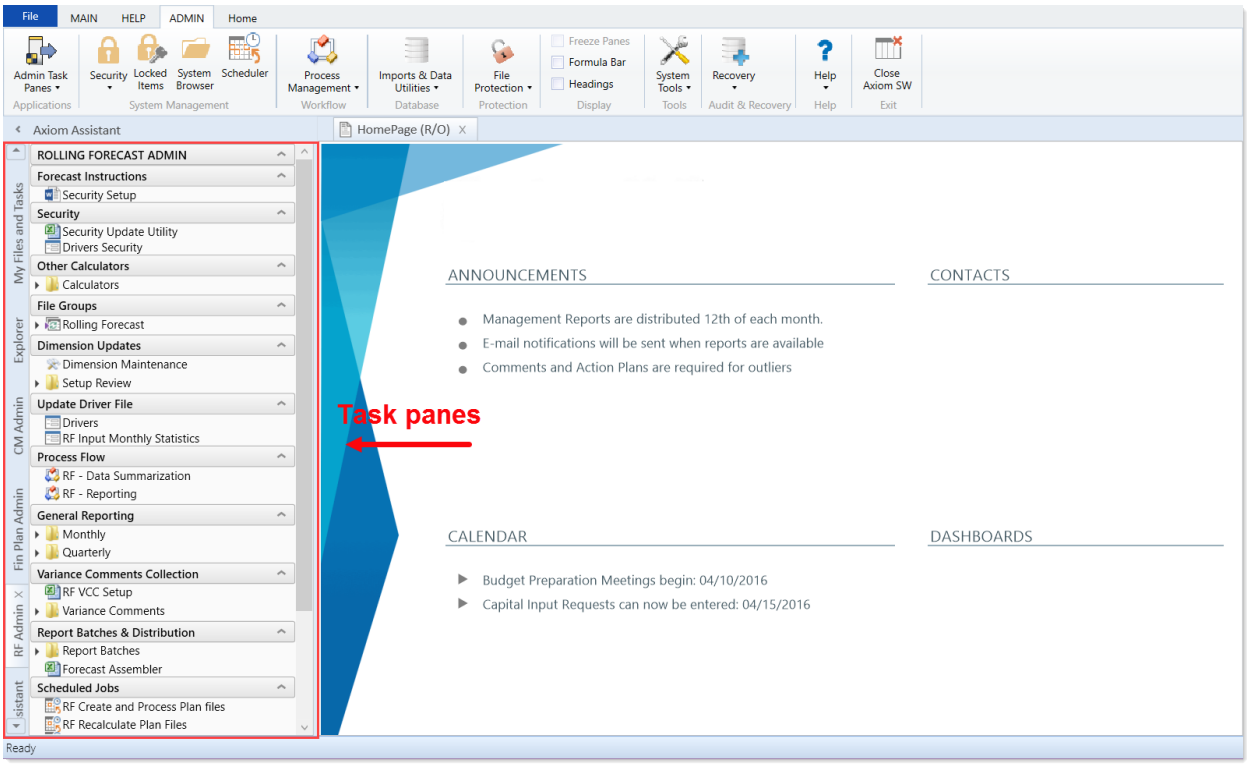


Task panes

A task pane provides access to commands, utilities, reports, plan files, and so on for Axiom Rolling Forecasting, 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.



Each Axiom Software product includes a set of specialized task panes. Different task panes display depending on your security role profile. The administrator role profile has access to all of the features of Axiom Rolling Forecasting, including drivers, dimension tables, and other system administrator features while the end user task pane includes a subset of the options available in the Admin task pane.



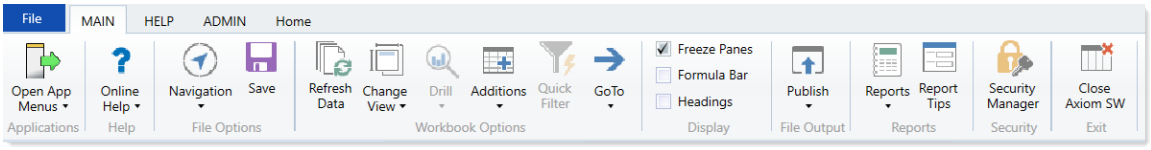
Ribbon tabs

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

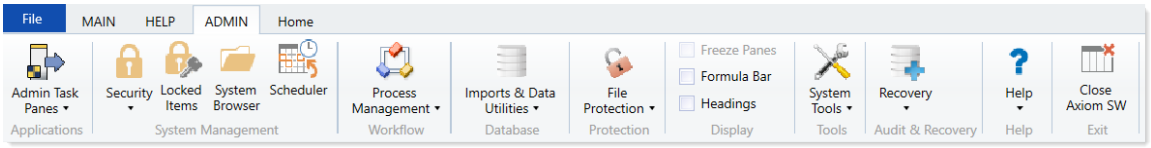
Includes commands for accomplishing most tasks in Axiom:

- Opening, closing, and saving files
- Accessing online help for products and advanced (Axiom platform) help
- Viewing data in spreadsheets
- Printing or emailing files
- Accessing shortcuts to frequently accessed reports



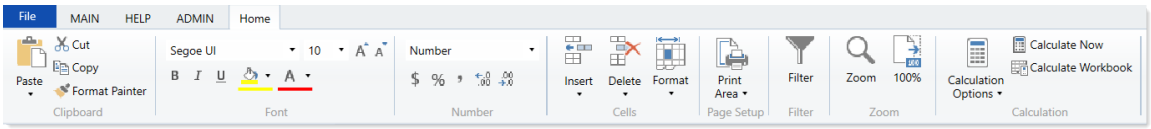
Admin

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. Access to online help for products and advanced topics (Axiom platform) is also available.



Home

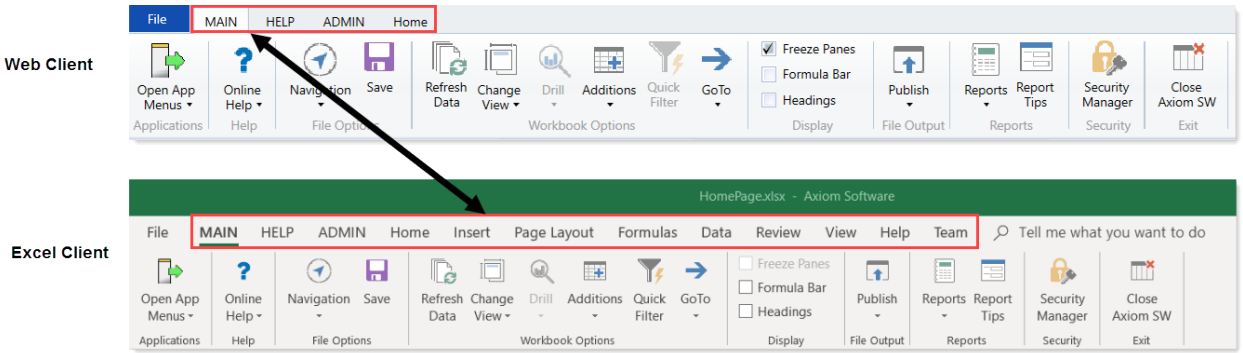
Includes standard spreadsheet commands.



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.

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.

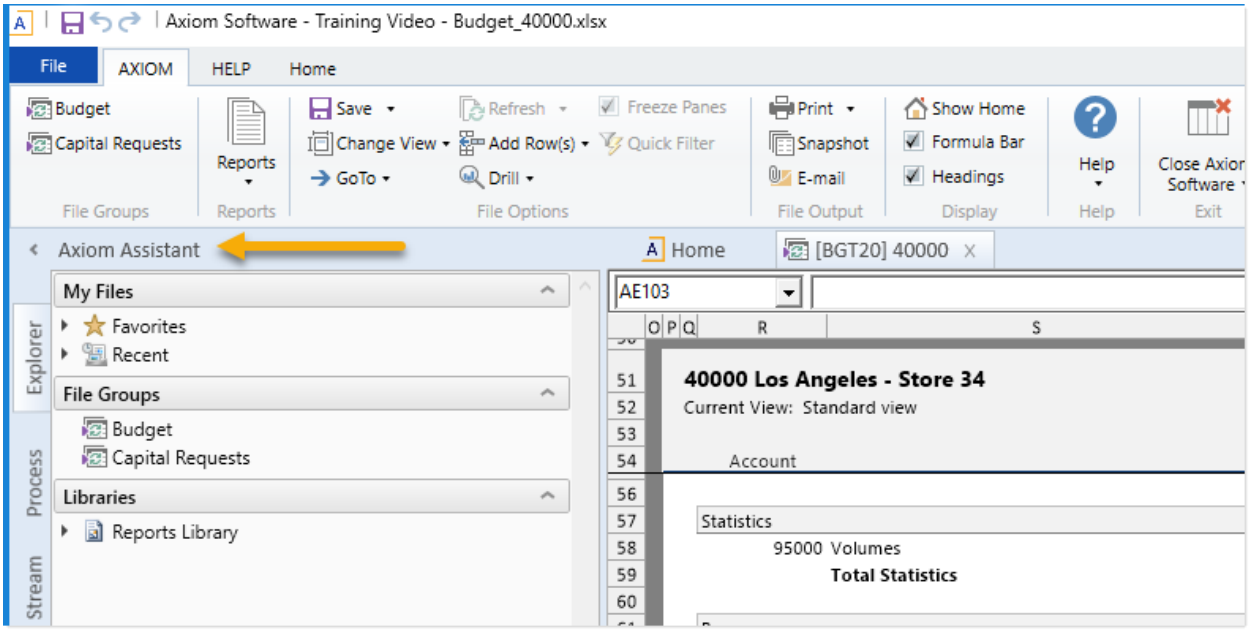


Axiom Assistant task panes

The Axiom Assistant area provides quick and easy access to Axiom Rolling Forecasting files and features as you work in the Desktop Client. A variety of task panes are available to help you perform general and context-sensitive tasks. Additionally, system administrators can create customized task panes for use in

this area.

The Axiom Assistant area is located in the left-hand side of the application, 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-hand edge of the pane.



Example Axiom Assistant area

Available 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
Data Source Assistant	Helper tool to build data sources, such as RefreshVariables, 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.

Task pane	Description	Availability
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.
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.
<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 Rolling Forecasting 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 system administrator has specified an order for the task panes that open when the system is started. System-controlled task panes display after these startup task panes.

▶ Minimize Axiom Assistant

By default, the Axiom Assistant area is maximized when you first start Axiom Rolling Forecasting. 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-hand 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 on one of the task pane tabs.

Axiom Rolling Forecasting remembers the state of the Axiom Assistant (minimized or expanded) when you exit the application, and will apply that state the next time you open Axiom Rolling Forecasting on the same machine.

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 will automatically show again when a task pane is opened).

Opening task panes

In most cases, the task panes that you need to use will open automatically—you do not need to manually open them.

- Certain task panes are configured to open automatically when Axiom Rolling Forecasting is started, such as the Explorer task pane. 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.
- 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 will always be available when it is relevant (and assuming that you have security permissions to view it).

If you have access to the Task Panes Library to open certain custom task panes as needed, then you can open a task pane by double-clicking it in the Explorer task pane or the Axiom Explorer dialog. Alternatively, one of your "startup" task panes might be used to open other task panes.

For example, you might have access to a Monthly Reporting task pane that details the steps you need to do to run your monthly reports, and links to those reports. You wouldn't necessarily need this task pane to be open at all times; instead, you would only want to see it when you are ready to process your monthly reports. You could open the task pane as needed from the Task Panes Library or from another custom task pane that links to it.

Closing task panes

Most task panes cannot be manually closed. Either they are global task panes that always apply, or they are context-sensitive task panes that close automatically when the associated file or feature is closed. Alternatively, you can minimize the Axiom Assistant area to "hide" all task panes and gain more screen space for your open files.

If a task pane is closeable, then you can close it by clicking the **X** icon on the side-tab for the task pane. If this icon is not present, then the task pane cannot be closed. Typically, only task panes that you open manually can be closed manually, but in some cases you may also be able to close task panes that open on startup.

Using task panes in the Axiom Excel Client

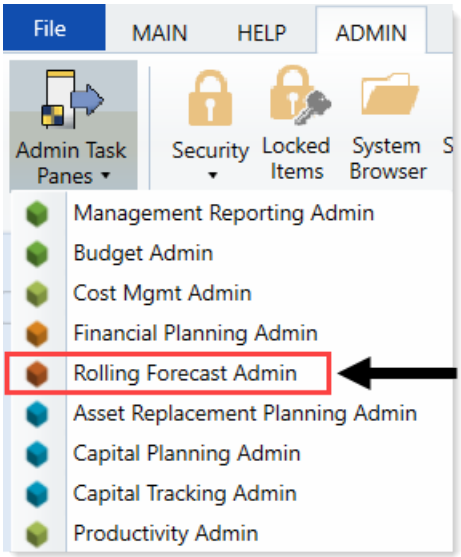
When using the Axiom Excel Client, each file opens within its own window, and each window maintains its own set of ribbon tabs and task panes. This means that as you switch windows, the set of task panes available in each window may be different. For example:

- 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 Axiom Windows Client, if you switch between files that have different default task pane associations. However, in the Axiom Excel Client it may also happen when switching between files with the same default task pane associations.)
- The current state of task panes is managed independently for each window. For example, if you expand the Reports Library in the Explorer task pane in one window, that expansion will not be present if you switch to a different window.

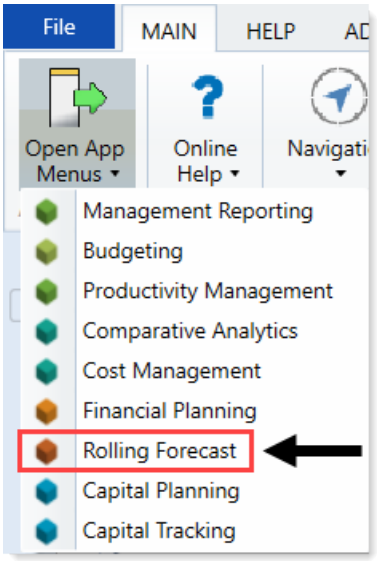
Opening the Axiom Rolling Forecasting task panes

To open the Axiom Rolling Forecast task panes:

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



- For end users, in the **Main** ribbon tab, click **Open App Menus**, and select **Rolling Forecast**.



Opening the Explorer task pane

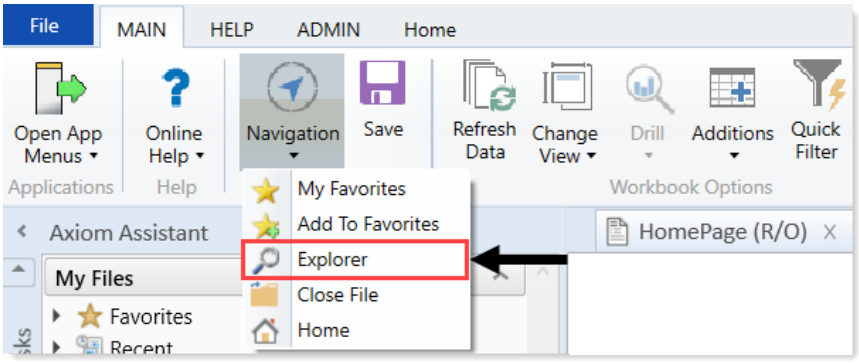
Axiom Rolling Forecasting provides a built-in Explorer task pane so that you can quickly access your favorites, recent items, and all the files that you have rights to access.

> **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:

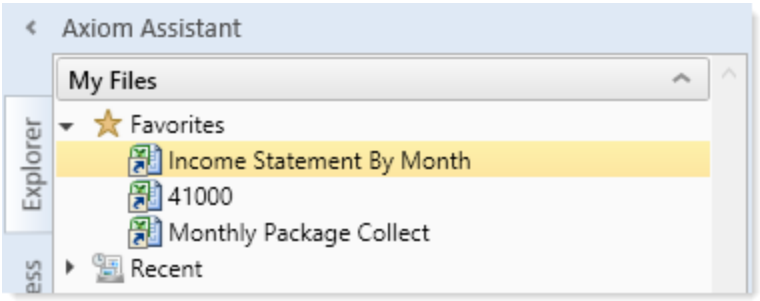
- In the **Main** ribbon tab, click **Navigation**, and select **Explorer**.



Managing favorites

You can save Axiom files and other items as favorites, for quick access to commonly used items. In the Desktop Client, 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)



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 that would be 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 Software file system, but it retains the same document ID, then the shortcut will not be broken.

Saving and deleting favorites

You can save an item as a favorite in one of the following ways:

- In the **Explorer** task pane and the **Axiom Explorer** dialog, you can right-click an item and select **Add to Favorites**.
- When a file is open, you can right-click the file tab and select **Add to Favorites**.

The item is saved as a favorite and now displays in your Favorites list. If the file was open when you saved it as a favorite, it displays using the file tab name. If needed, you can change the display name by editing the shortcut properties for the favorite.

TIP: If you open a table using **Open Table in Spreadsheet**, and then save the open table as a favorite (using the file tabs), the settings you used will be automatically saved as part of the favorite, in the shortcut properties. You may want to rename the favorite to indicate the particular settings (for example: GL2020 - Filtered for North Region).

NOTE: If a web-enabled file is saved as a favorite in the Desktop Client, that favorite will also display in the Web Client. This includes Axiom forms and web reports. All other types of favorites do not display in the Web Client.

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

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 are displayed 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. Sub-folders cannot be reordered—they will always display in alphabetical order.

To rename a favorite, right-click the item and then 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.

Using web favorites in the Desktop Client

If you save a favorite in the Web Client, that favorite also displays in the Desktop Client favorites list. You can double-click the web favorite to open it in the Web Client browser.

When a favorite is saved in the Web Client, it is stored as a URL instead of a document shortcut. If the target of the favorite is later deleted, the favorite does not show as invalid in the Desktop Client. 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.

Opening recent files

Axiom Rolling Forecasting maintains a list of your recently opened files in the Desktop Client. 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. Recent files are listed using the file tab name that they were opened with, which may or may not be the same as the file name.

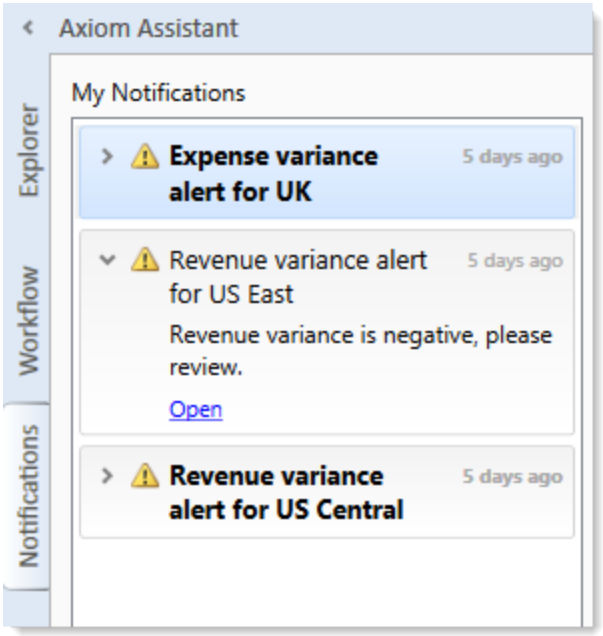
The list displays the last 15 files that you recently opened. Note the following:

- 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 Rolling Forecasting database. Therefore, Excel's recent file list cannot be used to open Axiom files.

Viewing notifications using the Notifications task pane

If you receive an Axiom Rolling Forecasting notification, the notification displays in the Notifications task pane. This is a system-controlled task pane that is always available in the Desktop Client if you have notifications. Click the **Notifications** tab in the Axiom Assistant area to view the task pane.



Example Notifications task pane

If you have unread notifications when you first log in, or if you receive new notifications during a current session, the Notifications tab will flash orange and remain that color until you click on the tab. Unread notifications display in bold text. Once a notification has been read, the bolding is removed.

Notifications can come from the following sources:

- **Alert notifications.** Your system administrators and other power users may have set up alerts to monitor certain alertable conditions and then notify specified users.
- **Process management notifications.** These notifications result from active processes in process management, such as to inform you that you have a new task in the process.
- **Message stream notifications.** If you have subscribed to a document's message stream, you will be notified of any new comments made about that document.
- **Axiom system processes such as Process Plan Files.** If you have triggered certain system processes, Axiom Rolling Forecasting will notify you when the process is completed or when errors occur.

NOTES:

- The Notifications task pane is a system-controlled task pane; you cannot hide or show this task pane manually. The Notifications task pane always displays on startup if you have any active notifications (read or unread). Otherwise, it does not display. If you receive a new notification during a session and the task pane is not already open, this will cause the task pane to open.
- All notifications displayed in the Notifications task pane are also available in the Notifications panel of the Axiom Web Client. Both areas read from the same source of notifications, and edit the same source as well. So if you mark a notification as read in one area, or delete a notification from one area, the other area will reflect these changes.

Reviewing notifications

Within the task pane, notifications are listed in the order they were created, with the newest notifications at the top. Each notification displays a severity icon and an alert title, as well as how old the notification is. The following severity icons are used:

-  Info
-  Warning
- Error

To read the notification text, double-click the notification to expand it. The text should provide you with more information about the notification and why you are receiving it. You can double-click the notification again to collapse it.

If the notification is from an alert, then the alert creator may have specified a document that you can open to see more information about the alert condition. If so, then you will see an **Open** link underneath the message text when you expand the notification. Click this link to open the associated document.

Notification actions

You can select one or more notifications and then right-click to perform the following additional actions:

- **Mark Read**: Mark the selected notifications as read.
- **Mark Unread**: Mark the selected notifications as unread.
- **GoTo Alert Definition**: Open the source document for the alert, if you have permission to access the file. You will be taken directly to the specific alert definition that generated the notification.
- **Delete**: Delete the selected notifications. Keep in mind that once a notification has been deleted, you cannot undo this action.

Changing your Axiom Rolling Forecasting password

If your authentication method is Axiom Prompt, you can change your password as needed using the Desktop Client. 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 Rolling Forecasting.

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 Rolling Forecasting

When you close Axiom Rolling Forecasting, you will be prompted to save any changed but unsaved files.

To close the Desktop Client:

- Click the **Close Axiom Software** button in the **Exit** group of the **Axiom** tab.

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

You can also close the application by clicking the **X** button in the top right-hand corner of the application window.

If you are using the Axiom Excel Client, there is no option to close Axiom Rolling Forecasting but leave the current Microsoft Excel session open. Keep in mind that it is not necessary to close Axiom Rolling Forecasting in order to work on a regular Excel file. You can open regular Excel files within Axiom Rolling Forecasting, or you can open a second Excel session.

3

Preparing Data

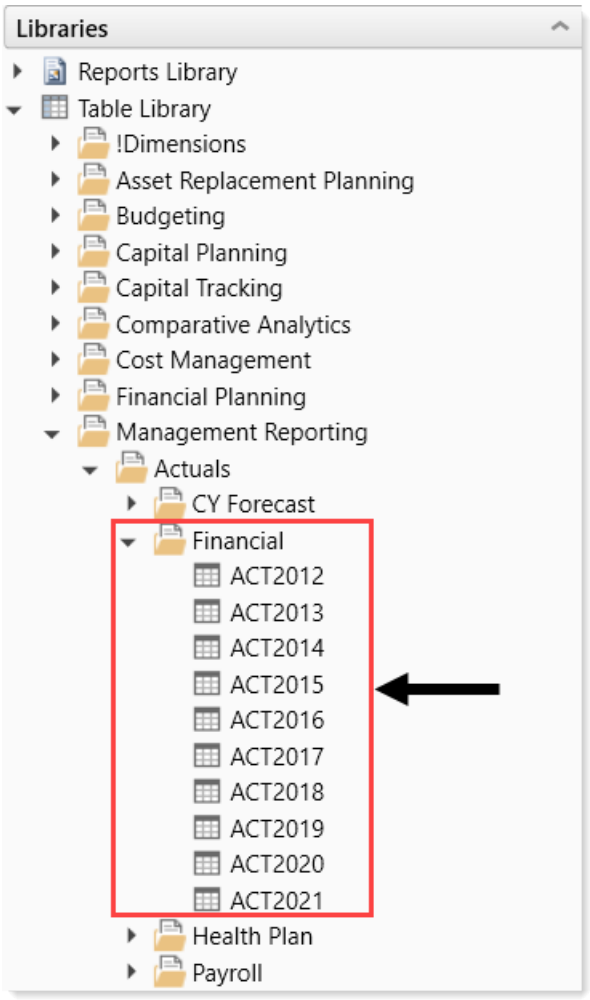
To create quarterly forecasts, import historical GL, statistics, and payroll data to summarize that data to the level necessary for Axiom Rolling Forecasting's calculations.

At a high level, the process is as follows:

1. **Import historical data** – Axiom Rolling Forecasting generates quarterly forecasts based on historical data acquired from your GL. By default, the system imports this data to the DEPT, ACCT, and INITIATIVEID dimension tables within the Syntellis database. For more information, see Working with Dimensions.
2. **Configure driver files** – Configure the driver files for initial and subsequent Rolling Forecasting processes. For more information, see Configuring Drivers.
3. **Summarize imported data** – Map department and account-level data to higher-level groups using summary codes called RFCode (for accounts), RFGroup (for departments), and RFID (for initiatives). For more information, see Summarizing data.
4. **Update Rolling Forecasts plan files** – After historical data has been imported and summarized, update the plan files for your forecasts. For more information, see Working with Plan Files.

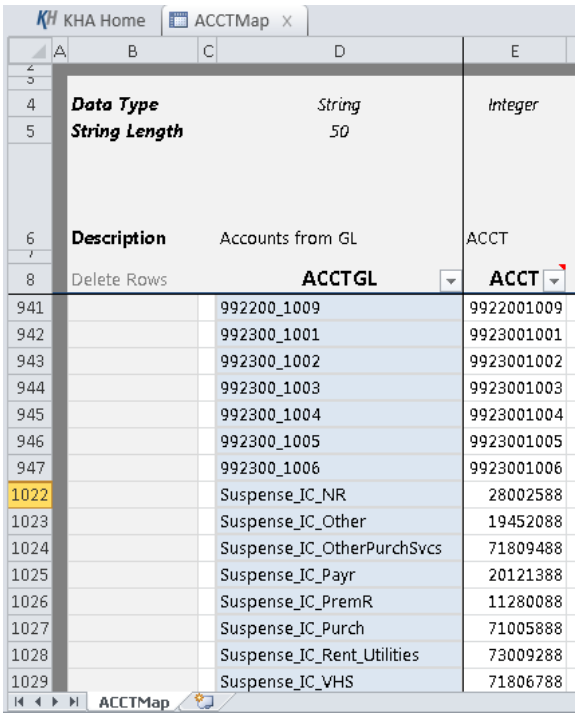
Importing and mapping source data

To ensure that all statistics and drivers used in calculations are up to date, you need to import General Ledger data into Axiom Rolling Forecasting. As part of the rolling forecast process, you will need to import your data on at least a quarterly basis and, most likely, a monthly basis. Since the data used in Axiom Rolling Forecasting comes from your ledger, the source data sits in your ACT20XX tables under the **Table Library > Management Reporting > Actuals > Financial folder**.



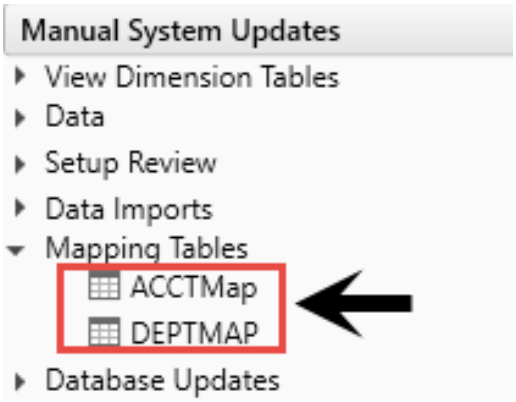
Your Syntellis Implementation Consultant will help configure automated import processes during implementation. From there, it is your responsibility as administrator to ensure that source data is available in the designated location in the requisite format when needed.

In some cases, it may be necessary to map data from your GL to valid numeric account or department numbers. Prior to importing your data, you must update these mapping tables to avoid errors or exceptions during the import process. In the following example, column D should be the code as it exists in your GL or import file, and column E should be the numeric Acct number that the data should be imported into the system with. It may be necessary to have multiple mapping tables such as one for Dept, depending upon your GL structure.



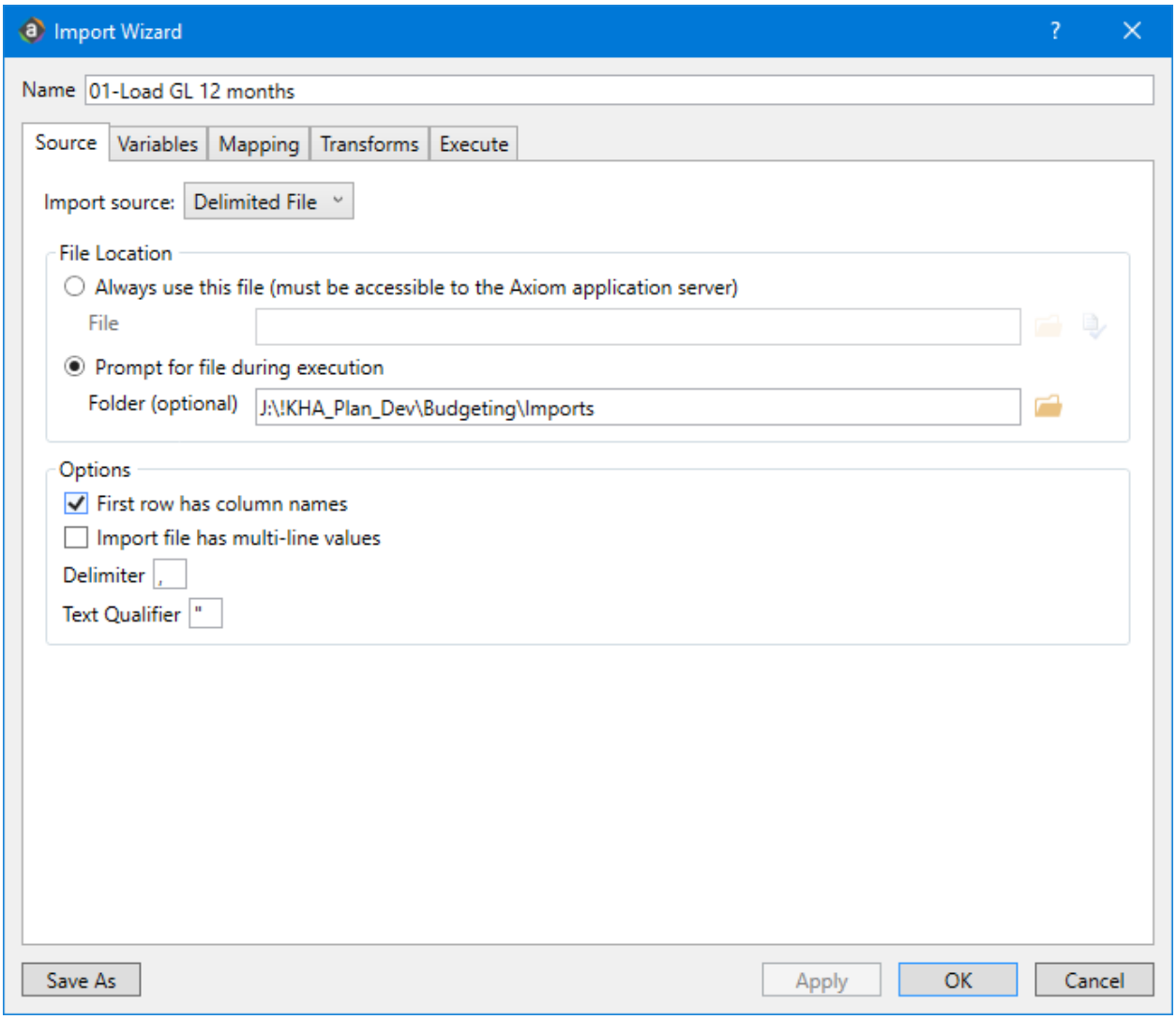
4	***Data Type***	*String*	*Integer*
5	***String Length***	*50*	
6	**Description**	Accounts from GL	ACCT
8	Delete Rows	**ACCTGL**	**ACCT**
941		992200_1009	9922001009
942		992300_1001	9923001001
943		992300_1002	9923001002
944		992300_1003	9923001003
945		992300_1004	9923001004
946		992300_1005	9923001005
947		992300_1006	9923001006
1022		Suspense_IC_NR	28002588
1023		Suspense_IC_Other	19452088
1024		Suspense_IC_OtherPurchSvcs	71809488
1025		Suspense_IC_Payr	20121388
1026		Suspense_IC_PremR	11280088
1027		Suspense_IC_Purch	71005888
1028		Suspense_IC_Rent_Utilities	73009288
1029		Suspense_IC_VHS	71806788

To access these tables, navigate to the **RF Admin** task pane, and in the **Manual System Updates** section, click **Mapping Tables**.



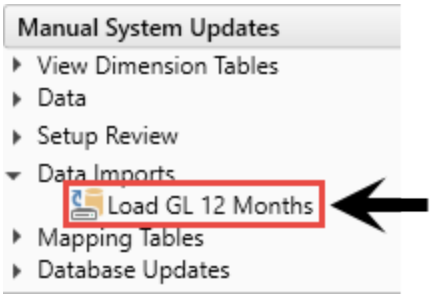
Running pre-defined imports

Use the following process to use the pre-defined import for loading your GL data. Since Axiom Rolling Forecasting depends on GL data, you will use the Management Reporting import.



To run pre-defined imports:

1. In the RF Admin task pane, in the **Manual System Updates** section, click **Data Imports**, and double-click **Load GL 12 Months**.



In the **Admin** ribbon tab, you can also open the imports by clicking **Imports > Management Reporting > 01 - Load GL 12 months**, and clicking **Execute**.

2. In the **Import Wizard** dialog, click the **Execute** tab.
3. In the **Execute** tab, you can make the following configuration changes before you run the import:

NOTE: Before changing default settings, contact your Syntellis Implementation Consultant or Customer.

Option	Description
Allow pauses	Specifies whether pauses are honored during processing. • If enabled, then Axiom Rolling Forecasting honors the pause settings on the **Transforms** tab. If a step has **Pause** enabled, then the import pauses after performing the step, and displays the temp table in the **View Data** dialog. When the dialog is closed, the import continues to the next step. • If disabled (the default setting), then the import will continue without pausing, regardless of whether any steps are flagged with **Pause**. This option is only available to users with read/write access to the import. This option only applies to the current execution of the import; it is not saved in the import settings.
Preview only	Data is only imported to the temporary table and transformed for preview. It is not saved to the destination table.
Ignore lookup and key errors	Data is saved to the destination table, even if errors are encountered.

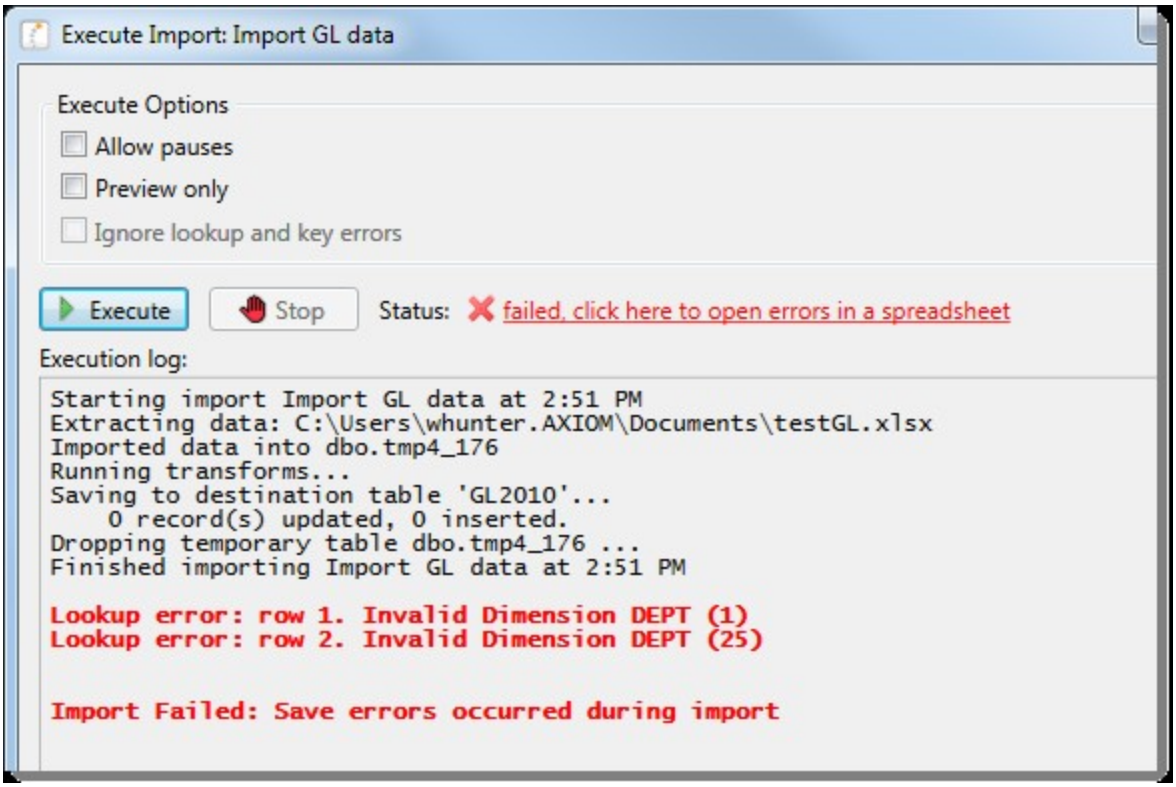
Option	Description
Aggregate rows on final save	Specifies whether duplicate rows are aggregated during the final save to the destination table. Duplicate rows are rows that have the same key column values. • If enabled (the default setting), then duplicate rows are aggregated before saving data to the destination table. This aggregation process may take some time for large imports. • If disabled, then the temptable data is not aggregated before saving data to the destination table. If any duplicate rows exist, the import is aborted and no data is saved to the destination table. You can optionally use the **Ignore lookup and key errors** option to instead exclude the invalid rows and only import valid rows. Disabling this option improves import performance for large imports where aggregation is not necessary. This option is only available to users with read/write access to the import. This option is saved in the import settings and will apply to future executions of the import by default. This option only applies when saving data to a data table. If you are saving data to a reference table, rows are never aggregated and duplicate keys are not allowed.

4. In the **Description** box, you can optionally enter a description for the import.

   You can use the description to document the purpose of the import and/or to detail important import instructions. The description is limited to 2000 characters.

5. To run the import, click **Execute**. To stop the execution, click **Stop**.

As you complete the import settings, the Import Wizard performs error checking for missing required settings and invalid settings. If the destination table has linked columns (columns that are assigned to a lookup column), data is automatically validated against the lookup column before importing. The Execution log displays the process steps of the import as it executes. If errors occur, they display in the log.



You can click the link to go to the tab that contains the error. Only one error displays at a time; after you resolve the current error message, a new message may display.

Reconciling data imports

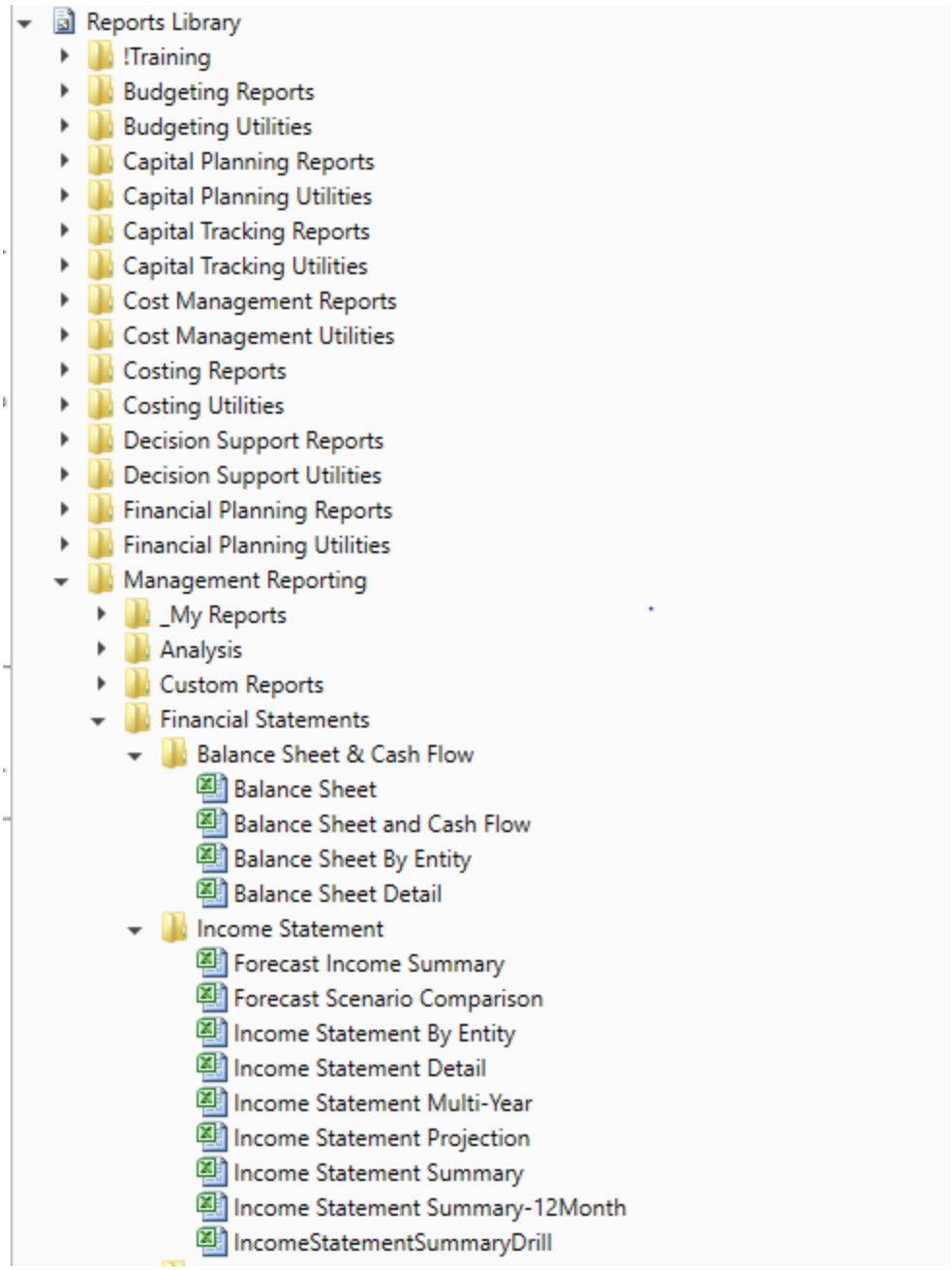
After importing your data, there are several reports you can use to reconcile your data to the GL. These reports include the following:

- **Income Statement Summary** - An Income Statement report that shows month-end data by comparing Actual to Budget at the FSDetail level.
- **Income Statement by Entity** - An Income Statement-style report with a column for each selected entity.
- **Income Statement Detail** - An Income Statement that shows account detail and variances for each Income Statement category.
- **Income Statement – 12 Month** - A monthly Income Statement-style report summarized by FSDetail level. This report is located in the following location in the Explorer task pane: **Libraries > Reports Library > Management Reporting > Financial Statements > Income Statement**.
- **Balance Sheet** - Compares current year and prior year balance sheet information.
- **Balance Sheet by Entity** - Compares balance sheet information by entity for a selected time period.

- **Balance Sheet Detail** - Shows the month-end data by display the account-level detail for balance sheet data within each FSDetail category.

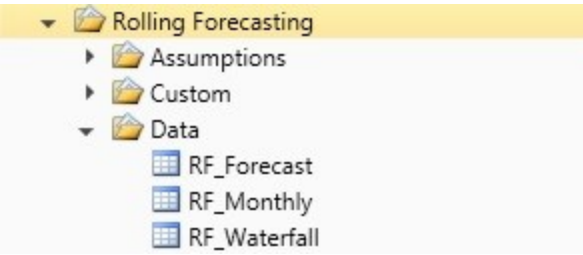
To reconcile data imports:

1. In the Explorer task pane, in the **Libraries** section, click **Reports Library > Management Reporting > Financial Statements**, and click the following:
    - For balance sheet reports, click **Balance Sheet & Cash Flow**, and double-click one of the following:
        - Balance Sheet
        - Balance Sheet by Entity
        - Balance Sheet Detail
    - For income statement reports, click **Income Statement**, and double-click one of the following:
        - Income Statement Summary
        - Income Statement by Entity
        - Income Statement Detail
        - Income Statement – 12Month



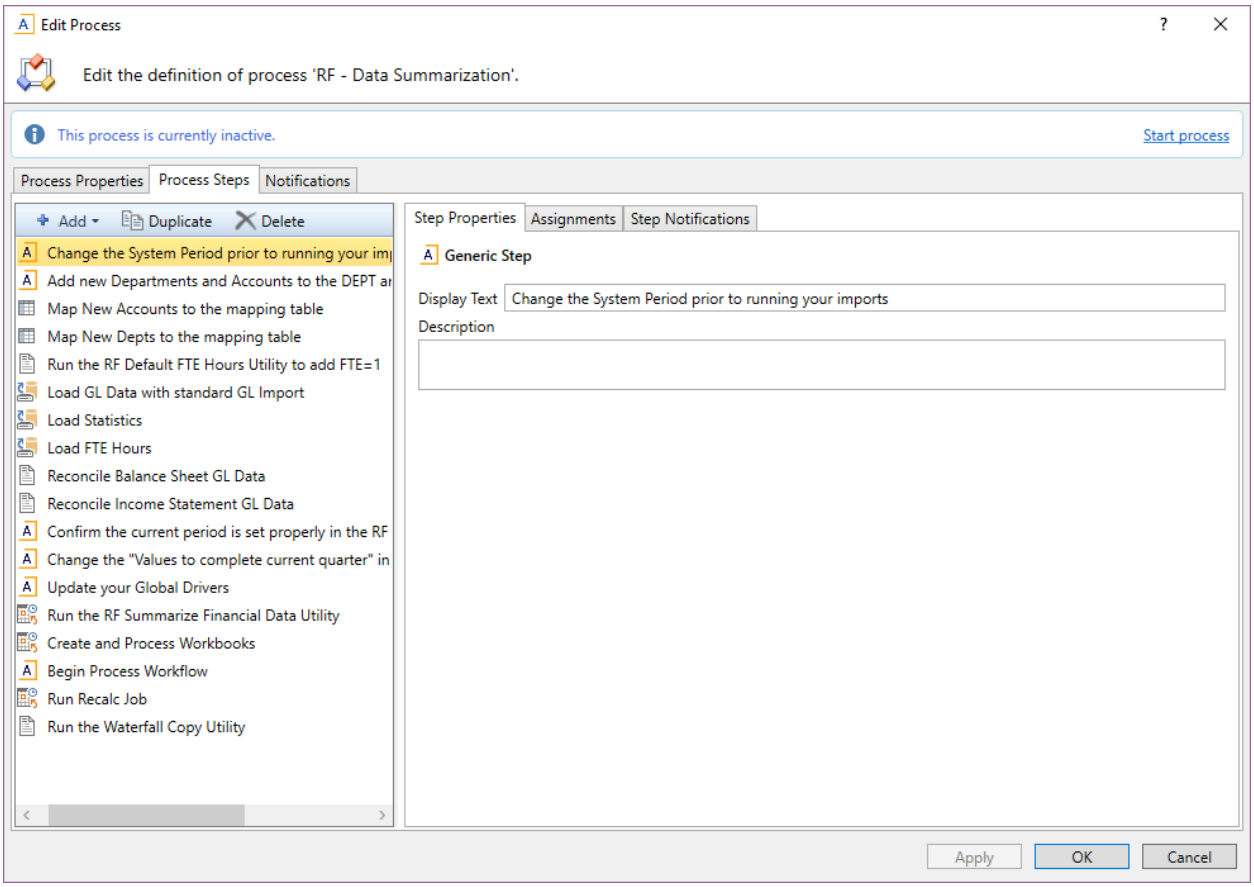
Summarizing data

For purposes of rolling forecasting, you need to summarize general ledger and statistics data. To this end, detailed GL and statistics data is first imported at the level set up in the DEPT and ACCT dimension tables, then assigned to roll-up codes in the DEPT (RFGroup) and ACCT (RFCode) dimension tables. From there, the data is summarized in a Rolling Forecasting data table named RF_Monthly.



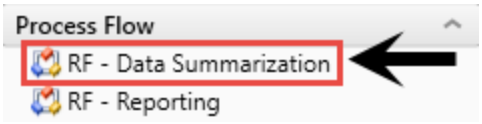
Preparing data for Axiom Rolling Forecasting

To simplify the process of updating Axiom Rolling Forecasting, we have designed a Process Definition that includes all the steps you need to follow.



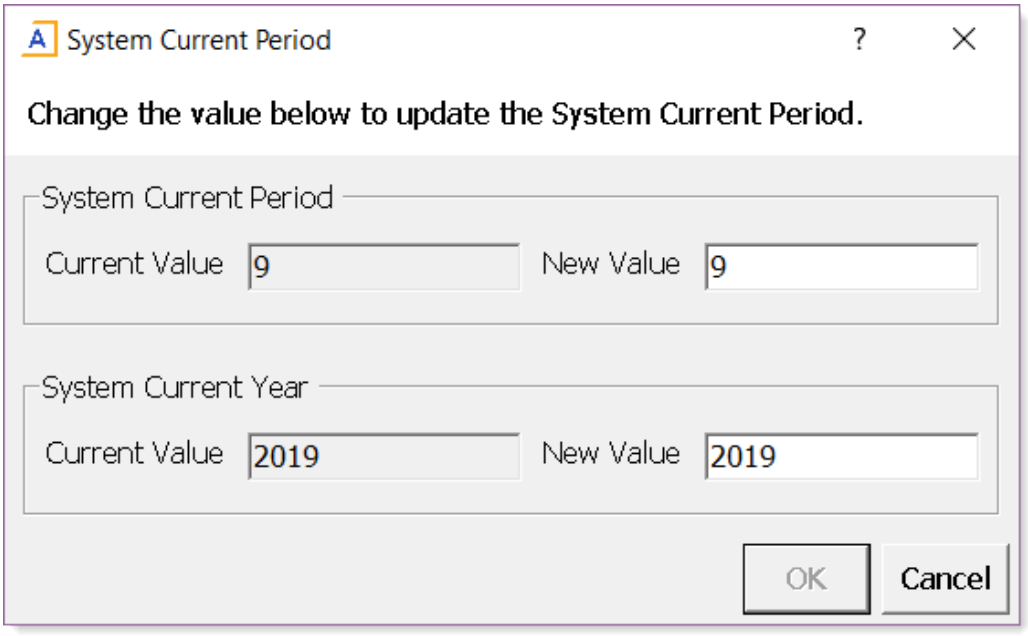
To prepare data for Rolling Forecasting:

1. In the **RF Admin** task pane, in the **Process Flow** section, double-click **RF- Data Summarization**.

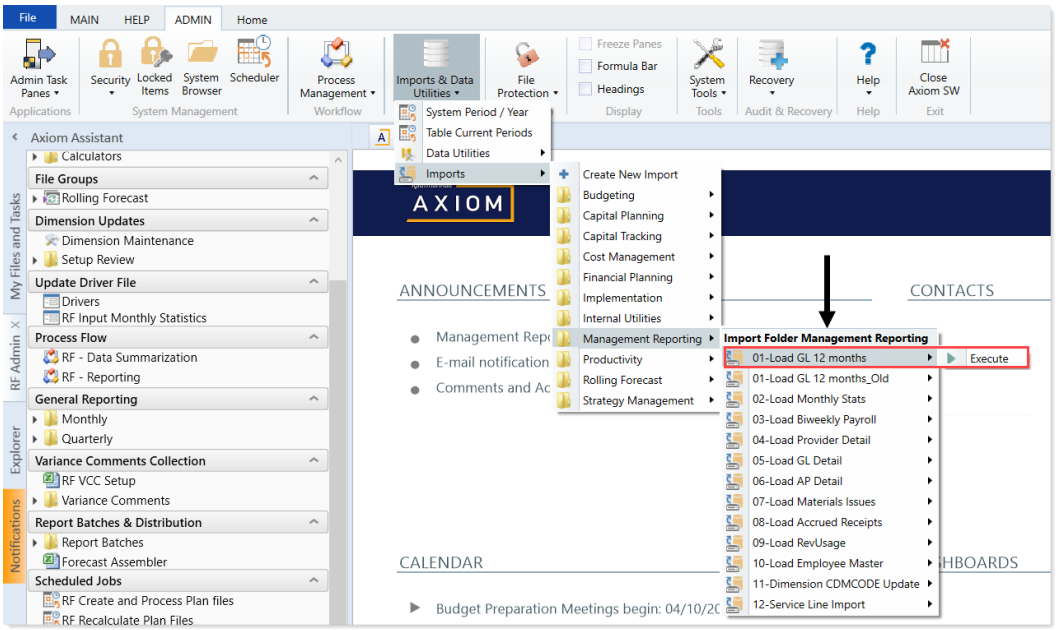


After this is activated, each step in the process flow directs you to complete the remaining steps listed below.

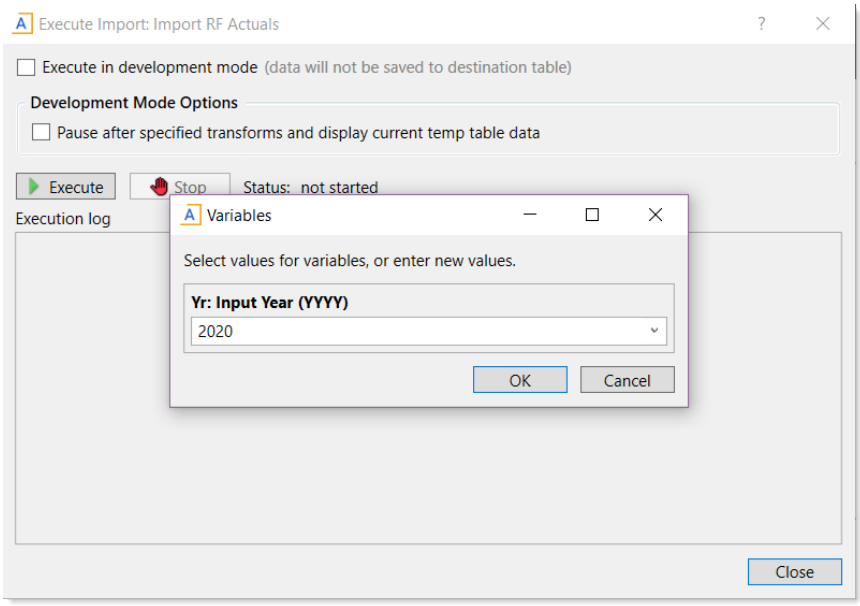
2. **Change the current system period** – In the **Admin** ribbon tab, click **Imports & Data Utilities**, and then click **System Period/Year**.
    a. In the **System Current Period** dialog, change the system current period as well as the system current year (if you are changing fiscal years or loading historical data).



    b. Click **OK**.
3. **Add new departments and accounts to the DEPT and ACCT dimension tables.**
4. **Update any ACCT Mapping tables used in imports.** (If necessary)
5. **Update any DEPT Mapping tables used in imports.** (If necessary)
6. **Run the RF Default FTE Hours utility** to populate FTE hours manually if hours are not loaded from through any of your imports. This is for plan files that have salaries loaded but hours are not loaded into your GL. It is required for the Salary CMs to work properly.
7. **Load the GL data** by doing the following:
    - To import your source data, in the **Admin** ribbon tab, click **Imports & Data Utilities > Imports > Management Reporting > 01-Load GL 12 Month**, and click **Execute**.



8. **Load statistics** by doing the following:
   - In the **Admin** ribbon tab, click **Imports & Data Utilities > Imports > Management Reporting > 02-Load Monthly Stats**, and click **Execute**.
9. **Load FTE Hours** by doing the following:
   - In the **Admin** ribbon tab, click **Imports & Utilities > Imports > Rolling Forecast > Import RF Actuals**, and click **Execute**. When prompted, enter / verify the date and then click **OK**.



10. **Reconcile Balance Sheet data** – In **Management Reporting > Financial Statements**, run the

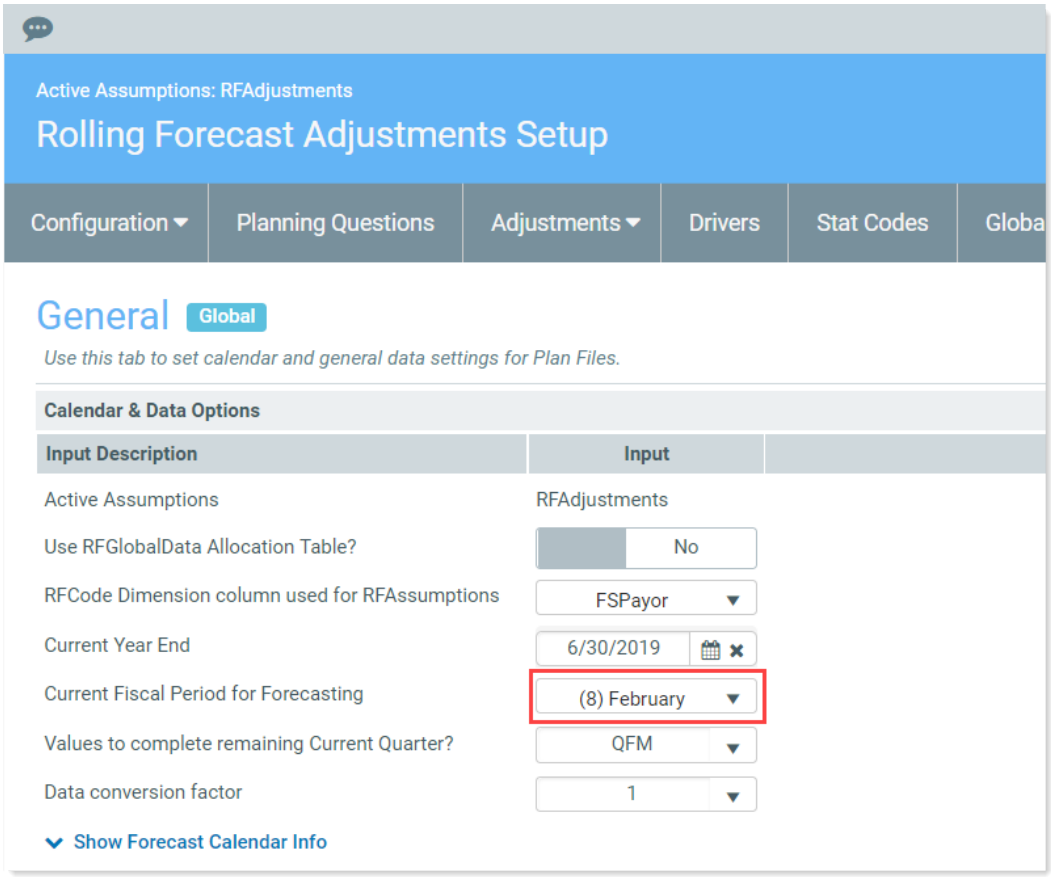
Balance Sheet.xlsx report to ensure your balance sheet data loaded properly and ties to your GL.

11. **Reconcile Income Statement data** – In **Management Reporting > Financial Statements**, run the **Income Statement Summary.xlsx** report to ensure your Income Statement data loaded properly and ties to your GL.

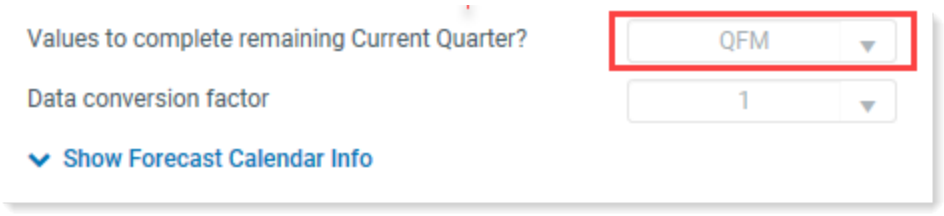
12. **Confirm the current period is set for the forecast** – In the **RF Admin** task pane, in the **Update Driver File** section, double-click **Drivers**, and do the following:

    - Click the **Configuration** > **General**, and then, in the **Current Fiscal Period for Forecasting** cell, confirm that the current period is set properly.

    IMPORTANT: Do not use formulas in this setting.



13. **Change the Values to complete remaining Current Quarter? setting** – In the **Values to complete remaining Current Quarter** drop-down, select one of the following methods for populating values for the remaining time in the current quarter:



Type	Description
CYF	Use if you are a Budgeting client and currently using the Current Year Forecast feature under the Budgeting module. For more information, see Working with Axiom Rolling Forecasting Calculators.
QFM	Use if using monthly values from Axiom Rolling Forecasting.
CYB	Use if using the current year budget (if available).
None	Use if not using either option (for example, you are entering a full quarter's worth of data).

14. **Update your Global Drivers** – In the **RF Admin** task pane, in the **Update Driver File** section, double-click **Drivers**.

15. **Run the Summarize Financial Data Utility** – In the **RF Admin** task pane, in the **Scheduled Job** section, double-click **RF Summarize Financial Data**, and click **Run Once**.

    This job summarizes and populates the RF Monthly data table to summarize the financial data from monthly time series to quarterly. This step summarizes GL data based on the RFGroup and RFCode from the monthly time series (P1, P2 ...) to the quarterly time series.

16. **Create and Process Workbooks** – In the **RF Admin** task pane, in the **Scheduled Jobs** section, double-click to run the job once or schedule to run at a later date to create and process plan files.

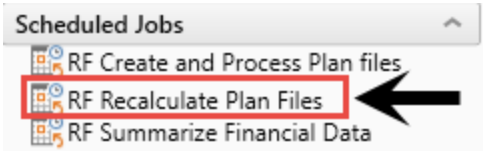
    NOTE: For Rolling Forecasting, the plan files are rebuildable, which allows you to recreate and process the workbooks each month without losing your previous months adjustments, forecast method selections, new initiatives approve/exclude selections, or comments.

17. **Begin Process Workflow** – In the **RF Admin** task pane, in the **File Groups** section, click **Rolling Forecast > Process Definitions**, and double-click **RF- Plan File Process Flow**.

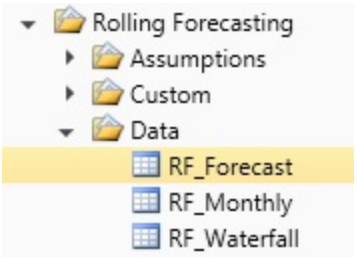
    NOTE: Workflow is optional. If you do not want to use workflow, you need to adjust your security settings to allow users to see workbooks when not using workflow. For more information, see Security Overview.

18. **Run Recalc Job** – Run Recalc Job periodically throughout the Plan File Update process. This refreshes the GetData variables in the plan files, which are connected to the drivers. In the **RF Admin** task pane, in the **Scheduled Jobs** section, double-click **RF Recalculate Plan Files**.

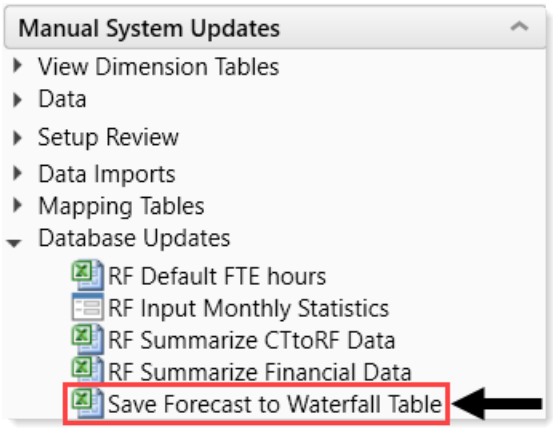
NOTE: You may consider scheduling the job to run nightly during the Rolling Forecasting Process.



As plan files are saved back to the database, the data is stored in the RF_Forecast data table. You can find this table in the Explorer task pane in the Table Library section by clicking Rolling Forecasting > Data.



19. **Run the Waterfall Copy Utility** – You must complete this step before starting a new forecast update. All data from the workbooks are saved back to the Waterfall table to be used not only for Waterfall reporting but to rebuild workbooks with the percent, adjustments, and comments made to the workbooks. To run the utility, in the **RF Admin** task pane, in the **Manual System Updates** section, click **Database Updates**, and double-click **Save Forecast to Waterfall Table**.



This utility copies (snapshot) the data from the RF_Forecast data table to the RF_Waterfall data table. You can find this table in the **Explorer** task pane in the **Table Library** section by clicking **Rolling Forecasting > Data**.

Using the RF Input Monthly Statistics utility (optional)

The RF Input Monthly Statistics utility provides summarized statistics from the ACTYYYY financial tables to the RF Monthly table for your organization's specific entities.

Using this utility, you can do the following:

- Save your custom filters for each RFGroup row.

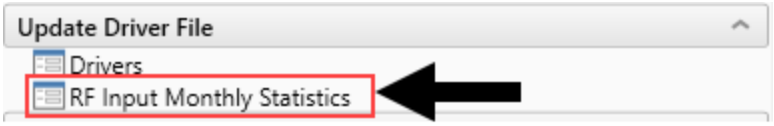
  NOTE: Your statistics filters are saved to the RF_StatFilter table when you save the RF Input Monthly Statistics Form. This means that the filters are saved even if you zero out the RF_ Monthly table.

- View and save values from the ACTYYYY table for the current, ultimate, and penultimate years to the corresponding time series in the RF Monthly table at the same time.
- Filter the report by plan group.
- Manually update statistics that do not exist in the Actual tables.

TIP: Run this report after Monthly close is completed.

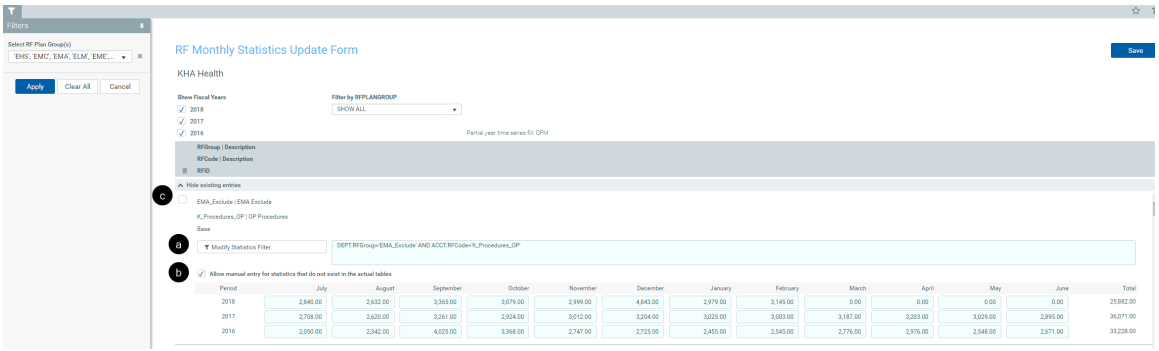
To use the RF Input Monthly Statistics utility:

1. In the RF Admin task pane, in the **Update Driver Files** section, double-click **RF Input Monthly Statistics**.



2. In the **Filters** panel, click the **Select RF Plan Group(s)** drop-down.
3. In the **Choose a value for RFPlanGroup** dialog, select the plan groups to include, and click **OK**.
4. In the **Filters** panel, click **Apply**.
5. Under the **Show Fiscal Years** section, select the plan groups to show by fiscal year, as needed.
6. From the **Filter by RFPLANGROUP** drop-down, select the plan groups to display, as needed.
7. In the utility, do any of the following:
   a. To select, edit, or create a filter, click **Modify Statistics Filter**. For instructions, see Using the Advanced Filter Wizard.
   b. To manually update values, select the check box next to **Allow manual entry for statistics that do not exist in the actual tables**. Update the blue cells with statistics value changes, as needed.
   c. To remove entities from the RF_Monthly table, select the check box in the delete column

(indicated by the trash can icon). The entities are removed when you save changes.



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

Selecting and transferring capital projects to Axiom Rolling Forecasting

If your organization uses Axiom Capital Tracking, you can transfer your capital data to include in your rolling forecast plan files.

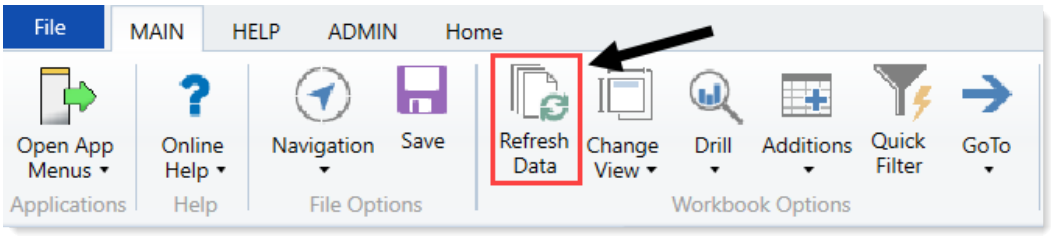
IMPORTANT: We recommend that you DO NOT change department numbers in Axiom Capital Tracking after you transfer projects to Axiom Rolling Forecasting and process them in RF plan files. This may cause duplication of data in different plan files.

To select and transfer capital projects to Axiom Rolling Forecasting:

1. In the **Cap Track Admin** task pane, in the **Integration** section, double-click **CT Map Projects to RF**.

2. Do one of the following to refresh the data:

   - In the **Main** ribbon tab, in the **Workbook Options** group, click **Refresh Data**.

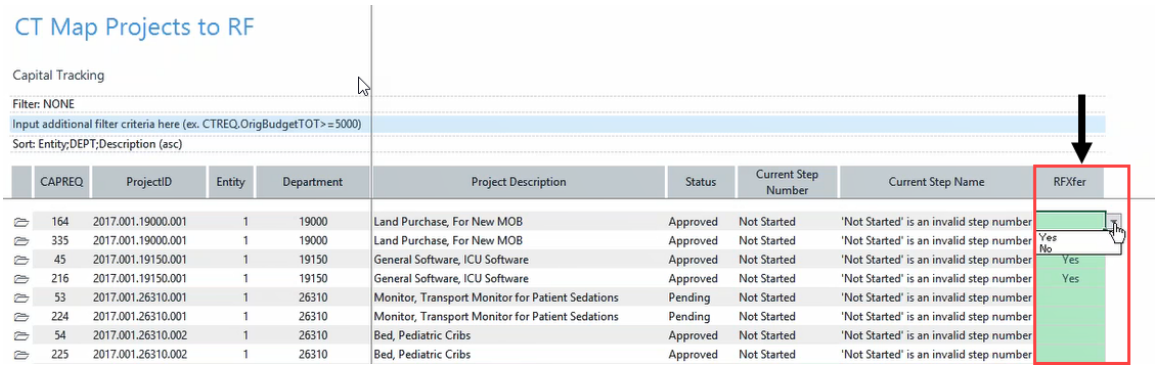


- Press **F9**.

3. In the **Refresh Variables** dialog, click **Choose Value** to select the variables to filter the projects to display, and click **OK**.

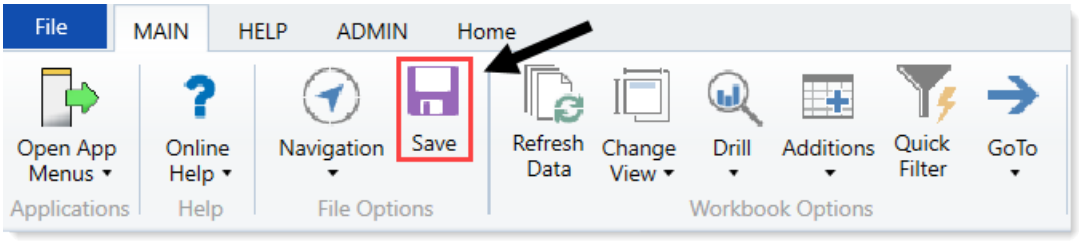
> **TIP:** To display all projects, leave the variable fields blank.

4. In the **RFXfer** column, select **Yes** for each project to transfer to Axiom Rolling Forecasting.

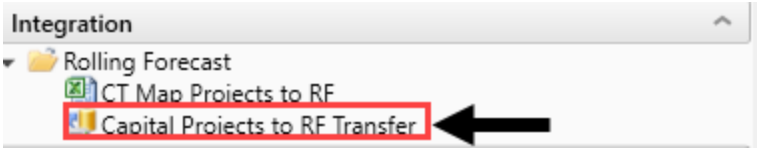


> **TIP:** To view more information about a project, double-click the folder icon in the first column.

5. After you finish selecting the projects to transfer, click **Save**.



6. In the **Cap Track Admin** task pane, in the **Integration** section, double-click **Capital Projects to RF Transfer**.



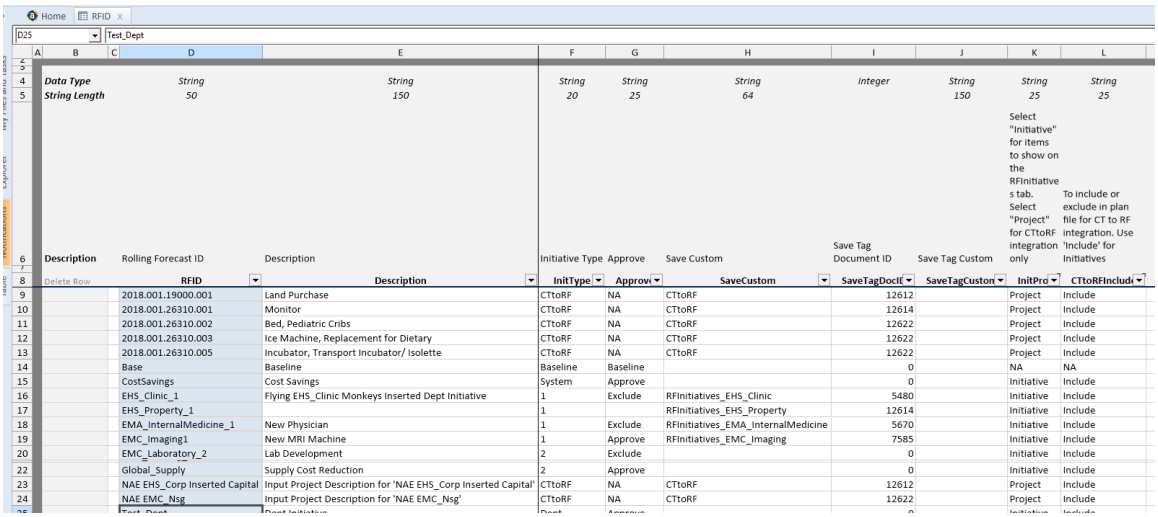
> **NOTE:** This step needs to be performed by someone that is a member of CT Admin (unrestricted access to Capital tables) and RF Admin role.

7. In the **Execute Import: Capital Projects to RF Transfer** dialog, click **Execute**.
8. In the **Variables** dialog, select the year to export, and click **OK**. This transfers the selected capital

projects from Capital Tracking to the CTtoRF tables in the Rolling Forecasting system.

The data for these project are transferred to the RF subsystem in two places. The Project Id is transferred to the \Axiom\Table Library\!Dimensions\RFID table and the spend is transferred to the \Axiom\Table Library\System Tables\Integration\CTtoRF_YYYY table(s).

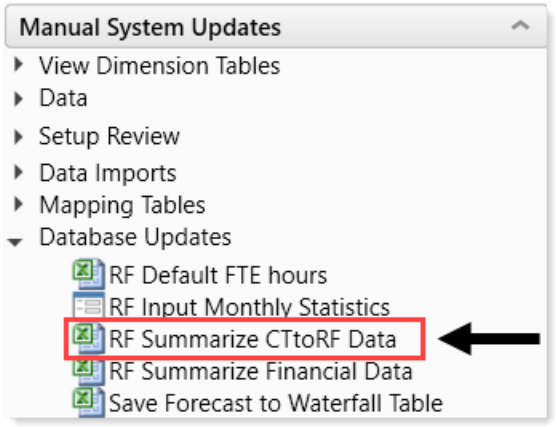
9. In the RFID table, you can update the information and will default as follows:
    - InitType = CTtoRF
    - Approve=NA (only used for Initiatives)
    - SaveCustom=CTtoRF
    - InitProj=Project (This column is used to differentiate the Projects and the Initiatives.
    - CTtoRFInclude=Include (This column us used to determine if you want to include the Plan files)



	A	B	C	D	E	F	G	H	I	J	K	L
4		Data Type		String	String	String	String	String	Integer	String	String	String
5		String Length		50	150	20	25	64		150	25	25
6		Description		Rolling Forecast ID	Description	Initiative Type	Approve	Save Custom	Save Tag Document ID	Save Tag Custom	Select "Initiative" for items to show on the RFInitiatives tab. Select "Project" for CTtoRF integration only	To include or exclude in plan file for CT to RF integration. Use 'Include' for Initiatives
8		Delete Row		RFID	Description	InitType	Approvi	SaveCustom	SaveTagDocID	SaveTagCustom	InitPro	CTtoRFIncludi
9				2018.001.19000.001	Land Purchase	CTtoRF	NA	CTtoRF	12612		Project	Include
10				2018.001.26310.001	Monitor	CTtoRF	NA	CTtoRF	12614		Project	Include
11				2018.001.26310.002	Bed, Pediatric Cribs	CTtoRF	NA	CTtoRF	12622		Project	Include
12				2018.001.26310.003	Ice Machine, Replacement for Dietary	CTtoRF	NA	CTtoRF	12622		Project	Include
13				2018.001.26310.005	Incubator, Transport Incubator/ Isolette	CTtoRF	NA	CTtoRF	12622		Project	Include
14				Base	Baseline	Baseline	Baseline		0		NA	NA
15				CostSavings	Cost Savings	System	Approve		0		Initiative	Include
16				EHS_Clinic_1	Flying EHS_Clinic Monkeys Inserted Dept Initiative	1	Exclude	RFInitiatives_EHS_Clinic	5480		Initiative	Include
17				EHS_Property_1		1		RFInitiatives_EHS_Property	12614		Initiative	Include
18				EMA_InternalMedicine_1	New Physician	1	Exclude	RFInitiatives_EMA_InternalMedicine	5670		Initiative	Include
19				EMC_Imaging1	New MRI Machine	1	Approve	RFInitiatives_EMC_Imaging	7585		Initiative	Include
20				EMC_Laboratory_2	Lab Development	2	Exclude		0		Initiative	Include
22				Global_Supply	Supply Cost Reduction	2	Approve		0		Initiative	Include
23				NAE EHS_Corp Inserted Capital	Input Project Description for 'NAE EHS_Corp Inserted Capital'	CTtoRF	NA	CTtoRF	12612		Project	Include
24				NAE EMC_Nsg	Input Project Description for 'NAE EMC_Nsg'	CTtoRF	NA	CTtoRF	12622		Project	Include

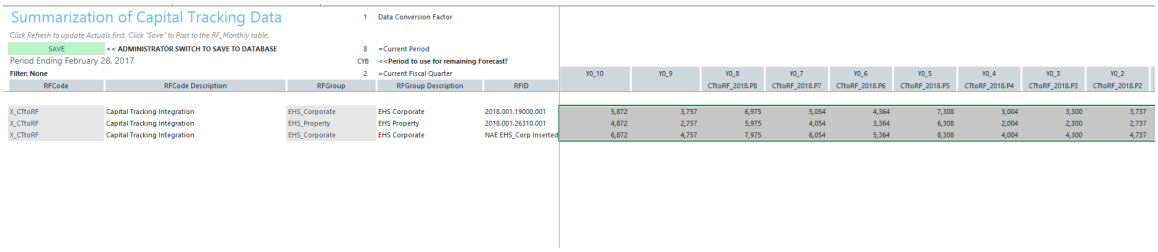
NOTE: The remaining steps will need to be completed by a user assigned the RFAdmin role.

10. In the **RF Admin** task pane, in the **Manual System Update** section, click the **Database Updates** folder, double-click the **RF Summarize CTtoRF Data** report to summarize the project data to the RF Monthly table in a similar fashion you summarize financial data.

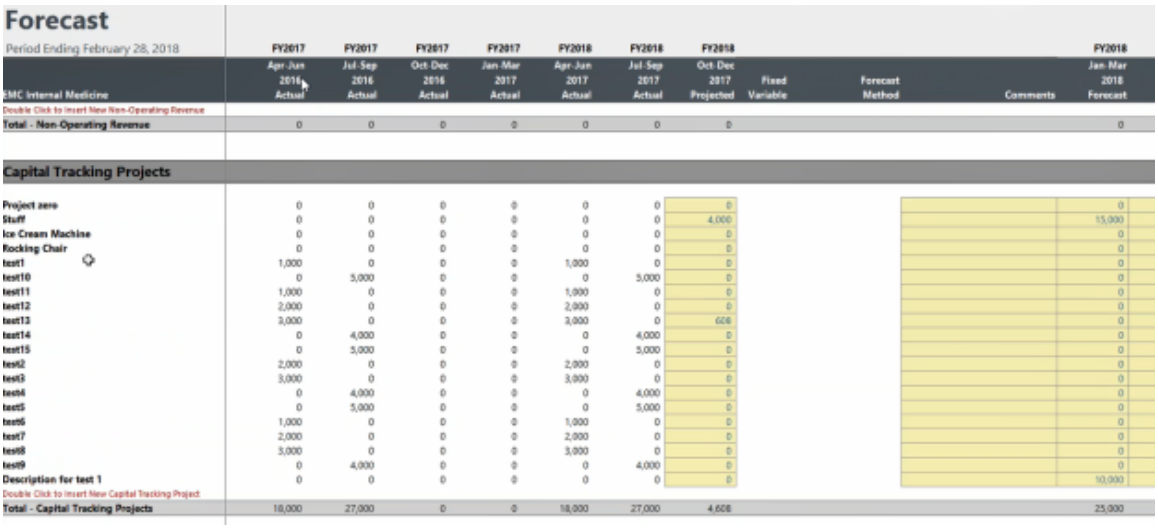


11. Refresh the report, and click **Save**.

    The capital projects displays as a block in the plan file in the Forecast tab, as shown in the following example:



12. Create and process plan files. If you have project(s) that were transferred from Axiom Capital Tracking for the RF Group, the capital projects display as a block in the plan file in the Forecast tab, as shown in the following example. If an RFGroup has no capital projects you will not see this in a plan file.



4

Working with Dimensions

Dimensions are the key index fields for the tables in the Axiom Rolling Forecasting database. All data in the system is associated with one or more dimensions.

The dimensions used in Axiom Rolling Forecasting include:

- RFCODE – Contains records for different types of accounts within an organization. For example, OP visits, deliveries, land, and so on.
- RFGROUP – Contains records for groups in an organization.
- RFID – Identifies initiatives or projects.

Each dimension has multiple fields. The fields within dimensions tables are typically referred to as columns. Field/column names are expressed as *tablename.fieldname*.

A few examples of dimension fields used in Axiom Rolling Forecasting include:

- **RFCODE.Description** – Provides a definition or brief description of a rolling forecast code name, as stored in the RFCODE dimension.
- **RFGROUP.Director** – Identifies the director tied to a group, as stored in the RFGROUP dimension.
- **RFID.Approve** – Identifies the approval status of an initiative, as stored in the RFID dimension.

When Axiom Rolling Forecasting is first implemented, a consultant will help you configure the dimension tables to reflect the structure of your organization (roll-up groups, entities, codes, and so on). Subsequently, you may need to edit dimensions to add new forecast groups, codes, or other items to the database.

IMPORTANT: Many dimensions are shared across multiple Axiom Software products. Do not delete a grouping column or modify entries in dimensions without consulting the administrators for the other applications.

Working with the Dimension Maintenance utility

Your organization may use multiple distinct Entity Management branches within your structure to help manage your Axiom Software products. It might be the responsibility of each local product administrator

to maintain their own elements within dimensions for each Axiom Software product that your organization is licensed for. Additionally, and ideally, each administrator should not be able to modify elements outside of their area, otherwise, reports and processes could be negatively impacted.

The Dimension Maintenance utility allows the administrator for a local branch to manage only grouping columns within a dimension and limits this dimension to only the elements that the administrator has access to.

IMPORTANT: Version 2017.1 and higher includes a variety of security changes to enable this tool. The dimension tables have been restricted to read-only access until the system administrator configures a user for dimension maintenance security. For more information, see Editing the security rights for a user.

The Dimension Maintenance utility allows administrators to:

- Have multi-user and filtered access to key universal dimensions.
- Restrict dimension grouping column maintenance to specified product grouping columns.
- Create dimension grouping columns, and assign them to products.
- Add new records and update all validated grouping columns, even when they are outside of that product range.
- Create dimension grouping columns that automatically display in an organized manner.

To enable the Dimension Maintenance functionality described above, the following features were created:

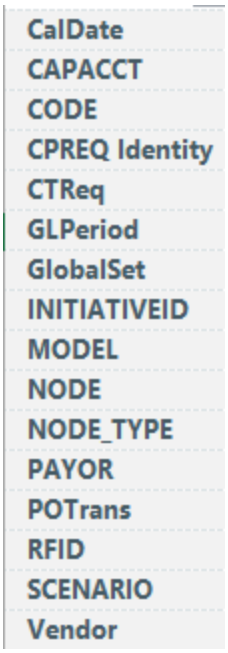
- In the Edit Data Structure mode, administrators can manage grouping columns using datasets.
- In the Dimension Maintenance utility, depending on their roles, users can select the products and dimensions to maintain.
- Using the security feature in the Dimension Maintenance utility, for each product, administrators can quickly assign write filters to those users who have an administrator role assigned to them.

The following table represents which dimensions are part of each product. A check mark means users can access the dimension using the Dimension Maintenance utility, but the records each user can edit depends on the security filter applied to each.

	Management Reporting Admin	Budgeting Admin	Rolling Forecast Admin	Capital Planning Admin	Capital Tracking Admin	Cost Management Admin	Costing Admin	DSS Admin	Financial Plan Admin
ACCT	✓	✓	✓			✓	✓		✓
CDMCode	✓	✓					✓	✓	
COSTCAT							✓	✓	
COSTITEM							✓	✓	
COSTMETHOD							✓		
COSTPOOL							✓	✓	
CPT	✓	✓					✓	✓	
DATATYPE	✓	✓							
DEPT	✓	✓	✓	✓	✓	✓	✓	✓	✓
ENTITY	✓	✓	✓	✓	✓	✓	✓	✓	✓
FINCLASS	✓	✓						✓	
ICATEGORY						✓			
INSPLAN							✓	✓	
IRESULTS						✓			
ITYPE						✓			
JOBCODE	✓	✓				✓	✓		✓
LOCATION	✓	✓					✓	✓	
METRICID						✓			
PAYTYPE	✓	✓				✓	✓		
PROVIDER	✓	✓					✓	✓	
REVCODE							✓	✓	
RFCODE			✓						✓
RFGROUP			✓						✓
YRMO							✓	✓	

The following dimension tables are not affected by this update and are not part of the Dimension Maintenance utility. Each of these dimensions retain:

- Full edit rights, per authorized user.
- Ability for direct table edit.
- Leverage existing edit tools as you have used in the past.



Configuring the Dimension Maintenance utility

To configure the Dimension Maintenance utility, do the following:

1. Configure the utility to assign any custom dimension grouping column to their respective products. For more information, see Assigning an existing grouping column to a dataset (product).
2. Configure the security for each administrator user in the utility. You must apply a dimension filter to any member that you want to have edit rights. If **NotConfigured** displays, then the user does have edit ability. A filter grants users edit abilities for those records within the assigned filter. For more information, see Editing the security rights for a user.
3. Review and test the Dimension Maintenance utility.

Editing the security rights for a user

You can only access the security management feature of the Dimension Maintenance utility if you are assigned the security administrator role.

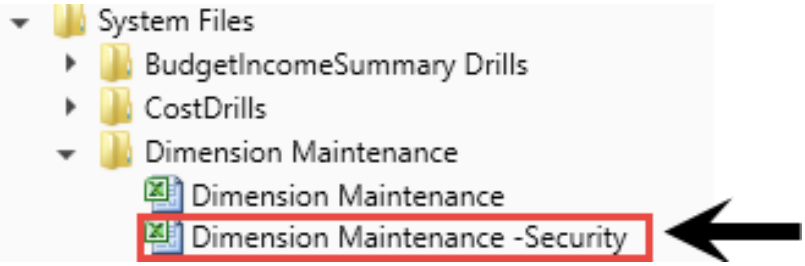
With Dimension Maintenance - Security, you can set in bulk the security rights for all users assigned a product administrator role for all dimensions for a specific dataset (product).

NOTE: If a user is assigned as an administrator for a product and as a user for another product, the user can only access the tables for the product they are administrator of. For example, if a user is a product administrator for Axiom Cost Accounting and a user for Axiom Budgeting and Performance Reporting, the user would only be able to edit the dimensions for Axiom Cost Accounting.

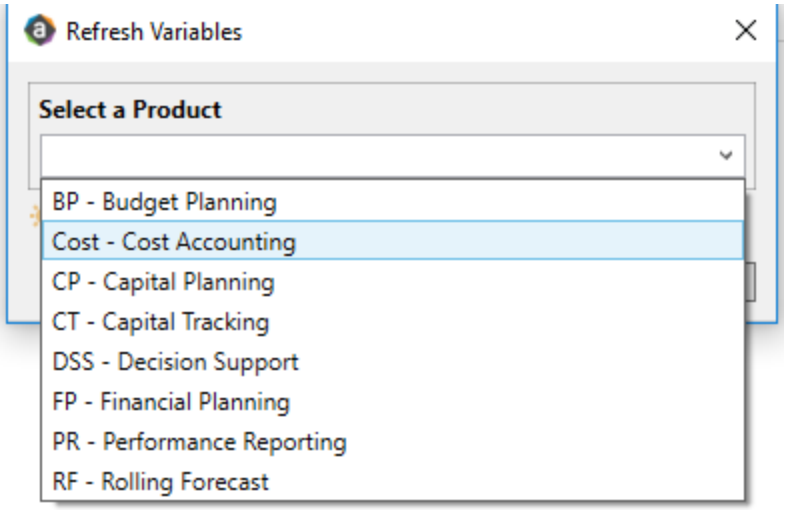
IMPORTANT: For a user (with a product administrator role) to edit a dimension, you must first assign them security rights using this utility.

To edit the security rights for a user:

1. From the **Explorer** task pane, in the **Reports Library** section, select **System Files > Dimension Maintenance**, and double-click **Dimension Maintenance - Security**.



2. In the **Select a Product** drop-down, select the product to display the respective product administrators, and click **OK**.

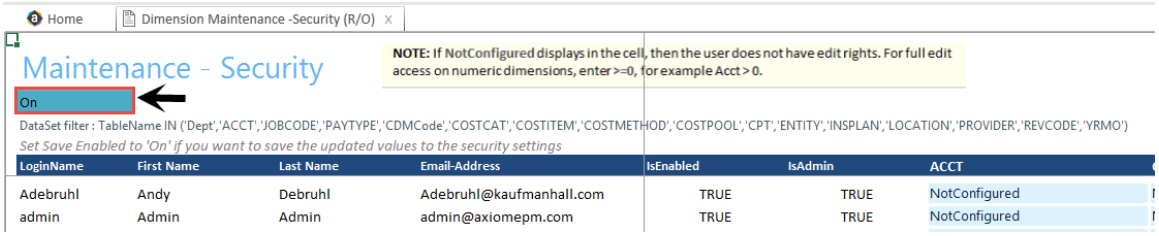


3. Select a user, and do one of the following:

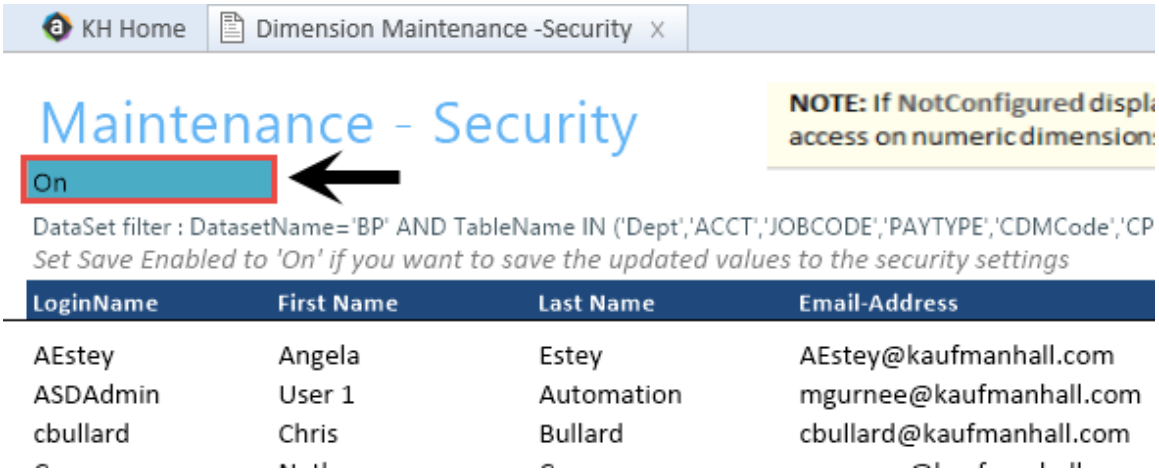
IMPORTANT: If **NotConfigured** displays in the cell, then the user does not have edit rights. For full edit access on numeric dimensions, enter **>= 0**, for example Acct > 0.

To...	Then...
Use the filter wizard to specify the security rights	a. Right-click the cell to edit. b. Select **Axiom Wizards > Filter Wizards**. c. Use the **Filter Wizard** to select and specify the security rights for a product administrator. For more information on using the Filter Wizard, do the following: i. On the **Main** ribbon tab, click **Help**. ii. In the left navigation pane, click **Reference > Filters > Filter Wizard**.
Enter the security rights manually	Click in a cell, and type the rights.

In the following example, Angela is not authorized to edit the ACCT dimension. She can, however, edit the DEPT dimension records for departments that belong to Entity 2.



4. In the **Maintenance - Security** table, at the top of the utility, **On** indicates saving will post changes to the database.



NOTE: The ability to save is initially enabled (On). Clicking **Save** on the **Main** ribbon tab posts any changes to the database.

5. In the **Main** ribbon tab, click **Save**.

Assigning an existing grouping column to a dataset (product)

You can associate each grouping column you create with multiple licensed products. The assignment determines which product each column gets displayed under within the Data Maintenance utility.

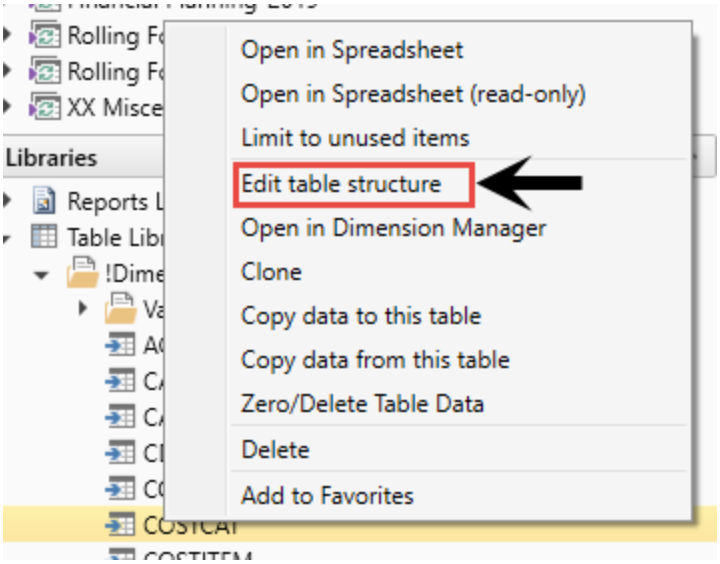
NOTE: You can only perform assignments for custom columns that your organization has added. We recommend that you do not change the assignments of any standard columns included with the product.

IMPORTANT: Make sure to define a default value entry for the column. To do this, complete steps 1-8 of Creating a grouping column.

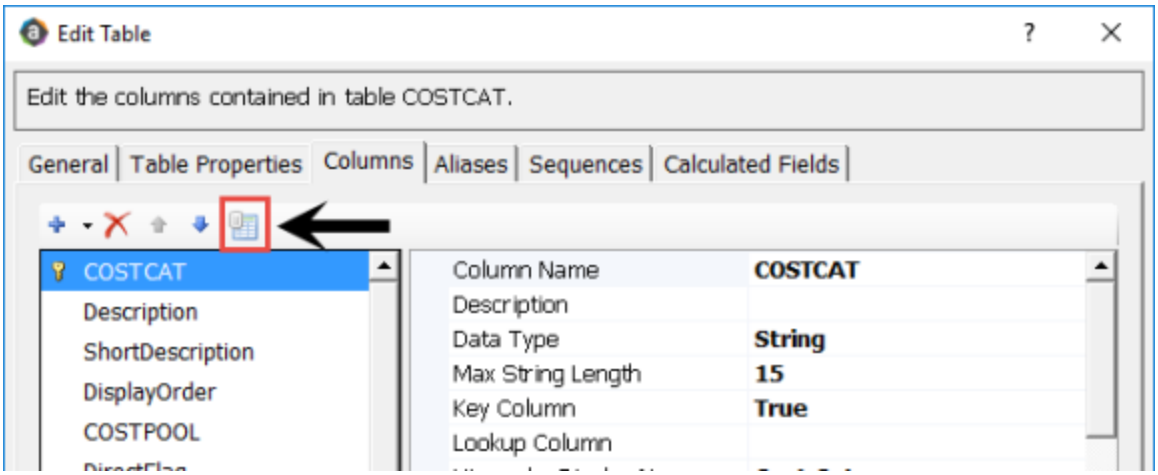
To assign an existing dimension grouping column to a dataset (product):

1. From the **Explorer** task pane, in the **Libraries** section, click **Table Library** > **!Dimensions**.

2. Right-click a dimension, and select **Edit table structure**.

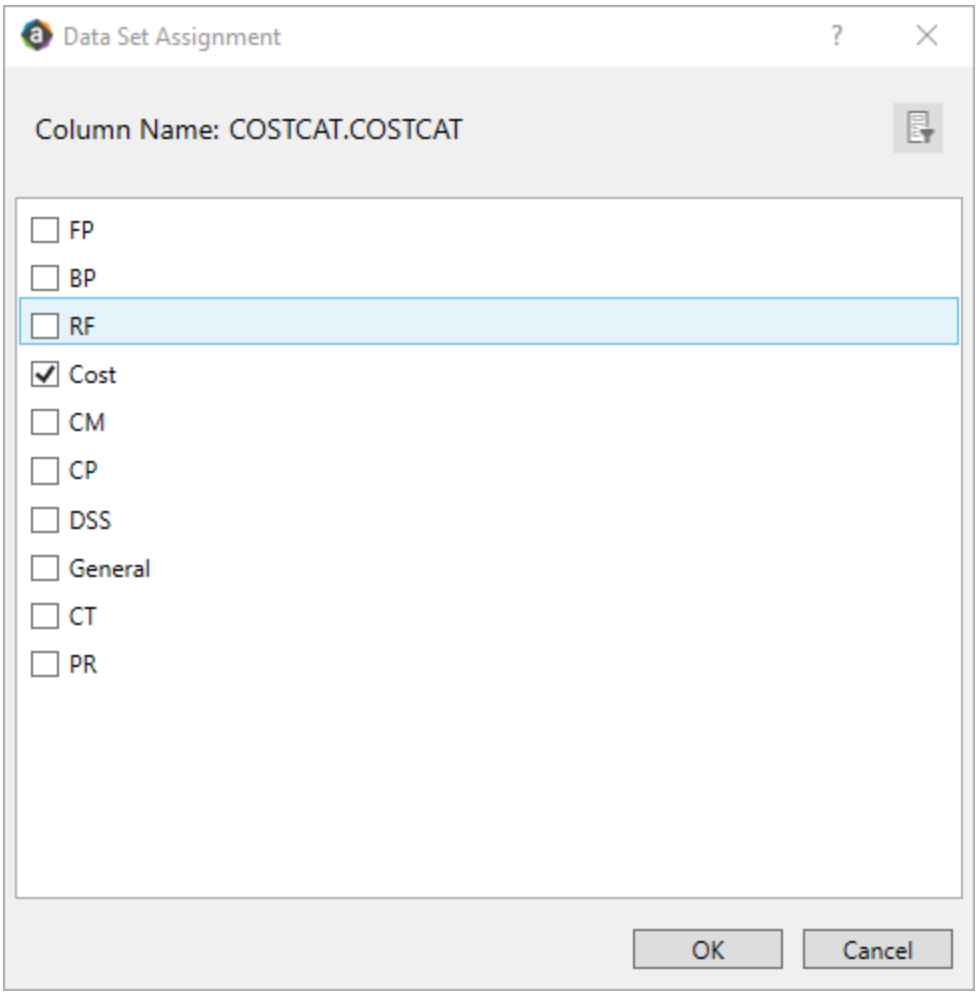


3. In the **Edit Table** dialog, click the **Columns** tab.
4. In the list of columns, select a column to assign, and click the **Assign Column to Data Sets** button.



5. In the **Data Set Assignment** dialog, in the list of data sets (products) that have predefined for you, select the checkbox next to the products to assign this grouping column to, and click **OK**.

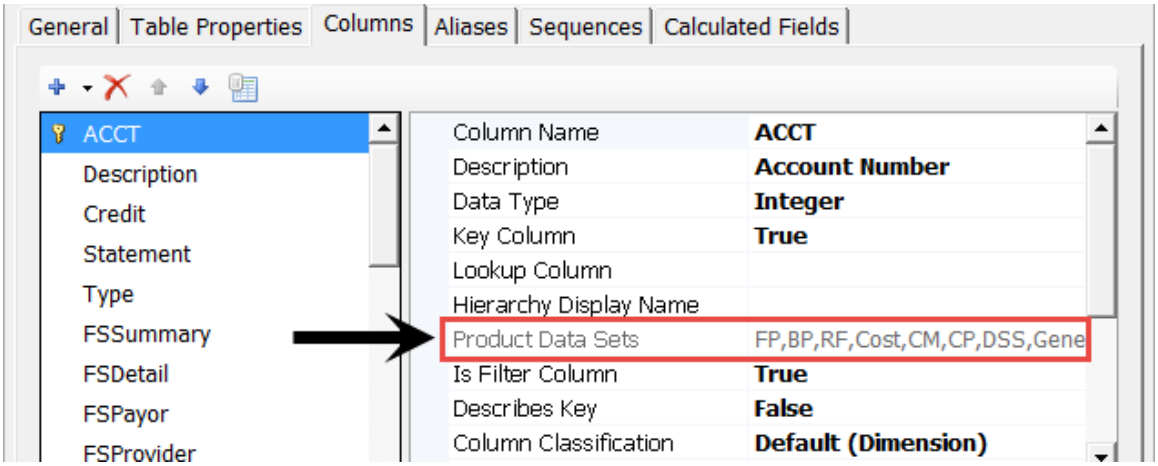
> **NOTE:** The list that displays will vary depending on the Axiom Healthcare Suite products you are licensed to use.



Product	Product Node
Budget Planning	BP
Financial Planning	FP
Rolling Forecast	RF
Cost Accounting	Cost
Cost Management	CM

Product	Product Node
Capital Planning	CP
Decision Support	DSS
Capital Tracking	CT
Performance Reporting	PR
Available to all related products	General

After you select the products, they display in the **Edit Table** dialog in the **Product Data Sets** field.



6. In the **Edit Table** dialog, click **OK**.

Managing dimensions

After you configure the Dimension Maintenance utility and set the security rights for the appropriate users, they can access the utility from the Administrator task pane to manage and configure dimensions. The products and dimensions a user can access will vary depending on their role. As an administrator, you can select all of the Axiom Software products.

For more information, see the following:

- Launching the Dimension Maintenance Utility
- Editing a dimension
- Adding a dimension record

- Creating a grouping column

Launching the Dimension Maintenance Utility

Depending on the product, do the following:

Product	Steps
Budget	In the **Bud Admin** task pane, in the **Budget System Maintenance** section, double-click **Dimension Maintenance**.
Capital Planning	In the **Cap Plan Admin** task pane, in the **Administration** section, double-click **Dimension Maintenance**.
Capital Tracking	In the **Cap Track Admin** task pane, in the **Administration** section, double-click **Dimension Maintenance**.
Cost Accounting	In the **Cost Admin** task pane, in the **Costing Structure Maintenance** section, double-click **Dimension Maintenance**.
Cost Management	In the **CM Admin** task pane, in the **System Maintenance** section, double-click **Dimension Maintenance**.
Decision Support	In the **DSS Admin** task pane, in the **Decision Support Imports and Data Maintenance** section, double-click **Dimension Maintenance**.
Financial Planning	In the **Fin Plan Admin** task pane, in the **Administration** section, double-click **Dimension Maintenance - Integration Mapping**.
Management Reporting	In the **Mgmt Admin** task pane, in the **Dimension & Reference Maintenance** section, double-click **Dimension Maintenance**.
Productivity	In the **Prod Admin** task pane, in the **System Settings** section, double-click **Dimension Maintenance**.
Rolling Forecasting	In the **RF Admin** task pane, in the **Dimension Updates** section, double-click **Dimension Maintenance**.

Editing a dimension

The Dimension Maintenance utility allows you to edit the grouping columns for one or more products, but the product options available to you depend on the role assigned to you. Axiom Financial Planning administrators have rights to Financial Planning dimensions, Axiom Capital Planning and Capital Tracking administrators have rights to Capital dimensions, and so on.

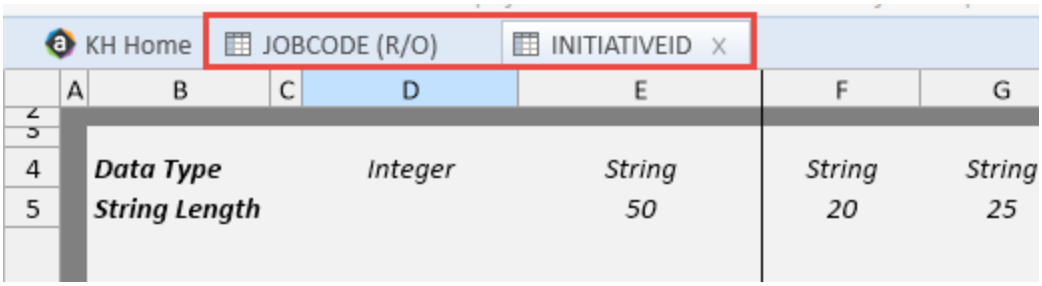
TIP: You never edit database tables directly in the database. Instead, data is pulled into spreadsheets, where you can edit the data and then subsequently save it back to the database.

The columns that display depend on what products each column is assigned to using the Data Set Assignment.

When editing dimensions, keep in mind the following:

- The products you select determine the columns you can view.
- The dimension you select determines the table you can edit.
- Your role determines the records you can edit.

Some dimensions are not included in the Dimension Maintenance utility. You can continue to access and modify these dimensions from the Axiom product's Admin task pane, as usual. If the dimension you open displays as read-only, this means that you need to use the Dimension Maintenance utility to modify it. For example, in Axiom Budgeting, when you open the DEPT dimension from **Bud Admin task pane > Budget System Maintenance > View Dimension Tables**, the tab displays DEPT R/O. Though you can view the dimension, you need to use the Dimension Maintenance utility to edit it. On the other hand, if you open the INITIATIVEID dimension, the tab does not display R/O. This means that you can modify the dimension as usual. This is because the INITIATIVEID table is not included in the list of tables that are maintained via the Dimension Maintenance utility. For a list of dimensions not included in the Dimension Maintenance utility, see the Overview section.



IMPORTANT: Edit dimension data with extreme care, as any errors introduced could cause problems throughout the system. Do not modify fields not described in Axiom documentation.

After you select the product(s) and dimension to edit, the Dimension Maintenance utility refreshes itself and displays the different products and the columns that belong to them for the dimension. As seen in the following example, the columns display in groups.

TIP: It is not always necessary to populate every field. Enter as much information in the dimension table as you have available.

Maintenance

Dimension : PAYTYPE

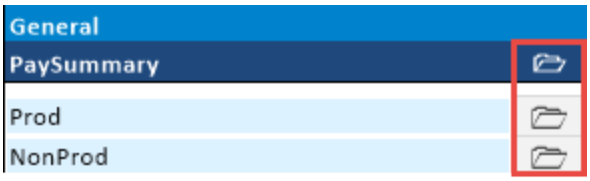
DataSet filter : (DataSetname IN ('General','BP') OR DataSetName = '')

(*) the column is duplicate. Only the first instance will be saved back

		General						BP			
PAYTYPE	Description	PaySummary		PayDetail		FTE		Empl_Detail		KHAInt	
P0001	Regular	Prod		Regular		Yes		Z_Employee		JobCode	
P0004	Paid Time Off	NonProd		NonProd		Yes		Z_Employee		JobCode	
P0006	Sick Pay	NonProd		NonProd		Yes		Z_Employee		JobCode	
P0008	Jury Duty	NonProd		NonProd		Yes		Z_Employee		JobCode	
P0009	Education	Prod		Regular		Yes		Z_Employee		JobCode	
P0011	Payroll Adjustments	Prod		Regular		Yes		Z_Employee		JobCode	
P0014	Personal Development	Prod		Regular		Yes		Z_Employee		JobCode	
P0015	Med Tech Pay	Prod		Regular		Yes		Z_Employee		JobCode	
P0016	Extra Shift	Other		Other		No		Z_Employee		Dollars	
P0019	Education	Prod		Regular		Yes		Z_Employee		JobCode	
P0020	Call Pay	Other		Other		No		Z_Employee		Dept	
P0022	Call-Back	Prod		Overtime		Yes		Z_Employee		JobCode	
P0024	Sick Pay	NonProd		NonProd		Yes		Z_Employee		JobCode	
P0028	PDO Cash-In	Other		Other		No		Z_Employee		NA	
P0030	Additional Pay	Other		Other		No		Z_Employee		Dept	
P0031	Retroactive Pay	Prod		Regular		Yes		Z_Employee		JobCode	
P0035	Hol/Flt Pool Bonus	Prod		Regular		No		Z_Employee		Dollars	
P0037	Suppl Staff-Hourly	Prod		Regular		Yes		Z_Employee		JobCode	
P0039	Additional Pay	Other		Other		No		Z_Employee		Dollars	
P0050	Recognition Pay	Other		Other		No		Z_Employee		Dollars	
P0051	Sign On Bonus	Other		Other		No		Z_Employee		Dollars	
P0054	Incentive Pay	Other		Other		No		Z_Employee		Dollars	

In the blue cells, you can do the following:

- Choose from a list of validated values by double-clicking the folder in the column next to the grouping column.



- Enter free-form values, though we recommend that you take into consideration any existing values or rules for that column.

Grouping columns tagged as General display first, as shown in the previous example. General columns are typical reference fields leveraged by multiple products. Each subsequent grouping displays based on the products you selected. Records display depending on the security assigned to you. For example, if a no write filter is assigned for that member, the dimension will return no records. For more information, see Editing the security rights for a user.

IMPORTANT: If you are not sure whether to edit a cell, contact your system administrator.

Some columns in dimensions tables are validated, allowing only certain predefined values. If you enter an invalid value, an error will occur when you save, specifying the cell so you may make a correction and save again.

The following are examples of validated columns:

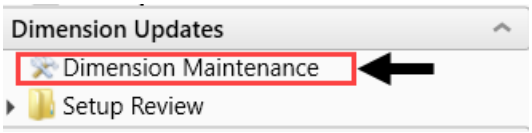
- **RFCODE.RFStdLine** – Used during the reporting process to identify the standard financial statement categories to use for each RFCode category. (Same as Acct.FSDetail in Axiom Management Reporting.)

- **RFCODE.RFType** – Used during the forecast workbook interface process to define the categories within each model that an account or account group will be categorized into. (Similar to BudgetType in the traditional budget workbooks.)

For more information, see Adding validations.

To edit a dimension:

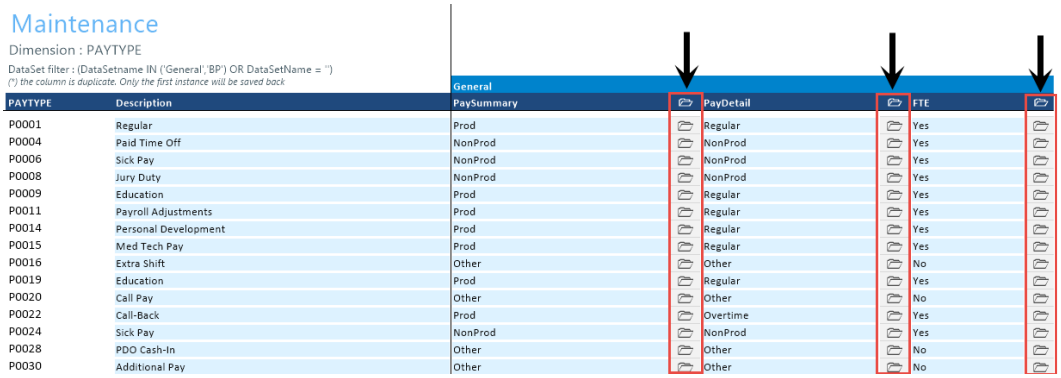
1. In the RF Admin task pane, in the **Dimension Update** section, double-click **Dimension Maintenance**.



2. In the **Main** ribbon tab, click **Refresh Data**.
3. In the **Refresh Variables** dialog, do the following:
   a. In the **Select The Product To Edit** drop-down, select the product.

      NOTE: The list of products that display is determined by the Axiom product licenses that your organization owns.

   b. In the **Select a Dimension to Edit** drop-down, select the dimension, and click **OK**.
4. To retrieve a smaller subset of data, you can use the **Quick Filter** in the **Workbook Options** of the **Main** ribbon tab.
5. Enter the dimension member attribute information in the appropriate cells. You can type a value in the cell free-form or select from a list of existing validated values. These are represented with a folder icon next to the grouping column. You can do one of the following to enter validated values:
   - Next to the column, double-click the folder icon. In the **Choose Value** dialog, select the value, and click **OK**.


Maintenance

Dimension : PAYTYPE

DataSet filter : (DataSetname IN ('General','BP') OR DataSetName = '')

(*) the column is duplicate. Only the first instance will be saved back

		General				
PAYTYPE	Description	PaySummary		PayDetail		FTE
P0001	Regular	Prod		Regular		Yes
P0004	Paid Time Off	NonProd		NonProd		Yes
P0006	Sick Pay	NonProd		NonProd		Yes
P0008	Jury Duty	NonProd		NonProd		Yes
P0009	Education	Prod		Regular		Yes
P0011	Payroll Adjustments	Prod		Regular		Yes
P0014	Personal Development	Prod		Regular		Yes
P0015	Med Tech Pay	Prod		Regular		Yes
P0016	Extra Shift	Other		Other		No
P0019	Education	Prod		Regular		Yes
P0020	Call Pay	Other		Other		No
P0022	Call-Back	Prod		Overtime		Yes
P0024	Sick Pay	NonProd		NonProd		Yes
P0028	PDO Cash-In	Other		Other		No
P0030	Additional Pay	Other		Other		No

   - If you have a large number of entries to make, instead of opening each folder, you can copy

and paste the validated value to other cells in the same column.

IMPORTANT: Do not change the format of cells in dimensions (e.g., number, date, percentage, and so on).

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

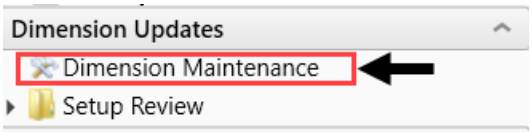
NOTE: If a column is missing, then it is assigned to a different dimension or not assigned. For more information, see Assigning an existing grouping column to a dataset (product).

Adding a dimension record

When you save the new dimension record, it displays in the existing table on the next utility refresh.

To add a dimension record:

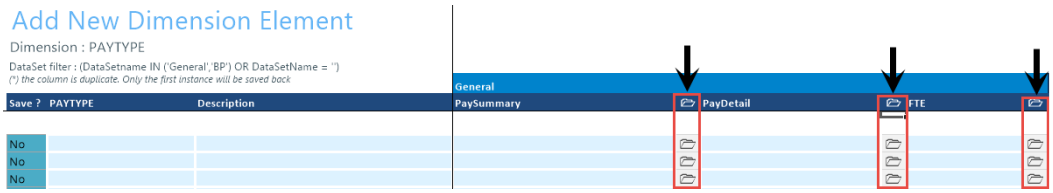
1. In the RF Admin task pane, in the **Dimension Update** section, double-click **Dimension Maintenance**.



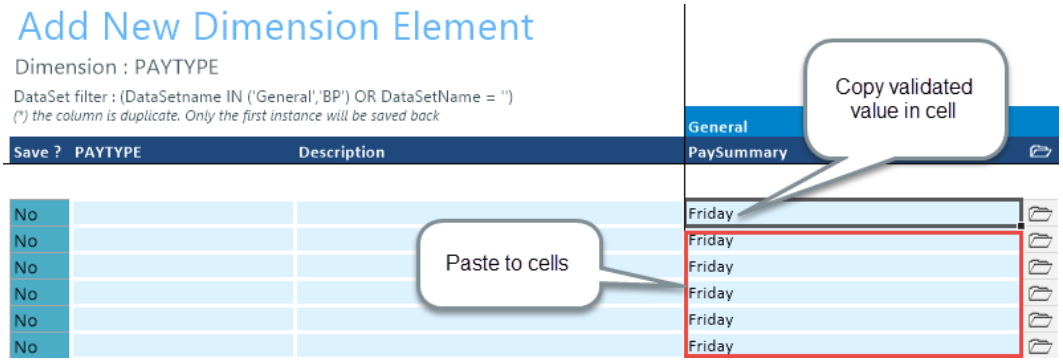
2. To select the product to add the new dimension record, do the following:
    a. Press **F9** or in the **Main** ribbon tab, in the **Workbook Option** group, click **Refresh Data**.
    b. In the **Refresh Variables** dialog, from the **Select The Product To Edit** drop-down, select the Axiom Healthcare Product.
    c. From the **Select a Dimension to Edit** drop-down, select the dimension.
    d. Click **OK**.
3. At the bottom of the workbook, click the **Add_New_Dimension** tab.
4. You can type a value in the cell free-form or select from a list of existing validated values. These are represented with a folder icon next to the grouping column. You can do one of the following to

enter validated values:

- Next to the column, double-click the folder icon. In the **Choose Value** dialog, select the value, and click **OK**.

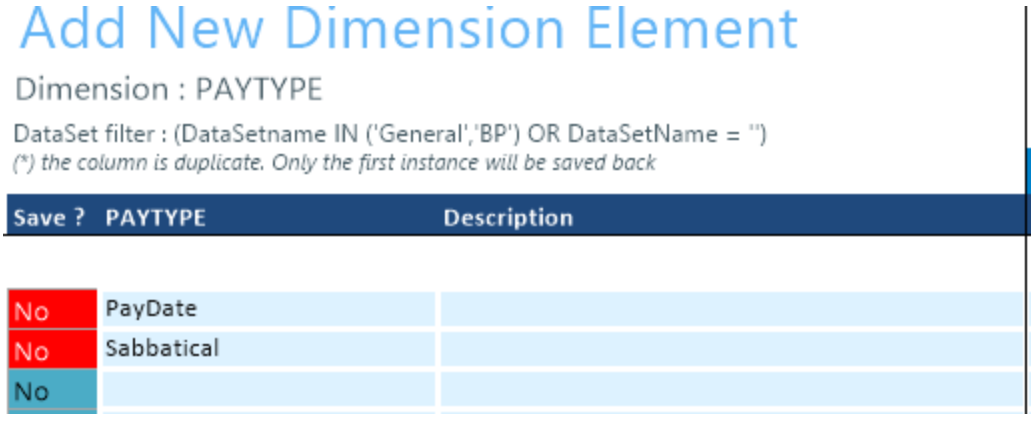


- If you have a large number of entries to make, instead of opening each folder, you can copy and paste the validated value to other cells in the same column.



5. For each record to create, in the **Save?** cell, click the drop-down box, and select **Yes**.

   If you do not select Yes, the **Save ?** cell for the new dimension displays No with a red background as a reminder that you need to save your changes. If you do not save your changes, the default values you enter will not display. If you leave the values unpopulated, the system will populate the defaults using those defined in the column properties in the dimension table.



6. In the **Main** ribbon tab, click **Save**.

Upon Save, the new record posts to the database and the utility refreshes, moving the newly saved record to the **Dimension Maintenance** tab.

IMPORTANT: When adding new records, the field used as that user's security filter must be completed and within their filter before it will save successfully. If it is not, the system displays a message that you cannot post this record to the database because it is outside of your write filter. For example, if a security administrator using the Dimension Maintenance Security provides a filter for Angela to grant her edit rights to the Department dimension for Entity =2, then Angela must enter 2 in the Entity column before saving. For more information about setting up security for the Dimension Maintenance utility, see Editing the security rights for a user.

Creating a grouping column

Some dimension tables include grouping columns that allow data associated with those records to share common settings or be rolled up into larger groups for calculation or reporting purposes.

NOTE: If you created a custom grouping column in Axiom Rolling Forecasting version 2016.4 or earlier, you need to assign it to a data set (product). For instructions, see Assigning an existing grouping column to a dataset (product).

Here are a few guidelines for naming your columns:

- Keep the descriptions of grouping columns short and simple.
- Avoid using common English words in your grouping column names, such as Interface or Union. Instead, combine words to come up with column titles such as IntGroup.
- It is good practice to fill out each grouping column for every element (table row).
- Spaces are not allowed. Use the underscore to separate upper/lower case words.
- Grouping columns cannot start with a number, but they may include a number.

To create a grouping column:

1. In the **Explorer** task pane, in the **Libraries** section, click **Table Library > !Dimensions**.
2. Right-click the dimension table to add the grouping column to, and select **Edit table structure**.
3. In the **Edit Table** dialog, click the **Columns** tab.
4. Above the list of column names on the left side of the tab, click the **+** button.
5. In the **Column Name** field, type a name for the new column.

   IMPORTANT: Use only alphanumeric characters in group column labels.

6. In the **Data Type** field, click the drop-down button, and select **String**.
7. In the **Default Value** field, type a default value that displays to the user.
8. Click **Apply**.
9. In the list of columns, select the column you just added.

10. Above the list of columns, click the **Assign Columns to Data Sets** button.
11. In the **Data Set Assignment** dialog, select the checkbox for any Axiom Healthcare Suite products to add to the column to, and click **OK**.
12. In the **Edit Table** dialog, click **OK**.
13. To view the new column, in the **Main** ribbon tab, click **Refresh Data**.

The new grouping column now displays in the dimension.

Dimension Tables

This section includes a description of all the dimensions used in Axiom Rolling Forecasting.

ACCT

The ACCT dimension table 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.

Refer to the Axiom EPM Dimensions Setup files (AcctCoding sheet) for codes to use in \Axiom\Reports Library\System Files\Documents\Admin\Management Reporting\KHA EPM Dimensions Coding.xls.

NOTE: Some dimension tables are shared across multiple Axiom products. As a result, some of the columns listed in the following table may not display in the Dimension Maintenance Utility, depending on the Axiom products in which your organization is licensed.

The following table lists all of the options available in this dimension table:

Column	Description
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. Do not enter a description in all capital letters. To remove the all-caps format in the spreadsheet, use the Proper formula =Proper().
Credit	Used during the interface process to reverse the signs so values are stored in a positive condition in the database. Select one of the following valid entries: • dr • C Normally, Revenue and Liabilities are C, and all others are dr.

Column	Description
RptMap	Used to group accounts. Valid entries include any account numbers in the ACCT column. The system automatically copies the information in the ACCT column to this column during installation.
Statement	Used to identify the Financial Statement category. Select one of the following valid entries: • BS (Balance Sheet) • HoursJC (Jobcode Hours) • Hours • IS (Income Statement) • KeyStat • NI (New Initiatives) • SCA (Cost Management) • Statistic • VCC (Variance Comments Collection) **NOTE:** This is an Axiom standard column and categories cannot be added or edited. The default value is NA.

Column	Description
Type	Used to identify the major Financial Statement category. Select one of the following valid entries: • Asset • Bmark (Benchmark) • Capital • Comments • Deduction • Equity • Expense • GenStat • HoursJC (Job Code Hours) • Hours • KeyStat • Liability • NetAsset • Plan • Revenue • Scenario • Statistic • Target (Hours codes that are not reported as FTEs should be coded as Statistic.) **NOTE:** This is an Axiom standard column and categories cannot be added or edited. The default value is NA.
FSSummary	Used to identify summary-level Financial Statement categories. For the naming convention, use the first letter of the type category with an underscore and then the category name. For example, R_PatientRev or E_Salaries. **NOTE:** This is an Axiom standard column and categories cannot be added or edited. Default value is NA.
FSDetail	Used to identify line-item Financial Statement categories. For the naming convention, use the first letter of the type category with an underscore and then the category name. For example, R_IPRev, R_OPRev. For a list of the available options, see Options for Acct.FSDetail. **NOTE:** This is an Axiom standard column and categories cannot be added or edited. The default value is NA.

Column	Description
FSPayor	A variation of FSDetail used if GL accounts have payor categories; used for Budgeting Deductions models. If this is not used, match to FSDetail. Categories can be added or edited. The default value is a blank.
FPCode	Used to identify the name of the Financial Planning category to use for summarization during the integration process with Axiom Financial Planning. If Axiom Financial Planning is not used, the default is NA.
FSProvider	Used to identify line-item Financial Statement categories. For the naming convention, use the first letter of the type category with an underscore and then the category name. For example, R_IPRev, R_OPRev. **NOTE:** This is only used if licensed for the Provider Budget Module. The default value is NA.
FPCategory	Used to identify the name of the Financial Planning category to use for transferring the financial plan targets during the integration process with Axiom Financial Planning. If Axiom Financial Planning is not used, the default is NA.
BPCode	Used to identify the payors from the Budget Deductions report. During installation, the system automatically copies the information from the FPCode column to this column.
FlexStat	Identifies the primary statistic used for Flexible Budgeting. The most common set up is KeyTot for all stat, hours, and expenses. Revenue uses KeyIP for IP, KeyOP for OP, and KeyOth for other patient revenue. The default is NA.
FlexPercent	Identifies default variable percentage (0-100%) to use for Flexible Budgeting. Values should be entered as decimals, 0.75 = 75%. The default value is 0 (zero).
ReclassType	A grouping attribute that is useful in defining the type of reclass to use in the in Axiom Cost Accounting reclass functionality.
AllocType	Defines the type of account for indirect allocations in Axiom Cost Accounting.
FlexGroup	Used to group accounts together for Flexible Budgeting. For example, Medical Supplies or Other Expenses. The default is NA.
COSTCAT	Identifies the Cost Category of account for Axiom Cost Accounting. Cost Categories are a fundamental dimension that determines the level at which costs are calculated and stored (variable and fixed) at the unit cost level.

Column	Description
KHAInt	Used to identify which tab an account should be interfaced to during the budget plan file create process. Valid entries include the following: • To assign to all statistics, revenue, and deduction accounts that will be budgeted in the budget plan files, type Stat_Rev . • To assign to all expense and hours accounts that will be budgeted in the budget plan files, type Expense. • To exclude an account from all budget plan files, type NA.
KHAStdLine	Used to identify default budget methodology used in budget plan files during budget plan file creation. Refer to calc methods for Stat_Rev sheet and Expense sheet in the *Axiom Budgeting and Performance Reporting Administrator's Guide* (Budget Plan Files chapter) for valid entries and definitions. The default value is NA.
CostVarPct	The Percent Variable for Axiom Cost Accounting; 0 = Fixed, which is used in the costing processes to determine the dollar weighted variability for calculation results.
KHABgtCode	Used for combining accounts together during budget plan file creation. If there are historical values for two accounts that you want to budget as one combined account, list the surviving account number on both lines. If not combining accounts, this value should match value in the Account column. The default value is 0 (zero).

Column	Description
BudgetType	Used to identify which category an account should be interfaced to during the budget plan file interface process. If KHAInt = Stat_Rev, valid entries are: • IPRev • OPRev • OthPtRev • OtherRev • Allowance • BadDebt • KeyIP • KeyOP • KeyOth • OthStat If KHAInt = Expense, valid entries are: • Salaries • Benefits • Supplies • OtherExp • PaidHours The default value is NA.
DropDown	Identifies Drop Down pick list when adding new accounts on Stat_Rev or Expense sheets in the budget plan file. It should be the same as value in BudgetType column.
CDMStdLine	Used to identify default budget methodology for CDM budget plan files (departments which have CDMStdLine in KHACMDimGrp column of DEPT Dimension) during budget plan file creation. It is used similarly to KHAStdLine in Budget Planning workbooks. Valid entries are: • Statistical accounts = CDMStatistic • IP Revenue accounts = CDMIPRevenue • OP Revenue accounts = CDMOPRevenue Copy the remaining account assignments from KHAStdLine column.

Column	Description
Cost_Provider	Used by the Axiom Cost Accounting system when performing the Provider RVU costing method. This identifies the cost information at the account level that is associated to the Provider, which is then allocated to his or her patients' cost item or chargeable activities.
KHASum	Used to summarize information from the Stat_Rev and Expense sheets to the Summary sheet within the budget plan files. **NOTE:** This is an Axiom standard column and categories cannot be added or edited. The default value is NA.

CYPMethod	Used to identify the methodology used for projecting the remainder of the current fiscal year. Valid entries are dependent upon values in KHAStdLine column:
	
	• Input Monthly, Detail, or any of the Fixed Options:
	  ◦ Rolling12 – Use historical values from previous year's same months
	  ◦ Annual –- Annualize YTD value
	  ◦ RemBud – Use remaining budget
	  ◦ CapBud – Use Total Budget less YTD actual
	  ◦ PctBud – Use percentage of CY Actual over Budget
	• Variable – Use Variable
	• Labor – Use Labor
	• FICA – Use FICA
	• Hours – Use Hours
	• GlobalExpense – Use GlobalExpense
	• Depreciation – Use Depreciation
	• IP_Per_Unit – Use IP_Per_Unit
	• OP_Per_Unit – Use OP_Per-Unit
	• Oth_Per_Unit – Use Oth_Per_Unit

PhyStdLine	Used to identify default budget methodology used in the Provider budget plan files (departments which have PhyStdLine in KHACMDimGrp column of the DEPT dimension table) during budget plan file creation. Refer to Provider Version Only: Calc Methods - Stat_Rev Sheet and Expense Sheet in the *Axiom Budgeting and Performance Reporting Administrator's Guide* (Budget Plan Files chapter) for valid entries and definitions. The default value is NA.

Column	Description
CYFMethod	Used to identify the methodology used for projecting the remainder of the current fiscal year in the current year forecast utility. This utility is available in Axiom Budgeting and Performance Reporting in the Bud Admin task pane in Financial Reporting > Financial Utilities > Current Year Forecast. Statistics: • Key Dept Statistics – See Forecast Methods below, normally use Trend • Other Dept Statistics – See Forecast Methods below Revenue: • IP Revenue – IP_Per_Unit • OP Revenue – OP_Per_Unit • Other Patient Revenue – Oth_Per_Unit • Other Operating Revenue – See Forecast Methods below Salaries: • Hours – See Forecast Methods below • Salaries – Labor All Other Accounts: See Forecast Methods below Forecast Methods: • IP_Per_Unit: YTD IP_Per_Unit * Forecasted Volume • OP_Per_Unit: YTD OP_Per_Unit * Forecasted Volume • Oth_Per_unit: YTD Oth_Per_Unit * Forecasted Volume • Labor: Actual Hourly Rate * Forecast Hours * Budget Rate Change • RemBud: Remaining Budget from CYB • Annual: YTD / Calendar Days * Remainng Calendar Days • Rolling12: YTD Actual / YTD Budget * Remainder of LYA • PctBud: YTD Actual / YTD Budget * Remainder of CYB • Variable: Actual Rate per Unit * Forecast Volume • Trend • CapBud: Remaining Budget not to exceed the annual budget You can also add additional CYFMethod columns. Create a new CYFMethod column and use this in conjunction with the CYFDimGrp column in the DEPT dimension if you need to use a different CYP method for different departments.

Column	Description
BudStat	Identifies Budget Statistic accounts used in Budget Statistics Driver. Standard entries are: • Admits • PatientDays • Discharges • AdjDischarges • Encounters • ERVisits • ClinicVisits You can also create custom stats to use in the Budget Statistics Driver and identify accounts appropriately. The default value is a blank.
CMStdLine	Used to identify the StdLine for Axiom Cost Management.
KHAStandardClass	KHA standard classification used for reporting.
BPCategory	Used to identify the Budget Planning category.
NewDeptStdLine	Used to set or update the calc method for each department.
RFCode	Identifies the RFCode for account. Only used with Axiom Rolling Forecasting. The default value is Z_Exclude.
CM_Group	Used to summarize account types at a higher level for Axiom Cost Management analysis and reporting needs.
CM_NonLabor	Used to classify non-labor accounts in Axiom Cost Management according to FSDetail. Valid entries include the following: • Drugs • KeyStats • OtherExp • PurchSvcs • Supplies These classifications are used in reporting and plan creation.
CM_Map	Used to map accounts together in Axiom Cost Management. You can use this column to map closed accounts with another existing account or to group like accounts.
CM_TargetBgt	Used to create team workbooks in Axiom Cost Management at the account level.
CM_FlexStat	Used to identify the flex stat for Axiom Cost Management.
CMFlexPercent	Used to identify the flex percentage for Axiom Cost Management.

Options for Acct.FSDetail

- A_AccumDepr
- A_AR
- A_ARAllow
- A_BoardInvest
- A_BondAmort
- A_BondCost
- A_Cash
- A_CashInvest
- A_CIP
- A_CurLtdAsset
- A_CurOtherAsset
- A_CurReceivable
- A_Inventory
- A_Land
- A_LTNotesRec
- A_LTOtherAsset
- A_PPE
- A_Prepaid
- A_RelatedParty
- A_ThirdPartyRec
- A_Trusteed
- C_Comments
- D_BadDebt
- D_Charity
- D_Contractual
- D_Discounts
- E_BadDebt
- E_Benefits
- E_Depreciation
- E_Drugs
- E_Insurance
- E_Interest
- E_MaintRepairs
- E_MedSupplies
- E_OtherExp
- E_OthSupplies

- E_ProFees
- E_PurchSvcs
- E_RentLease
- E_Salaries
- E_SalariesContract
- E_SalariesMid
- E_SalariesPhy
- E_Utilities
- F_ContractFTEs
- F_NonProdFTEs
- F_OvertimeFTEs
- F_ProdFTEs
- H_Contract
- H_JCHours
- H_Midlevel
- H_NonProd
- H_Overtime
- H_Physician
- H_Prod
- L_AccExpense
- L_AccPayroll
- L_AP
- L_CurLTDebt
- L_CurOthLiab
- L_LTDebt
- L_LTOther1
- L_LTOther2
- L_ThirdPartyPay
- M_BmarkAdjD
- M_BmarkNOR
- M_DEPUOS
- M_NonLabor
- M_ONLPUOS
- M_PSPUOS
- M_SEPUOS
- M_TContPct
- M_TEducPct
- M_TEPUOS

- M_TFTERate
- M_TOTPct
- M_TPHUOS
- M_TUOSRate
- M_TWHPUOS
- N_NetAsset
- N_NetAssetPerm
- N_NetAssetTemp
- NA
- Q_Restricted
- Q_RestrictedPerm
- Q_RestrictedTemp
- Q_Unrestricted
- R_IPRev
- R_NonOpContrib
- R_NonOpExtraord
- R_NonOpGainLoss
- R_NonOpInterest
- R_NonOpInvest
- R_NonOpOther
- R_NonOpRev
- R_OPRev
- R_OtherRev
- R_OthPtRev
- S_Admits
- S_Deliveries
- S_Discharges
- S_Encounters
- S_ER Visits
- S_GenStat
- S_Global
- S_KeyIP
- S_KeyOP
- S_KeyOth
- S_Newborn
- S_OthStat
- S_PatientDays
- S_PayorDays

- S_PayorDisch
- S_PayorVisits
- S_StatOth
- Z_Exclude

DEPT

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

The following table lists all of the options available in this dimension table:

Column	Description
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, MHS Operating Room. **NOTE:** For closed departments, add three asterisks to the beginning of the description. For example, MHS *** Operating Room. Descriptions should not be in all capital letters.
Entity	The Axiom Software entity code. The description lookup table is in the ENTITY dimension table. This should be the Business Unit, and match the first three to four characters of the department number.
CostCenter	The cost center portion of the department number. You can use this for comparative reporting across entities, such as comparing the cost per unit of all operating rooms across your health system.
RptMap	Used to consolidate departments for reporting.
BudgetGroup	A collection of departments used primarily for plan file purposes. This is commonly setup by a KHA consultant during implementation but can easily be updated by clients. For example, departments 16010 and 16020 may be assigned to EMC budget group. **NOTE:** BudgetGroup is a validated dimension so additions and deletions need to first be added/deleted in the associated validation table.
ProdMap	Used to consolidate departments for productivity reporting.
VP	The Vice President responsible for the department. Use the naming convention of FirstName LastName. This information is primarily used for rollup reporting.

Column	Description
Director	The director responsible for the department. Use the naming convention of FirstName LastName. This information is primarily used for rollup reporting.
Manager	The manager responsible for the department. Use the naming convention of FirstName LastName. This information is primarily used for rollup reporting.
Division	The division for rollup reporting, which is defined by your organization. You can use this information to consolidate types of departments together for reporting. For example, you can use the word Radiology to combine all radiology departments across all entities.
KHABgtTemplate	Used to identify the template to use for plan file creation. Valid options include the following: • **Master** • **NoBudget** • **RollingForecast** **NOTE:** This is an Axiom standard column and categories cannot be added or edited. The default value is **NA**.
KHABgtCode	Used to identify departments to combine during plan-file creation.
TplOptions	Used to identify the template option based on licensed products. Valid options include the following: • **Master** (common for all clients) • **MasterCDM** (used for clients licensed for CDM option) • **MasterProvider** • **NoBudget** • **RFProvider**
CM_Template	Used to assign a specific Axiom Cost Management plan template.

Column	Description
LaborType	Used to identify the labor method to use for plan file creation. Valid options are: • **altEmployee** • **Employee** • **HHLabor** • **JobCode** • **JobCodeADC** • **NoBudget** • **Staffing** **NOTE:** This is an Axiom standard column and categories cannot be added or edited. The default value is NA.
CM_Map	Similar to RptMap, used to consolidate departments for reporting.
KHACMDimGrp	Used to identify the Standard Line selected from the ACCT dimension for use in budget planning specifically for the budget values. Valid options are the options used on the ACCT dimension. For example the common ones uses include: KHAStdLine, PHYStdLine.
CM_TeamMap	Used to create team-planning workbooks. You can create teams by combining like departments or like accounts for team Axiom Cost Management planning.
JobcodeDimGrp	Used to designate which labor type distribution set applies to the associated department. KHAInt is the standard set of job code labor types. PhyInt is the modified set of job code labor types.
ProjDimGrp	Used to identify the Standard Line selected from the ACCT dimension for use in budget planning specifically for the projection values. Valid options are the options used on the ACCT dimension. For example the common ones uses include CYPMethod.
CM_Team	Create teams by combining like departments for team Axiom Cost Management planning.
KHABgtMap	Used for combining departments during plan-file creation. This column is also used when more than one department is needed in one plan file.
CM_Division	Used to group similar departments for Axiom Cost Management reporting and analytics.

Column	Description
CYFDimGrp	Used to identify which CYFMethod column each department uses to forecast accounts. Valid options are: • CYFMethod - Uses the method specified in ACCT.CYFMethod • NA - Not Applicable • [Other Column Name] - Uses the method specified in the corresponding column on the ACCT dimension table
FPNode	Used to group the department to the appropriate FPNode in Axiom Financial Planning.
ShowOnList_Costing	Determines which departments to include in the unit cost processing.
CM_BMarkStatus	Used to define which departments to include in Axiom Cost Management benchmarking reports and analytics. Valid entries include the following: • To include the department, type **Yes**. • To exclude the department, type **No**.
FPType	Used to group the department to the appropriate FPTYPE in Axiom Financial Planning.
Owner	Used to identify the network ID of the person responsible for initial input of the plan file (i.e. Manager). It should be the same as their Axiom login ID. Naming convention would be first initial, full last name (or whatever your network ID naming convention is). If your organization does not use this role for plan file approval, type **[skip]** in the cell. **IMPORTANT:** Do not leave this cell blank.
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.
FPNodeBS	Balance Sheet node for Axiom Financial Planning.
Reviewer	The network ID of the person responsible for reviewing the cost management plan, for example, Director. This information should be the same as the user's Axiom Software login ID. The naming convention is first initial, full last name or whatever your network ID naming convention is. If your organization does not use this role for plan file approval, type **[skip]** in the cell. **IMPORTANT:** Do not leave this cell blank.

Column	Description
Approver	The network ID of the person responsible for approving the cost management plan, for example, VP. This information should be the same as their Axiom Software login ID. The naming convention is first initial, full last name or whatever your network ID naming convention is. If your organization does not use this role for plan file approval, type **[skip]** in the cell. **IMPORTANT:** Do not leave this cell blank.
CM_DeptStandard	Used for mapping departments to external benchmark data. This mapping matches the department to the ExternalBMark information in the Axiom Cost Management file groups.
CM_PdHrsMetricID	The paid hours metric ID from external benchmark. Elements are validated to the MetricID table. Used to link a department with specific metrics in the CM_Benchmarks_yyyy tables. Used only in Axiom Cost Management.
CM_WkdHrsMetricID	The metric ID for worked hours from external benchmark. Elements are validated to the MetricID table. Used to link a department with specific metrics in the CM_Benchmarks_yyyy tables. Used only in Axiom Cost Management.
CM_ NonLabor1MetricID	The metric ID for NonLabor 1 from external benchmark. Elements are validated to the MetricID table. Used to link a department with specific metrics in the CM_Benchmarks_yyyy tables. Used only in Axiom Cost Management.
CM_ NonLabor2MetricID	The metric ID for NonLabor 2 from external benchmark. Elements are validated to the MetricID table. Used to link a department with specific metrics in the CM_Benchmarks_yyyy tables. Used only in Axiom Cost Management.
BudLocalAdmin1	Used to select the local administrator for Axiom Budgeting.
CM_CombineStat	Used to determine if key statistics should be combined when grouping departments together with CM_Map grouping column for Axiom Cost Management. Valid entries include the following: • If the key statistics of the rolled up departments are to be cumulative, type **Y**. • To only use the key statistics from the surviving department, type **N**.
CM_ NonLabor3MetricID	The metric ID for NonLabor 3 from external benchmark. Elements are validated to the MetricID table. Used to link a department with specific metrics in the CM_Benchmarks_yyyy tables. Used only in Axiom Cost Management.

Column	Description
CM_ NonLabor4MetricID	The metric ID for NonLabor 4 from external benchmark. Elements are validated to the MetricID table. Used to link a department with specific metrics in the CM_Benchmarks_yyyy tables. Used only in Axiom Cost Management.
CostMap	Allows departments to processed 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.
ShowOnList_ Budgeting	Used to identify if a department displays to be selected during the plan file creation process. Valid entries include the following: • **True** • **False**
CM_ NonLabor5MetricID	The metric ID for NonLabor 5 from external benchmark. Elements are validated to the MetricID table. Used to link a department with specific metrics in the CM_Benchmarks_yyyy tables. Used only in Axiom Cost Management.
BudLocalAdmin2	Used to select the local administrator for Axiom Budgeting.
MarkupName	The specified markup table to use when processing unit costs using the Reverse Markup method. **NOTE:** Currently only one table is available per department.
BudLocalAdmin3	Used to select the local administrator for Axiom Budgeting.
FinContact	Used to assign the finance contact for a department during the cost management process.
KeyStatDesc	Used to identify the description of the primary statistic for each department.
FlexGroup	Used for grouping departments together for the flexible budget utility. (For example, Imaging).
FlexDept	Used for defining each department as fixed or variable during the flexible budget utility. Valid entries include the following: • **Yes** • **No** • **NA**
Campus	Used as part of Axiom Cost Accounting.
KHAStandardClass	Used for reporting.

Column	Description
RFGroup	Used to define your forecast groups. Consider: • Management structure and cultural impact. • Team concept versus individual department managers. • The availability of a statistic that can be collected.
CM_ShowOnList	Used to define which departments to build Axiom Cost Management plan files. Valid entries include the following: • To build a plan file, type **TRUE**. • To exclude from plan file lists and build, type **FALSE**.
CM_PlanGroup	Used to group departments together for applying assumptions and configurations in Axiom Cost Management driver files.
CM_ ExtBenchmarkSource	The source name of the external benchmark to use for this department in Axiom Cost Management. Used to link a department with the CM_ Benchmarks_yyyy tables.
ShowOnList_Capital	Used to define which departments to build Axiom Capital Planning plan files. Valid entries include the following: • **True** • **False**
PM_IT	The IT reviewer assigned for Process Management in Axiom Capital Planning and Capital Tracking.
PM_Facilities	The Facilities reviewer assigned for Process Management in Axiom Capital Planning and Capital Tracking.
PM_Clinical	The Clinical Engineering reviewer assigned for Process Management in the Axiom Capital Planning and Capital Tracking systems.
PM_Voting	The owner of the prioritization process assigned for Process Management in Axiom Capital Planning and Capital Tracking.
ProviderType	Select, by dept, whether to use the Detail or Summary options for provider plan files.
PM_Legal	The Legal reviewer assigned for Process Management in Axiom Capital Planning and Capital Tracking.
PM_HR	The Human Resources reviewer assigned for Process Management in Axiom Capital Planning and Capital Tracking.
PM_Purchasing	The Purchasing or Supply Chain reviewer assigned for Process Management in Axiom Capital Planning and Capital Tracking.

Column	Description
PM_CFO	The Chief Financial Officer reviewer assigned for Process Management in Axiom Capital Planning and Capital Tracking.
PM_CEO	The Chief Executive Officer reviewer assigned for Process Management in Axiom Capital Planning and Capital Tracking.
PM_BOD	The Board of Directors reviewer assigned for Process Management in Axiom Capital Planning and Capital Tracking.
PM_Accounting	The Accounting reviewer assigned for Process Management in Axiom Capital Planning and Capital Tracking.
CM_DeptSeries	Groups departments into service lines or other client-defined series for Axiom Cost Management analytics and reporting.

INITIATIVEID

Use the INITIATIVEID dimension when budgeting for initiatives, which may or may not be approved. It allows for tracking the impact of proposed initiatives while keeping that data separate from the baseline budget.

The following table lists all of the options available in this dimension table:

Column	Description
INITIATIVEID	The INITIATIVEID used in Axiom Budgeting. This is used during the budget process to store new initiatives. InitiativeID 1 is used for baseline operations. All other initiative numbering is determined by the system administrator and must be numeric.
Description	Identifies the INITIATIVEID description to use for budgeting and reporting.
InitType	Groups initiatives together for reporting and categorization. Valid entries include the following: • **Baseline** (INITIATIVE 1 only) • **System** • **Dept**
Approve	The coding for Approve/Exclude for new initiatives. Valid entries include the following: • **Baseline** (INITIATIVEID 1 only) • **Approve** • **Exclude**

Column	Description
SaveCustom	Used to save from the Axiom Budgeting plan file to this dimension table. **IMPORTANT:** Do not alter or recode.
SaveTagDocID	Used to save from the Axiom Budgeting plan file to this dimension table. **IMPORTANT:** Do not alter or recode.

RFCODE

You can forecast at the GL account level or, for those expense categories where a significant change is not expected over time, at a more aggregate level (recommended).

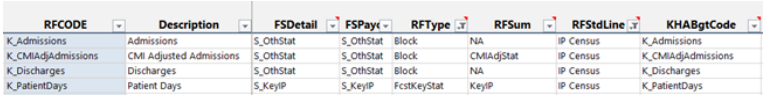
For example, you may choose to summarize all medical supply accounts into one category as opposed to forecasting by GL account number. Alternatively, you may choose to create several medical supply categories such as MedSupplies, Implants, and Blood Products. Assign GL accounts to the appropriate category. Default RFCODE values have been provided for you as a starting point.

The following table lists all of the options available in this dimension table:

Column	Description
RFCODE	Used during the budget workbook interface process to summarize accounts into groupings for forecasting.
Description	The forecast code description. Do not enter a description in all capital letters. To remove the all-caps format in the spreadsheet, use the Proper formula =Proper().
Statement	Used to identify the main categories of the Financial Statements such as IS, BS, Hours, HoursJC, KeyStat, and Statistic. Double-click the cell to see all available options.
Type	Used to identify major Financial Statement category. Hours codes that are not reported as FTEs should be coded as Statistic. Double-click the cell to see all available options.
FSSummary	Used to identify summary level Financial Statement categories used in the standard report library. Double-click the cell to see all available options.
FSDetail	Used to identify line item Financial Statement categories used in the standard report library.
FSPayor	Used for coding deductions, revenues and statistics by payor (ex. R_ IPMedicare, R_OPMedicaid. S_OPVisitsBC). All other RFCode types can be copied from FSDetail.

Column	Description
RFType	Used during the forecast workbook interface process to define the categories within each model that an account or account group will be categorized. Similar to BudgetType in the traditional budget workbooks. Codes for admissions and discharges that are associated with a code in the RFConfig driver for the IP Census calc method should be coded as "Block".
RFSum	Used to summarize the data in the Forecast tab to the Summary tab in the forecast workbook. Similar to KHASum in the traditional budget workbooks.
RFStdLine	Used during the interface process to identify the standard planning method to use for each RFCode category. In other words, this identifies the desired formula to use to calculate the forecast. Similar to KHAStdLine in the traditional budget workbooks.
KHABgtCode	Used for combining forecast codes together. Same as KHABgtCode in the traditional budget workbooks.
FPCode	Used for mapping to the financial planning categories.
RFInitStdLine	Used during the interface process to identify the standard planning method for initiatives.

Rolling Forecasting calculation methods

Calc Method	Description
Depreciation	Used for Depreciation expense – Inflation can be applied to existing depreciation expense plus an input for depreciation for new capital purchases.
Expense	Used for NonSalary expenses. Inputs for Variable percentage and Expense Adjustments along with global lookup for inflation rate.
GlobalData	Pulls a calculated value from the RFGlobalData tab in the Driver table. No inputs are allowed in the plan file.
IP Census	Intended for forecasting at the entity level. Used to forecast patient days, admissions, adjusted admissions, and CMI adjusted admissions. (Discharges can be substituted for admissions.) Also includes Average Daily Census and Average Length of Stay. 

RFCODE	Description	FSDetail	FSPay(	RFType	RFSum	RFStdLine	KHABgtCode
K_Admissions	Admissions	S_OthStat	S_OthStat	Block	NA	IP Census	K_Admissions
K_CMIAdjAdmissions	CMI Adjusted Admissions	S_OthStat	S_OthStat	Block	CMIAdjStat	IP Census	K_CMIAdjAdmissions
K_Discharges	Discharges	S_OthStat	S_OthStat	Block	NA	IP Census	K_Discharges
K_PatientDays	Patient Days	S_KeyIP	S_KeyIP	FcstKeyStat	KeyIP	IP Census	K_PatientDays

Calc Method	Description
IP Revenue	Calculates gross revenue on a rate-per-key inpatient-statistic basis. Deductions are an optional component using a percent-of-inpatient-revenue basis.
IP Revenue_NetPerUnit	Intended for forecasting at the entity level. Calculates gross revenue on a rate-per-patient-day basis. Deductions are optional using a rate per admission or discharge.
IP Volume	Calculates inpatient statistics using a relationship to the inpatient global driver along with the historical growth of the statistic within the forecast group. Any of the four forecast methods can be used as the basis for the forecast.
NoForecast	Populates with historical data for reconciliation purposes, but no forecast is calculated.
OP Revenue	Calculates gross revenue on a rate-per-key outpatient statistic basis. Deductions are an optional component using a percent of outpatient revenue basis.
OP Revenue_NetPerUnit	Intended for forecasting at the entity level. Calculates gross revenue on a rate-per-outpatient key statistic basis. Deductions are an optional component using a rate-per-key-statistic basis. Normally the outpatient key statistic would be outpatient visits.
OP Volume	Calculates outpatient statistics using a relationship to the outpatient global driver along with the historical growth of the statistic within the forecast group. Any of the four forecast methods can be used as the basis for the forecast.
Oth Pt Revenue	Calculates gross revenue on a rate-per-key other patient statistic basis. Deductions are an optional component using a percent of other patient revenue basis.
Oth Pt Revenue_Net PerUnit	Intended for forecasting at the entity level. Calculates gross revenue on a rate per other key statistic basis. Deductions are an optional component using a rate per key statistic basis. Normally the other key statistic would be physician visits.
Other Deduction	Used for calculating deductions on a percentage of gross revenue basis where there is no directly assigned gross revenue category. Commonly used for bad debt and charity care.
Other Revenue	Used for Other Operating and NonOperating Revenue – Inputs for Variable percentage and Revenue Adjustments along with global lookup for inflation rate. Different forecast methods can be used as the basis for the forecast.

Calc Method	Description
Other Volume	Calculates other patient statistics using a relationship to the other patient global driver along with the historical growth of the statistic within the forecast group. Use any of the four forecast methods as the basis for the forecast.
Pct of Salaries	Used for benefits where salary cost drives the benefit expense such as FICA or pension expense as a percentage of salaries.
Rate Per FTE	Used for benefits where FTEs (employees) drive the benefit expense, such as health insurance, using a rate-per-FTE basis.
Return Rate	Used for NonOperating Revenue such as Investment Income where a return rate is defined in the Driver table and multiplied times the estimated cash balance.
Salary	Used for FTEs and salary expenses: • **FTEs**: Inputs for Variable percentage and productivity adjustments to forecast FTEs. You can use different forecast methods as the basis for the forecast. • **Salaries**: Uses an average hourly rate calculation along with global lookup for inflation rate times the forecasted FTEs.

RFGROUP

Rolling Forecasting is normally done at a forecast group level.

Forecast group is a grouping of functional departments that define a hospital service such as Surgical Services, which would include the operating room, anesthesiology, recovery room, and any other departments that contribute to the provision of surgical services at the hospital. Normally, there are 20-25 forecast groups per facility.

The RFGROUP dimension contains records for groups in an organization.

The following table lists all of the options available in this dimension table:

Column	Description
RFGROUP	Define your forecast groups. Consider: • Management structure and cultural impact. • Team concept versus individual department managers. • The availability of a statistic that can be collected.
Description	A description for the RFGroup name.

Column	Description
Entity	The entity number assigned to each RFGroup.
RptMap	The RFGroup code used for grouping in reporting.
VP	The name of the VP responsible for the RFGroup.
Director	The name of the director responsible for the RFGroup.
Manager	The name of the manager responsible for the RFGroup.
Division	The name of the division under which the RFGroup falls.
Owner	Used to identify the network ID of the person responsible for initial input of the forecast (i.e. manager); It should be the same as their Axiom Software login ID. In general, this ID will be the same as your organizations network ID.
Reviewer	Used to identify the network ID of the person responsible for reviewing the forecast (i.e. Director); It should be the same as their KH_EPM login ID. In general, this ID will be the same as your organizations network ID.
Approver	Used to identify the network ID of the person responsible for approving the forecast (i.e., VP); It should be the same as their KH_EPM login ID. In general, this ID will be the same as your organizations network ID.
FinContact	Used to assign the finance contact for an RFGroup during the forecast process.
KeyStatDesc	Defines the type of statistic used as your key statistic. Type the description of the forecast group statistic to use for each new forecast group created.
CYFDimGrp	The dimensions group used to define the current year forecast method. Not currently being used.
RFRollup	Used to assign a rollup structure to use for drill downs and reporting on your forecast.
RFPlanGroup	The forecast planning group name.
KHABgtTemplate	Assign Rolling Forecasting to each RFGroup. If no workbook should be generated, assign **NA**.
TplOptions	Template Options – not currently used. The default code is **NA**.
KHACMDimGrp	Assign RFStdLine to each RFGroup.
ShowOnList_RF	Used to define which departments to build forecasts for. Valid entries include the following: • To build a plan file, type **TRUE**. • To exclude from plan file lists and build, type **FALSE**.

Column	Description
KHABgtCode	Assign a forecast group (must be a string) for each RFGroup. To exclude a forecast group from the forecast process, assign Z_Exclude in KHABgtCode.
KHABgtMap	Not currently used.
FPModel	The financial planning group code for each RFGroup.
FPType	The financial planning type for each forecast group.
FPNode	The financial planning node each RFGroup belongs to.
FPCode	Used by Axiom Financial Planning.
ProviderDType	Used to define the key stat to use for the RF Provider template (must be licensed). Generally, fill with WRVU, Visit, or Encounter.

RFID

The RFID dimension includes initiatives or projects. This dimension is used when forecasting for initiatives, which may or may not be approved. It allows for tracking the impact of proposed initiatives while keeping that data separate from the baseline forecast.

The following table lists all of the options available in this dimension table:

Column	Description
RFID	Used to store new initiatives in Axiom Rolling Forecasting.
Description	Do not use all capital letters in the description. To remove the all-caps format in the spreadsheet, use the Proper formula =Proper().
InitType	Groups initiatives together for reporting and categorization. Valid entries include the following: • **Baseline** • **System** • **Dept** • **CTtoRF**
Approve	The coding for Approve/Exclude for new initiatives. Valid entries include the following: • **Baseline (Base only)** • **Approve** • **Exclude** • **NA**

Column	Description
SaveCustom	Used to save from the forecast plan file to this dimension table. **IMPORTANT:** Do not alter or recode.
SaveTagDocID	Used to save from the forecast plan file to this dimension table. **IMPORTANT:** Do not alter or recode.
SaveTagCustomer	Used to save data from utility reports to this dimensions table when applicable. Discuss with consulting or support.
InitProj	Select **Initiative** for items to show on the RFInitiatives tab. Select **Project** for CTtoRF integration only.
CTtoRFInclude	To include or exclude in plan file for CT to RF integration. Select **Include** for Initiatives.

Adding validations

We have validated many of the grouping columns in your RFGroup and RFCode dimensions tables for you. To ensure that you have the correct codes in your dimensions, use the following steps to ensure your dimensions are configured properly.

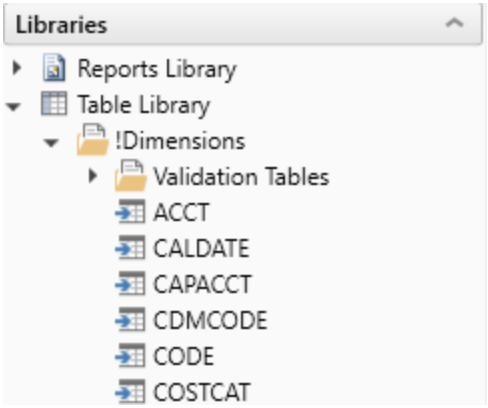
The following table lists the lookup columns and the corresponding default values for the specified dimensions:

Dimension	Lookup Column	Default Value
ACCT.RFCODE	RFCODE.RFCODE	'Z_Exclude'
DEPT.RFGROUP	RFGROUP.RFGROUP	'NA'
RFCODE.Statement	ACCT_Statement.Statement	'NA'
RFCODE.Type	ACCT_Type.Type	'NA'
RFCODE.FSSummary	ACCT_FSSUMMARY.FSSUMMARY	'NA'
RFCODE.FSDETAIL	ACCT_FSDETAIL.FSDETAIL	'NA'
RFCODE.RFSum	RFCODE_RFSUM.RFSUM	'NA'
RFCODE.RFStdLine	RFCODE_RFSTDLINE.RFSTDLINE	'NA'
RFCODE.KHABgtCode	RFCODE.RFCODE	'Z_Exclude'
RFCODE.RFINITSTDLINE	RFCODE_RFINITSTDLINE.RFCODE_RFINITSTDLINE	'NA'
RFGROUP.Entity	ENTITY.ENTITY	0
RFGROUP.RPTMap	RFGROUP.RFGROUP	'NA'

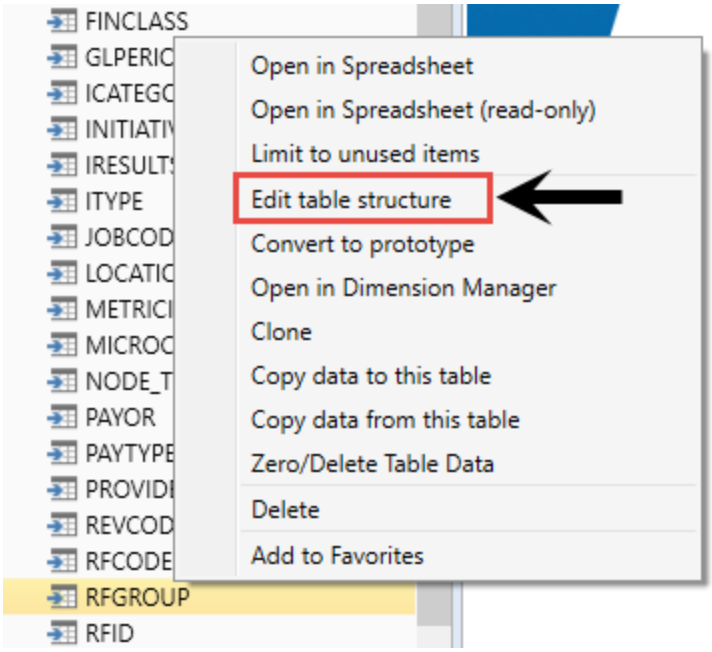
Dimension	Lookup Column	Default Value
RFGROUP.KHABgtTemplate	DEPT_KHABGTTemplate.KHABgtTemplate	'NA'
RFGROUP.TPLOptions	DEPT_TPLOPTIONS.TPLOptions	'NA'
RFGROUP.KHABgtCode	RFGROUP.RFGROUP	'NA'
RFGROUP.KHABgtMap	RFGROUP.RFGROUP	'NA'

To validate dimensions:

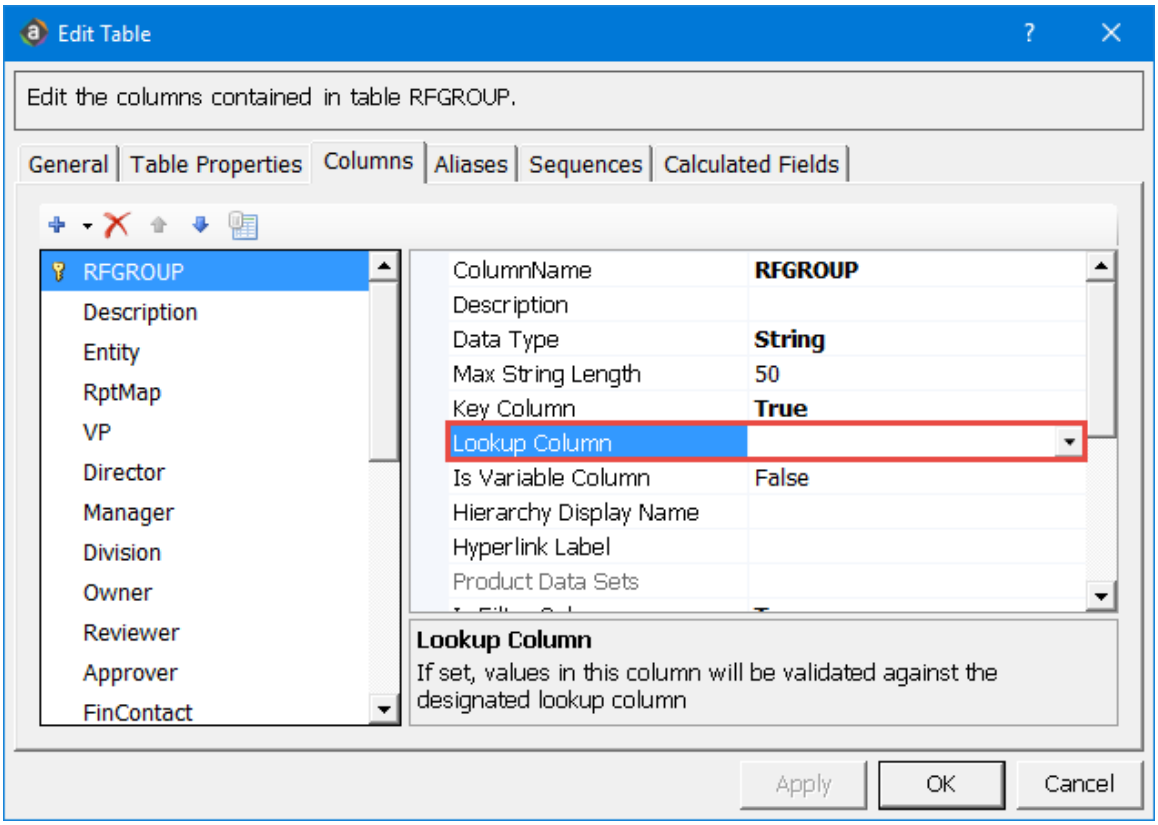
1. In the Explorer task pane, in the **Libraries** section, click **Table Library** > **!Dimensions**.



2. Right-click the dimension table, and click **Edit table structure**.



3. In the **Edit Table** dialog, click the **Columns** tab.
4. In the **Lookup Column** field, select the lookup column to select the default for.



5. In the **Default Value** field, type the default value for the column.
6. Click **OK**.
7. After you are done making your changes, in the **Main** ribbon tab, click **Save**.

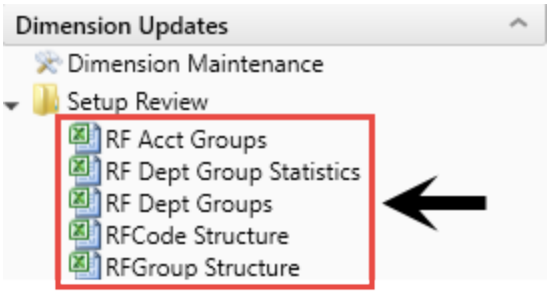
Confirming dimension coding

Uses the following reports to confirm that your coding in dimensions is correct:

- **RF Acct Groups** – Verifies that the RFCode coding in the ACCT dimension table to your RFCode categories.
- **RF Dept Group Statistics** – Shows you the current statistics available within the departments of each forecast group.
- **RF Dept Groups** – Verifies the RFGroup coding in the DEPT dimension table to your RFGroup categories.
- **RFCode Structure** – Similar to the RFCode dimension table, this report displays all of the RFCodes along with historical data. To be used by users who do not have access to dimensions.
- **RFGroup Structure** – Similar to the RFGroup dimension table, this report displays all of the RFGroups along with historical data. To be used by users who do not have access to dimensions.

To confirm dimension coding:

1. In the RF Admin task pane, in the **Dimension Updates** section, click **Setup Review**.



2. Double-click the report to run, and do the following:

Report	Steps
RF Acct Groups	a. In the **Refresh Variables** dialog, in the **Filter By** drop-down, select how you want to filter the RFCodes by. b. In the **Select *type***, click **Choose Value**. c. Select the Department, Entity, VP, or RF Group to filter by, and click **OK**.
RF Dept Group Statistics	No steps needed.
RF Dept Groups	No steps needed.
RFCode Structure	In the **Refresh Variables** dialog, in the **Select sort by criteria** drop-down, select RFCode as sort criteria to start.
RFGroup Structure	In the **Refresh Variables** dialog, in the **Select sort by criteria** drop-down, select the sort criteria.

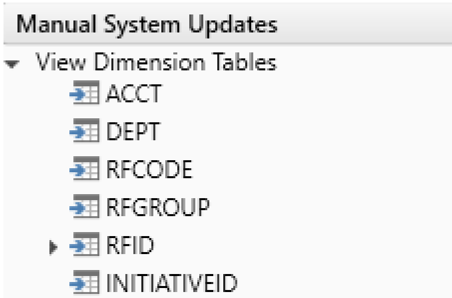
Viewing dimension tables

If you own multiple Axiom Healthcare Suite products, columns display for different products commingled on the dimension tables. This topic only examines dimension tables and fields used in Axiom Rolling Forecasting.

NOTE: To make changes to dimensions, you must use the Dimension Maintenance Utility. The only exception to this is the RFID dimension table. For more information, see Manually updating the RFID dimension table.

To view dimension tables:

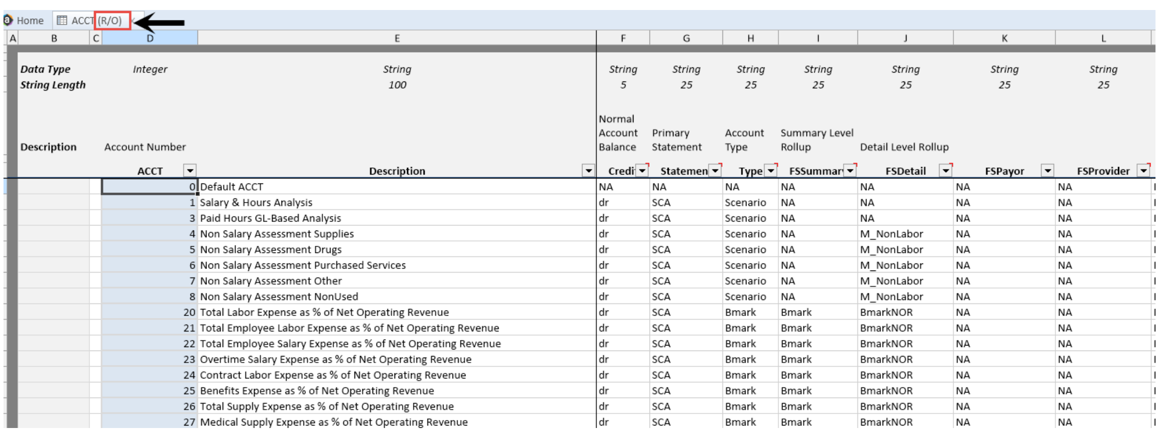
1. In the **RF Admin** task pane's **Manual System Updates** section, expand the **View Dimension Tables** section.



2. Double-click the dimension to view.

3. In the **Open Table in Spreadsheet** dialog, select from the following options, and click **OK**:

   - **Columns to Return** – View all physical columns or only a selected column range. Additionally, you may choose to include audit columns and calculated fields.
   - **Rows to Return** – View all rows or only a certain number (useful if you simply want to review the table structure).
   - **Data Filter** – Filter table data using the standard Filter Wizard dialog.
   - **Options** – Additional options include applying an auto filter, opening the spreadsheet as a read-only file, or only including unused items.



	ACCT	Description	Credi	Statemen	Type	FSSummar	FSDetail	FSPayor	FSProvider
Data Type	Integer	String	String	String	String	String	String	String	String
String Length		100	5	25	25	25	25	25	25
Description	Account Number		Normal Account Balance	Primary Statement	Account Type	Summary Level Rollup	Detail Level Rollup		
	0	Default ACCT	NA	NA	NA	NA	NA	NA	NA
	1	Salary & Hours Analysis	dr	SCA	Scenario	NA	NA	NA	NA
	3	Paid Hours GL-Based Analysis	dr	SCA	Scenario	NA	NA	NA	NA
	4	Non Salary Assessment Supplies	dr	SCA	Scenario	NA	M_NonLabor	NA	NA
	5	Non Salary Assessment Drugs	dr	SCA	Scenario	NA	M_NonLabor	NA	NA
	6	Non Salary Assessment Purchased Services	dr	SCA	Scenario	NA	M_NonLabor	NA	NA
	7	Non Salary Assessment Other	dr	SCA	Scenario	NA	M_NonLabor	NA	NA
	8	Non Salary Assessment NonUsed	dr	SCA	Scenario	NA	M_NonLabor	NA	NA
	20	Total Labor Expense as % of Net Operating Revenue	dr	SCA	Bmark	Bmark	BmarkNOR	NA	NA
	21	Total Employee Labor Expense as % of Net Operating Revenue	dr	SCA	Bmark	Bmark	BmarkNOR	NA	NA
	22	Total Employee Salary Expense as % of Net Operating Revenue	dr	SCA	Bmark	Bmark	BmarkNOR	NA	NA
	23	Overtime Salary Expense as % of Net Operating Revenue	dr	SCA	Bmark	Bmark	BmarkNOR	NA	NA
	24	Contract Labor Expense as % of Net Operating Revenue	dr	SCA	Bmark	Bmark	BmarkNOR	NA	NA
	25	Benefits Expense as % of Net Operating Revenue	dr	SCA	Bmark	Bmark	BmarkNOR	NA	NA
	26	Total Supply Expense as % of Net Operating Revenue	dr	SCA	Bmark	Bmark	BmarkNOR	NA	NA
	27	Medical Supply Expense as % of Net Operating Revenue	dr	SCA	Bmark	Bmark	BmarkNOR	NA	NA

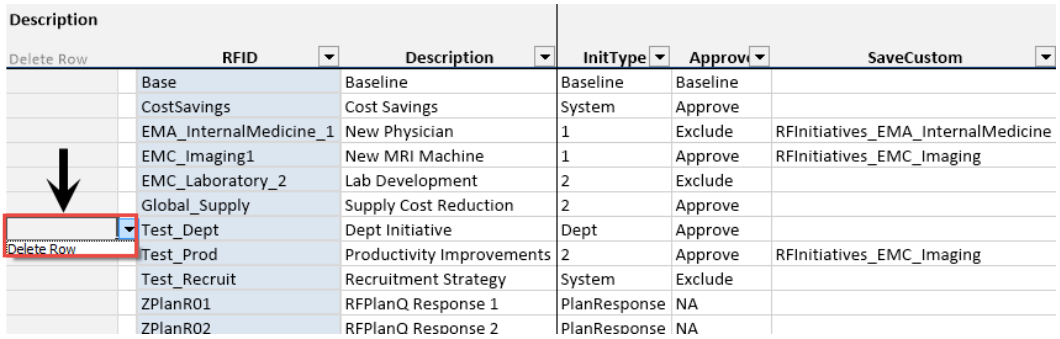
NOTE: R/O next to the tab name indicates that the table is read-only and cannot be edited.

Manually updating the RFID dimension table

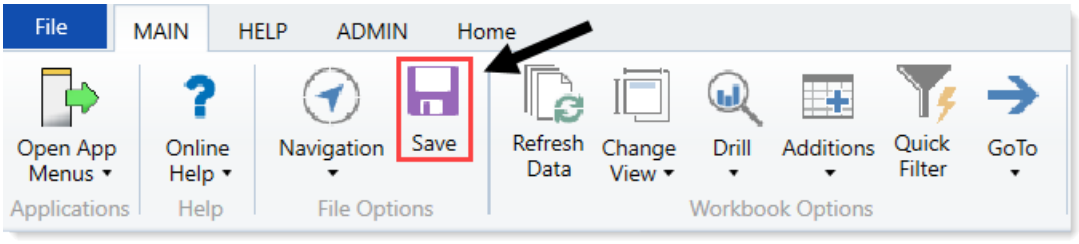
IMPORTANT: You cannot save format changes in dimension tables. For example, highlights, number, date, percentage, and so on.

To manually update the RFID dimension table:

1. In the **RF Admin** task pane, in the **View Dimension Tables** section, click **Dimension Maintenance > RFID**.
2. Double-click **Open in Spreadsheet**.
3. In the **Open Table in Spreadsheet** dialog, select from the following options, and click **OK**:
   - **Columns to Return** – View all physical columns or only a selected column range. Additionally, you may choose to include audit columns and calculated fields.
   - **Rows to Return** – View all rows or only a certain number (useful if you simply want to review the table structure).
   - **Data Filter** – Filter table data using the standard Filter Wizard dialog.
   - **Options** – Additional options include applying an auto filter, opening the spreadsheet as a read-only file, or only including unused items.
4. Do one of the following:
   - To add a new record, scroll to the bottom of the list and enter data into an empty row. After you save data back to the database, the new record should appear in the proper sort order the next time the dimension table is opened.
   - To delete a record, click the drop-down in the **Delete Rows** cell in column B, and select **Delete Row**. The system deletes the record when the spreadsheet data is written back to the database. A record cannot be deleted if there is data stored with that record in the database.



5. After you finish making changes, in the **Main** ribbon tab, click **OK**.



6. At the confirmation prompt, click **OK**.

5

Configuring Drivers

IMPORTANT: If this the first time you are using the Drivers form, you must first assign the new Rolling Forecasting Global Driver Management role to at least one user (preferably a user previously assigned the RF Admin role) and then open and save each tab in the Drivers form. For more information, see "Configure Driver form security" in the Manual Setup Instructions section of the Axiom Rolling Forecasting 2018.3 Release Notes.

In Axiom Rolling Forecasting, each rolling forecast plan file includes a set of associated driver files with configuration settings and assumptions referenced by all of the other files associated with each plan file.

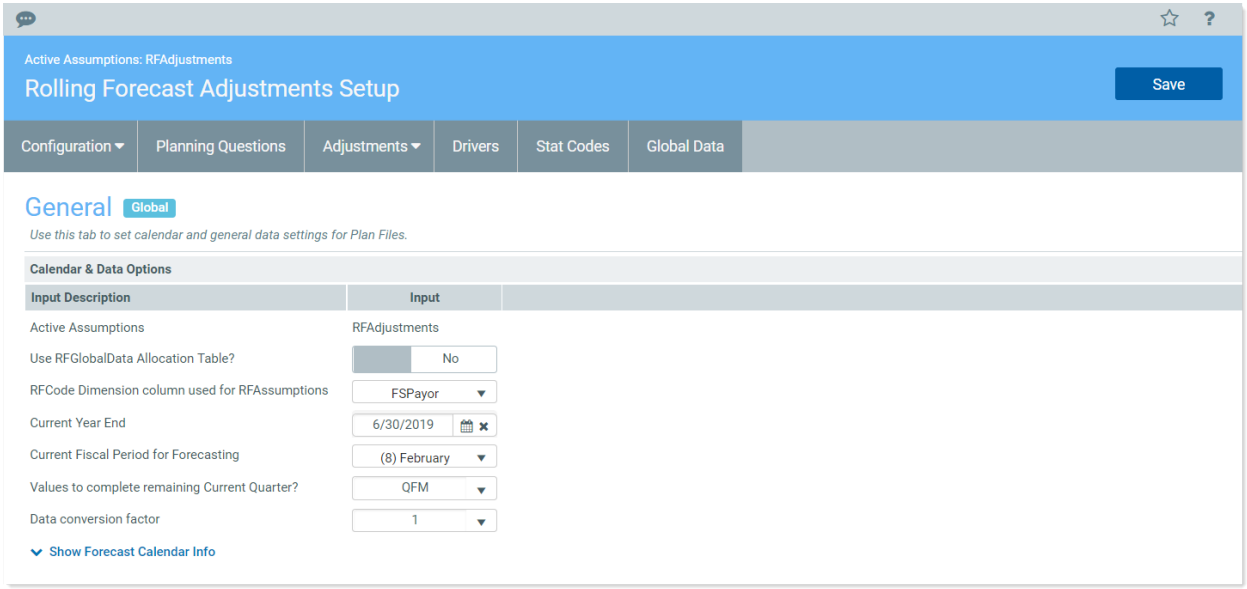
You access and update Axiom Rolling Forecasting drivers using the RF Drivers utility, located in the RF Admin task pane in File Groups > Rolling Forecast > Drivers.

The utility groups drivers into the following areas based on their function:

Driver File	Description
Configuration	• General – Configure calendar and general data settings. • Workbook Visibility – Configure workbook and tab visibility settings. • Workday Periods – Configure workdays in a period settings. • Census Codes – Configure the Inpatient Census code settings. • Revenue & Salary Codes – Configure the Revenue and Salary code settings.
Planning Questions	Add, edit, or delete the default questions to include in plan files.
Adjustments	• Revenue – Configure the RF Revenue Forecast adjustments. • Expenses – Configure the RF Expense Forecast adjustments. • Hours – Configure the RF Hours Forecast adjustments.
Global	Configure global forecast driver assumptions.
Stat Codes	Configure the Stat codes.
Global Data	Configure the RF Group Global forecast.

These driver file types display at the top of the utility as tabs. Depending on driver, you may need to click the tab drop-down, and select the driver to update.

NOTE: Your Axiom Rolling Forecasting Security administrator sets up the permissions of what you can view and edit in this utility. Not all of the tabs or settings described in the next few sections may be available to you. If this is the case, a message will display in the utility.



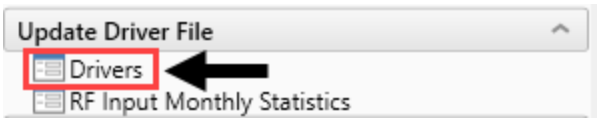
Managing the General driver

The General driver allows you to configure the basic settings for how the organization's forecast is structured. It contains options to control the forecast period, time series, and plan file visibility.

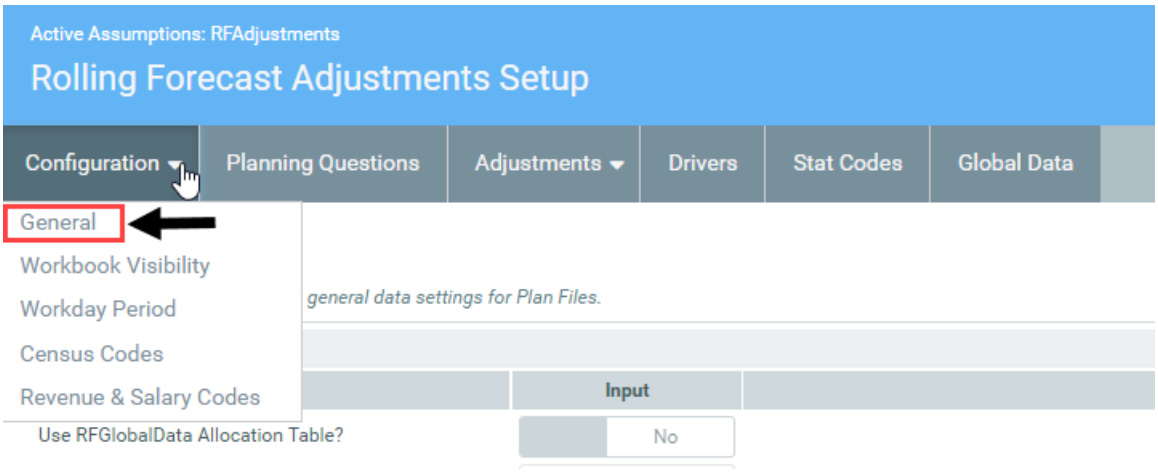
NOTE: Only the user assigned to the Rolling Forecast Global Management role will have read/write access to this driver Configuration Drivers. All other RF Admins may only have Read/Only access if permitted by the administrator.

To manage the General driver:

1. In the RF Admin task pane, in the **Update Driver File** section, double-click **Drivers**.



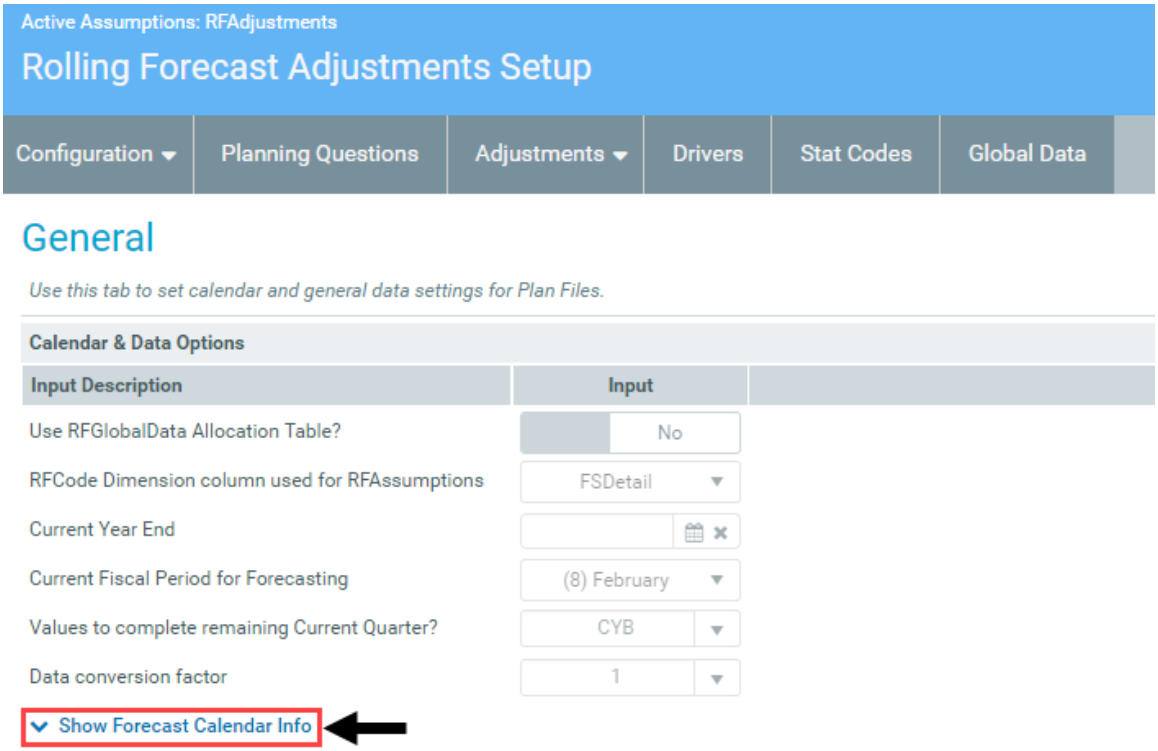
2. In the RF Drivers utility, from the **Configuration** tab, click **General**.



3. Complete the following fields, as needed:

Option	Description
Use RFGlobalData Allocation table?	The default is set to No. This option is for clients that need an additional schedule not delivered with the standard package. See your Syntellis consultant for more information.
RFCode Dimension column used for RFAssumptions	Select the dimension to use for RFAssumptions. By default, the system uses FSDetail column in the RFCODE table and provides the option to use FSPayor if more codes than our standard FSDetail codes are required.
Current Year End	Select the year end of your organization.
Current Fiscal Period for Forecasting	Select the current fiscal period to use for forecasting
Values to complete remaining Current Quarter?	Select one of the following: • CYB – Current Year Budget • CYF – Current Year Forecast – from the Budgeting Module • QFM – Quarterly Forecast Monthly data from the previous forecast • None – Required when the period is set to a quarter end (3, 6, 9, 12)
Data conversion factor	The default is 1 unless you want the data to scale by 1,000.

4. To view or hide the forecast calendar, click the **Show Forecast Calendar Info** drop-down.



5. To save your changes, click the **Save** button in the upper right corner of the page.

Comparing driver forecast assumptions

In addition to calendar-based assumptions and forecast assumptions, the Drivers tab in the RF Drivers utility now includes an Average Length of Stay (ALOS) section that you can use to model driver forecast assumptions used in plan files. The ALOS calculation is the number of days divided by the number of discharges or admissions, but you can use this tool to compare any two driver forecast assumptions on the Driver tab as a ratio.

Administrators and analysts create the ALOS calculation from statistics based on the RFPlangroup filter. (The plan groups to which you have access are controlled by your security settings.)

Process overview

1. In the Driver Forecast Assumptions section, set up the driver assumptions to use in your comparisons. For details, see Map the numerator and denominator fields for the ratio.
2. In the Average Length of Stay section, select the driver assumptions for the numerator and denominator. For details, see Select driver forecast assumptions for the ratio.
3. View the results. For details, see View driver forecast assumption ratios.

Using this driver forecast assumptions comparison tool, you can:

- Select one of the Patient Days RFCodes from the Drivers tab and divide that by any one of the Discharges or Admission RFCode options from the Drivers tab.
- Create more than one ALOS calculation depending on the number of RFPlangroups or Entities where this information is important
- Use the ALOS calculation to determine a stat-per-calendar-day or a stat-per-work-day calculation. You can select any RFcode from the Drivers tab to use as the numerator, and any RFcode, including Work Days and Calendar days, to use as the denominator
- Change the default term from ALOS to Stat-Per-Day (or whatever works for you)
- View:
    - Quarter over Quarter amount change (Q2-Q1) and percentage change (Q2-Q1/Q1) for every quarterly column
    - Year over Year amount change (Y2-Y1) and percentage change, which is (Y2-Y1/Y1) for every 4th quarter
    - Month over Month amount change (M2-M1) and percentage change (M2-M1/M1) for the monthly columns

Map the numerator and denominator fields for the ratio

Before you can preview ALOS forecast assumptions, you must specify the numerator and denominator assumptions to use in the ALOS ratio. The numerator must come from a selected driver in the Driver Forecast Assumptions section. The denominator can come from either the Driver Forecast Assumptions section or from the Driver Calendar-Based Assumptions section.

For example, suppose you want to compare the number of critical care admissions to all admissions for an entity.

You can set up as many ALOS ratios as you need.

To map the ratio fields:

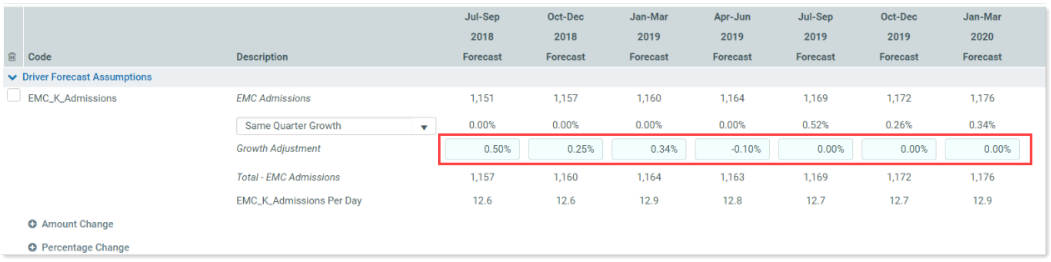
1. In the RF Admin task pane, in the **Update Drivers File** section, double-click **Drivers**.
2. In the RF Drivers utility, click the **Drivers** tab.
3. Expand **Driver Forecast Assumptions**.
4. To set up the driver to use for the numerator, do the following:

    NOTE: Data in this section comes from the RF Monthly Statistics Update Form.

    a. If you do not see the driver you want to use, at the bottom of the page in the **Code** column, click **Insert Driver Forecast Assumption**, and select the desired driver from the drop-down.

    b. In the **Description** column for the driver, select the trend or growth to use: Same Quarter Growth, Last Quarter Growth, 4 Qtr Trend, or Manual Growth.

c. To make adjustments to the trend data, in the **Growth Adjustment** row fields, enter the desired growth adjustment percentages for the dates needed, as shown in the following example.



Code	Description	Jul-Sep 2018 Forecast	Oct-Dec 2018 Forecast	Jan-Mar 2019 Forecast	Apr-Jun 2019 Forecast	Jul-Sep 2019 Forecast	Oct-Dec 2019 Forecast	Jan-Mar 2020 Forecast
Driver Forecast Assumptions								
EMC_K_Admissions	*EMC Admissions*	1,151	1,157	1,160	1,164	1,169	1,172	1,176
	Same Quarter Growth	0.00%	0.00%	0.00%	0.00%	0.52%	0.26%	0.34%
	Growth Adjustment	0.50%	0.25%	0.34%	-0.10%	0.00%	0.00%	0.00%
	Total - EMC Admissions	1,157	1,160	1,164	1,163	1,169	1,172	1,176
	EMC_K_Admissions Per Day	12.6	12.6	12.9	12.8	12.7	12.7	12.9
Amount Change								
Percentage Change								

5. To set up a driver to use for the denominator, repeat step 4.
6. To save this information, click **Save**.

> **NOTE:** Changes in the Driver Forecast Assumptions section are saved to the RollingForecast_RFDrivers table. Keep in mind that these changes may affect other data pulled from this table.

7. In the confirmation dialog, click **OK**.

Select driver forecast assumptions for the ratio

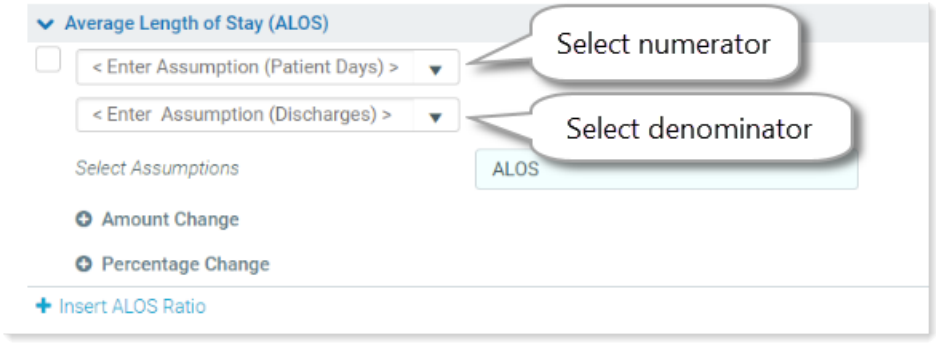
This tool allows you to compare any two driver forecast assumptions modeled in the Driver Forecast Assumptions section of the RF Driver utility.

Data comparison results in the Average Length of Stay section are not saved to any data tables. This section serves as a modeling tool only; you can think of it as a scratch pad. When you save the form, the data in this section saves on this form only and remains until you delete it. Data changes made in the Driver Forecast Assumptions section save to the RollingForecast_RFDrivers table.

> **NOTE:** Comparisons do not save if the numerator and denominator are the same assumption.

To select the modeled assumptions:

1. At **Average Length of Stay (ALOS)**, click the toggle to **Yes**.
2. In the **Average Length of Stay** section, click **Insert ALOS ratio**.
3. In the top drop-down, select the assumption to use for the numerator.



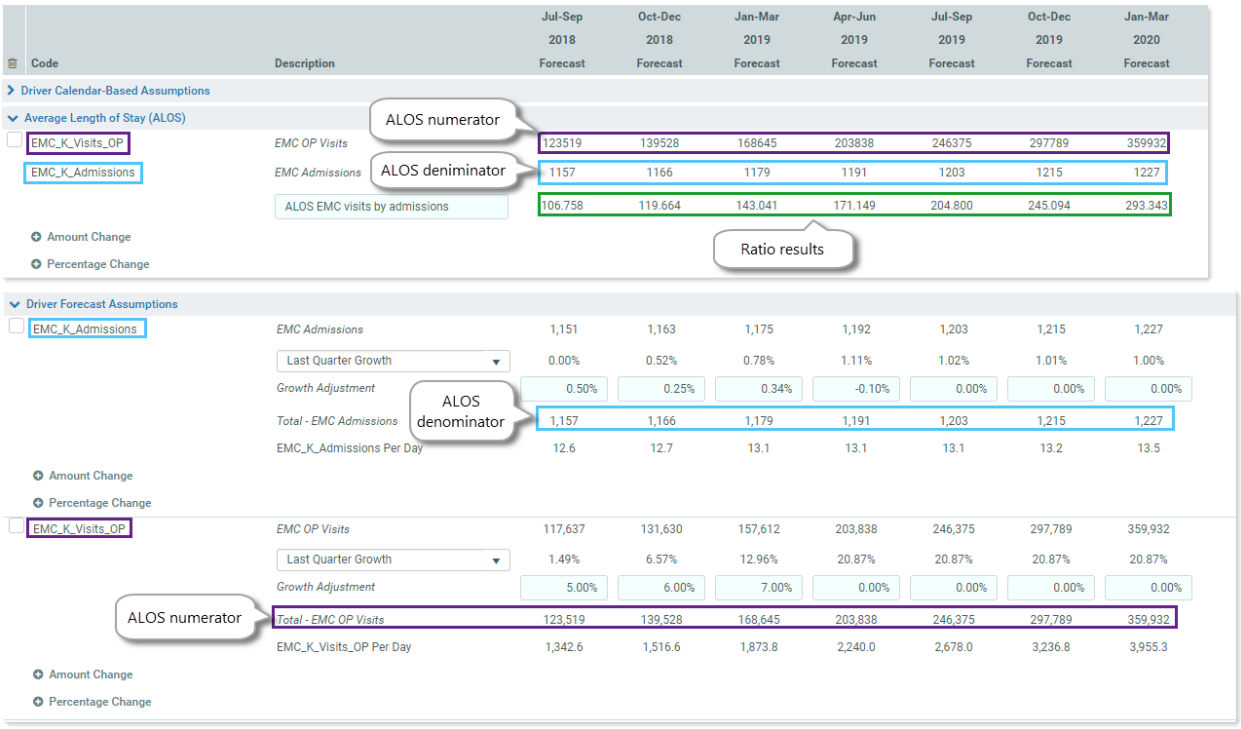
4. In the bottom drop-down, select the assumption to use for the denominator.
5. To provide a name for this comparison, in the **Description** field of the ratio results row, type a descriptive name.
6. To save this comparison, click **Save**.

   NOTE: Comparison names in the ALOS section save to the RollingForecast_RFDrivers table, but the comparison data is not, because the data being used in the comparisons comes from dynamic sources.

7. In the confirmation dialog, click **OK**.

View driver forecast assumption ratios

The following example shows that the numbers in the ALOS section come from the Driver Forecast Assumptions section. The ALOS numerator data is outlined in purple in the example. The ALOS denominator data is shown in the middle row on the right (outlined in light blue). The ratio results are in the bottom row, outlined in green.



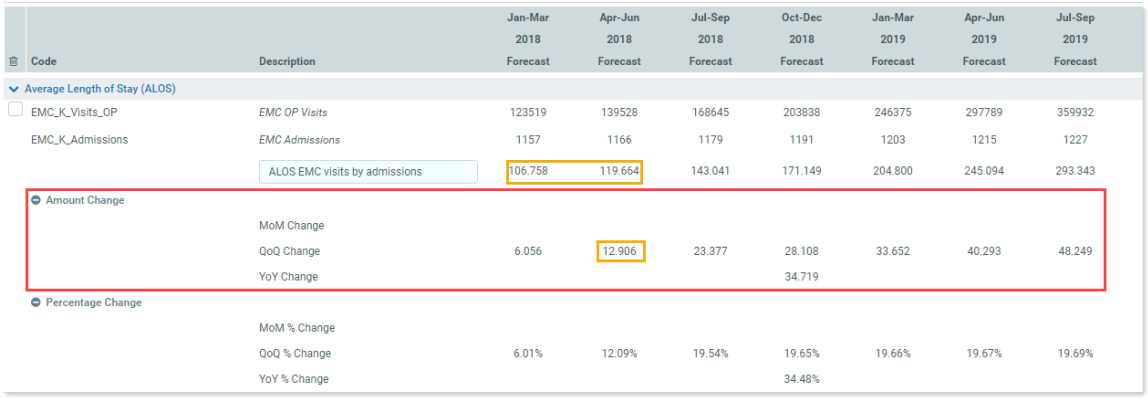
In addition to the main ratio results, you can also view the amount of change and percentage of change quarter over quarter, year over year, and month over month.

NOTE: To view month over month data, in the RF Driver utility, click the **Configuration** tab, and select **Workbook Visibility**. In the **Other Visibility Options** section, click the **Display Monthly Input for NEXT quarter** toggle to **Visible**.

- To view the amount of change from one quarter to the next, click **Amount Change**.

  In the following example, the first quarter subtracted from the second quarter yields the QoQ change shown in the second column of the QoQ Change row.

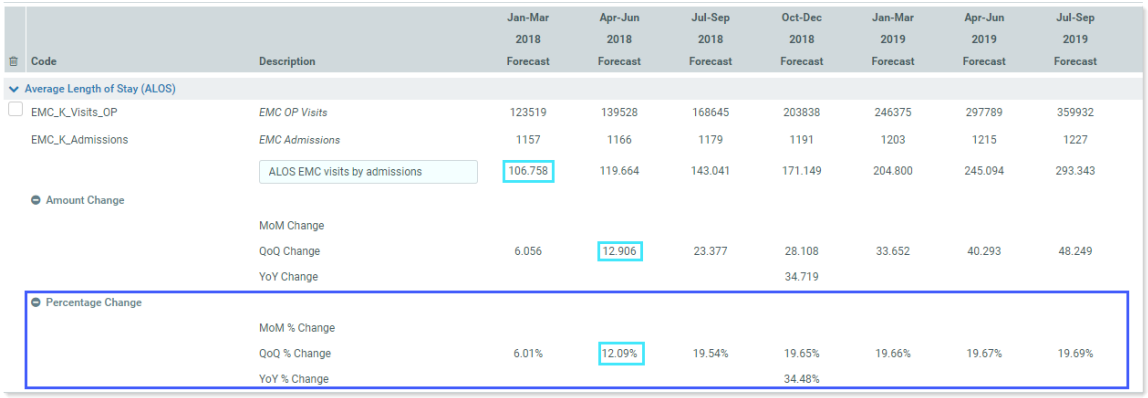
  Note that the Year over Year amount displays in the fourth quarter column (Oct-Dec), of the YoY Change row.



Code	Description	Jan-Mar 2018 Forecast	Apr-Jun 2018 Forecast	Jul-Sep 2018 Forecast	Oct-Dec 2018 Forecast	Jan-Mar 2019 Forecast	Apr-Jun 2019 Forecast	Jul-Sep 2019 Forecast
Average Length of Stay (ALOS)								
EMC_K_Visits_OP	*EMC OP Visits*	123519	139528	168645	203838	246375	297789	359932
EMC_K_Admissions	*EMC Admissions*	1157	1166	1179	1191	1203	1215	1227
	ALOS EMC visits by admissions	106.758	119.664	143.041	171.149	204.800	245.094	293.343
Amount Change								
	MoM Change							
	QoQ Change	6.056	12.906	23.377	28.108	33.652	40.293	48.249
	YoY Change				34.719			
Percentage Change								
	MoM % Change							
	QoQ % Change	6.01%	12.09%	19.54%	19.65%	19.66%	19.67%	19.69%
	YoY % Change				34.48%			

- To view the percentage of change from one quarter to the next, click **Percentage Change**.

  The system calculates the percentage of change from one quarter to the next by subtracting the previous quarter (Q1 in this case) from the next quarter number (Q2), then dividing the result by the previous quarter number. In the following example, the QoQ change 12.906 divided by 106.758 is 12.09%.



Code	Description	Jan-Mar 2018 Forecast	Apr-Jun 2018 Forecast	Jul-Sep 2018 Forecast	Oct-Dec 2018 Forecast	Jan-Mar 2019 Forecast	Apr-Jun 2019 Forecast	Jul-Sep 2019 Forecast
Average Length of Stay (ALOS)								
EMC_K_Visits_OP	*EMC OP Visits*	123519	139528	168645	203838	246375	297789	359932
EMC_K_Admissions	*EMC Admissions*	1157	1166	1179	1191	1203	1215	1227
	ALOS EMC visits by admissions	106.758	119.664	143.041	171.149	204.800	245.094	293.343
Amount Change								
	MoM Change							
	QoQ Change	6.056	12.906	23.377	28.108	33.652	40.293	48.249
	YoY Change				34.719			
Percentage Change								
	MoM % Change							
	QoQ % Change	6.01%	12.09%	19.54%	19.65%	19.66%	19.67%	19.69%
	YoY % Change				34.48%			

  In the previous example, no monthly amount or percentage changes are included.

- To view monthly data, in the Workbook Visibility screen, click the **Display Monthly Input for NEXT quarter** toggle to **Visible**. For instructions, see Other Plan File Visibility Options in Managing the Workbook Visibility driver.

  The following example shows monthly data in addition to the quarterly and annual data.

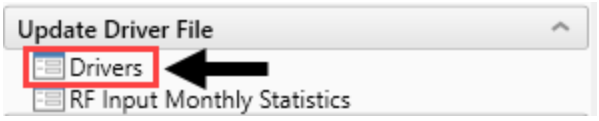
Code	Description	Oct 2017 Forecast	Nov 2017 Forecast	Dec 2017 Forecast	Oct-Dec 2017 Forecast	Jan-Mar 2018 Forecast	Apr-Jun 2018 Forecast	Jul-Sep 2018 Forecast	Oct-Dec 2018 Forecast	Jan-Mar 2019 Forecast	Apr-Jun 2019 Forecast	Jul-Sep 2019 Forecast
Driver Calendar-Based Assumptions												
Average Length of Stay (ALOS)												
EMC_K_Visits_OP	*EMC OP Visits*	39056	37796	39056	115908	123519	139528	168645	203838	246375	297789	359932
EMC_K_Admissions	*EMC Admissions*	388	375	388	1151	1157	1166	1179	1191	1203	1215	1227
	ALOS EMC visits by admissions	100.660	100.789	100.660	100.702	106.758	119.664	143.041	171.149	204.800	245.094	293.343
Amount Change												
	MoM Change	69.483	0.130	-0.130								
	QoQ Change				1.480	6.056	12.906	23.377	28.108	33.652	40.293	48.249
	YoY Change				—				34.719			
Percentage Change												
	MoM % Change	222.86%	0.13%	-0.13%								
	QoQ % Change				1.49%	6.01%	12.09%	19.54%	19.65%	19.66%	19.67%	19.69%
	YoY % Change				—				34.48%			

Managing the Workbook Visibility driver

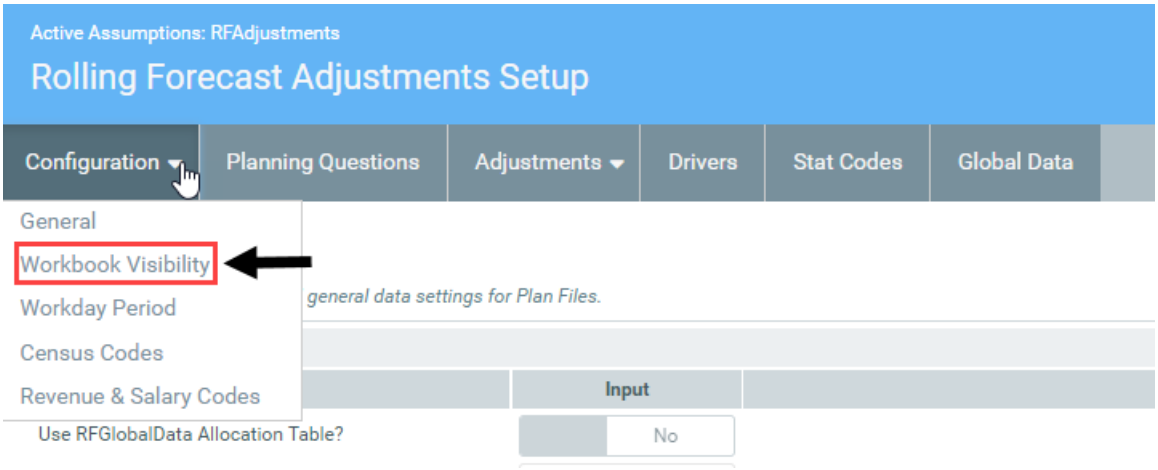
The Workbook Visibility driver allows you to configure what parts of the plan file to display to the user.

To manage the Workbook Visibility driver:

1. In the RF Admin task pane, in the **Update Driver File** section, double-click **Drivers**.



2. In the RF Drivers utility, from the **Configuration** tab, click **Workbook Visibility**.



3. Complete the following fields, as needed:

Plan File Column Visibility Options

For each column, do the following:

- To hide column, click toggle button to **Hidden**.
- To display a column, click the toggle button to **Visible**.

Other Plan File Visibility Options

Complete the following, as needed:

Option	Description
Labeling Options	Type labels for EBIDA margin, net margin, and adjusted EBIDA (operating EBIDA margin before restructuring) if your organization uses different terminology. These values will be used on the Summary Tab of the pan files.
Reports - Grouping Columns for Refresh Variables	Select columns from the RFGroup table to use as additional refresh variables in your reports.
Plan File Tab	Click the toggle to show (**Visible**) or hide (**Hidden**) any of the listed tabs in the plan file.
RFHistory Tab Options	Click the toggle to show (**Visible**) or hide (**Hidden**) any of the listed tabs in RFHistory.
Other Visibility Options	Click the toggle to show (**Visible**) or hide (**Hidden**) the following options: • **Summary - Show EBIDA**: Show or hide the EBIDA rows in the worksheet. • **Summary - Show Adjusted EBIDA**: Show or hide the Adjusted EBIDA rows in the worksheet. • **Show Balance Input Sheets**: Show or hide the Balance Input tabs. • **Display Monthly Input for THIS Quarter**: Show or hide the Monthly inputs for this quarter in the worksheet. • **Display Monthly Input for NEXT Quarter**: Show or hide the Monthly inputs for next quarter in the worksheet.

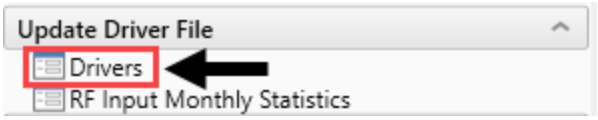
4. To save your changes, click the **Save** button in the upper right corner of the page before you continue.

Managing the Workday Period driver

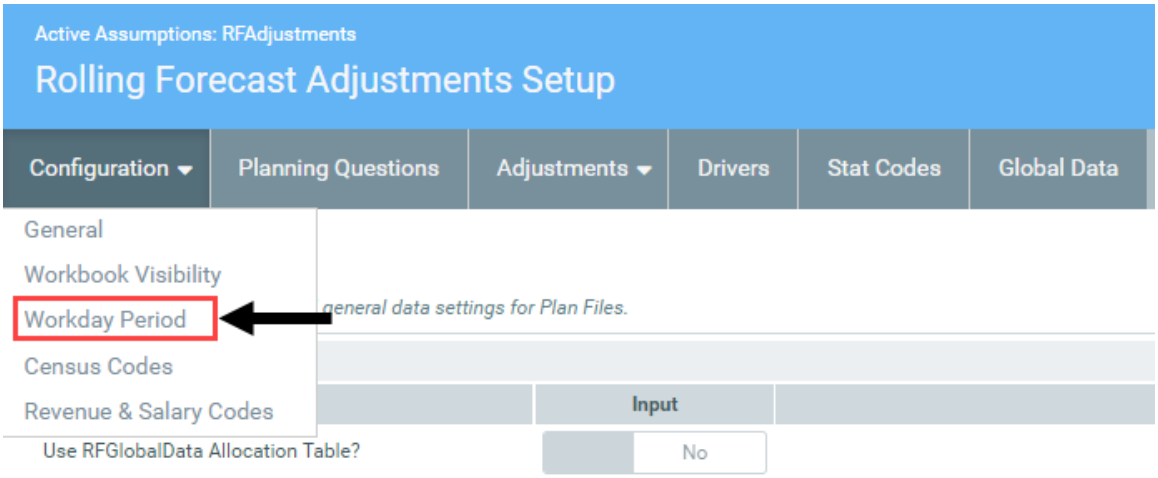
The Workday Period driver allows you to set the workdays in period settings for plan files.

To manage the Workbook Period driver:

1. In the RF Admin task pane, in the **Update Driver File** section, double-click **Drivers**.



2. In the RF Drivers utility, from the **Configuration** tab, click **Workday Period**.



3. At the **Show Historical Actuals?** option, do one of the following:
   - To show the actuals for previous years, click the toggle to **Yes**. The current data moves to the right. Use the slider bar at the bottom of the screen to view it.
   - To hide the actuals for previous years, click the toggle to **No**.
4. For the **Annual FTE Hours** option, specify the default standard work hours for your organization by clicking the toggle to 2080 or 2086.
5. In the blue cells, type the number of workdays in a period.
6. To show the Days in Period, Hours in Period, and Period Quarter, click **Show Additional Detail**. Click **Hide Additional Detail** to hide the information.

   NOTE: The Hours in Period are set for a 2086 FTE by default and must be changed if using 2080.

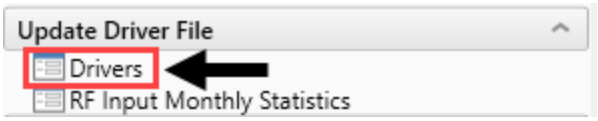
7. To save your changes, click the **Save** button in the upper right corner of the page.

Managing the Census Codes driver

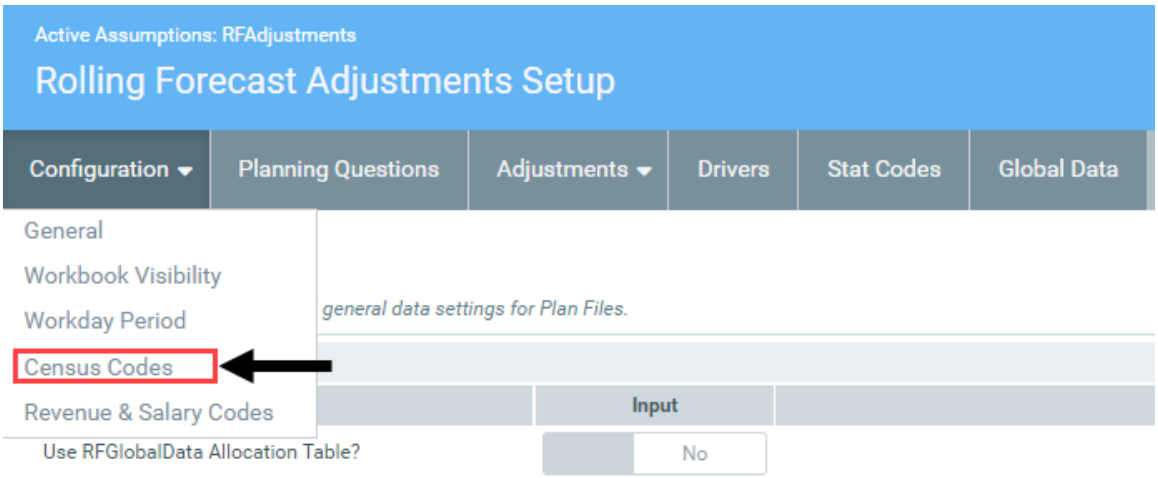
The Census Codes driver allows you to set the inpatient Census Code settings for plan files by matching your Patient Days codes with the appropriate Admissions or Discharge code. Additionally, you may match a CMIAdjusted Discharge or Admissions code if further configuration is needed (please speak with your consultant). You need to configure this coding to use the Census calc method.

To manage the Census Codes driver:

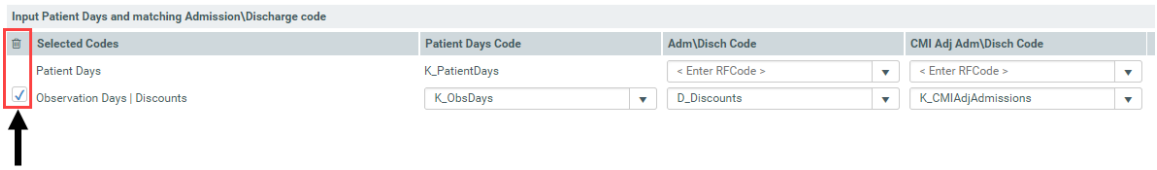
1. In the RF Admin task pane, in the **Update Driver File** section, double-click **Drivers**.



2. In the RF Drivers utility, from the **Configuration** tab, click **Census Codes**.



3. To add or edit a Census Code, do the following:
   a. To add a code, click **+ Insert Additional IP Census Code**.
   b. From the **Adm\Disch Code** drop-down, select the Admission or Discharge RF code.
   c. From the **CMI Adj Adm\Disch Code** drop-down, select the CMI Adjusted Admission or Discharge RF code.
4. To delete a Census Code, select the check box in the Delete column next to the item. The code will be deleted when you click **Save**.



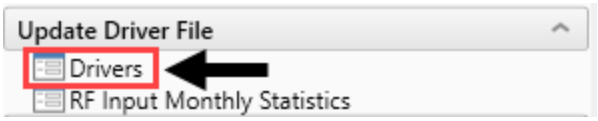
5. To save your changes, click the **Save** button in the upper right corner of the page.

Managing the Revenue and Salary Codes driver

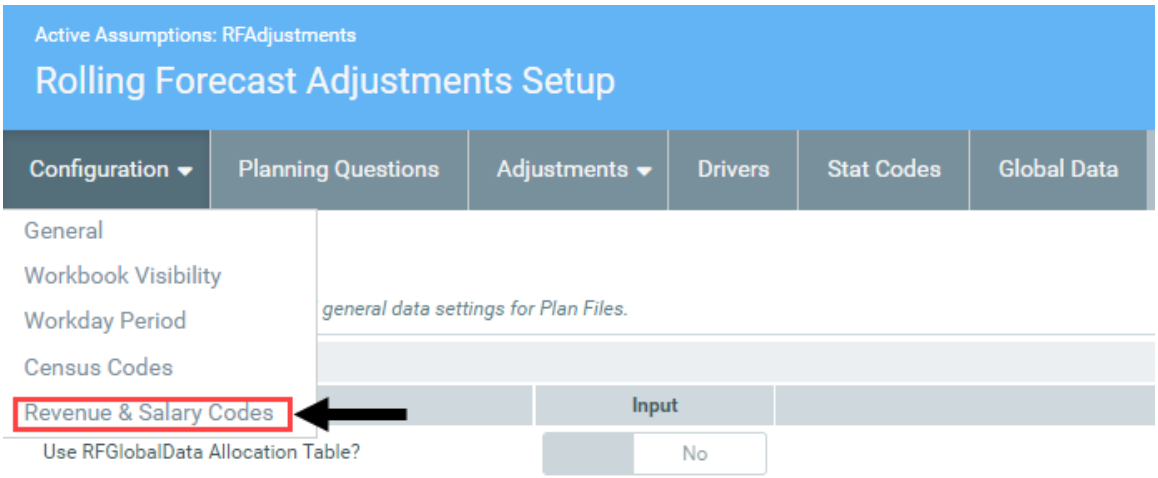
The Revenue and Salary Codes driver allows you to manage the corresponding accounts for Deductions and Hours.

To manage the Revenue and Salary Codes driver:

1. In the RF Admin task pane, in the **Update Driver File** section, double-click **Drivers**.



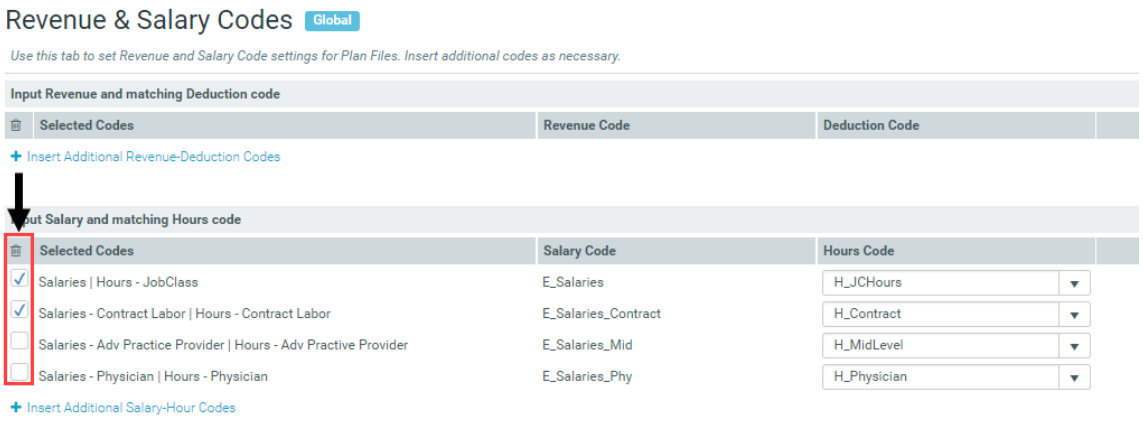
2. In the RF Drivers utility, from the **Configuration** tab, click **Revenue & Salary Codes**.



3. To add or edit an Inpatient Revenue code, do the following:
    a. To add a code, click **+ Insert Additional Revenue-Deduction Codes**.
    b. From the **Deduction Code** drop-down, select the corresponding Deduction code.

> **NOTE:** If you do not allocate or account for deductions at the account level, this step is not necessary.

4. To add or edit a Salary code, do the following:
    a. To add a code, click **+ Insert Additional Salary-Hour Codes**
    b. From the **Hours Code** drop-down, select the corresponding Hours code.
    c. From the **Benefits Code** drop-down, select the corresponding Benefits Code to assign to the Salary Code.
5. To delete a code, select the check box in the **Delete** column next to the item. The code will be deleted when you click **Save**.



6. To save your changes, click the **Save** button in the upper right corner of the page.

Managing the Planning Questions driver

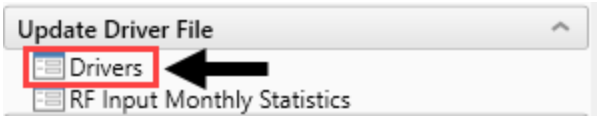
The Planning Questions driver allows you define the questions for the RFPlan sheet. You configure two types of questions:

Global – Questions that apply to all plan files.

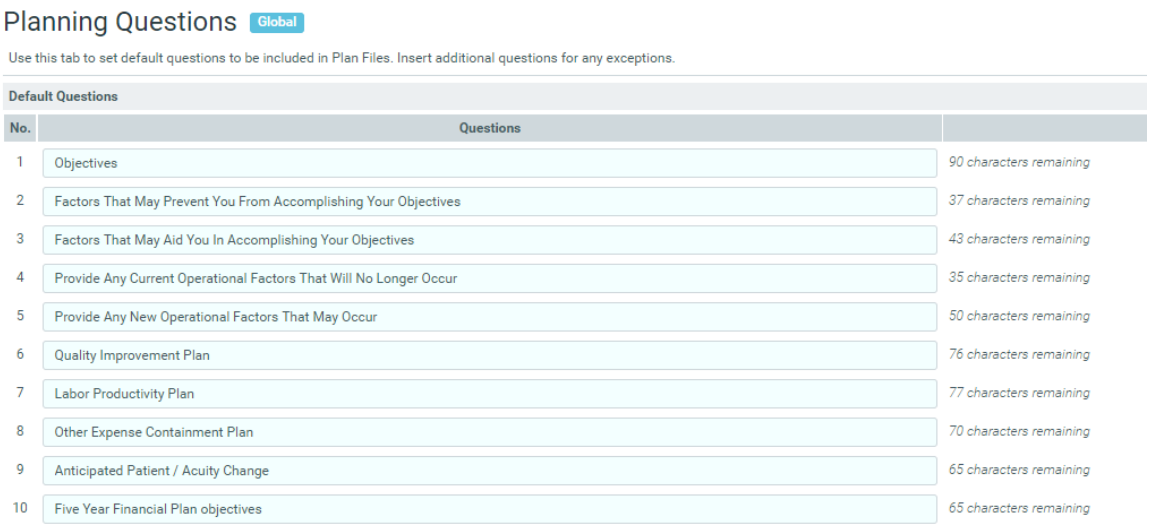
RFPlanGroup – Questions that apply to one or more specific RFPlanGroups. The system will only display RFPlanGroups that you have access to.

To manage the Planning Questions driver:

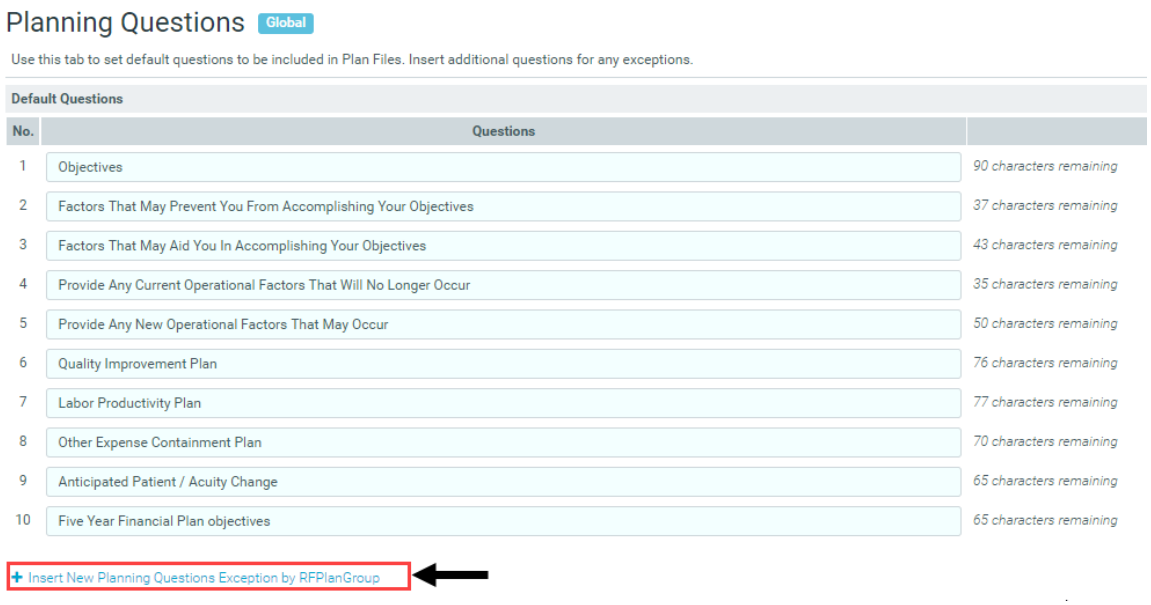
1. In the RF Admin task pane, in the **Update Driver File** section, double-click **Drivers**.



2. In the RF Drivers utility, from the **Planning Questions** tab.
3. In the **Questions** field for the Default Questions, edit the question, as needed.

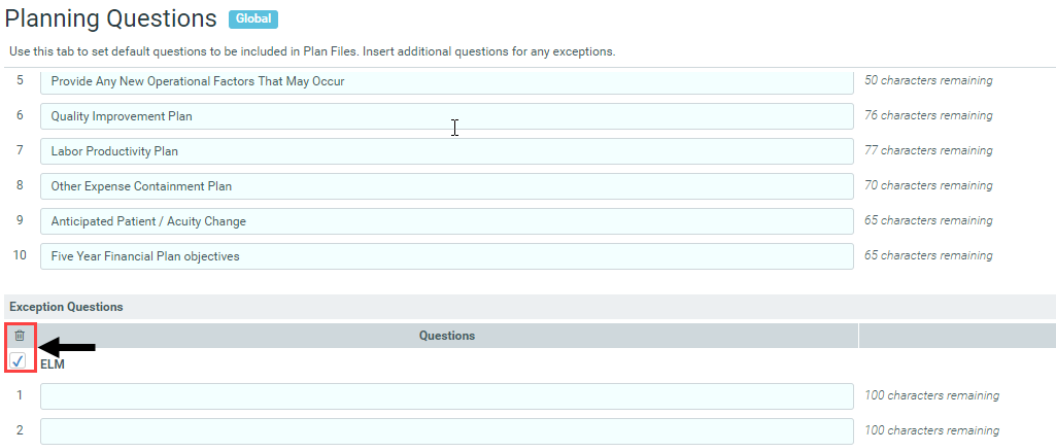


4. To add questions, click **+ Insert New Planning Questions Exception by RFPlanGroups**.



5. From the **RFPlanGroup** drop-down, select the plan group in which to add the question, and click **Apply**.
6. In the **Questions** field, type the question.
7. To delete questions, do any of the following:
   - To delete a block of ten Exception Questions, select the check box in the **Delete** column at the top of the list. The questions will be deleted when you click **Save**.

     NOTE: You cannot delete Global questions.



NOTE: The Delete column is the far left column that displays as the trash can icon.

- To delete an individual Default or Exception question, delete the content in the **Questions** field.

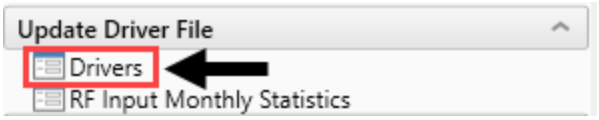
8. To save your changes, click the **Save** button in the upper right corner of the page.

Managing the Adjustments driver

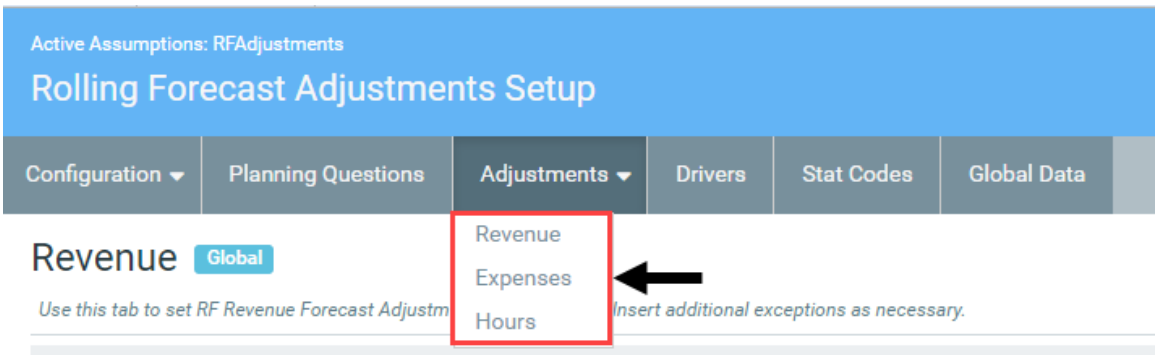
The Adjustments driver allows you to define your revenue, expenses, and hours forecast assumptions for your plan files. You can enter values into the various fields or enter adjustments based on data from Axiom Financial Planning (if available). You can make exceptions by RFPlanGroup or down to the RFCode.

To manage the Adjustments driver:

1. In the RF Admin task pane, in the **Update Driver File** section, double-click **Drivers**.



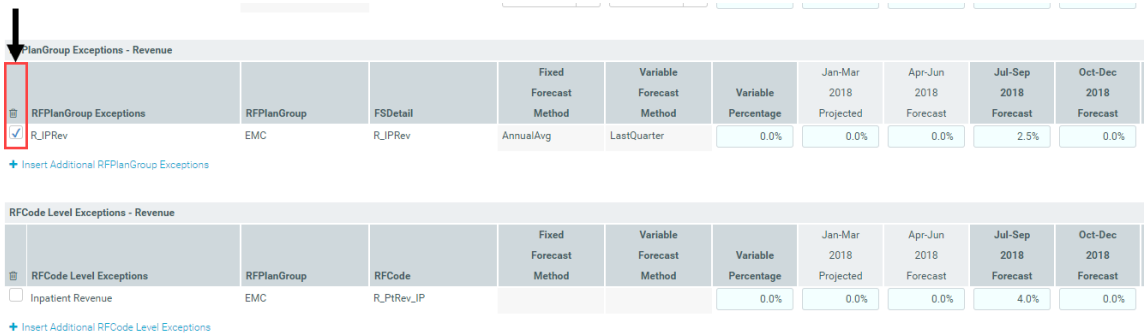
2. In the RF Drivers utility, from the **Adjustments** tab, click **Revenue**, **Expenses**, or **Hours**.



3. To add additional exceptions, do the following:
   - For RFPlanGroup exceptions, click **+ Insert Additional RFPlanGroup Exceptions**.
   - For RFCode exceptions, click **+ Insert Additional RFCode Level Exceptions**.
4. Complete the following options, as needed:

Column	Description
Fixed Forecast Method	Select the Fixed Forecast method to use.
Variable Forecast Method	Select the Variable Forecast method to use.
Variable Percentage	Type a variable percentage.
Variable Pct to be used in Plan Files	Do one of the following: • To use the Variable Percentage amount as the default for your plan files, select **Driver**. • To use the variable percentage from the prior forecast as the default for your plan files, select **PriorForecast**.
Month-Year Projected	Type a projected adjustment percentage for the time period.
Month-Year Forecast	Type a forecasted adjustment percentage for the time period.

5. To delete an RFPlanGroup or RFCode Level exception, select the check box in the Delete column next to the item. The exception will be deleted when you click **Save**.



6. To save your changes, click the **Save** button in the upper right corner of the page.

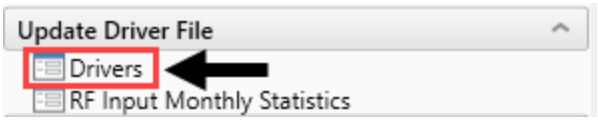
Managing the Global driver

The Global driver allows you to configure global change assumptions to apply to forecast group statistics in the forecast workbooks. This tab includes calendar-based assumptions and forecast assumptions that include the global driver statistics such as patient days, outpatient or clinic visits, and so on, that drive forecast group volume growth assumptions. Please note that Entity and RFCode data is available to be set as a driver, though for any one user to properly set those up, they must be provided all RFPlangroups that roll into that Entity in the driver security setup or be assigned the Rolling Forecast Global Driver Management role.

You can enter values into the various fields or enter adjustments based on data from Axiom Financial Planning (if available).

To manage the Global driver:

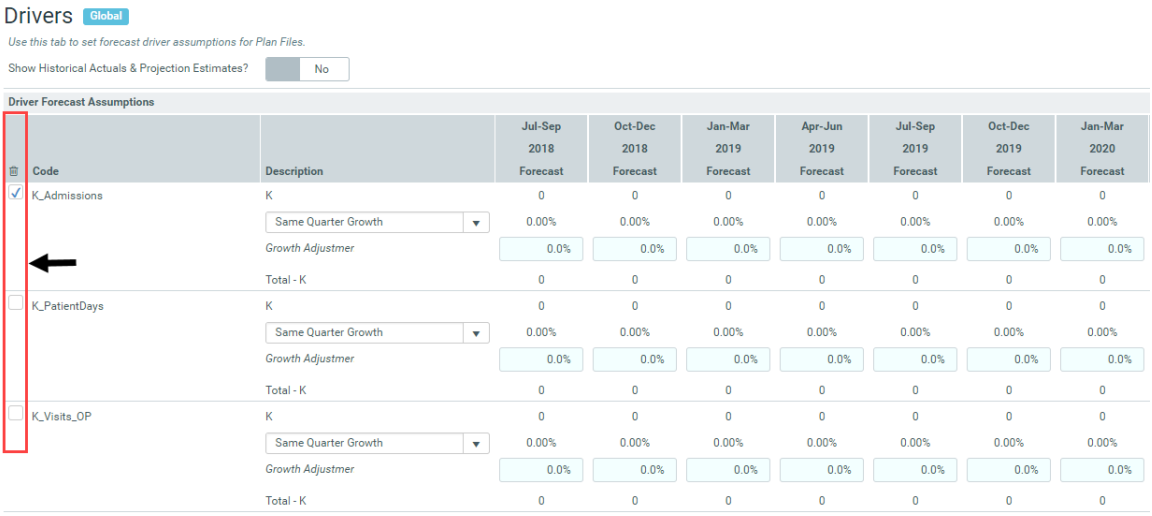
1. In the RF Admin task pane, in the **Update Driver File** section, double-click **Drivers**.



2. In the RF Drivers utility, click **Drivers**.
3. At the **Show Historical Actuals & Projection Estimates?**, do one of the following:
   - To show the actuals for previous years, click the toggle to **Yes**. The current data moves to the right. Use the slider bar at the bottom of the screen to view it.
   - To hide the actuals for previous years, click the toggle to **No**.
4. To add additional growth rate exceptions, click **+ Insert Additional Growth Rate Exceptions**.
5. Complete the following options, as needed:

Column	Description
Code (Only when adding a new exception)	Select a driver forecast assumption.
Description	Select the description to use for the code.
Month-Year Forecast	Type a forecasted adjustment percentage for the time period.

6. To delete an exception, select the check box in the Delete column next to the item. The exception will be deleted when you click **Save**.



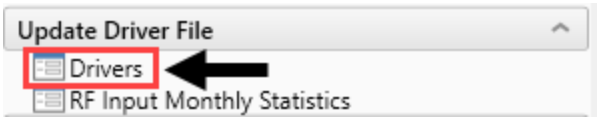
7. To save your changes, click the **Save** button in the upper right corner of the page.

Managing the Stat Codes driver

The Stat Codes driver allows you to assign the default global driver statistics for all forecast groups. You can also make exceptions by Forecast Group. Only those statistics available on the Drivers tab may be used as a driver statistic.

To manage the Stat Codes driver:

1. In the RF Admin task pane, in the **Update Driver File** section, double-click **Drivers**.



2. In the RF Drivers utility, click **Stat Codes**.
3. Do the following for each section:

Stat Codes Setup

From the drop-downs, select the default IP Driver, OP Driver, and Other Driver.

RFPlanGroups Exceptions

a. To add an additional exception, click **+ Insert Additional RFPlanGroups Stat Exceptions**.

b. From the drop-down, select the RFPlanGroup.

c. From the remaining drop-downs, select the IP, OP, and Other Drivers.

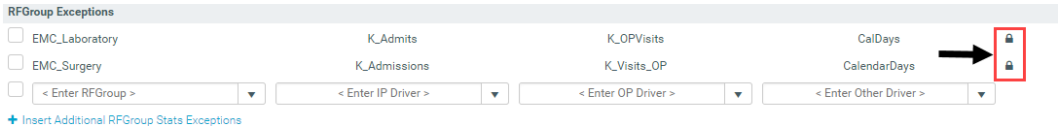
RFGroup Exceptions

a. To add an additional exception, click **+ Insert Additional RFGroup Stat exceptions**.

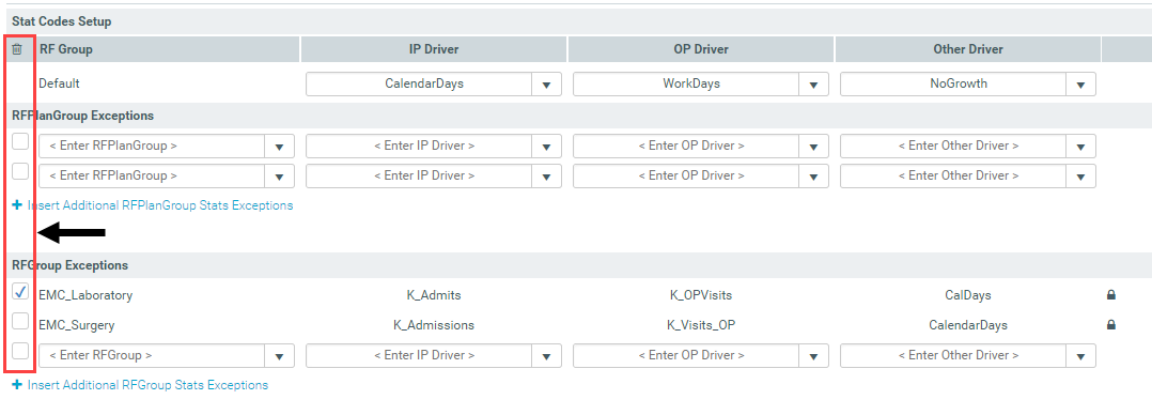
b. From the drop-down, select the RFGroup.

c. From the remaining drop-downs, select the IP, OP, and Other Drivers.

A lock icon displays next to the RFGroup exceptions. To make changes to these exceptions, click the lock to unlock for editing.



4. To delete an exception, select the check box in the Delete column next to the item. The exception will be deleted when you click **Save**.



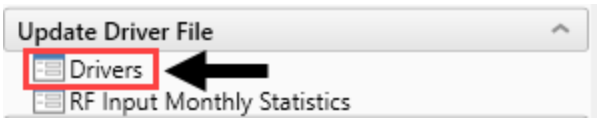
5. To save your changes, click the **Save** button in the upper right corner of the page.

Managing the Global Data driver

From the Global Data driver page, you can add, edit, or delete global assumptions using the Global Data Import worksheet. This allows you to feed data into multiple forecast workbooks from a central location. For example, depreciation expense that is calculated and controlled by Finance.

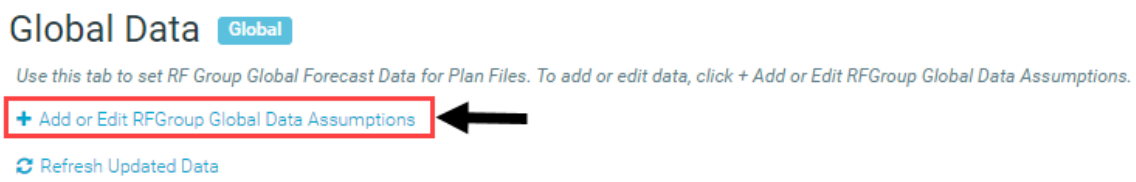
To manage the Global Data driver:

1. In the RF Admin task pane, in the **Update Driver File** section, double-click **Drivers**.



2. In the RF Drivers utility, click **Global Data**.

3. Click **+ Add or Edit RFGroup Global Data Assumptions**.



4. At the **Proceed to Global Data Import.xls?** prompt, click **OK**.
5. In the Global Data Assumptions worksheet, do any of the following:

Add or modify an assumption

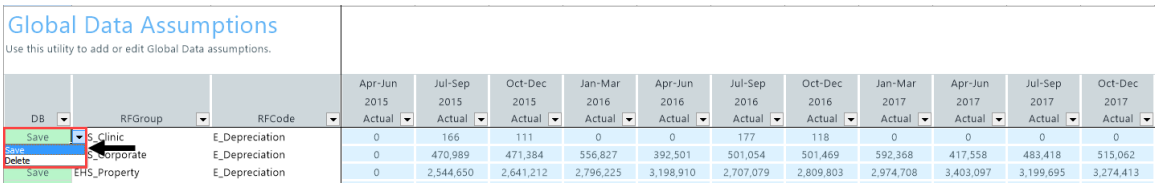
a. In the **Main** ribbon tab, click **Additions > Add Row(s) > Insert Additional Rows**.

> **NOTE:** Any additional rows that you add will need a valid RFGroup and RFCode to save. You will only be able to add rows to RFPlanGroups you are assigned to.

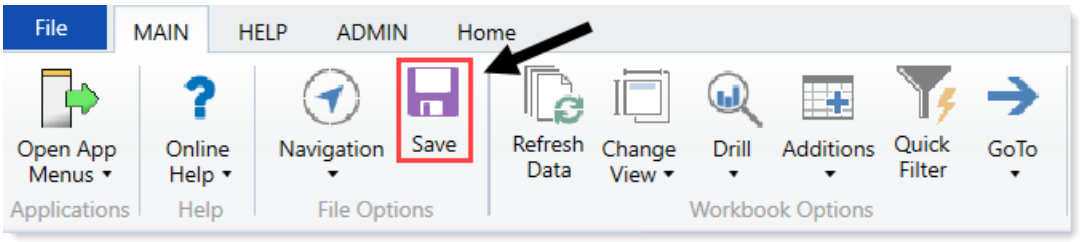
b. Enter data in the *Month-Year* Actual, Budget, and Forecast columns.

Delete an assumption

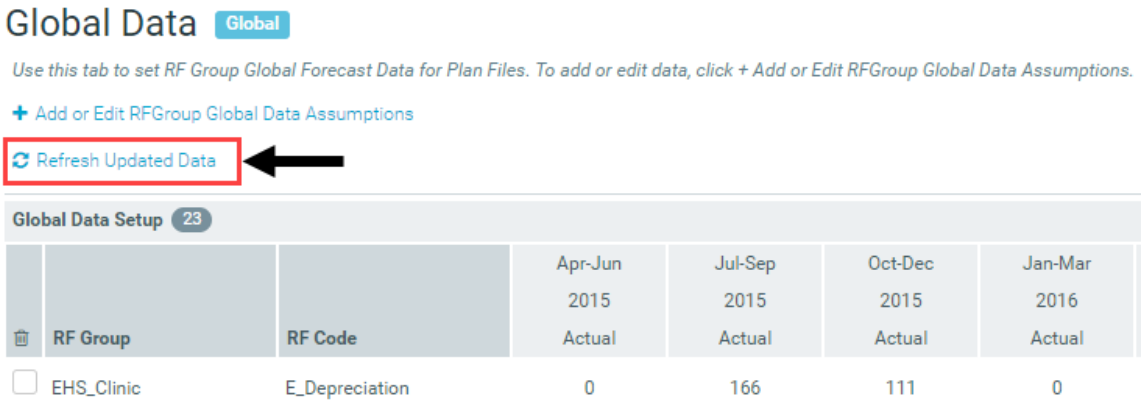
In the **DB** column, select **Delete**. The exception will be deleted when you click **Save**.



6. To save your changes, in the **Main** ribbon tab, click the **Save**.



7. In the Global Data driver page, to refresh the list of assumptions, click **Refresh Updated Data**.


Global Data
Global
Use this tab to set RF Group Global Forecast Data for Plan Files. To add or edit data, click + Add or Edit RFGroup Global Data Assumptions.
+ Add or Edit RFGroup Global Data Assumptions
Refresh Updated Data
Global Data Setup 23
RF Group
RF Code
Apr-Jun 2015 Actual
Jul-Sep 2015 Actual
Oct-Dec 2015 Actual
Jan-Mar 2016 Actual
EHS_Clinic
E_Depreciation
0
166
111
0

6

Working with Plan Files

After you import and summarize your historical data, you are ready to generate forecasts, which you do by creating plan files.

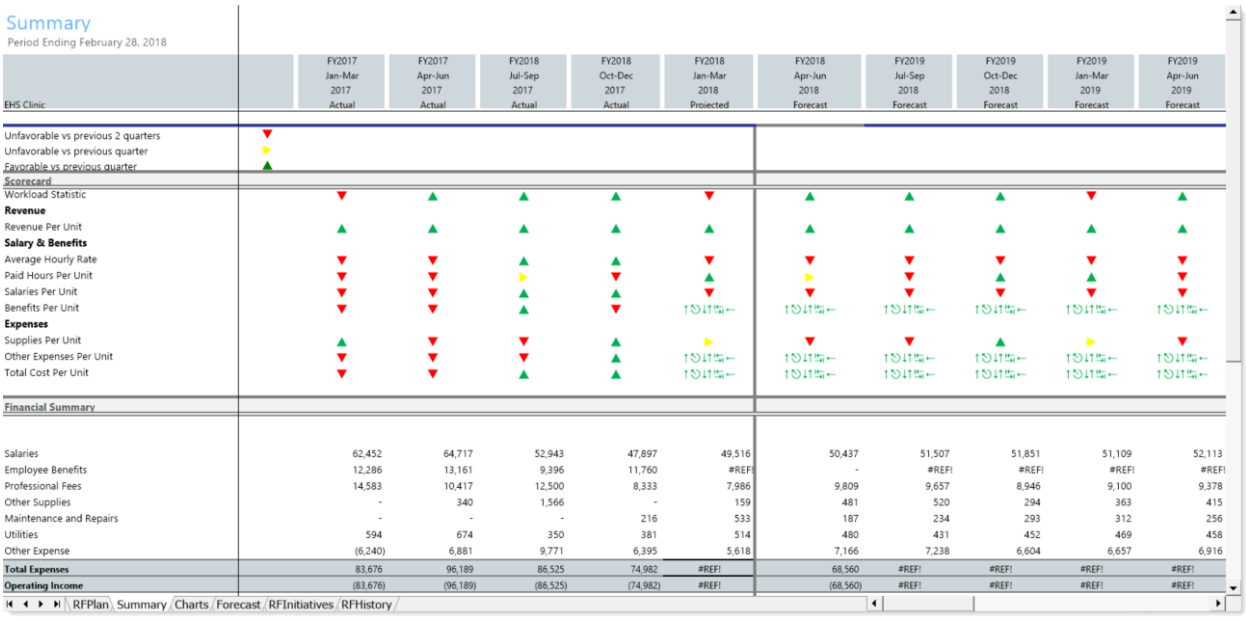
You need to create plan files for each RFGroup, and process the files to interface data. You can accomplish this as a batch operation; however, we would strongly advise creating a single plan file as a test. We recommend you verify that you configure your settings correctly and data summarizes properly before creating and processing files for all groups.

In Axiom Rolling Forecasting, the forecast data for each RFGroup is maintained in plan files.

Opening Rolling Forecasting plan files

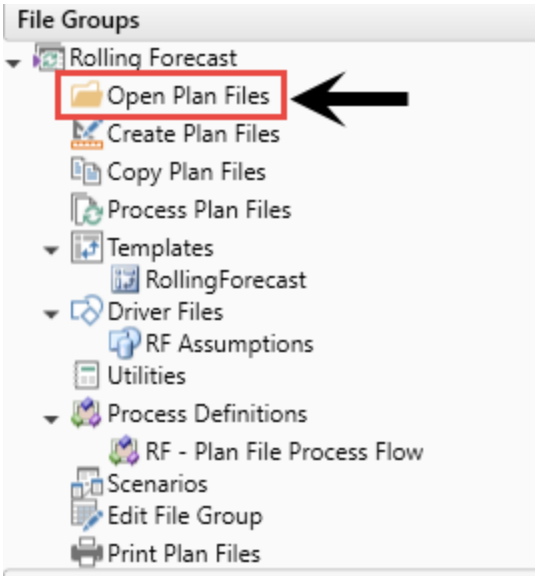
The forecast data for each RFGroup is maintained in plan files, which take the form of workbooks. The plan files include a series of tabs, each with its own purpose. You access file groups from the **Plan Files** section of the **Rolling Fcst** task pane.

The plan file opens on the Summary tab upon creation; however, it may open on different tabs depending on where the plan was active on the last save.

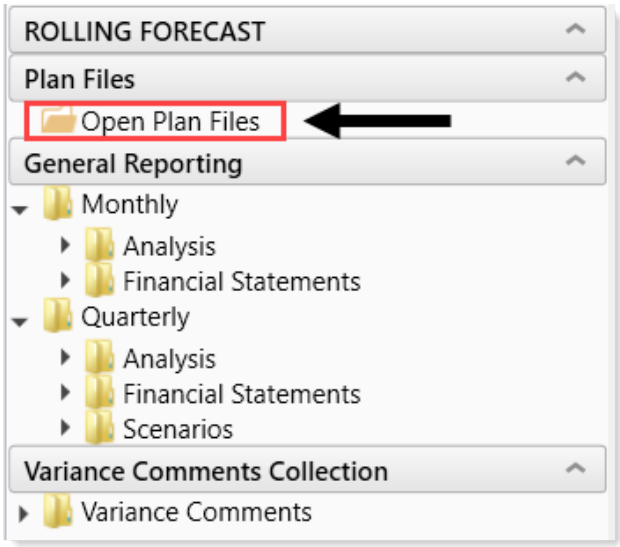


To open Rolling Forecasting plan files:

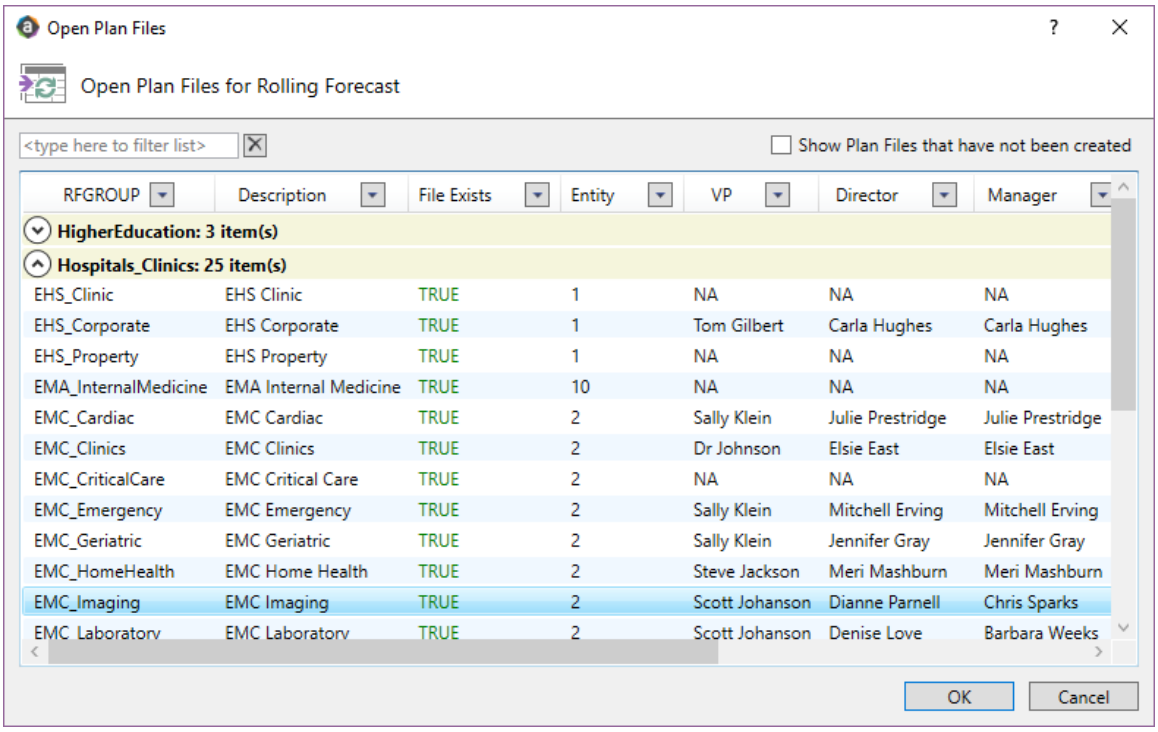
1. In the RF Admin task pane, in the **File Groups**, click **Rolling Forecast**, and double-click **Open Plan Files**.



2. In the Rolling Fcst task pane, in the **Plan Files** section, double-click **Open Plan Files**.



3. In the **Open Plan Files for Rolling Forecast** dialog, select the plan file to open, and click **OK**.



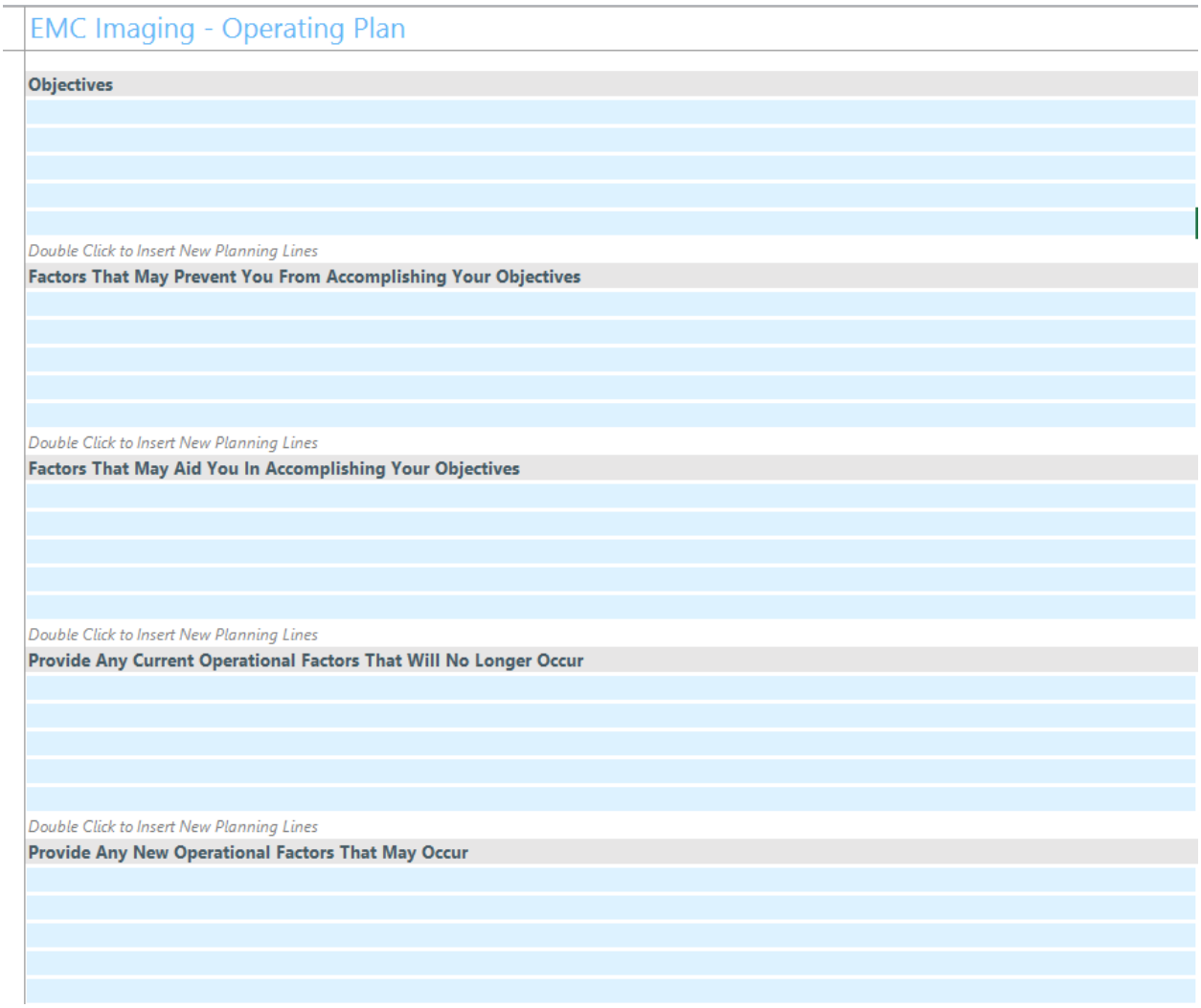
The workbook contains multiple tabs, which are covered in the following topics:

- RFPlan tab
- Summary tab
- Charts tab
- Forecast tab
- Notes tab
- RFInitiatives tab
- Forecast History tab

RFPlan tab

This tab is a questionnaire to aid in the planning process and provides the narrative documentation to support your forecast, such as the narrative behind the numbers. It is a great way to ensure that you are discussing the right topics during the forecast process.

Use this tab to document what is important about this quarterly Rolling Forecasting update and provide answers to questions requested by the leadership team so that it can be referred to during the review process.



For the comments from the RFPlan sheet to save back to the database, you need a valid RFID, RFCode and RFGroup Dimension. The plan file assigns default codes for both the RFID and RFCode dimension tables where these comments will be stored so that reports can be written to summarize these comments for senior management review. The RFGroup Dimension gets assigned from the plan file where you wrote your comments.

Summary tab

This tab compares the historical data and projections for each quarter and indicates whether each quarter's figures represent a favorable or unfavorable change from previous quarters.

The top portion of the tab is the scorecard section. The arrows indicate the following:

- Green arrow ▲ - Favorable performance vs. the previous quarter
- Yellow arrow ▶ - Unfavorable performance vs. the previous quarter

- Red arrow ▼ - Unfavorable performance vs. the previous two quarters

SUMMARY

Period Ending February 28, 2017

EMC_Imaging EMC Imaging		FY2016 Jan-Mar 2016 Actual	FY2016 Apr-Jun 2016 Actual	FY2017 Jul-Sep 2016 Actual	FY2017 Oct-Dec 2016 Actual	FY2017 Jan-Mar 2017 Projected	FY2018 Jul-Sep 2017 Forecast	FY2018 Oct-Dec 2017 Forecast	FY2018 Jan-Mar 2018 Forecast
Unfavorable vs previous 2 quarters	▼								
Unfavorable vs previous quarter	▶								
Favorable vs previous quarter	▲								
Scorecard									
Workload Statistic		▲	▲	▲	▶	▲	▲	▲	▲
Revenue									
Revenue Per Unit		▲	▲	▲	▶	▼	▲	▲	▲
Salary & Benefits									
Average Hourly Rate		▼	▼	▼	▲	▼	▼	▼	▼
Paid Hours Per Unit		▼	▼	▲	▲	▲	▲	▲	▲
Salaries Per Unit		▼	▼	▼	▼	▼	▲	▶	▲
Benefits Per Unit		▼	▼	▼	▲	▶	▼	▲	▲
Expenses									
Supplies Per Unit		▼	▼	▲	▲	▶	▲	▲	▶
Other Expenses Per Unit		▼	▼	▲	▼	▼	▲	▶	▲
Total Cost Per Unit		▼	▼	▲	▶	▼	▲	▲	▲

Forecast Summary section shows the P&L summary of the history and forecast results.

SUMMARY

Period Ending February 28, 2017

EMC_Imaging EMC Imaging	FY2016 Jan-Mar 2016 Actual	FY2016 Apr-Jun 2016 Actual	FY2017 Jul-Sep 2016 Actual	FY2017 Oct-Dec 2016 Actual	FY2017 Jan-Mar 2017 Projected	FY2018 Jul-Sep 2017 Forecast	FY2018 Oct-Dec 2017 Forecast	FY2018 Jan-Mar 2018 Forecast	FY2018 Apr-Jun 2018 Forecast
Financial Summary									
Inpatient Revenue	4,990,066	5,455,460	6,601,586	6,261,528	6,328,562	6,954,558	6,910,927	7,062,084	7,146,219
Outpatient Revenue	9,146,468	9,130,013	11,701,178	11,644,268	11,814,956	13,415,095	13,915,830	14,435,255	14,974,069
Other Patient Revenue	5,020	3,585	10,660	3,610	3,421	3,620	3,620	3,541	3,581
Total Patient Revenue	14,141,554	14,589,058	18,313,424	17,909,406	18,146,940	20,373,272	20,830,376	21,500,880	22,123,868
Net Patient Revenue	14,141,554	14,589,058	18,313,424	17,909,406	18,146,940	20,373,272	20,830,376	21,500,880	22,123,868
Other Revenue	3,814	4,704	3,994	4,342	5,481	4,612	4,766	4,872	4,720
Total Revenue	14,145,368	14,593,762	18,317,418	17,913,748	18,152,420	20,377,884	20,835,142	21,505,752	22,128,588
Salaries	1,041,214	1,079,405	1,106,002	1,084,294	1,101,352	1,173,649	1,181,486	1,163,029	1,189,798
Employee Benefits	200,389	162,316	221,517	180,564	187,433	201,936	196,388	195,721	199,169
Contract Labor	167,397	275,939	244,677	304,881	362,062	356,031	381,440	397,337	409,753
Professional Fees	27,472	11,562	15,017	42,002	90,353	46,776	54,716	57,895	49,780
Medical Supplies	523,784	501,281	467,383	364,282	420,614	427,739	413,356	430,573	427,815
Other Supplies	48,535	43,609	61,888	40,447	40,896	47,485	43,884	44,744	45,706
Purchased Services	31,145	191,509	51,929	69,222	47,983	64,824	68,047	67,754	72,696
Maintenance and Repairs	147,361	409,200	118,765	219,537	231,302	203,576	224,779	226,089	224,786
Lease and Rental	513,068	512,339	598,537	678,612	644,508	632,539	641,040	631,647	628,431
Utilities	1,019	857	1,009	754	1,193	977	969	1,023	981
Other Expense	8,889	1,372	10,284	28,438	30,490	21,715	24,572	23,606	21,885
Total Expenses	2,710,273	3,189,389	2,897,008	3,013,032	3,158,186	3,177,247	3,230,678	3,239,417	3,270,800
EBIDA Margin	11,435,095	11,404,373	15,420,410	14,900,716	14,994,234	17,200,637	17,604,464	18,266,335	18,857,789
Depreciation	228,450	228,391	507,939	605,525	640,216	605,525	605,525	605,525	605,525
Net Margin	11,206,645	11,175,982	14,912,470	14,295,191	14,354,018	16,595,112	16,998,939	17,660,810	18,252,264

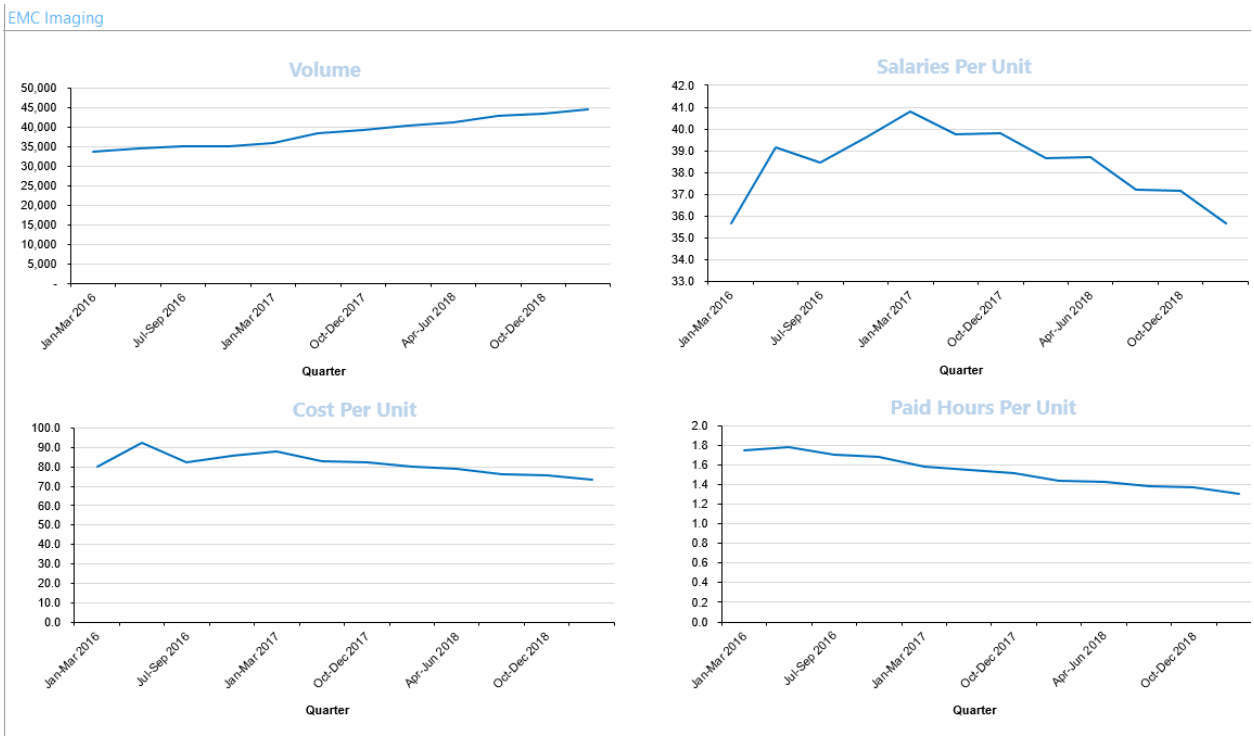
The Per Unit and Hours Analysis sections are a summary of the history and forecast results for each metric.

SUMMARY

Period Ending February 28, 2017 EMC_Imaging EMC Imaging		FY2016 Jan-Mar 2016 Actual	FY2016 Apr-Jun 2016 Actual	FY2017 Jul-Sep 2016 Actual	FY2017 Oct-Dec 2016 Actual	FY2017 Jan-Mar 2017 Projected	FY2018 Jul-Sep 2017 Forecast	FY2018 Oct-Dec 2017 Forecast	FY2018 Jan-Mar 2018 Forecast	FY2018 Apr-Jun 2018 Forecast
Total - Key Statistic	Key Statistic	33,881	34,601	35,099	35,093	35,871	38,456	39,259	40,387	41,335
Operating EBIDA Margin		80.8%	78.1%	84.2%	83.2%	82.6%	84.4%	84.5%	84.9%	85.2%
Revenue / Unit		417.5	421.8	521.9	510.5	506.1	529.9	530.7	532.5	535.3
Salaries / Unit		35.7	39.2	38.5	39.6	40.8	39.8	39.8	38.6	38.7
Benefits / Unit		5.9	4.7	6.3	5.1	5.2	5.3	5.0	4.8	4.8
Supplies / Unit		16.9	15.7	15.1	11.5	12.9	12.4	11.6	11.8	11.5
Other Expense / Unit		21.5	32.6	22.7	29.6	29.2	25.2	25.8	25.0	24.2
Total Expense / Unit		80.0	92.2	82.5	85.9	88.0	82.6	82.3	80.2	79.1
EBIDA Margin / Unit		337.5	329.6	439.3	424.6	418.0	447.3	448.4	452.3	456.2
Hours Analysis										
Paid FTEs - Staff		108.08	110.04	112.06	110.32	107.59	110.50	110.46	110.28	110.70
Paid FTEs - Contract		5.78	8.76	1.95	2.17	2.87	2.73	2.93	3.12	3.18
Total Paid FTEs		113.86	118.80	114.01	112.49	110.46	113.23	113.38	113.39	113.87
Avg Hourly Rate - Staff		$ 18.53	$ 18.86	$ 18.77	$ 18.70	$ 19.90	$ 20.20	$ 20.35	$ 20.51	$ 20.67
Total Paid Hours / Unit		1.7	1.8	1.7	1.7	1.6	1.5	1.5	1.4	1.4
Paid Hours - Staff		56,202	57,219	58,914	57,997	55,334	58,089	58,069	56,715	57,563
Paid Hours - Contract		3,005	4,558	1,026	1,139	1,474	1,436	1,538	1,602	1,652
Total Paid Hours		59,207	61,776	59,939	59,136	56,809	59,525	59,607	58,317	59,215

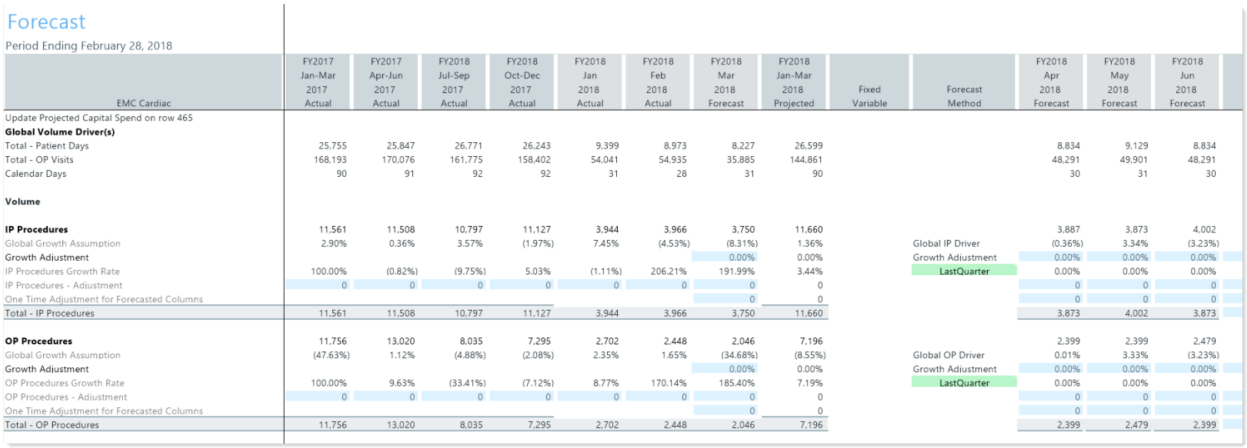
Charts tab

This tab includes a series of graphs illustrating historical and forecasted trends for volume, salaries per unit, cost per unit, and paid hours per unit.



Forecast tab

This is where all of the forecasting activity takes place by displaying historical and forecasted values for volume, revenue, and expenses. If your organization uses Axiom Capital Tracking, capital projects may also be included at the bottom of the worksheet in the Capital Tracking Projects block. This information only displays if your organization has configured your system to import project spending data from Axiom Capital Tracking.



Forecast

Period Ending February 28, 2018

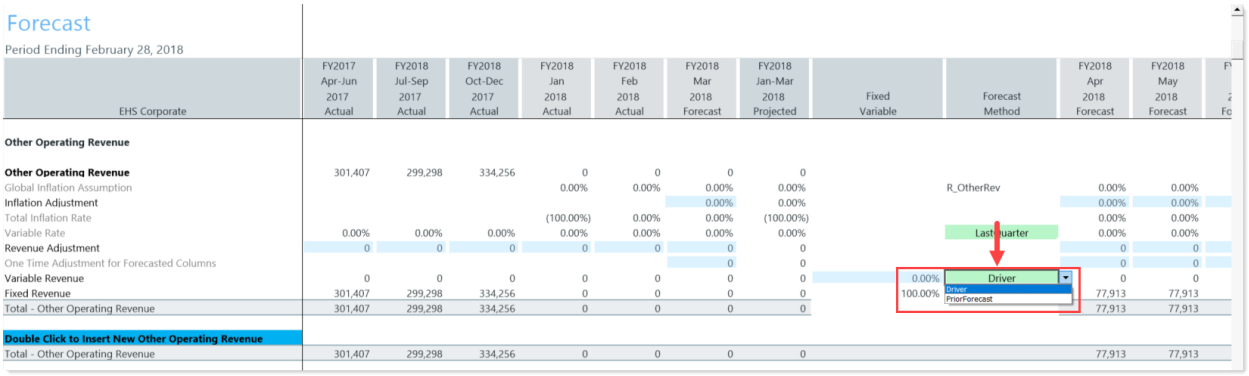
EMC Cardiac	FY2017 Jan-Mar 2017 Actual	FY2017 Apr-Jun 2017 Actual	FY2018 Jul-Sep 2017 Actual	FY2018 Oct-Dec 2017 Actual	FY2018 Jan 2018 Actual	FY2018 Feb 2018 Actual	FY2018 Mar 2018 Forecast	FY2018 Jan-Mar 2018 Projected	Fixed Variable	Forecast Method	FY2018 Apr 2018 Forecast	FY2018 May 2018 Forecast	FY2018 Jun 2018 Forecast
Update Projected Capital Spend on row 465													
Global Volume Driver(s)													
Total - Patient Days	25,755	25,847	26,771	26,243	9,399	8,973	8,227	26,599			8,834	9,129	8,834
Total - OP Visits	168,193	170,076	161,775	158,402	54,041	54,935	35,885	144,861			48,291	49,901	48,291
Calendar Days	90	91	92	92	31	28	31	90			30	31	30
Volume													
IP Procedures	11,561	11,508	10,797	11,127	3,944	3,966	3,750	11,660			3,887	3,873	4,002
Global Growth Assumption	2.90%	0.36%	3.57%	(1.97%)	7.45%	(4.53%)	(8.31%)	1.36%		Global IP Driver	(0.36%)	3.34%	(3.23%)
Growth Adjustment							0.00%	0.00%		Growth Adjustment	0.00%	0.00%	0.00%
IP Procedures Growth Rate	100.00%	(0.82%)	(9.75%)	5.03%	(1.11%)	206.21%	191.99%	3.44%		LastQuarter	0.00%	0.00%	0.00%
IP Procedures - Adjustment	0	0	0	0	0	0	0	0			0	0	0
One Time Adjustment for Forecasted Columns							0	0			0	0	0
Total - IP Procedures	11,561	11,508	10,797	11,127	3,944	3,966	3,750	11,660			3,873	4,002	3,873
OP Procedures	11,756	13,020	8,035	7,295	2,702	2,448	2,046	7,196			2,399	2,399	2,479
Global Growth Assumption	(47.63%)	1.12%	(4.88%)	(2.08%)	2.35%	1.65%	(34.68%)	(8.55%)		Global OP Driver	0.01%	3.33%	(3.23%)
Growth Adjustment							0.00%	0.00%		Growth Adjustment	0.00%	0.00%	0.00%
OP Procedures Growth Rate	100.00%	9.63%	(33.41%)	(7.12%)	8.77%	170.14%	185.40%	7.19%		LastQuarter	0.00%	0.00%	0.00%
OP Procedures - Adjustment	0	0	0	0	0	0	0	0			0	0	0
One Time Adjustment for Forecasted Columns							0	0			0	0	0
Total - OP Procedures	11,756	13,020	8,035	7,295	2,702	2,448	2,046	7,196			2,399	2,479	2,399

For the forecasted values, in the blue cells, update the values, as needed:

Section/Column	Description
Historical actuals by quarter (6-12 quarters may display)	Each section includes several rows to enter adjustments. For example, in the Volume > IP Visits section, you can enter a percentage in the Growth Adjustment row.
Fixed Variable	By default, the percentage that displays in this cell depends on the Adjustments driver.
Forecast Method	Select the forecast method to use: • **Last Quarter**: Base forecast on the quarter immediately prior to the current. • **Same Quarter**: Base forecast on the same quarter for the previous year. • **AnnualAvg**: Base forecast on the quarterly average for the last four quarters. • **GlobalOnly**: Volume ONLY. Uses the global driver inflation but ignores the RFGroup historical growth rate.
Comments	Enter any additional information, as needed.
Quarterly forecast for the future quarters (6-12 quarters may display)	Type the forecasted amount for each quarter. **NOTE:** If monthly input is enabled for your workbook, you can plan down to the monthly level for the current and next quarters.

Variable Percentage type and amount

By default, the variable percentage is assigned using the Adjustments driver, but you can change it as needed. The variable percentage setting is located in the Variable Revenue rows in the Forecast Method column. You can select to use the variable percentage set up in the driver or use the percentage from the prior forecast. The following calc methods of the Forecast tab are affected by the variable percentage type and amount: Expense, Other Revenue, Salary.



The **Fixed Variable** cell displays either the percentage amount from the driver or from the prior forecast.

NOTE: You can update the percentage in the Fixed Variable cell, but once you enter a number, the number you entered remains for the duration of that forecast. When you do your next forecast, the number will display the default, and you can either leave the percentage as-is or you can change it again for the duration of the forecast.

Benefits and salaries

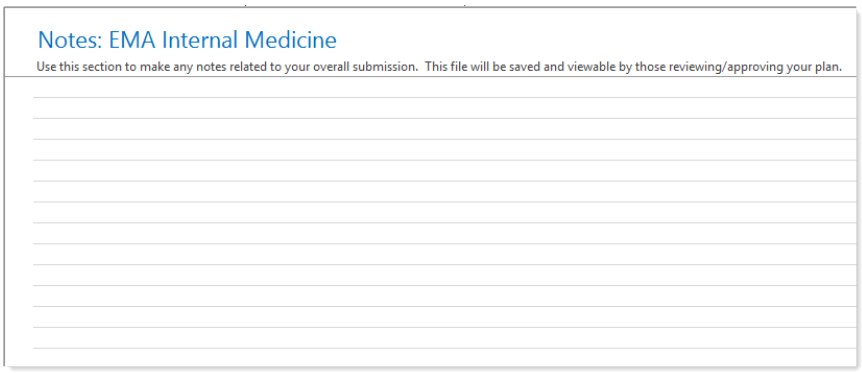
The total benefits for the following calc methods are calculated based on salaries from the Benefits Code assigned to the Salary Code:

- Percent of Salary
- Rate Per FTE
- Salaries

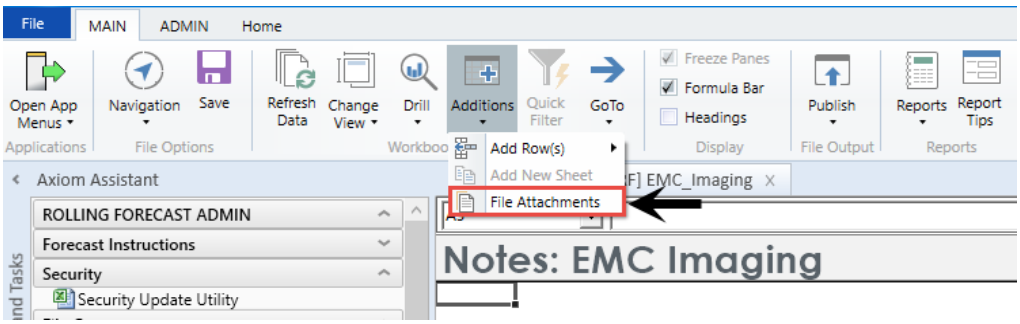
To configure assigning the Benefits Code to the Salary Code, see Managing the Revenue and Salary Codes driver.

Notes tab

This is a blank sheet where you can enter free-form notes for calculations and attach documents.



To attach documents, on the **Main** ribbon tab, click **Additions**, and select **File Attachments**.



RFInitiatives tab

This tab tracks projections for initiatives that may or may not be added to the baseline forecast. This tab is an optional configuration.

Your baseline forecast begins with historical actuals (same store operations). However, there may be some new initiatives or capital purchases with operating impact that may or may not be approved (i.e. Hospital expansion) that you might want to model the incremental volume, revenue, and expense impact that may be used to determine whether or not the organization approves the project.

Forecast Initiatives

EMC Imaging

RF Code			FY2017 Apr-Jun 2017	FY2018 Jul-Sep 2017	FY2018 Oct-Dec 2017	FY2018 Jan-Mar 2018	FY2018 Apr-Jun 2018
	Total Patient Revenue		$0	$0	$35,000	$35,000	$35,000
	Deductions		$0	$0	$0	$0	$0
	Double Click to Insert New Deductions						
	Net Patient Revenue		$0	$0	$35,000	$35,000	$35,000
	Other Revenue		$0	$0	$0	$0	$0
	Double Click to Insert New Other Revenue						
	Total Revenue		$0	$0	$35,000	$35,000	$35,000
	FTEs	FTEs	0.00	0.50	0.98	1.01	1.01
	Salaries	Salaries	$0	$4,206	$8,229	$8,320	$8,411
E_Salaries	Salaries		$0.00	$4,205.71	$8,228.57	$8,320.00	$8,411.4
	Hourly Rate		$0.00	$16.00	$16.00	$16.00	$16.0
	FTEs		0.00	0.50	0.98	1.01	1.01

If the monthly input columns are enabled for your workbook, you can use the months that make up the current and next quarter to more precisely plan initiatives, as shown in the following example.

Forecast Initiatives

EMA Internal Medicine

RF Code			FY2018 Jan 2018	FY2018 Feb 2018	FY2018 Mar 2018	FY2018 Jan-Mar 2018	FY2018 Apr 2018	FY2018 May 2018	FY2018 Jun 2018	FY2018 Apr-Jun 2018
	Geriatrics	Approve								
	Volume									
K_Admissions	Admissions		411	414	409	1,234	422	403	450	1,275
K_Discharges	Discharges		402	400	399	1,201	400	389	432	1,221
	Double Click to Insert Statistic									
	Patient Revenue									
R_PtRev_IP	Inpatient Revenue		$4,110,000	$4,140,000	$4,090,000	$12,340,000	$4,220,000	$4,030,000	$4,500,000	$12,750,000
K_Admissions	Admissions	No. of Units	411	414	409	1,234	422	403	450	1,275
		Rate	$10,000.00	$10,000.00	$10,000.00	$10,000.00	$10,000.00	$10,000.00	$10,000.00	$10,000.00
R_PtRev_OP	Outpatient Revenue		$804,000	$800,000	$798,000	$2,402,000	$800,000	$778,000	$864,000	$2,442,000
K_Discharges	Discharges	No. of Units	402	400	399	1,201	400	389	432	1,221
		Rate	$2,000.00	$2,000.00	$2,000.00	$2,000.00	$2,000.00	$2,000.00	$2,000.00	$2,000.00
R_PtRev_Oth	Other Patient Revenue		$513,750	$517,500	$511,250	$1,542,500	$582,592	$554,226	$611,631	$1,748,449
K_Admissions	Admissions	No. of Units	411	414	409	1,234	422	403	450	1,275
		Rate	$1,250.00	$1,250.00	$1,250.00	$1,250.00	$1,380.55	$1,375.25	$1,359.18	$1,371.33
	Double Click to Insert New Patient Revenue									
	Total Patient Revenue		5,427,750	5,457,500	5,399,250	16,284,500	5,602,592	5,362,226	5,975,631	16,940,449
	Deductions		$375	$450	$445	$1,270	$550	$525	$525	$1,600
D_Contractual	Contractual Allowances		$375	$450	$445	$1,270	$550	$525	$525	$1,600

For more information, see one of the following:

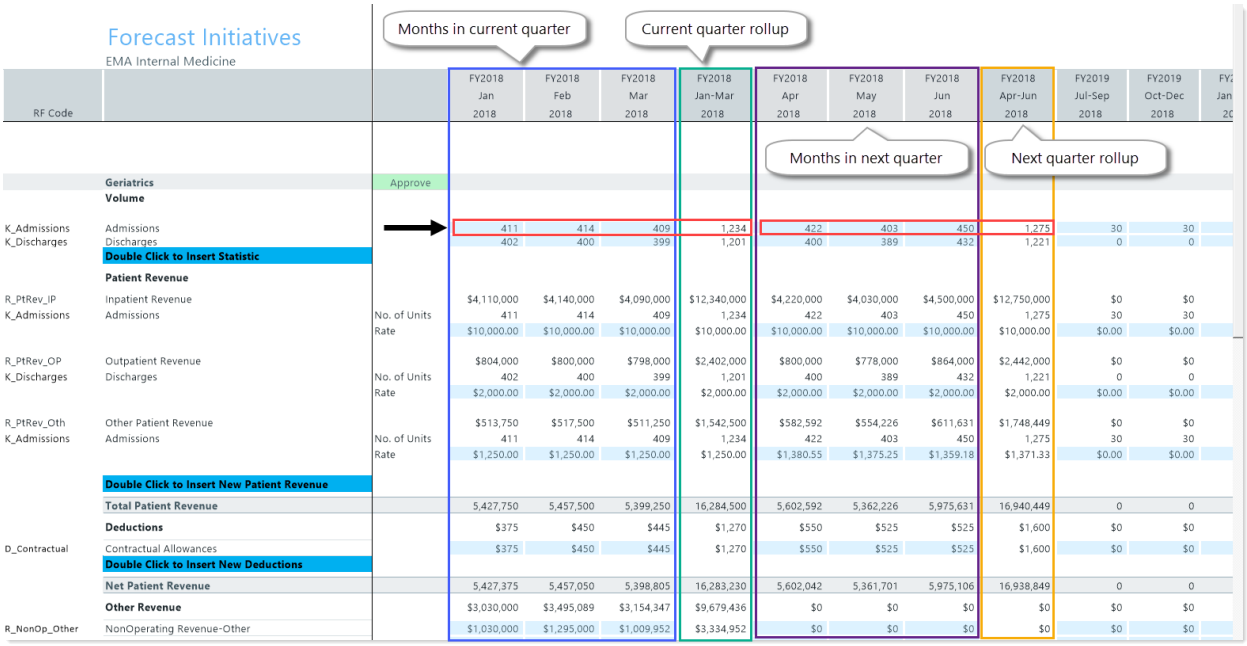
- Building a Department initiative
- Building a Project initiative

Plan Initiatives on a monthly basis

You can forecast plan file Initiatives on a monthly basis for the current and next quarter, allowing you to set more specific goals for initiatives.

The same monthly columns available for the current and next quarters in the Forecast tab are also available in the plan file RFInitiatives tab. Data entered into each month in a quarter is totaled for each row and displayed in a quarter rollup column, as shown in the following example.

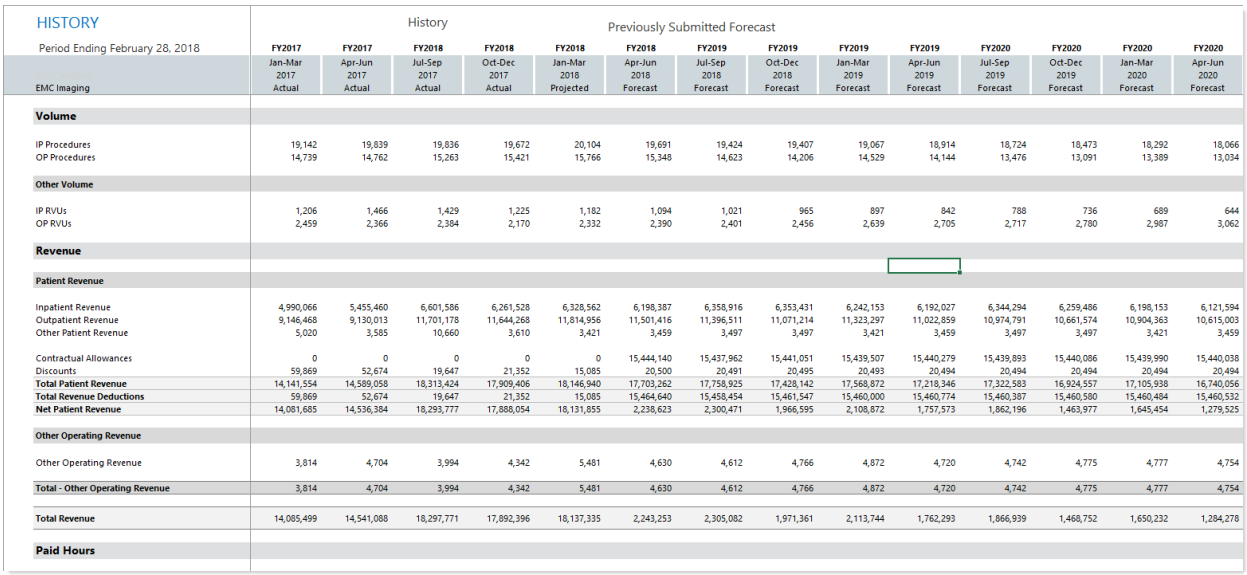
NOTE: The option to enter the current and next quarters by month is controlled in the Workbook Visibility driver located in the RF Driver utility. Users must have the Rolling Forecast Global Driver Management role to make changes to this driver. For more information, see Managing the Workbook Visibility driver.



For more information, see Building a Department initiative.

Forecast History tab

This sheet provides historical data by months/quarters for the previous two years, the previously submitted forecast, budget data, and the current Financial Plan data, if you have Syntellis Financial Planning.



HISTORY

Period Ending February 28, 2018

EMC Imaging	History				Previously Submitted Forecast									
	FY2017 Jan-Mar 2017 Actual	FY2017 Apr-Jun 2017 Actual	FY2018 Jul-Sep 2017 Actual	FY2018 Oct-Dec 2017 Actual	FY2018 Jan-Mar 2018 Projected	FY2018 Apr-Jun 2018 Forecast	FY2019 Jul-Sep 2018 Forecast	FY2019 Oct-Dec 2018 Forecast	FY2019 Jan-Mar 2019 Forecast	FY2019 Apr-Jun 2019 Forecast	FY2020 Jul-Sep 2019 Forecast	FY2020 Oct-Dec 2019 Forecast	FY2020 Jan-Mar 2020 Forecast	FY2020 Apr-Jun 2020 Forecast
Volume														
IP Procedures	19,142	19,839	19,836	19,672	20,104	19,691	19,424	19,407	19,067	18,914	18,724	18,473	18,292	18,066
OP Procedures	14,739	14,762	15,263	15,421	15,766	15,348	14,623	14,206	14,529	14,144	13,476	13,091	13,389	13,034
Other Volume														
IP RVUs	1,206	1,466	1,429	1,225	1,182	1,094	1,021	965	897	842	788	736	689	644
OP RVUs	2,459	2,366	2,384	2,170	2,332	2,390	2,401	2,456	2,639	2,705	2,717	2,780	2,987	3,062
Revenue														
Patient Revenue														
Inpatient Revenue	4,990,066	5,455,460	6,601,586	6,261,528	6,328,562	6,198,387	6,358,916	6,353,431	6,242,153	6,192,027	6,344,294	6,259,486	6,198,153	6,121,594
Outpatient Revenue	9,146,468	9,130,013	11,701,178	11,644,268	11,814,956	11,501,416	11,396,511	11,071,214	11,323,297	11,022,859	10,974,791	10,661,574	10,904,363	10,615,003
Other Patient Revenue	5,020	3,585	10,660	3,610	3,421	3,459	3,497	3,497	3,421	3,459	3,497	3,497	3,421	3,459
Contractual Allowances	0	0	0	0	0	15,444,140	15,437,962	15,441,051	15,439,507	15,440,279	15,439,893	15,440,086	15,439,990	15,440,038
Discounts	59,869	52,674	19,647	21,352	15,085	20,500	20,491	20,495	20,493	20,494	20,494	20,494	20,494	20,494
Total Patient Revenue	14,141,554	14,589,058	18,313,424	17,909,406	18,146,940	17,703,262	17,758,925	17,428,142	17,568,872	17,218,346	17,322,583	16,924,557	17,105,938	16,740,056
Total Revenue Deductions	59,869	52,674	19,647	21,352	15,085	15,464,640	15,458,454	15,461,547	15,460,000	15,460,774	15,460,387	15,460,580	15,460,484	15,460,532
Net Patient Revenue	14,081,685	14,536,384	18,293,777	17,888,054	18,131,855	2,238,623	2,300,471	1,966,595	2,108,872	1,757,573	1,862,196	1,463,977	1,645,454	1,279,525
Other Operating Revenue														
Other Operating Revenue	3,814	4,704	3,994	4,342	5,481	4,630	4,612	4,766	4,872	4,720	4,742	4,775	4,777	4,754
Total - Other Operating Revenue	3,814	4,704	3,994	4,342	5,481	4,630	4,612	4,766	4,872	4,720	4,742	4,775	4,777	4,754
Total Revenue	14,085,499	14,541,088	18,297,771	17,892,396	18,137,335	2,243,253	2,305,082	1,971,361	2,113,744	1,762,293	1,866,939	1,468,752	1,650,232	1,284,278
Paid Hours														

Updating data in plan files

Axiom Rolling Forecasting does not actually store data in any of the plan files within a file group. Instead, these files pull data from the central database, allowing you to view and manipulate data within a spreadsheet-style interface, and write the data back to the central database.

The practical implication of this structure is that changes made to a file in a file group will not be reflected in other files (including copies of the same file opened by other users) until:

- Data in the file is saved back to the database, and
- Other impacted file(s) are refreshed with the latest data from the database (or, in the case of configuration setting changes that alter the structure of other files, re-created from the original template with the updated settings).

Most (but not all) files automatically refresh when opened.

Creating plan files

To create plan files for a new forecast period, you need to:

1. Create the plan file workbooks, as described in this topic.
2. Process the plan file to populate the spreadsheets with data from the Axiom Rolling Forecasting database.

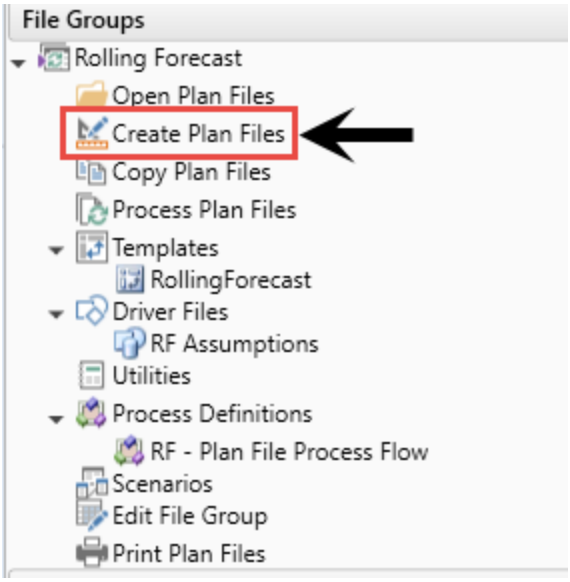
File groups contain plan files with data for each RFGroup in the organization. You will use the **Create Plan Files** utility to generate a new set of plan files for the new planning period.

Plan files are generated from templates. Which templates are used for a particular forecast group and how those templates are configured is based on settings in your Rolling Forecasting dimensions and assumptions driver files.

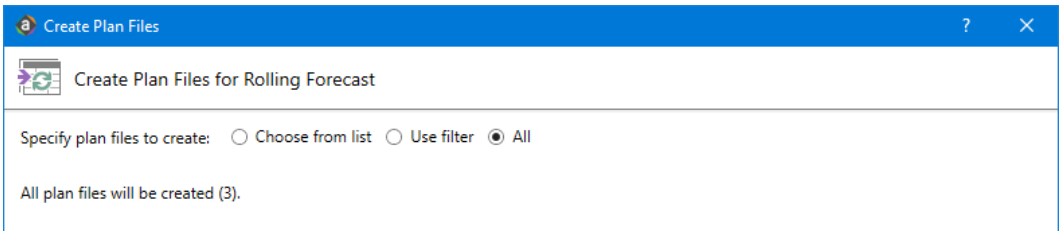
NOTE: The Create Plan Files utility creates and saves the plan files per the configuration settings in dimensions and the file group's driver files. It does not populate the files with data. Populating the plan files with data is an additional step, processing plan files.

To create plan files:

1. In the RF Admin task pane, in the **File Groups** section, click **Rolling Forecast**, and double-click **Create Plan Files**.

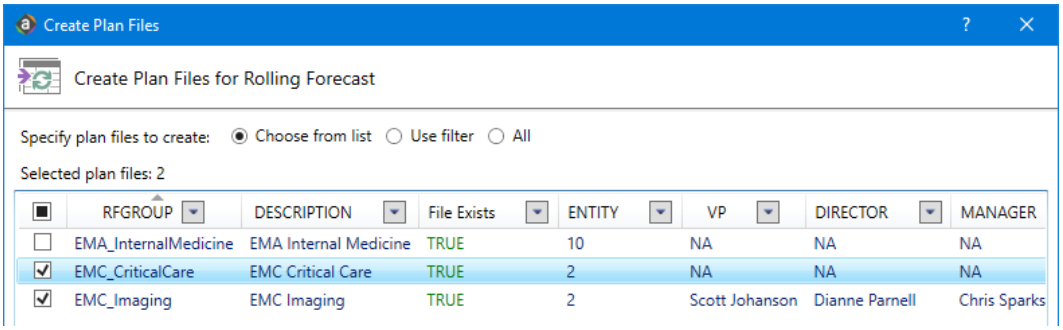


2. In the **Create Plan Files for Rolling Forecast** dialog, select the items for which to create plan files by doing one of the following:
   - To create all plan files, select **All**.

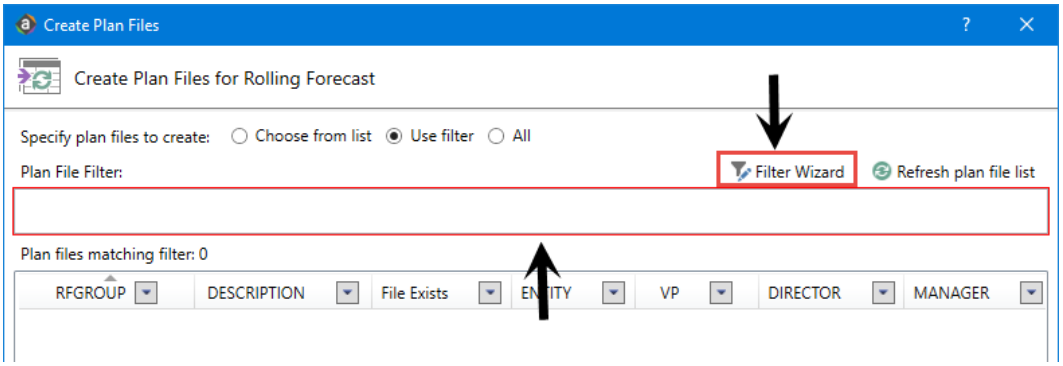


   - To create specific plan files, select **Choose from list**, and select the checkboxes for the individual items. You can sort, filter, and group the list as well as display additional columns and hide columns by right-clicking in the column header. If you filtered the list, you can

select the checkbox in the header to select only the items that currently display in the dialog.



- To create a subset of plan files using a filter, select **Use filter** and type a filter into the filter field. You can also use the . The filter must reference the associated dimension table. For example, for `RFGroup.VP='Sally Klein'`, after you enter a filter, click **Refresh plan file list** to show only those items that currently match the filter. The refresh feature helps you determine whether you have defined the filter correctly. .



IMPORTANT: If you select an item that already has a plan file, the **Create Plan Files** utility overwrites the existing file and creates a new one. You can use the **File Exists** column to see if a particular item already has a plan file.

3. Click **OK**.
4. At the confirmation prompt, do one of the following:
   - If the prompt displays the number of files you expect to create, click **Yes**.
   - If the prompt displays the number of files you do not expect to create, to cancel the process, click **No**.

NOTE: The confirmation prompt displays the number of plan files you are about to create. If you overwrite existing plan files, the message also informs you that a restore point will be created before the process begins so that you can restore plan files that were overwritten if necessary.

When the **Create Plan Files** process is complete, a dialog displays the results for each plan code included in the utility. The **Result** column displays success or failure, and the **Details** column provides additional information.

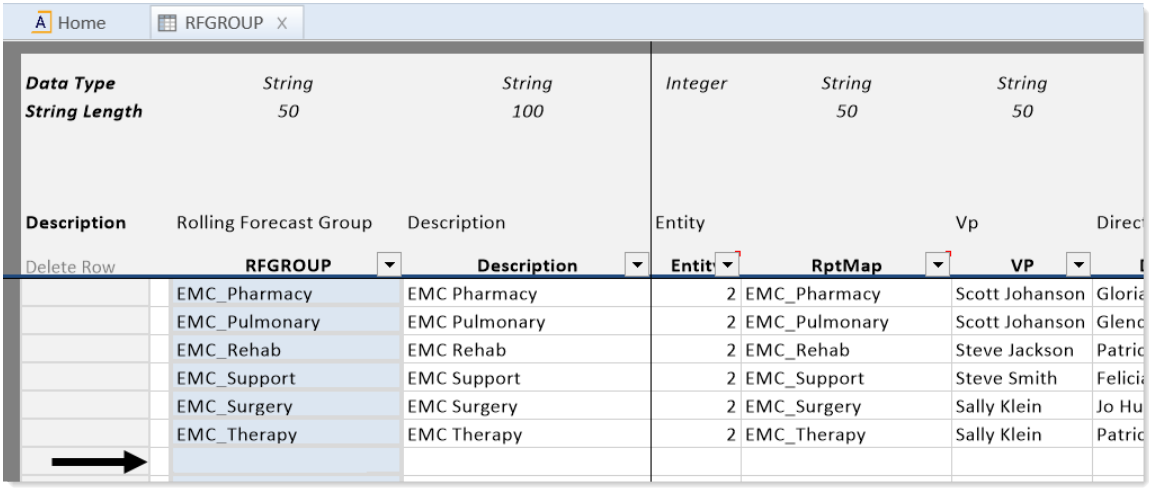
The next step is to process the plan file so information is pulled from the Axiom Rolling Forecasting database into the spreadsheet.

Create a new RFGROUP

Use these instructions to add a new RF Group to your system.

To create a new RFGROUP:

1. In the RF Admin task pane, in the **Manual System Updates** section, expand **View Dimension Tables**.
2. Double-click **RFGROUP**.
3. In the **Open Table in Spreadsheet** dialog, in the **Options** section, verify that the **Open read only** check box is NOT selected; if it is, clear the checkbox.
4. Click **OK**.
5. At the next available row, in the **RFGROUP** column, add the new RFGROUP name.
6. Add information as needed to the rest of the columns.



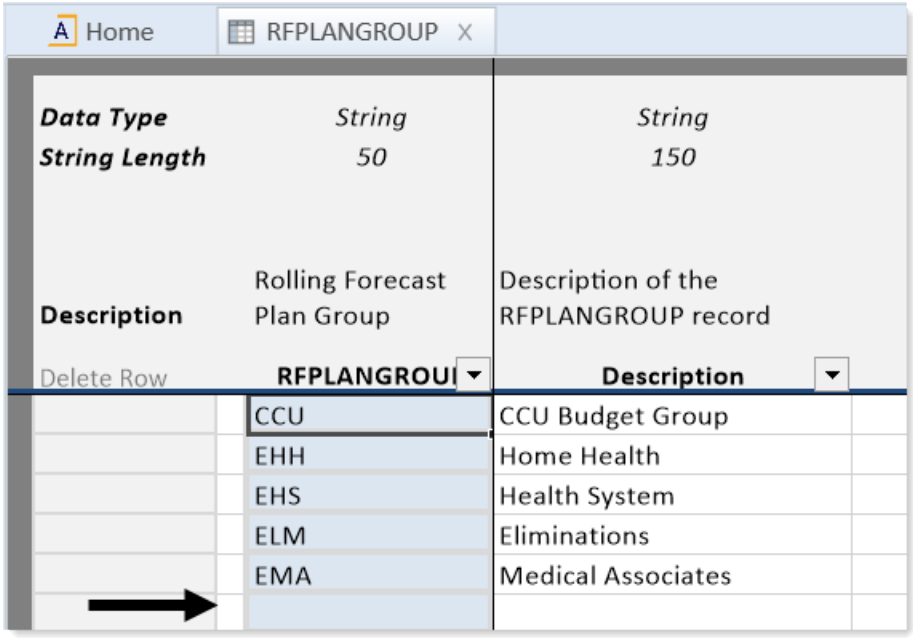
7. In the **Main** ribbon tab, click **Save**.

Create a new RFPLANGROUP

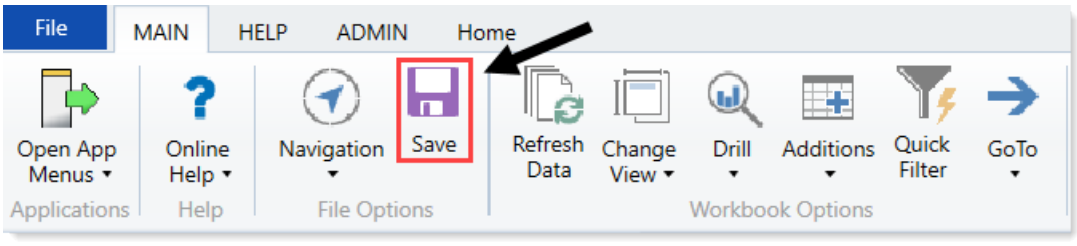
RFPlanGroups are like entities; you need to add a new RFPlanGroup to your system when you have an acquisition. Use the following instructions to create a new RFPlanGroup. Your plan group needs a name and an abbreviation.

To create an RFPlanGroup:

1. In the Desktop Client, navigate to the RFPLANGROUP table: In **Axiom Explorer**, go to **Libraries** > **Table Library** > **Dimensions** > **Validation Tables** > **RFGroup**.
2. Expand **RFGroup**, double-click **RFPLANGROUP**, and then click **OK**.
3. In the **RFPLANGROUP** worksheet, in the **RFPLANGROUP** column, type the plan group abbreviation in the next available row.



4. In the **Description** column, type the full name of the plan group.
5. In the **Main** ribbon tab, click **Save**.



Building a Department initiative

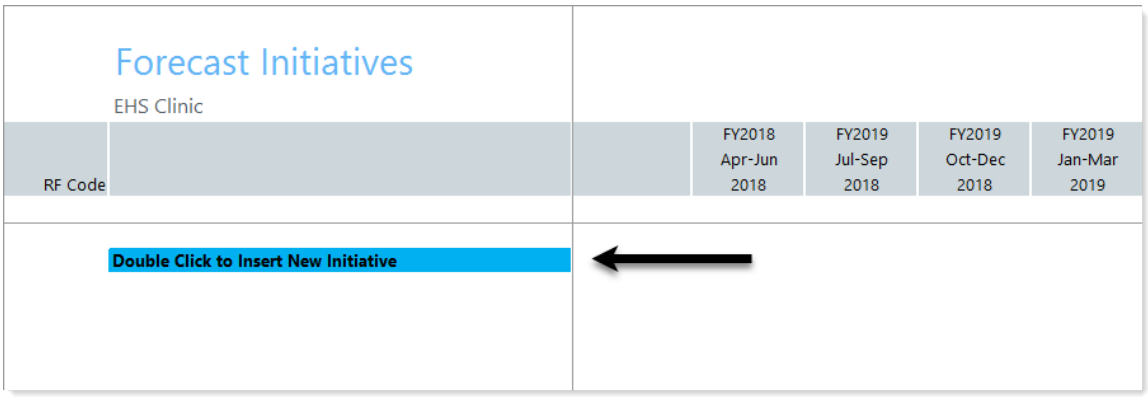
You can build two types of initiative:

- **Department** – An initiative specific to the forecast group.
- **Project** – Allows end users to select an initiative from a list predefined in the RFID dimension table.

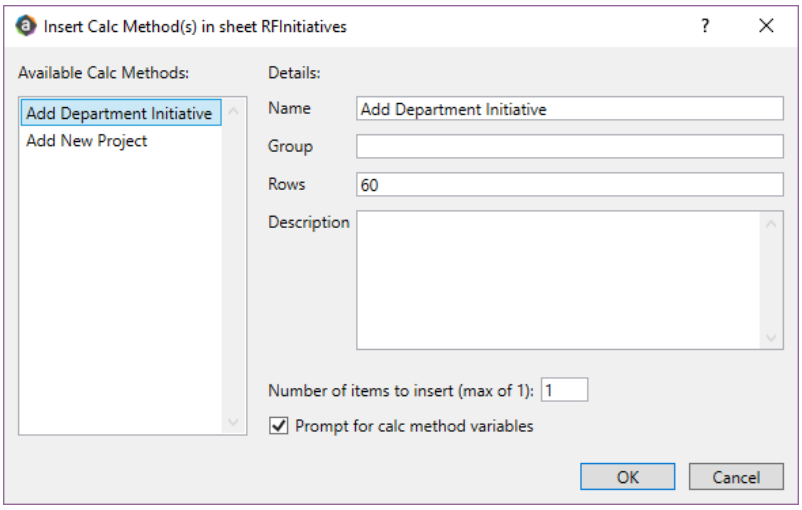
To control the approval of the initiative depends on the type of initiative you create. If you create a Department initiative, the end user controls the approval in the plan file. If you select a Project initiative, the Administrator controls the approval of the initiative in the RFID dimension table.

To build a Department initiative:

1. Open a plan file.
2. In the **RFInitiatves** tab, double-click **Double Click to Insert New Initiative**.



3. In the **Insert Calc Method(s) in sheet RFInitiatives** dialog, select **Add Department Initiative** (if it isn't already highlighted), and click **OK**.



4. In the **Name of Dept Initiative** field, type name that describes the RFID using 50 characters or

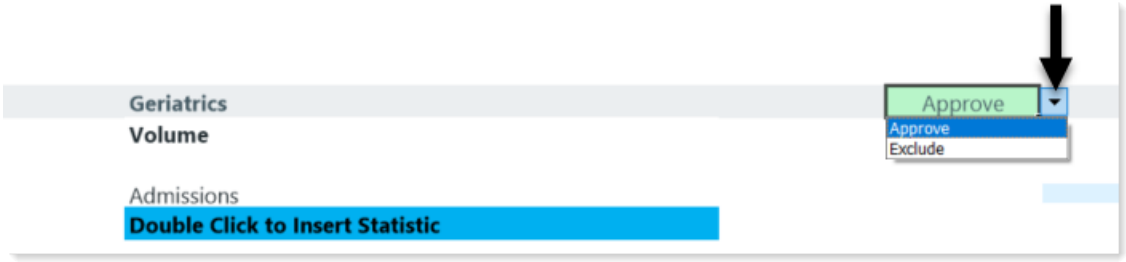
less, and click **OK**. This RFID **Description** (ex. Expanded Nursing Wing) stores to the RFID dimension table and should be easily discernable to the Administrator.

The RFID (ex. EMC_Nursing_1) is created automatically in the plan file using the RFGROUP name and numbered (starting with number 1) for that RFGroup (ex. EMC_Nursing_1).

RFID	Description	InitType	Approve	SaveCustom
Base	Baseline	Baseline	Baseline	
CostSavings	Cost Savings	System	Approve	
EMA_InternalMedicine_1	New Physician	1	Exclude	RFInitiatives_EMA_InternalMedicine
EMC_Imaging1	New MRI Machine	1	Approve	RFInitiatives_EMC_Imaging
EMC_Laboratory_2	Lab Development	2	Exclude	
EMC_Nursing_1	Expanded Nursing Wing	1	Exclude	RFInitiatives_EMC_Nursing
Global_Supply	Supply Cost Reduction	2	Approve	

NOTE: After you save the plan file, the system stores the initiative ID in the RFID dimension table.

5. In the first row drop-down, select whether the initiative is **Approved** or **Excluded**.



TIP: You can change this drop-down selection at any time.

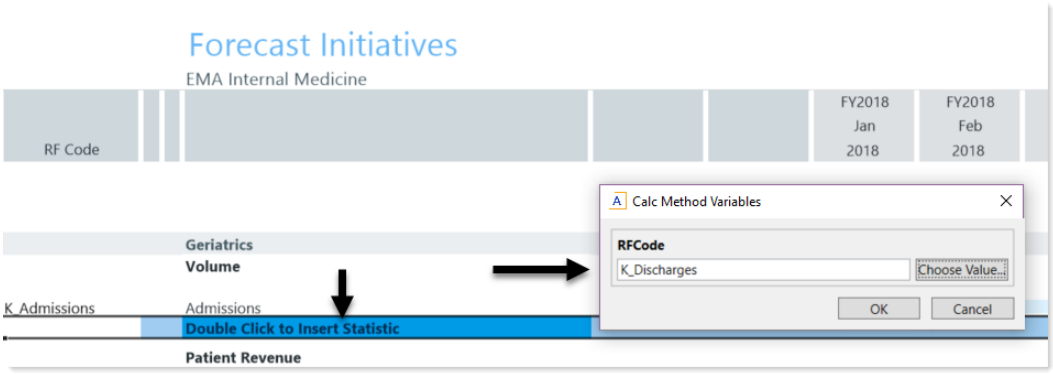
NOTE: Approvals for Department initiatives should only be changed in the plan file, not the RFID dimension table.

6. If forecasting Patient Revenue for your initiative, you need to create your Volume (Statistics) first before working on Patient Revenue.
7. Complete the following sections in the sheet:

Statistics (Volumes)

This section uses the **Add Statistic Line** calc method for statistics (see RFCODE.RFInitStdLine), which allows for manual adjustments each quarter.

a. In the **Volume** section, double-click **Double Click to Insert Statistic**.



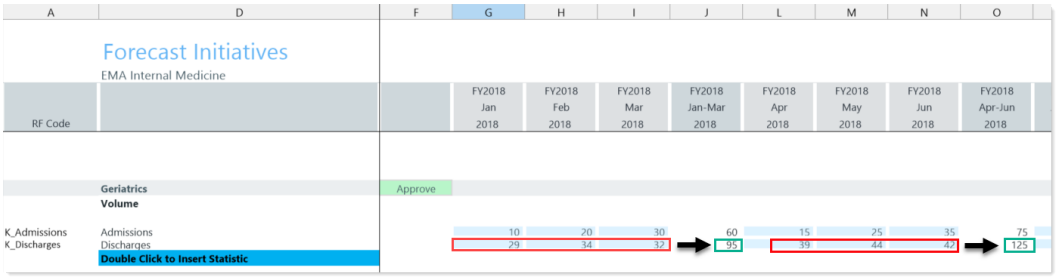
b. In the **Calc Method Variables** dialog, click **Choose Value**.

c. In the **Choose Value** dialog, select the RFCode, and click **OK**.

d. Click **OK**.

e. In columns G-R, add your volumes to the quarterly (or monthly) buckets.

> **NOTE:** If you populate column G with your initial volumes, it will forecast the same number to the remaining quarters, so you will need to review the other quarters in column H-R and adjust as needed. If you are forecasting monthly, the amounts entered in the monthly columns are automatically tallied and populated in the quarter rollup columns, as shown in the following example.



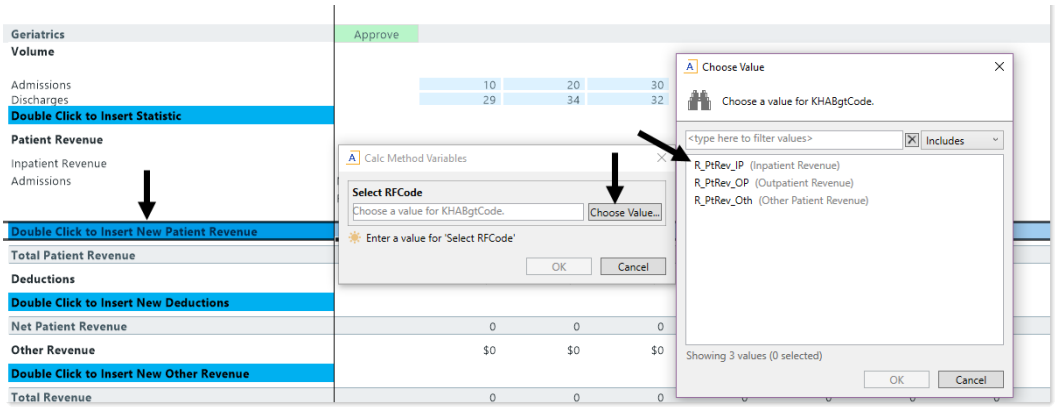
Patient Revenue

This sections uses the **Add Patient Revenue** calc method (see RFCODE.RFInitStdLine), which uses a rate-per-volume calculation.

a. Under **Patient Revenue**, double-click **Double Click to Insert Patient Revenue**.

b. In the **Calc Method Variables** dialog, click **Choose Value**.

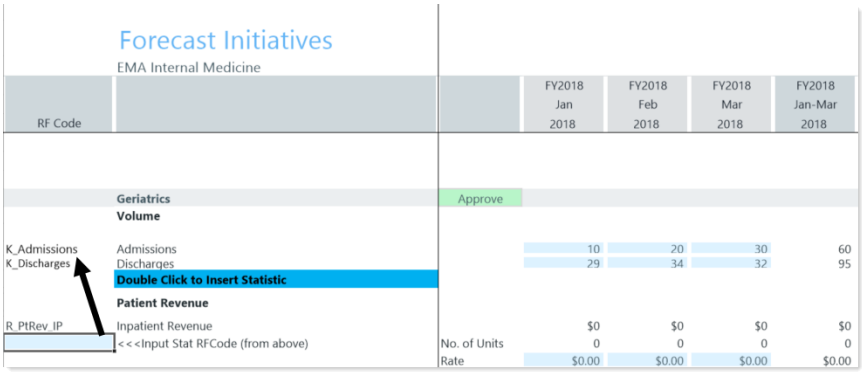
c. In the **Choose Value** dialog, select the appropriate RFCode, and click **OK**.



d. Click **OK**.

e. To project the patient revenue, assign the volumes projected in the Volume section to the patient revenue block.

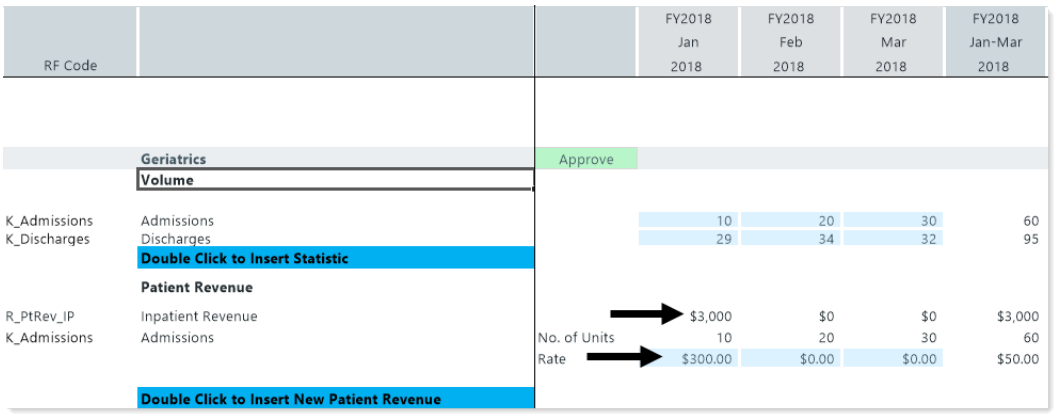
   To assign the volumes, copy the volume RFCode from column A of the Statistic (Volume) section, and use the Excel feature **Paste special value** option to paste the RFCODE into the blue input cell into the Patient Revenue section of column A. (ex. If you have two volumes (K_Adminissions and K_Discharges) select one statistic to copy and paste it in the revenue block to calculate).



f. After you assign the type of volume to drive patient revenue, input the dollar amount for the revenue rate (e.g., $300).

   When you enter your revenue rate for the first quarter (or month), it will not forecast the same rate to the remaining quarters (or roll up quarter columns if forecasting monthly) in columns H-R. The assumption is that there will be inflationary adjustments, so the system will require you to input the revenue rate for each quarter to forecast your projections.

   NOTE: After the revenue rate is assigned, the Inpatient Revenue projects.



RF Code			FY2018 Jan 2018	FY2018 Feb 2018	FY2018 Mar 2018	FY2018 Jan-Mar 2018
	Geriatrics	Approve				
	Volume					
K_Admissions	Admissions		10	20	30	60
K_Discharges	Discharges		29	34	32	95
	Double Click to Insert Statistic					
	Patient Revenue					
R_PtRev_IP	Inpatient Revenue		$3,000	$0	$0	$3,000
K_Admissions	Admissions	No. of Units	10	20	30	60
		Rate	$300.00	$0.00	$0.00	$50.00
	Double Click to Insert New Patient Revenue					

Example shows monthly forecasting

Deductions

This section uses the **Add Detail Line** calc method (see RFCODE.RFInitStdLine), which allows for manual adjustments each quarter.

When you enter the rate in the first quarter (or monthly) column, that number is copied to the remaining quarters (or first quarter rollup column if forecasting monthly) in columns H-R. You can adjust the remaining quarters for inflationary adjustments.

NOTE: You do not need to input your deductions as a negative number for a contra revenue (debit) entry.

Other Revenue

This section uses the **Add Detail Line** calc method (see RFCODE.RFInitStdLine), which allows for manual adjustments for each quarter (or monthly if you are forecasting monthly).

If you populate column G, it forecasts the same number to the remaining quarters in column H-R. You can adjust the remaining quarters for inflationary adjustments.

Salaries

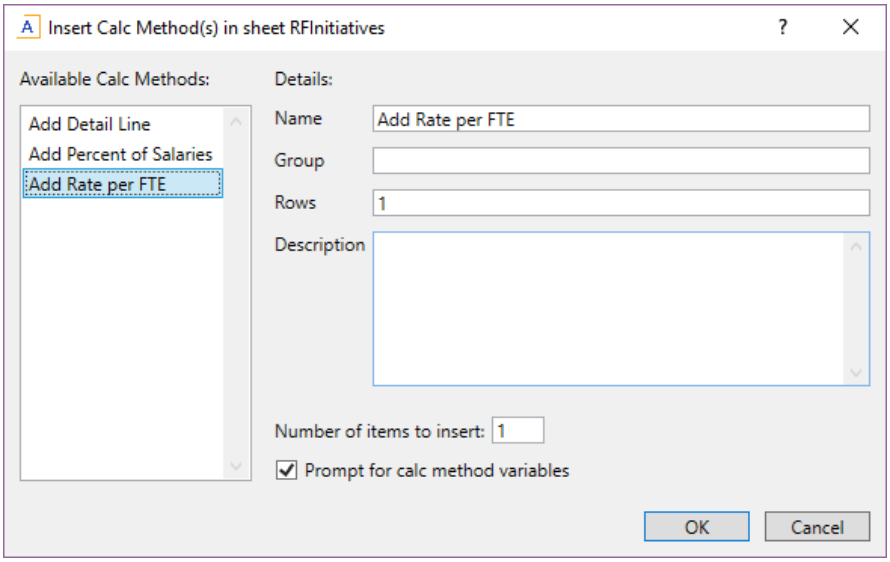
This sections uses the **Add Salary Line** calc method (see RFCODE.RFInitStdLine), which is an hourly calculation based on the number of FTEs and hours forecasted within that period, that allows a manual adjustment for FTEs and Salary rates for each quarter/month in the current and next quarter columns.

If you enter an amount in the first quarter (or month) column, that amount is copied to the remaining quarters (or quarter rollups for monthly forecasting) for FTEs but not Salary Rates. You can adjust the remaining quarters'/months' FTEs, but this is not required. You need to input the Salary Rates for each quarter/month, because the system assumes adjustments will need be made for annual merit increases.

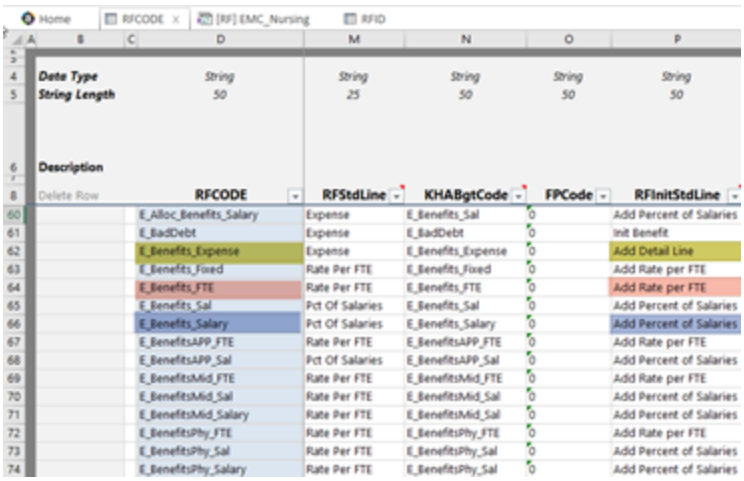
Benefits

This section includes three possible calc methods:

- **Add Detail Line**
- **Add Percent of Salaries**
- **Add Rate per FTE**



Depending on the RFCODE you select, ensure that the corresponding CM in the RFCODE.RFInitStdLine grouping column displays the correct assigned CM.

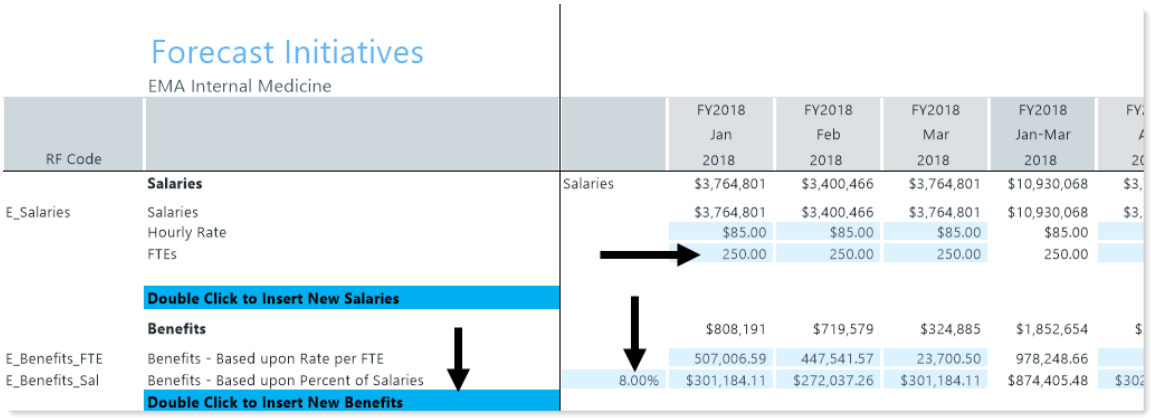


		RFCODE	RFStdLine	KHABgtCode	FPCode	RFInitStdLine
60		E_Alloc_Benefits_Salary	Expense	E_Benefits_Sal	0	Add Percent of Salaries
61		E_BadDebt	Expense	E_BadDebt	0	Init Benefit
62		E_Benefits_Expense	Expense	E_Benefits_Expense	0	Add Detail Line
63		E_Benefits_Fixed	Rate Per FTE	E_Benefits_Fixed	0	Add Rate per FTE
64		E_Benefits_FTE	Rate Per FTE	E_Benefits_FTE	0	Add Rate per FTE
65		E_Benefits_Sal	Pct Of Salaries	E_Benefits_Sal	0	Add Percent of Salaries
66		E_Benefits_Salary	Pct Of Salaries	E_Benefits_Salary	0	Add Percent of Salaries
67		E_BenefitsAPP_FTE	Rate Per FTE	E_BenefitsAPP_FTE	0	Add Rate per FTE
68		E_BenefitsAPP_Sal	Pct Of Salaries	E_BenefitsAPP_Sal	0	Add Percent of Salaries
69		E_BenefitsMid_FTE	Rate Per FTE	E_BenefitsMid_FTE	0	Add Rate per FTE
70		E_BenefitsMid_Sal	Rate Per FTE	E_BenefitsMid_Sal	0	Add Percent of Salaries
71		E_BenefitsMid_Salary	Rate Per FTE	E_BenefitsMid_Sal	0	Add Percent of Salaries
72		E_BenefitsPhy_FTE	Rate Per FTE	E_BenefitsPhy_FTE	0	Add Rate per FTE
73		E_BenefitsPhy_Sal	Rate Per FTE	E_BenefitsPhy_Sal	0	Add Percent of Salaries
74		E_BenefitsPhy_Salary	Rate Per FTE	E_BenefitsPhy_Sal	0	Add Percent of Salaries

The **Add Detail Line** CM (see RFCODE.RFInitStdLine) is an Input Monthly calculation, which allows for manual adjustments for each quarter/month.

For the **Add Percent of Salaries** CM, input in the percentage amount. You have the option to change the calculated data in the rest of the columns if the percentage rate changes in future quarters from the base percentage.

If you use the **Add Rate per FTE** CM, it uses the FTEs that you added from the Salary CM as well as the rate from the projections on the Forecast tab. You can adjust the amounts in rest of the columns.



Forecast Initiatives

EMA Internal Medicine

RF Code			FY2018 Jan 2018	FY2018 Feb 2018	FY2018 Mar 2018	FY2018 Jan-Mar 2018	FY
	Salaries	Salaries	$3,764,801	$3,400,466	$3,764,801	$10,930,068	$3
E_Salaries	Salaries		$3,764,801	$3,400,466	$3,764,801	$10,930,068	$3
	Hourly Rate		$85.00	$85.00	$85.00	$85.00	
	FTEs		250.00	250.00	250.00	250.00	
	Double Click to Insert New Salaries						
	Benefits		$808,191	$719,579	$324,885	$1,852,654	$
E_Benefits_FTE	Benefits - Based upon Rate per FTE		507,006.59	447,541.57	23,700.50	978,248.66	
E_Benefits_Sal	Benefits - Based upon Percent of Salaries	8.00%	$301,184.11	$272,037.26	$301,184.11	$874,405.48	$302
	Double Click to Insert New Benefits						

Example shows monthly forecasting

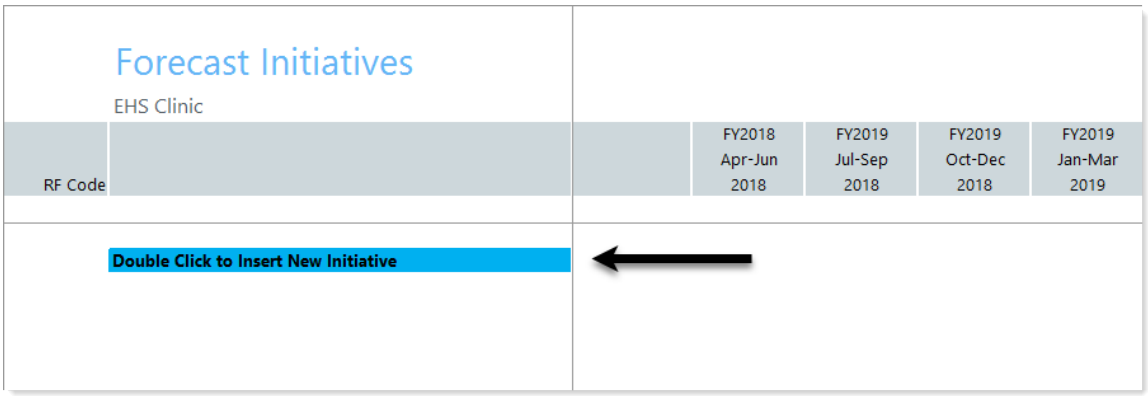
8. All other expenses (Supplies, Purchased Services, Other Expenses, etc.) use the **Add Detail Line** CM, which allows for manual adjustments each quarter/month.

   If you populate the first quarter/month column, it forecasts the same number to the remaining quarter/quarter rollup columns. You can adjust the remaining quarters for inflationary adjustments.

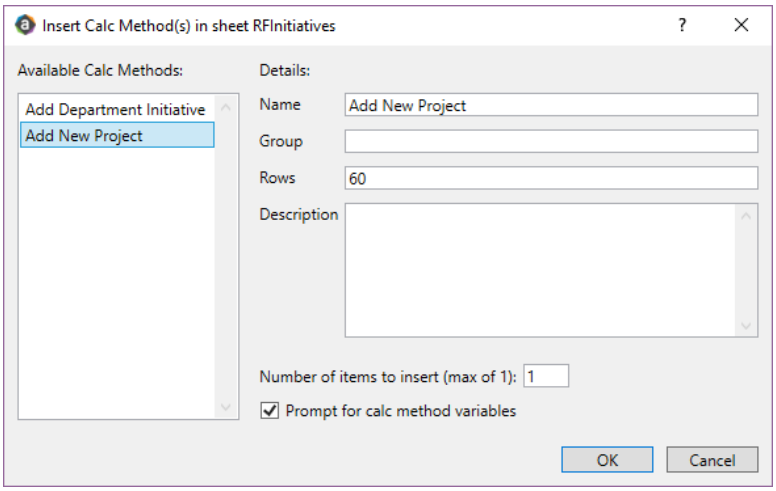
Building a Project initiative

To build a Project initiative:

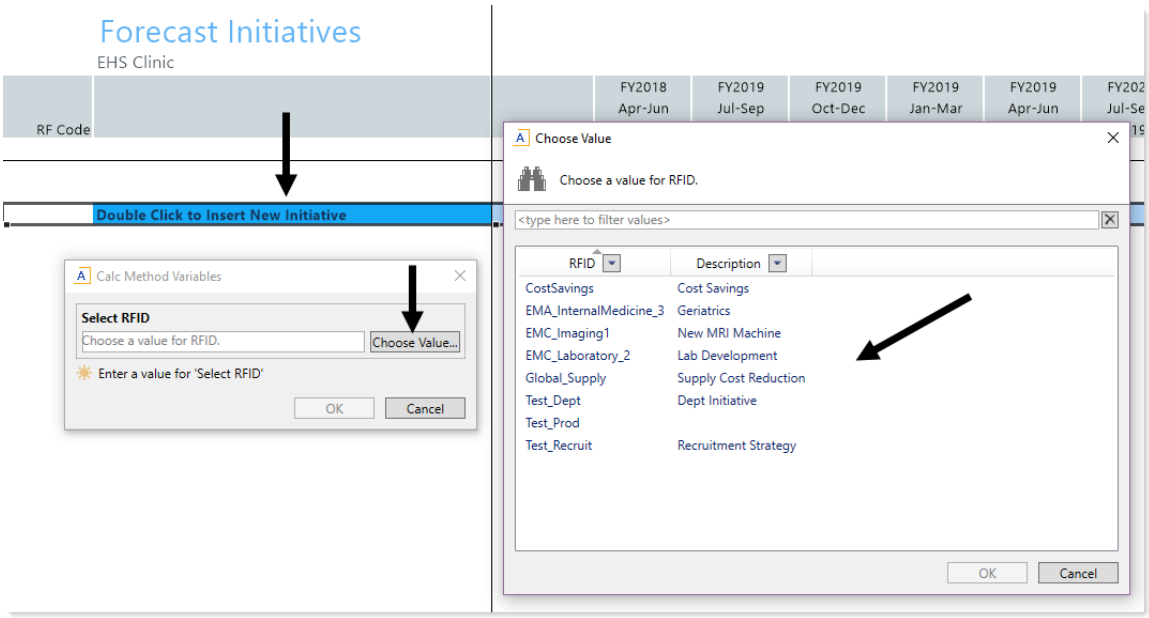
1. Open a plan file.
2. In the **RFInitiatves** tab, double-click **Double Click to Insert New Initiative**.



3. In the **Insert Calc Method(s) in sheet RFInitiatives** dialog, select **Add New Project**, and click **OK**.



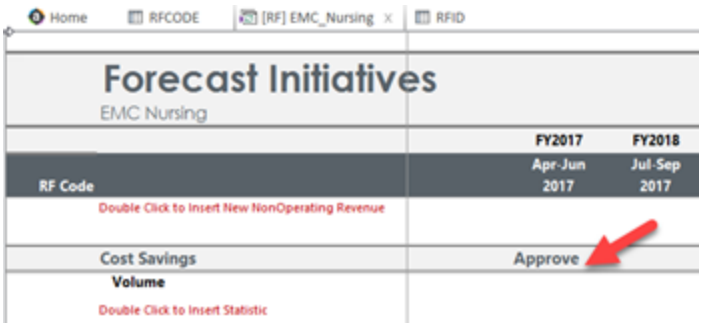
4. In the **Calc Method Variables** dialog, click **Choose Value**.
5. The **Choose Value** dialog provides a pick list of projects predefined by the RF Administrator. Select a project, and click **OK**.

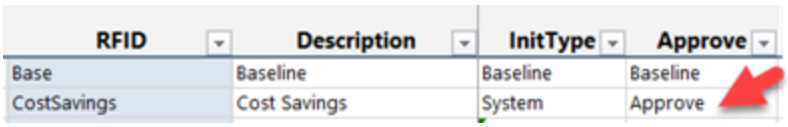


The RF Administrator determines whether the project is Approved or Excluded.

NOTE: Only the RF Administrator can change the Approval option in the RFID dimension table.

The approval option on the RFInitiative tab of the plan file is grey and locked from making changes.





Processing plan files

After you create your rolling forecast plan files, you need to populate them with data. The Process Plan Files step brings in the appropriate historical data into each plan file, then runs calculations based on the calc methods specified in the driver files and dimensions. For more information, see Creating plan files.

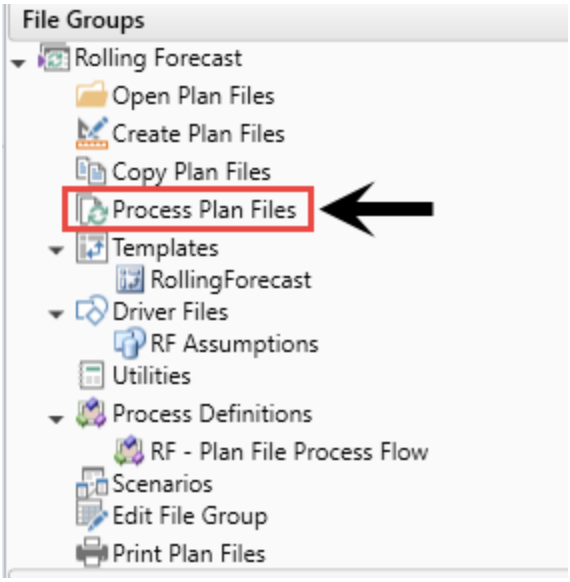
If you select department codes for which a Budget Plan file has not been created, processing for those codes fails when the task is executed. That is why the **Create Plan Files** process runs before the **Process Plan Files** process, by default.

Processing for a plan file will fail if it is locked by another user when the task is executed. A message box displays to warn you of the locked file, and prompts you to choose whether to continue. If you continue, the file lock is checked again before the file is processed as part of the utility. If the file is still locked, then it is not processed, and an error is noted in the result history for the job.

NOTE: You can use this utility repeatedly throughout the planning cycle to update plan files and the corresponding data in the database. Run it if you update any key stats or configuration settings in driver files, or to pull in any data that you or your staff might update throughout the year.

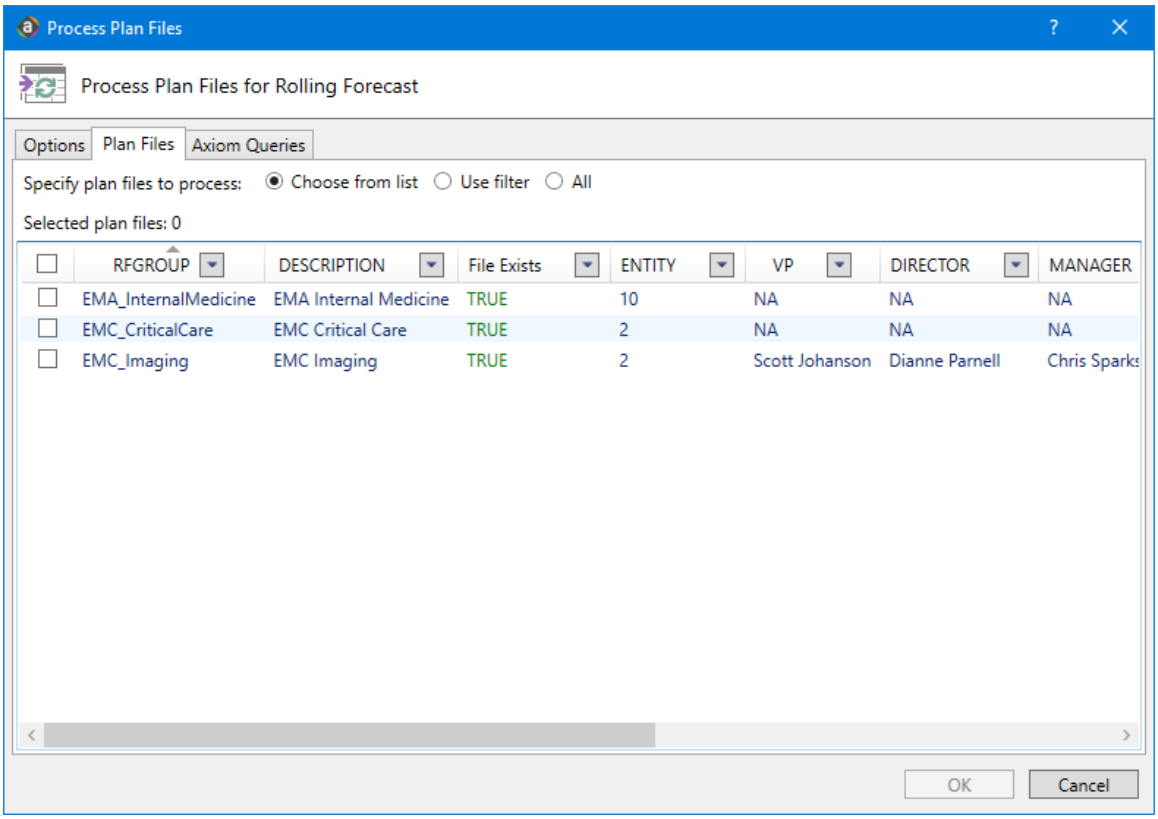
To create plan files:

1. In the RF Admin task pane, in the **File Groups** section, click **Rolling Forecast**, and double-click **Process Plan Files**.



2. In the **Process Plan Files** dialog, in the **Plan Files** tab, you can optionally select which files to process.

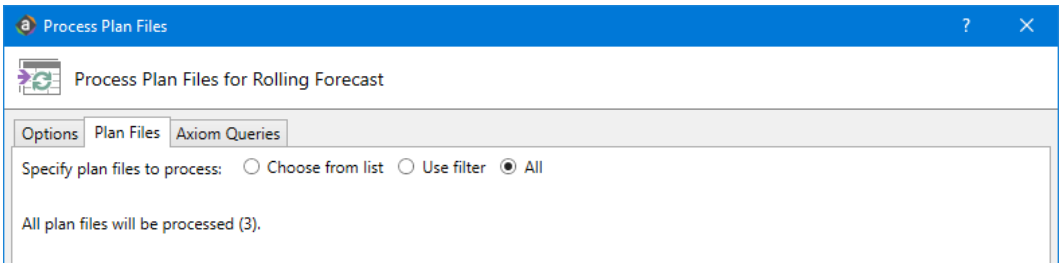
   NOTE: Plan codes without a file do not display in the dialog if you do not have rights to create plan files or if the file group is not configured to allow generation of plan files from templates.



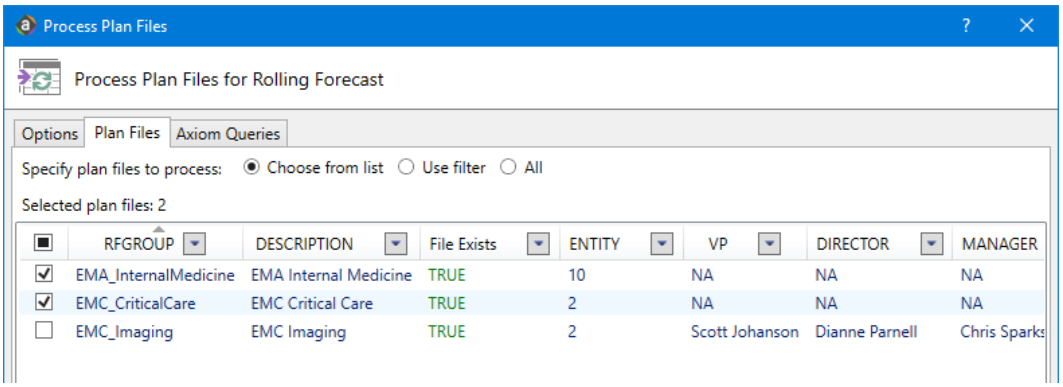
IMPORTANT: The **Plan Files** tab is the only tab you should modify. Changing settings on the **Options** or **Axiom Queries** tab could cause plan files to generate incorrectly.

To specify plan files to process, do any of the following:

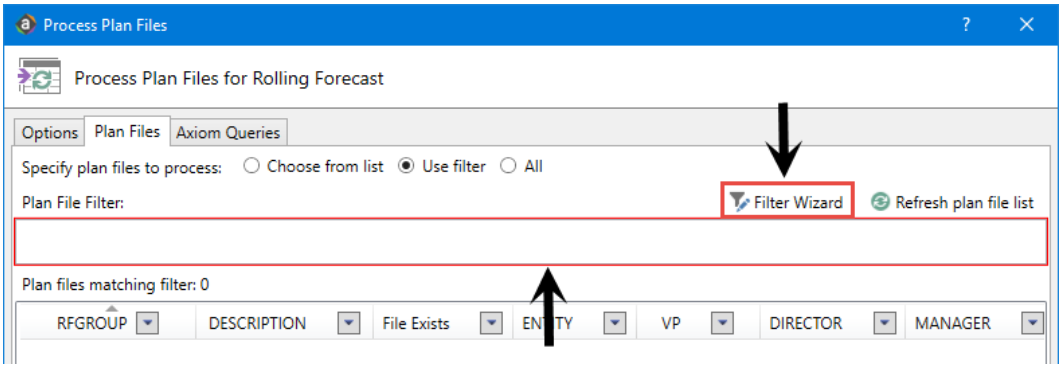
- To process all plan files for all existing and future forecast group codes, select **All**.



- To process specific plan files, select **Choose from list**, and select the checkboxes for the forecast groups to include/exclude. You can sort, filter, and group the list as well as display additional columns and hide columns by right-clicking in the column header. If you filtered the list, you can select the checkbox in the header to select only the items that currently display in the dialog.



- To process plan files for a subset of rolling forecast groups using a filter, select **Use filter** and type a filter into the filter field. You can also use the , which provides a list of responsible executives or forecast groups to select from. The filter must reference the associated dimension table. For example, for `RFGroup.VP='Sally Klein'`, after you enter a filter, click **Refresh plan file list** to show only those items that currently match the filter. The refresh feature helps you determine whether you have defined the filter correctly.



NOTE: If you selected departments that do not currently have a plan file, when you run the utility, the system prompts you if you want to create plan files for these codes. If you click **Yes**, the utility attempts to create the plan files, and then, if successful, continues with the **Process Plan Files** utility. If you choose not to create the plan files or if the plan file creation fails, then the system returns you to the **Process Plan Files** dialog to change your selections or cancel, as desired.

3. Click **OK**.
4. At the confirmation prompt, do one of the following:
   - If the prompt displays the number of files you expect to process, click **Yes**.
   - If the prompt displays the number of files you do not expect to process, to cancel the process, click **No**.

Viewing templates

Templates define the default file structure for plan files. Each template contains one or more sheets that are copied into plan files at the time the plan file is initially created. Individual cells in templates may contain formulas (tags) that define how data flows from the database into the corresponding plan file cells, and/or how data input or modified in the plan should be written back to the database.

In the Axiom Software products, templates are generally standardized for each product and not editable. You may still view the contents of templates, however, to help trace formulas back to the source data and understand how data in plan files flows to and from the central database.

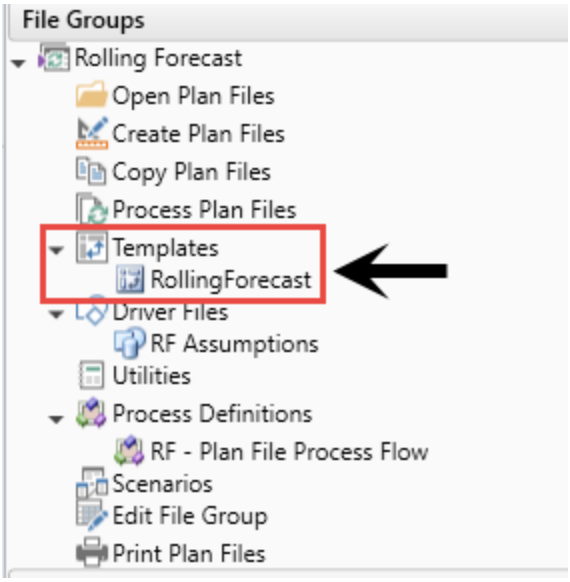
Clicking the templates button within a file group in the task bar lists any templates associated with the group. Click the name of a template to open it for review.

Which templates or sheets within templates are used to create a particular plan file depend on settings within the related driver files and dimension table(s). You may or may not configure these associations, depending on the application and particular category of plan file.

After plan files have been created from templates, subsequent changes to the template do not impact the plan files, unless the plan files are re-created.

To view templates:

1. In the RF Admin task pane, in the **File Groups** section, click **Templates**.



2. Double-click the template file to view.

> **IMPORTANT:** Do not alter the master template. Doing so puts your plan files at risk of the calc methods not working properly and data not saving back to the database. Contact Syntellis Support for questions on altering the template.

How driver files affect a file group

Each file group has a set of driver files listing key statistics and global values that the plan files in the group will reference when calculating data. Driver files also contain configuration settings for how plan files in the group are structured and formatted. Each file group can have multiple driver files, and each driver file can have multiple sheets.

Driver files merely present data and settings for the purpose of reviewing and editing. Ultimately, the data and settings in driver files are saved back to one or more driver tables in the database. It is these driver tables—not the associated driver file—that the system refers to when generating plan files from templates, calculating data or determining other global settings for the file group.

Understanding dimension tables and driver files

There are many similarities between dimensions tables and driver files, in that both contain settings for how data is displayed and calculated within plan files. The rule of thumb for which settings are maintained in dimensions versus which settings are maintained in driver files is:

- Driver files only affect the file group for a particular forecast period, while any settings or groupings stored in dimensions will affect all plan file groups in the system.
- Driver files typically contain settings and groupings that might change from period to period, whereas changes to settings or key statistics in dimensions are generally less frequent.

For more information, see Working with Dimensions.

Explanation of forecast methods

Method	Explanation
LastQuarter	Use the relationship of the most recent quarter as the basis for all future forecast quarters.
SameQuarter	Use the relationship of the same quarter from last year as the basis for the forecast. Use to add more seasonal fluctuation in your forecast.
AnnualAvg	Use the annual average of the most recent 4 quarters. Used when you want to smooth out any seasonal fluctuation in your forecast.
GlobalOnly	Volume ONLY – Used when you want to only apply the global driver growth and ignore the historical forecast group growth factor.

7

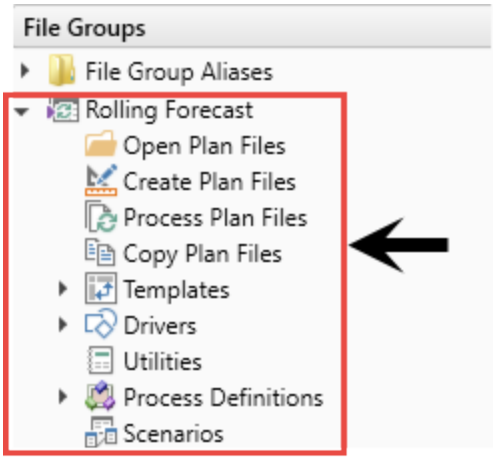
Working with Scenarios

Scenarios allow you to create what-if scenario forecasts. To see how your forecast would project with a different merit or revenue contract rate increase, you can use the Scenario functionality.

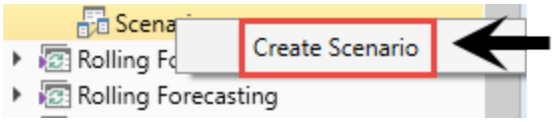
Creating a scenario

To create a scenario:

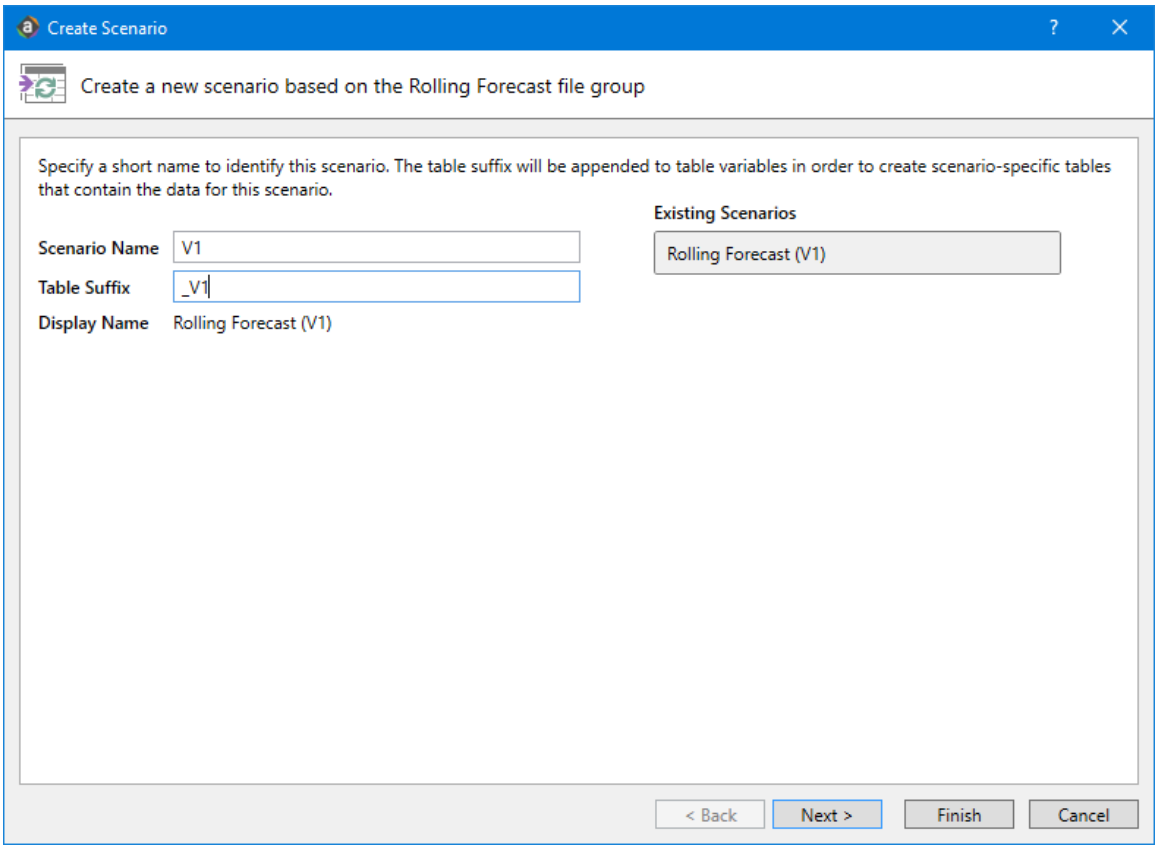
1. From the Explorer task pane, in the **File Groups** section, click **Rolling Forecast**.



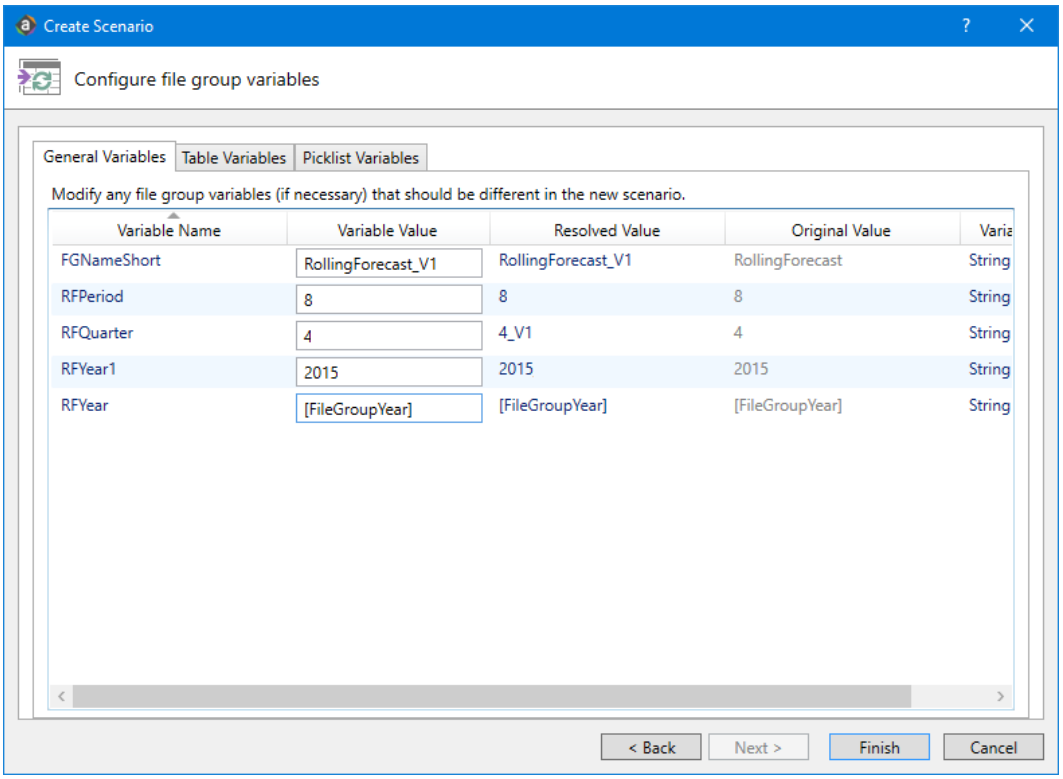
2. Right-click the **Scenario** icon, and select **Create Scenario**.



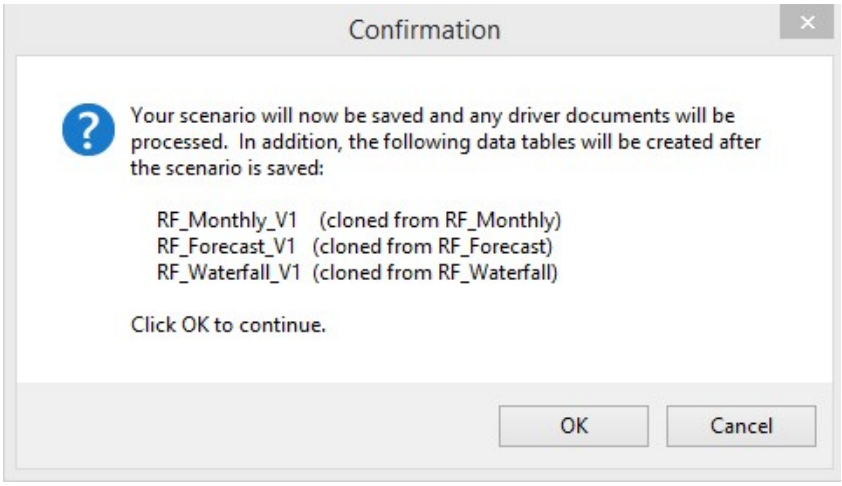
3. In the **Create Scenario** dialog, do the following:
   a. In the **Scenario Name** field, type a name for the scenario. For example, Aggressive, Conservative, and so on.
   b. In the **Table Suffix** field, type a suffix for the scenario. For example, _V1, _V2, _V3, and so on.



4. Click **Next**.
5. In the **General Variables** table of the **Create Scenario** dialog, do the following:
   - For the FGNameShort variable, in the **Variable Value** column, type the table suffix. For example, RollingForecast_V1.
   - Confirm that the data tables and drivers all have the suffix appended to the end of the descriptions.

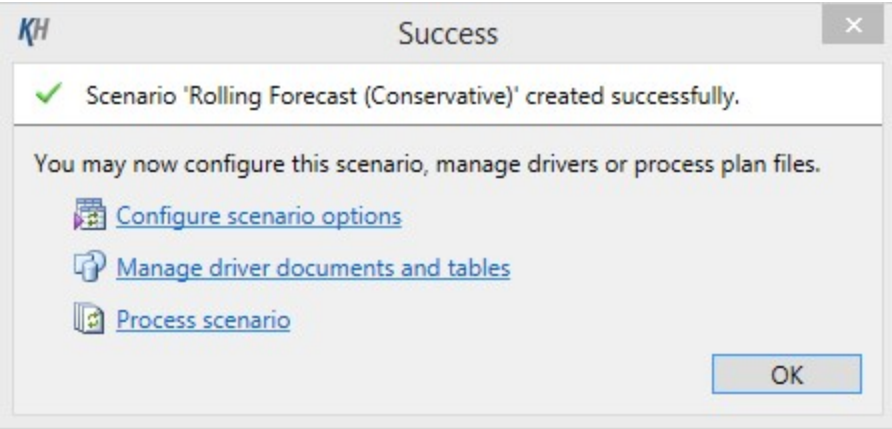


6. Click **Finish**.
7. At the confirmation prompt, the dialog displays the tables that the system will create after you save the scenario. Click **OK**.



8. At the scenario **Success** dialog, click **OK**.

   The scenario takes about five minutes to create. The Success dialog confirms that the scenario is complete.

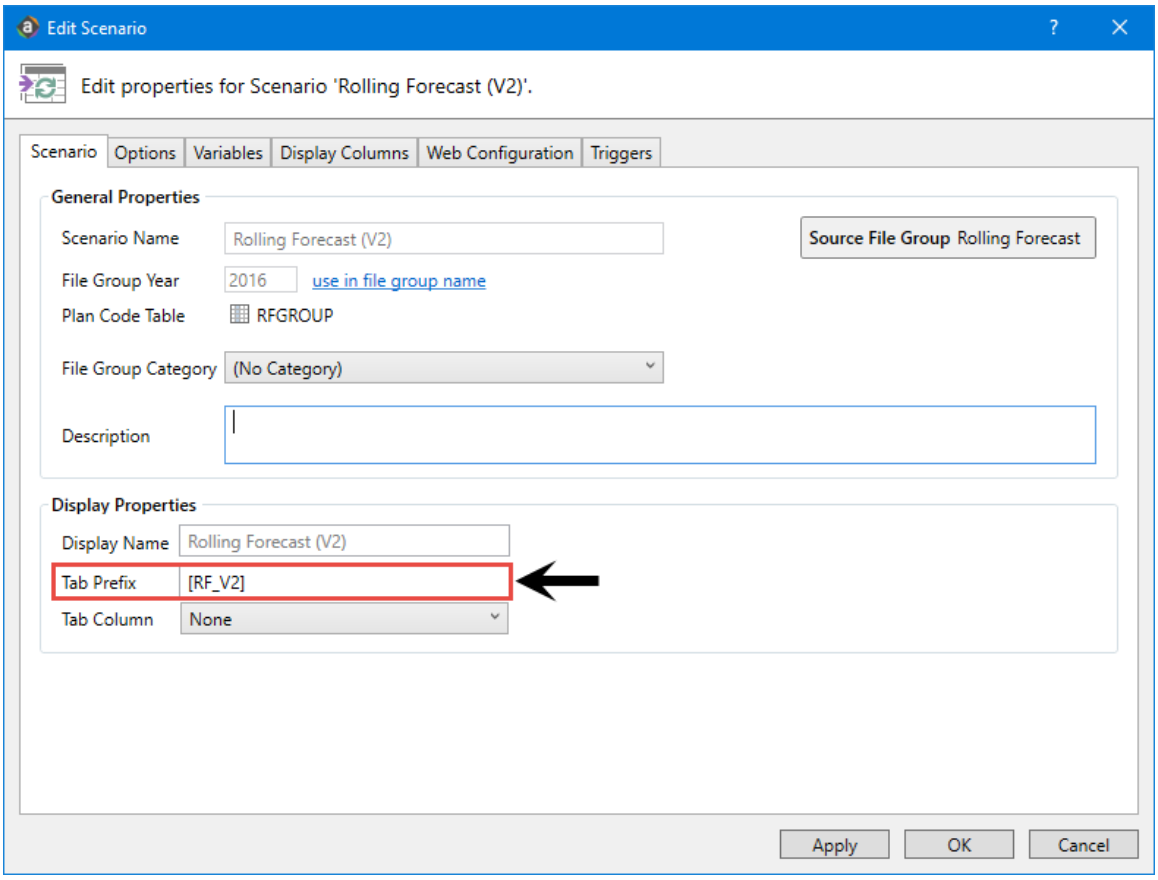


When the job has successfully completed, you can do the following:

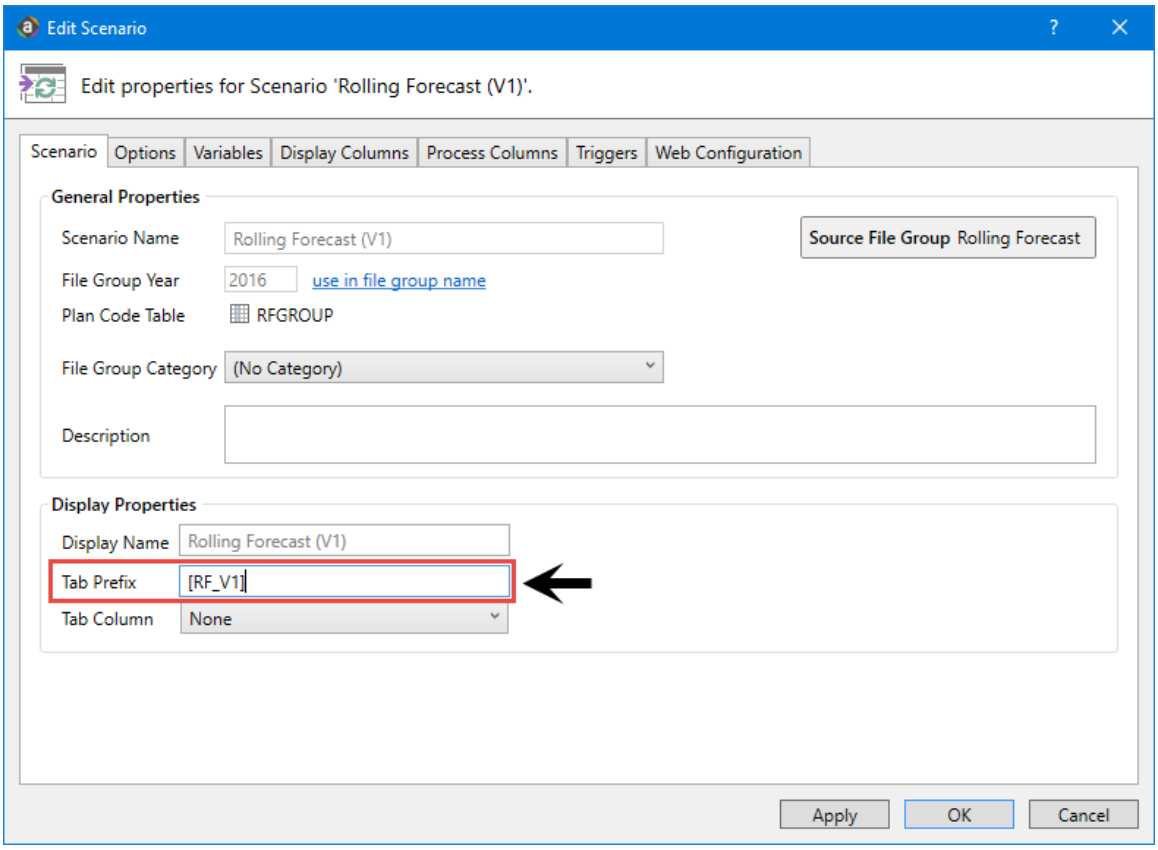
- Configure your scenario options.
- Manage your driver documents and tables, or
- Process your scenario plan files for your new scenario

NOTE: We recommend that you first configure scenario options.

9. To configure scenario options, in the **Explorer** task pane, right-click the new scenario, and click **Edit**.
10. In the **Edit Scenario** dialog, on the **Scenario** tab, in the **Display Properties** section, in the **Tab Prefix** field, add the suffix you created for the scenario.



This is how you identify the difference between plan file (or driver) that you have open from your scenario versus a plan file from your original rolling forecast plan file.



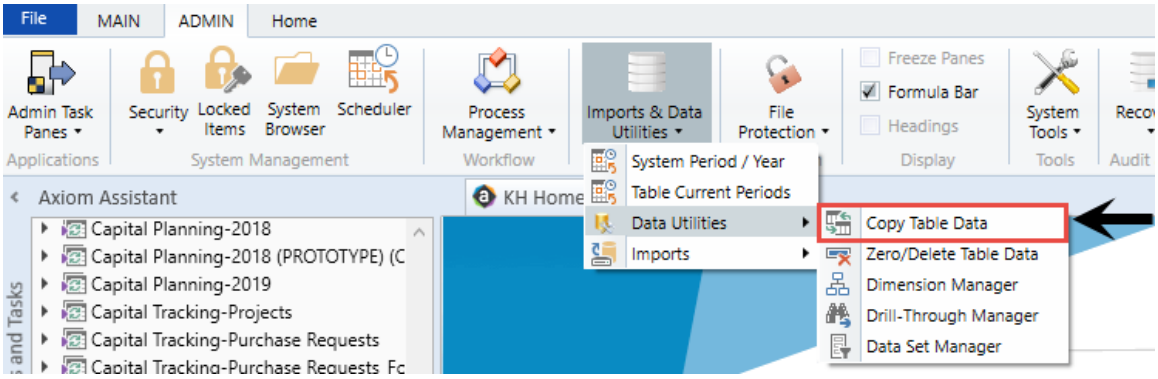
11. To save the changes, click **Apply**, and then click **OK**.

Copying scenario data tables

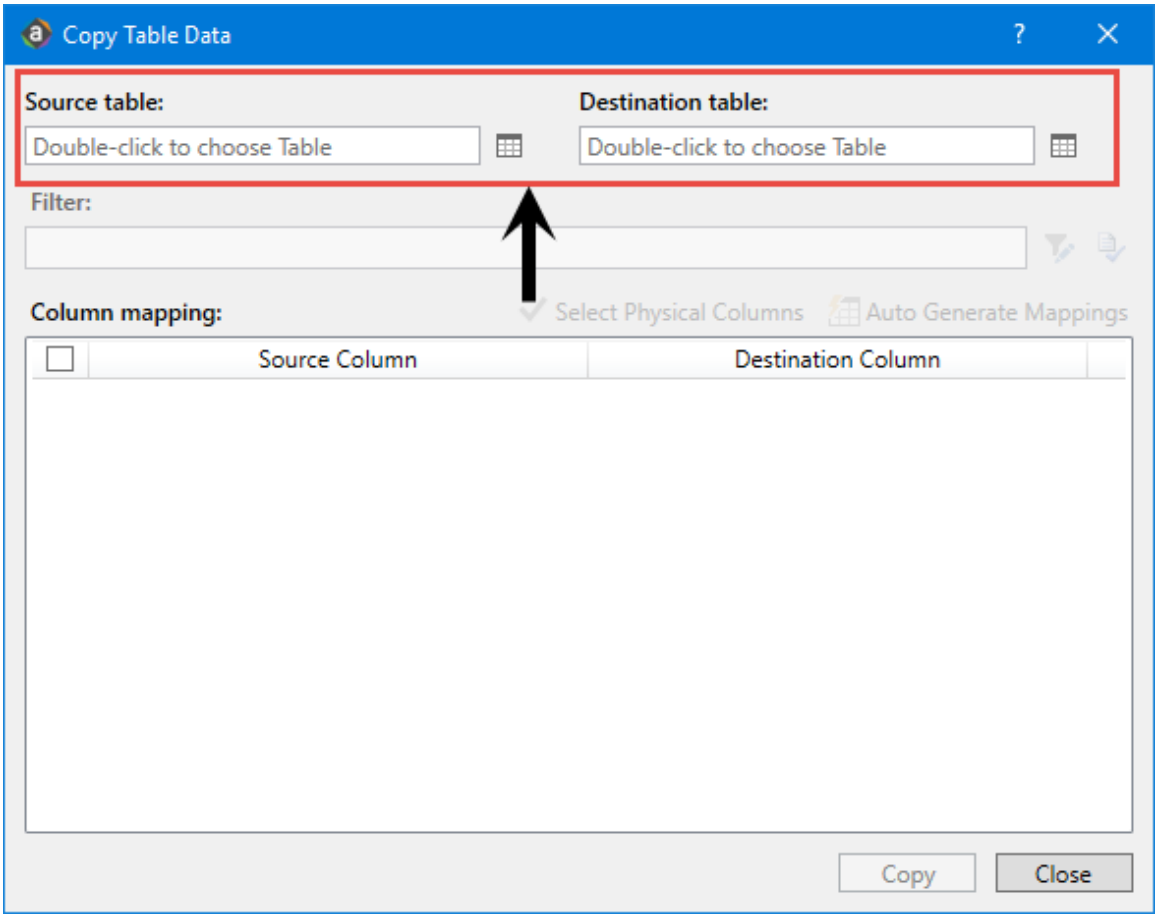
If you plan to reprocess the plan files, you need to copy the data from your RF_Monthly, RF_Forecast, and RF_Waterfall tables into the Scenario data tables to reprocess the revised data.

To copy scenario data tables:

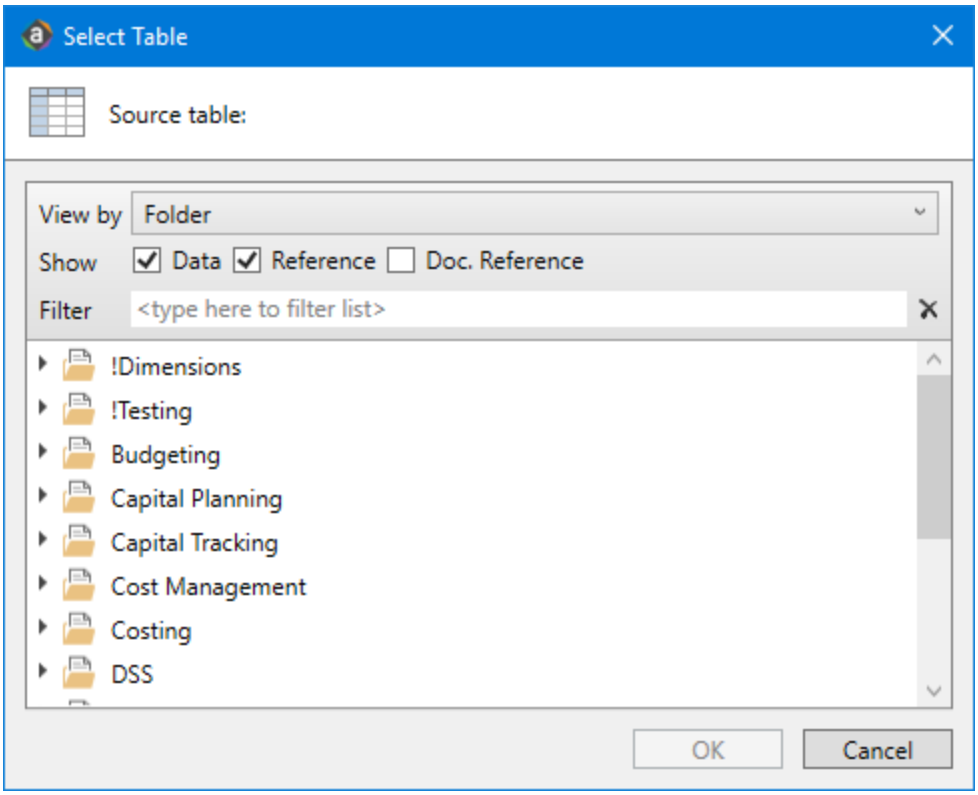
1. From the **Admin** ribbon tab, click **Import & Data Utilities > Data Utilities > Copy Table Data**.



2. In the **Copy Table Data** dialog, for the **Source table** field, click the table icon .



3. In the **Select Table** dialog, select **RF_Forecast**, and click **OK**.



4. For the **Destination table** field, click the table icon .
5. In the **Select Table** dialog, select **RF_Forecast_V2**, and click **OK**.
6. In the **Copy Table Data** dialog, click the **Column Mappings** checkbox.
7. Click **Auto Generate Mappings**.

   NOTE: Calculated columns do not map over, so you need to deselect those columns from the Source table. When you are finished deselecting the calculated columns, click **Copy**.

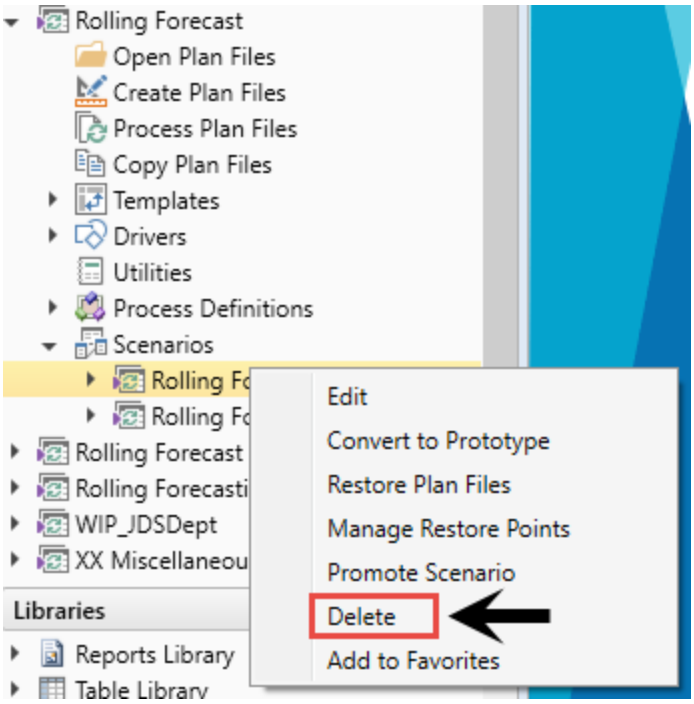
8. Repeat this process for RF_Monthly and RF_Waterfall.
9. When all of the data tables are updated, you can create and process the Scenario plan files.

NOTE: If you plan to re-interface the workbooks with new data, we recommend that you re-interface the new data into your original file group, and then copy the data again from your RF_Monthly, RF_Forecast, and RF_Waterfall tables into the Scenario data tables.

Deleting a scenario

To delete a scenario:

1. In the Explorer task pane, in the **File Groups** section, click **Rolling Forecast > Scenarios**.
2. Right-click the scenario to delete, and click **Delete**.



3. At the confirmation prompt, click **OK**.

8

Working with Reports

Reports are spreadsheets designed to help review and analyze your organization's financial data. Axiom Rolling Forecasting reports can query data from any table in the Axiom database. This chapter provides details about the Axiom Rolling Forecasting reports and how to work with them.

Like plan files, reports pull data from the database and, in some cases, allow you to input data and save it back to the database. Unlike plan files, however, reports are not associated with a particular file group or forecast year. You can use this same report to view data for any forecast year or to compare data across multiple budget years. Reports can even incorporate data from other Axiom Healthcare Suite products, provided that you have the necessary security permissions.

A few examples of Axiom Rolling Forecasting reports include:

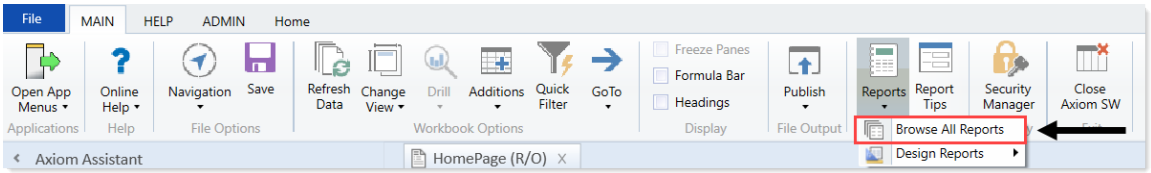
- **RF Dept Summary** – Summary for the six key performance indicators by department within the forecast group compared to the forecast group target. Used to track progress toward the forecast group targets.
- **RF FTE Summary** – Used to compare FTEs for the four most recently completed quarters vs the next four quarters in the forecast.
- **RF Key Ratio Trend** – Shows key ratios and performance indicators for a selected forecast group.

Browsing the Report Library

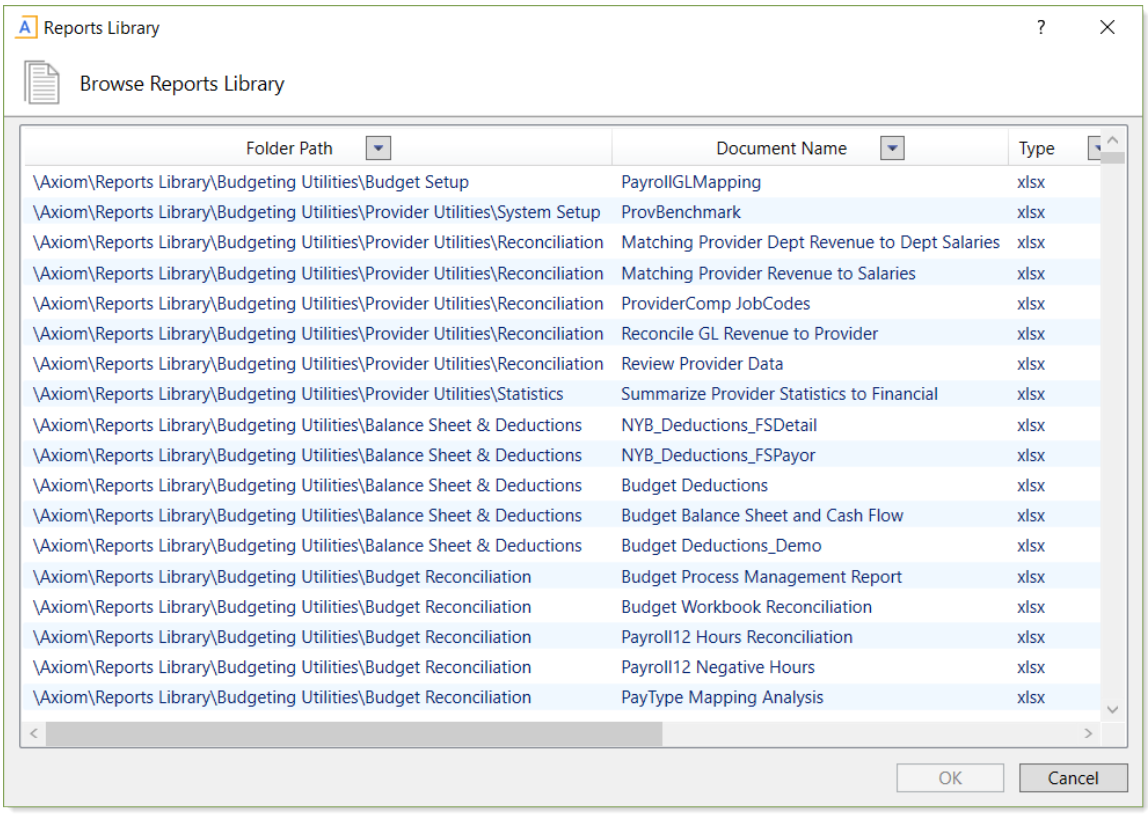
In addition to browsing the report folders in the Axiom Rolling Forecasting task panes, you can search all of the available Axiom reports in the Reports Library.

To browse the Report Library:

1. In the **Main** ribbon tab, in the **Reports** group, click **Reports > Browse All Reports**.



2. In the **Reports Library** dialog, you can do the following:



- To sort, group, or search by any of the columns, click the drop-down arrow next to the column label.
- To open a report, select it from the list, and click **OK**.

Viewing a report

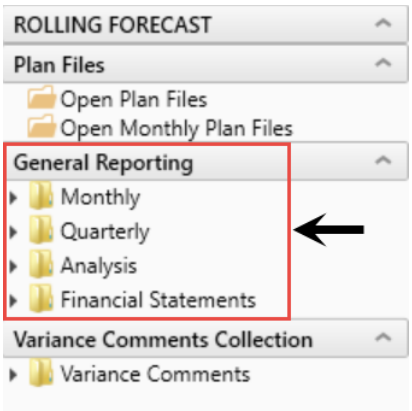
Axiom Rolling Forecasting reports are organized by folder in the RF Admin task pane or the Rolling Fcst task pane. The specific report folders and files that you can access and the level of access rights depend on your security settings. Administrators have full access to all reports.

When you first open a report, it is just an empty template, which you need to populate with data. Some reports automatically prompt you to select an account, department, or other variable. The system then populates the report with related data from the database tables.

Other reports simply open as an empty template by refreshing the data. For more information, see Refreshing a report with data.

To view a report:

1. In the **RF Rolling Fcst** task pane, in the **General Reporting** section, navigate to the specific report to open.



NOTE: Report folders may have sub-folders.

2. Double-click the report to open it.
3. To populate the report with data, see Refreshing a report with data.

The selected report opens. If a report is opened read-only, then the text **(R/O)** displays in the file tab. You cannot save read-only reports.

NOTE: If another user has the report open as read/write, then you can only open the file as read-only, regardless of your security permissions.

Advanced options

- To open a report without refreshing Axiom queries that are configured to refresh on open, right-click the file and then select **Open Without Refresh**.

  NOTE: This option is only available to administrators.

- If you have read/write permissions to a report but you want to open it as read-only to prevent locking the file from other users, right-click the file, and select **Open Read Only**.

Opening non-managed report files

If you have a *non-managed* report saved to your local drive or a network folder, you can open it as follows:

- In the Excel Client, use standard Excel functionality to open the file within Axiom Rolling Forecasting.
- In the Windows Client, click the Axiom button in the top left-hand corner. Click **Open**, and navigate to the file.

Saving a report

When you save a report, the report file is updated in the Axiom Rolling Forecasting file system. If the report is configured to save data to the database, a save-to-database also occurs.

To save a report:

- On the **Axiom** tab, in the **File Options** group, click **Save**. (In systems with installed products, this feature may be located on the **Main** tab.)

Your file permission settings in Security determine whether you can save a particular report. If a report is open with read/write permissions, then you can save it. If the report is open as read-only, then the report file cannot be saved, but you may still be able to save data. You may also be able to save a copy of the report.

NOTE: Some files may use a Control Sheet setting that causes the data in the report to zero when the file is saved. This is a security precaution that is normally enabled in reports only. You can click **Refresh** to restore the data.

Save-to-database reports

Some reports may be configured to save data to the database. If the report is configured to save to the database, then the file is validated before saving. If errors are found, the file still saves but the data save is stopped and the errors are displayed in the **Save Errors** pane. These errors must be corrected before data can be saved to the database. If no errors are found, then a confirmation message displays, with information about the number of records saved.

Your file permission settings in Security determine whether you can perform a save-to-database for a particular report. Note that the permission to save data is managed separately from the file access permission. Therefore, it is possible that you could have read-only permissions for the file, but still have rights to save data (or the opposite—you could have read/write permissions for the file, but not have the rights to save data).

When you click **Save**, Axiom Rolling Forecasting automatically performs all save actions that your user rights allow and that the file is configured to perform. If desired, you can use the additional save options to only save the file, or to only save data.

To save only the file:

- In the **Axiom** tab, in the **File Options** group, click the down arrow to the right of the **Save** button, and then click **Save File Only**.

The plan file is saved. All save-to-database processes are ignored.

To save only the data:

- In the **Axiom** tab, in the **File Options** group, click the down arrow to the right of the **Save** button, and then click **Save Data Only**.

Data from the file is saved to the database. The file itself is not saved.

NOTE: In systems with installed products, the additional save options may be located on the Main tab. In all systems, you can also access these options by right-clicking the file tab.

Saving a copy of a report

You can save a copy of a report using **Save As** features. You might want to save a copy of a report to use as a starting point to create a new report, or to create an archive copy before making changes to the report.

In most cases, you should save the report to the Axiom Rolling Forecasting file system (in the Reports Library). However, it is possible to save report files outside of the Axiom Rolling Forecasting system (as non-managed files). Non-managed files have limited functionality, and are not covered by Axiom Rolling Forecasting security or included in system processes.

To save a copy of a report to the Reports Library:

1. On the **Axiom** tab, in the **File Options** group, click the down arrow to the right of the **Save** button, and then click **Save As (Repository)**.

   TIP: The Save As options are also available by right-clicking the file tab.

   The **Save As** dialog opens, displaying the contents of the Reports Library.

   NOTE: By default this dialog only displays files with the same file extension as the current file. If you want to view all file types when using this dialog, select **View > Show All Files**. This setting will be remembered.

2. In the left-hand side of the dialog, navigate to the folder in the Reports Library where you want to save the file.

   You must have read/write permissions to a folder in order to save a copy of the report there. A lock icon displays next to folders where you do not have read/write permissions to any folder in that folder tree.

3. In the **File name** box, type a name for the new report.
4. Optional. In the **Description** box, type a description for the report.
5. Click **OK**.

To save a copy of a report locally (as a non-managed file):

1. On the **Axiom** tab, in the **File Options** group, click the down arrow to the right of the **Save** button, and then click **Save As (Local File)**.

   TIP: The Save As options are also available by right-clicking the file tab.

The **Save As** dialog opens.

2. Navigate to the desired location on your local computer or on a network file share, and then click **Save**.

   You can change the name of the file and its file format when saving. In the Excel Client, you can save the file using any file format that your Excel version supports. In the Windows Client, you can save the file as XLSM, XLSX, or XLS.

Refreshing a report with data

To update a spreadsheet Axiom report with the most current data from the database, refresh the file. A refresh does the following:

- Updates active Axiom queries with data, according to the update settings defined for the query
- Updates Axiom functions with data
- Performs an Excel calculation
- Reapplies the currently active views (if applicable)

To refresh a report:

- On the **Axiom** tab, in the **File Options** group, click **Refresh**.

  This refreshes all sheets in the workbook. If you want to refresh the current sheet only, click the down arrow on the right-hand side of the **Refresh** button, and then click **Refresh Active Sheet**.

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

You may be prompted to define values before the refresh occurs. If so, these values will be applied to the report to impact the data refresh.

TIP: You can also use F9 to refresh the entire workbook, and SHIFT+F9 to refresh only the active sheet.

NOTE: Administrators can use the Refresh command on the **Axiom Designer** tab to perform more targeted refresh actions, such as refreshing only a specific Axiom query.

Creating a new report

You can create a new report if you have read/write access to at least one folder in the Reports Library. You can use any of the methods discussed below to create a new report. If you do not have these permissions, then the associated menu options for creating new reports will not be available to you.

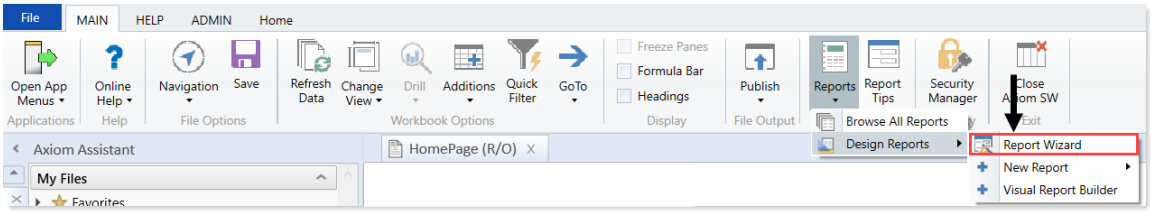
NOTE: After saving a new report to the Axiom file system, you may not see that new report displayed in Axiom Explorer or the Reports menu until the file system has been refreshed. You can go to **Reports > Refresh file system** to manually trigger a refresh and cause the new report to display.

Creating a new report using the Report Wizard

You can create a new report using the Report Wizard. In the wizard, you make selections regarding the type of report that you want to create and the desired data, and then the wizard creates a report based on your choices. You can then further modify the report as needed. For more information, see *About the Report Wizard* in Help (**Main** ribbon tab > **Help**).

To create a new report using the Report Wizard:

- On the **Main** ribbon tab, in the **Reports** group, select **Reports > Design Reports > Report Wizard**.



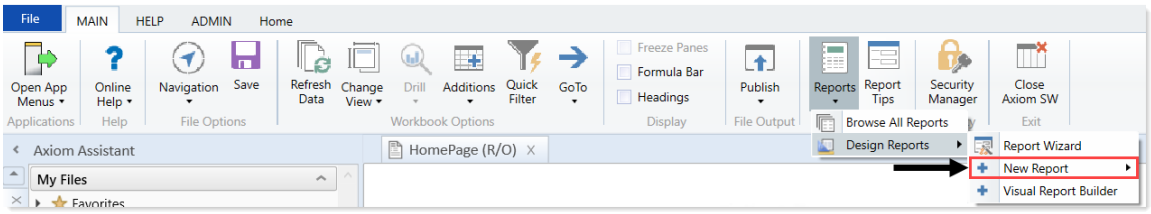
Creating a new blank report

You can create a new report from scratch using the default blank report template. This template is entirely free-format.

If your organization has saved additional report templates, you can use those to create a new report as well. Only administrators can create new report templates.

To create a new blank report:

- On the **Main** ribbon tab, in the **Reports** group, select **Reports > Design Reports > New Report**.

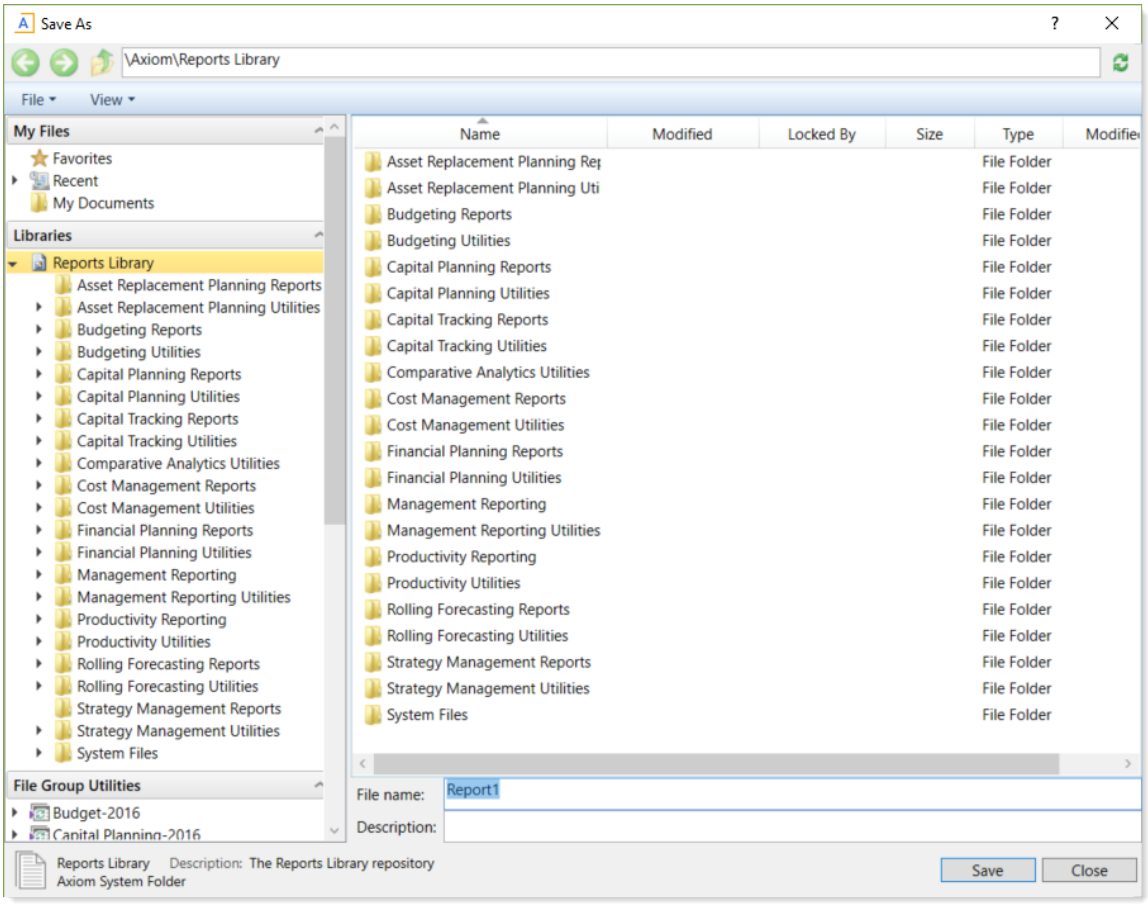


If your system has multiple report templates, you can select the template to use from this menu. Otherwise, the default ReportTemplate is automatically used.

You can now use Axiom file functionality on this sheet, such as using Axiom queries to bring in data. For more details on setting up Axiom files, see *Axiom file setup* in Help (**Main** ribbon tab > **Help**).

Saving a new report

To save a new report, in the **File Options** group of the **Main** ribbon tab, click **Save**. When you save the new report for the first time, you are prompted to define a file name and select a folder location in the Reports Library. You can also define a description for the report.



You must have read/write permissions to a folder to save a report there. A lock icon displays next to folders where you do not have read/write permissions. If you have access to a My Documents folder, you can also save reports there for your own use.

If you later want to change the file name, location, or description, you can use Axiom Explorer. If you do not have rights to access Axiom Explorer, you can edit the description by using **Save As (Repository)** (save the file with the same name and location, but edit the description).

You can also choose to save the report to your local drive or to a network location, by using **Save As (Local File)**. In this case the report is not stored in the Axiom Rolling Forecasting database and is considered to be a *non-managed file*.

NOTE: Access to certain task panes (such as the Sheet Assistant) may depend on security permissions defined at a folder level. When a new report file is created, the file location is assumed to be the root of the Reports Library until the file is saved. Therefore access to task panes for brand new reports depends on the user's permissions defined at the Reports Library level. If a user does not have permission to the task panes at the Reports Library level but does have access at a sub-folder level, then the user will not see the task panes until they save the file to that sub-folder.

Creating a new report based on an existing file

You can use **Save As** to create a new report based on a copy of an existing report. You can save the copied file to the Reports Library, or as a local non-managed file.

You can also create a report based on an existing Excel file, by opening the Excel file in Axiom Rolling Forecasting. To use certain Axiom file features such as Axiom queries, you must add a Control Sheet to the report. For more information, see Control Sheets in Help (**Main** ribbon tab > **Help**). Then you can use **Save As (Repository)** to save the file to the Reports Library.

Navigating reports

Apart from each report having an Instructions tab, Axiom Software report files do not have a standard structure. Each report can have any number of sheets, layouts, custom views, drill-downs, GoTo targets, quick filters, and associated task panes—all configured for the specific information that displays.

Although not all of these features are available for every report, here is an overview of common report features:

Instruction tab

Each report has an Instructions tab that provides an overview of its specific business purpose, features, and steps for processing the report.

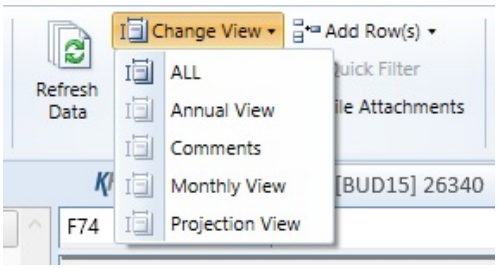
Custom views

Custom views allow for different presentations of data within a report. For instance, a report might default to showing monthly data but have custom views defined for displaying data by quarter or year.

NOTE: Not all reports have custom views defined.

If custom views have been defined within a report, you can access them by doing the following:

1. In the **Main** ribbon tab, in the **Workbook Options** group, click **Change View**.



2. From the menu, select the view to use.

Quick Filter

A Quick Filter is a temporary report filter. This allows you to quickly view the data at a different level of detail, without needing to alter the report configuration. For more information, see the following:

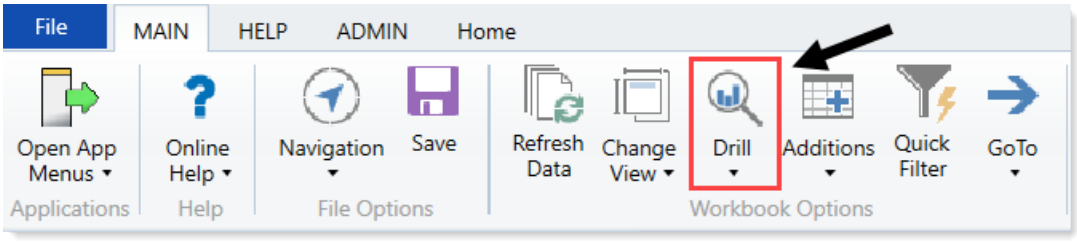
- Applying a Quick Filter to a report
- Using the Advanced Filter Wizard
- Understanding hierarchy-based Quick Filters

Drills

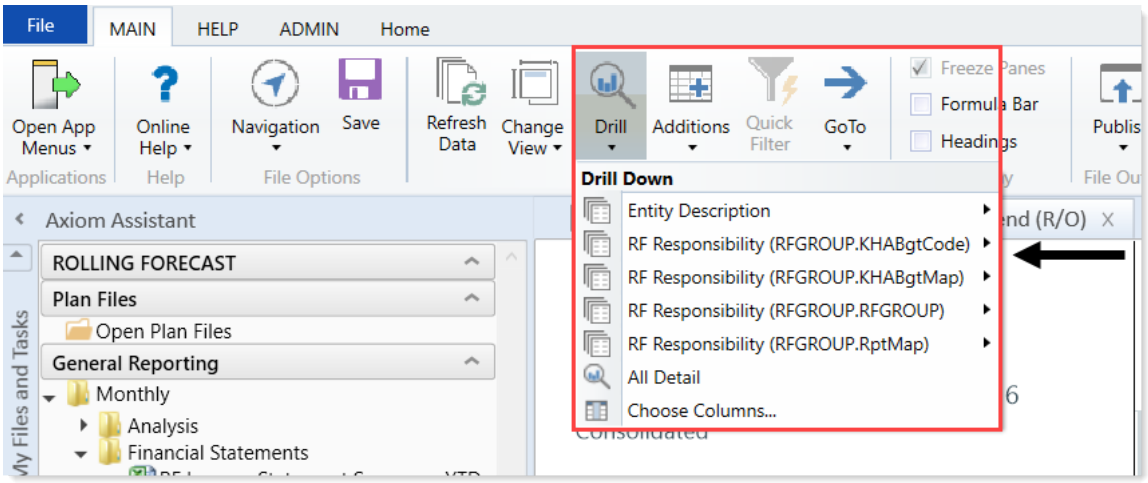
Some reports contain rows (or columns) where the data represents a roll-up of values for multiple database records. For instance, an income summary report might combine patient revenue for all departments into a single total for the year, or a report on payroll by department might roll up both regular and non-productive hours into a combined number of hours for each department. In such cases, you can use drills to view the individual values for each item included in the roll-up.

To drill in a report, do the following:

1. In the report spreadsheet, select a cell.
2. In the **Main** ribbon tab, in the **Workbook Options** group, click **Drill**.



3. From the drop-down, select any of the available drills to view a breakdown by that dimension or value.



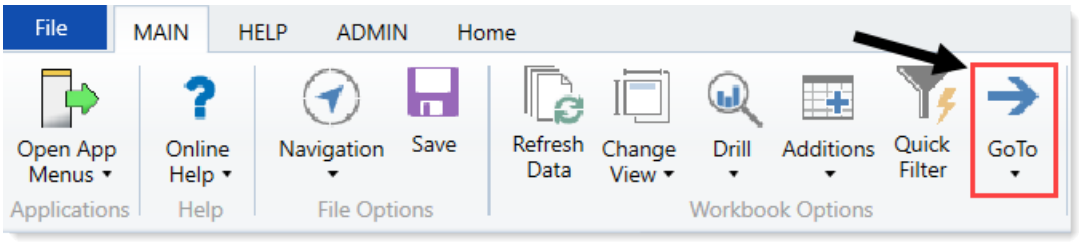
A new spreadsheet opens to display data at the specified drill-down level.

NOTE: While we have made an effort to deactivate any drill options that do not apply to a particular row/column/cell, there are simply too many possibilities for us to deactivate every invalid drilling method for every cell in every report. As a result, certain drill methods may produce strange results. For the most part, common sense should imply which dimensions or values you can drill for a given roll-up (for example, drilling by Vice President on a single department might result in a report with a single record, as a department typically has one VP assigned to it).

GoTo targets

GoTo targets are simply bookmarks that allow you to jump to different sections of a report. Not all reports include GoTo targets. To navigate to a target, do the following:

1. In the **Main** ribbon tab, in the **Workbook Options** group, click **GoTo**.



2. From the menu, select the GoTo target.

Using the Filter Wizard

You can use the Filter Wizard to assist you in constructing filters throughout Axiom Rolling Forecasting.

The Filter Wizard offers two different approaches for building filters:

- **Data Hierarchies**: Build a filter using hierarchies that have been set up for your system. You select the items to include, and the Filter Wizard builds the filter criteria statement for you.
- **Advanced Filter**: Build a filter using any table and column that is relevant to the current context. This approach also allows for more operators, including greater than, less than, and not equal to.

Creating filters using data hierarchies

For example, you may have a hierarchy for Geography that starts at the WorldRegion level, then goes down to the Country level, and then goes down to the LocalRegion level. If you want to filter by a particular country in the Asia WorldRegion, you can expand the Geography hierarchy, then expand the Asia WorldRegion, and then select the desired country.

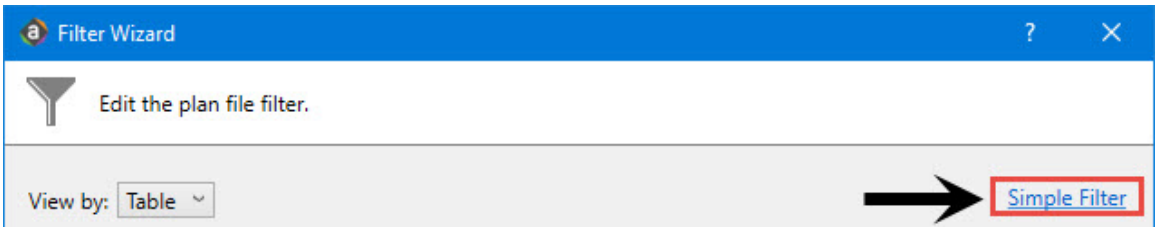
The hierarchies available to you are defined by your system administrator, based on grouping columns in reference tables. If your system has no defined hierarchies (or if no defined hierarchies are relevant to the current context), then the **Data Hierarchies** section does not display, and the Advanced Filter opens directly.

Note the following about filters created using data hierarchies:

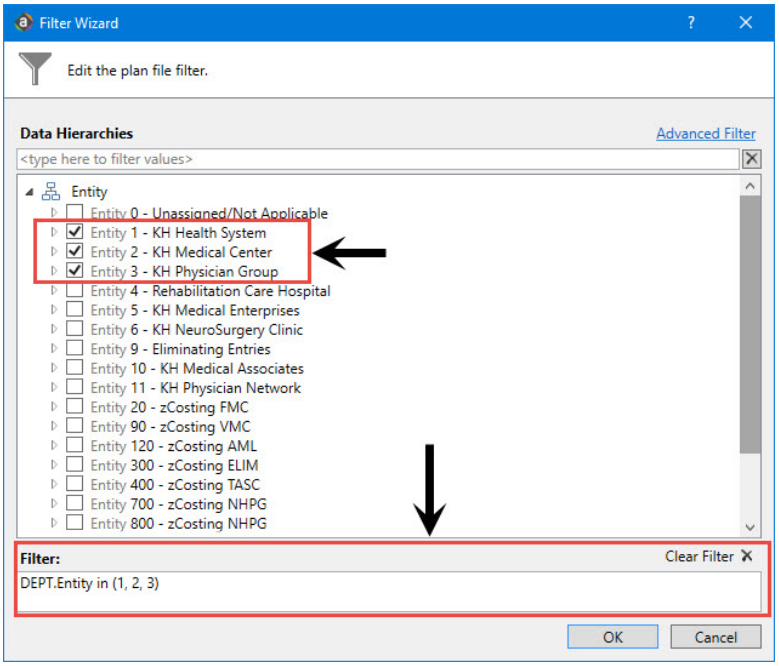
- Only include filter criteria statements can be created using data hierarchy selections. As you select items, those items will be included by using an equals (=) operator or an IN statement (for including multiple items at the same level). If you want to write a filter criteria statement that specifies items to exclude, or that uses other operators such as greater than or less than, then you must use the Advanced Filter.
- Certain assumptions are made regarding the use of AND and OR when multiple items are selected from different hierarchy levels or different hierarchies. If you want to change the way each statement is joined, you can manually edit the filter in the Filter box, or you can use the Advanced Filter.
- Sometimes when you select a child item underneath a parent item, the child and parent are joined with AND. For example: `DEPT.VP='Jones' AND DEPT.Manager='Smith'`. This means that the DEPT table has other instances of Manager Smith that belong to different VPs, so the compound statement is to ensure that you only get the data where Manager Smith is under VP Jones. You can manually edit the filter to remove the Jones portion of the statement if you want to see all data for Manager Smith, regardless of VP. If instead the system constructs the filter as just `Dept.Manager='Smith'`, that means all instances of Manager Smith are also under VP Jones.

To create filters using data hierarchies:

1. In the right side of the dialog, click **Simple Filter**.



2. Select the checkbox for each item to include in the filter. You can expand each hierarchy to see the items listed in it. You can also type a value into the filter box above the hierarchies to filter the list. As you select items, the filter criteria statement is created in the **Filter** field at the bottom of the dialog.



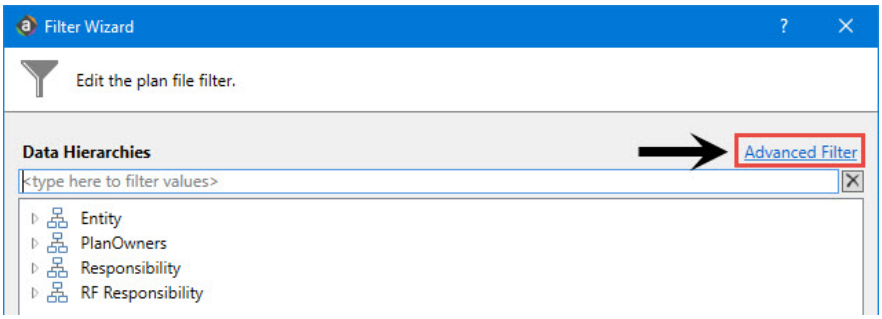
3. Do one of the following:
   - To apply the filter as is, click **OK**.
   - To manually edit the filter, type in the **Filter** field, and click **OK**.

Creating filters using the Advanced Filter

Using the Advanced Filter option, you can create a filter using any relevant table and column, and using any supported operator.

To create a filter using Advanced Filter:

1. In the right side of the dialog, click **Advanced Filter**.



2. In the left-hand side of the dialog, select the table column on which you want to base the filter.

   For example, to create a filter such as `DEPT.DEPT>=5000`, then you must select the DEPT column from the DEPT table.

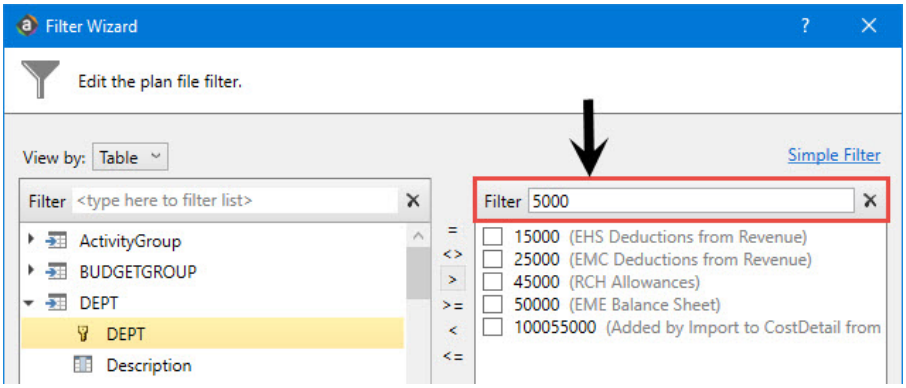
   To find the desired table and column, do the following:

   - Use the **View by** option to view the list by table, table type, folder, or alias. To select an alias, you must change the view to Alias—aliases are not listed under their assigned table.
   - You can also filter the list by typing into the filter field. The filter matches based on table name or column name.

   After you select a table column, the values in that column display in the right-hand side of the dialog.

   NOTE: If the selected column is a key column for a data table, and that key column links to a lookup column, the Filter Wizard automatically uses the lookup column in the reference table instead of the column in the data table. This is the recommended way to build the filter throughout the system, and it is required in some contexts. For example, if you select the column Acct in the GL2017 data table, the filter wizard automatically uses ACCT.ACCT in the filter (instead of GL2017.ACCT).

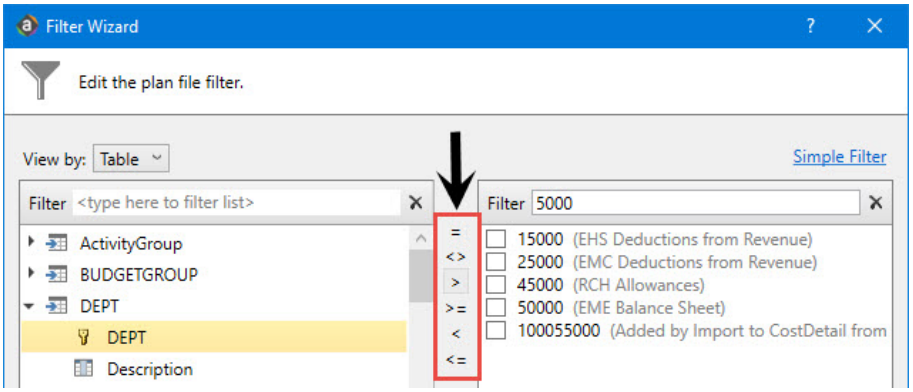
3. In the right-hand side of the dialog, type or select the value on which to base the filter.



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 is typed into the field is used by the filter.

If the column is a string, you can type an asterisk at the front or end of the value if you want to use "ends with" or "begins with" wildcard matching.

4. 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. By default, the filter statement uses equals (=).



Note the following about filter operators:

- Greater than / less than options are only available if the column data type holds numbers or dates.
- If multiple items are selected, then IN and NOT IN syntax is automatically used for equals and not equals respectively. Note that if the operator is equals but you select more items than you have not selected, the system will instead use NOT IN syntax for the unselected items to simplify the filter statement.
- If the column is a string column, and you type a value rather than selecting it, then LIKE and NOT LIKE syntax is automatically used for equals and not equals respectively. By default, wildcard characters (% signs) are placed on both sides of the text, meaning that it will match any value that contains the text. If you place an asterisk to the start or end of the text, then the wildcard character will be only at that location.
- If the column is a string column and the value contains an apostrophe (such as O'Connor), the wizard automatically converts this value to double apostrophes so that it is valid for use in the filter (O''Connor). Apostrophes in string values must be escaped this way so that they are not interpreted as the closing apostrophe for the filter criteria statement.

5. 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. The **Preview** box is not editable.

6. 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 1-4 to create another criteria statement. When the next statement is complete, click **AND** or **OR** to join it to the prior statement.

  You can repeat this process as many times as necessary to create the desired statement. You can also edit the full criteria statement within the **Filter** box as needed. When the entire statement is complete, click **OK**.

Editing existing filters

If a filter already exists in the setting or cell from which you launched the Filter Wizard, that existing filter displays in the **Filter** field of the wizard.

Note the following:

- If you select a new item from the **Data Hierarchies** section, the new filter will overwrite the existing filter in all cases.
- If you build a new filter using the **Advanced Filter**, you can concatenate that filter to the existing filter using AND or OR. If you would rather replace the existing filter, then click the **Delete** icon to clear the existing filter from the **Filter** field, and then accept the new filter.

Table and column visibility

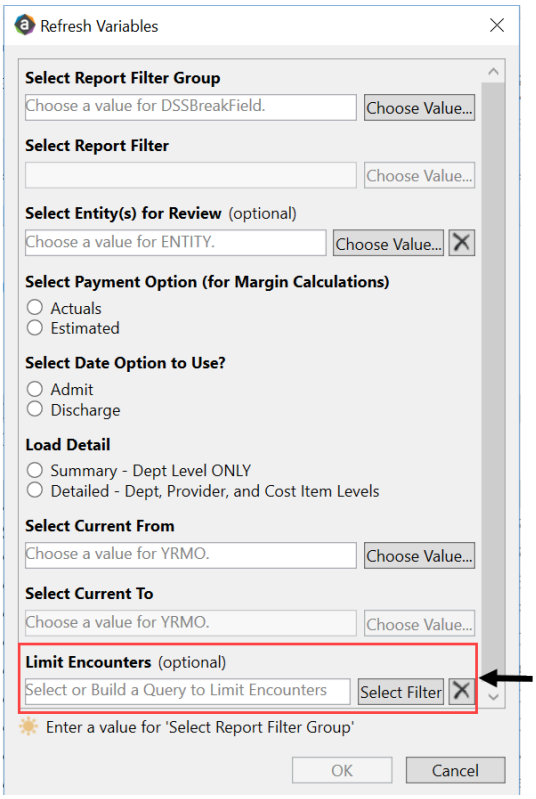
Whenever possible, the Filter Wizard is context-sensitive, meaning that it only displays hierarchies and tables that are relevant to the current context. For example, if you are defining a filter for a file group permission set in Security, the Filter Wizard is limited to the plan code table (and any hierarchies defined for that table).

The available tables and columns in the Filter Wizard are also subject to the following settings:

- **Security** – If a you do not have any read access to a table, then that table does not display in the Filter Wizard. If you have filtered read access to a table, then the filter is applied to the values displayed in the wizard.
- **Column Properties** – Individual columns in a table can be configured to be hidden in the Filter Wizard using the **Is Filter Column** setting. This may be used to hide columns that are unlikely to be used in filters. Filters can still be manually created using these columns; the property simply hides the column from the user interface to streamline the column list.

Using the Advanced Filter Wizard

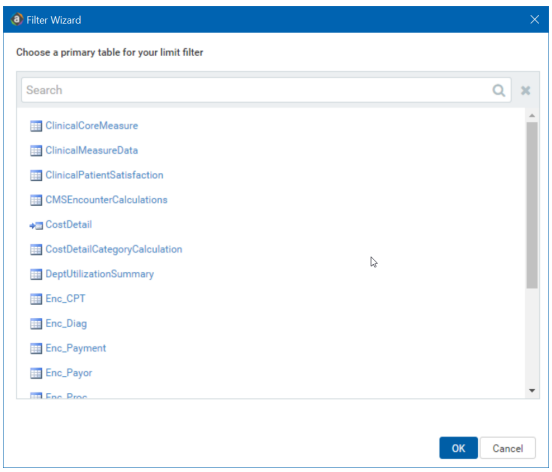
As part of the Refresh Variables, you can use or create your own filters to customize the data to include in the report. The Advanced Filter Wizard walks you through the process of building complex limit query filters rather than having to construct them manually. You can create and save new filters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



To use the Advanced Filter Wizard:

1. In the **Refresh Variables** dialog, in the **Limit Encounters** field, click **Select Filter**.
2. In the **Filter Wizard** dialog, select the primary table for the filter, and click **OK**.

   TIP: Use the Search field to narrow down the list of primary table names.



3. Do any of the following:

Using an existing filter

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

b. In the **Filter Library** dialog, select the filter to use, and click **OK**.

> **TIP:** You can edit an existing filter by selecting a filter and following the steps in **Creating a filter** below.

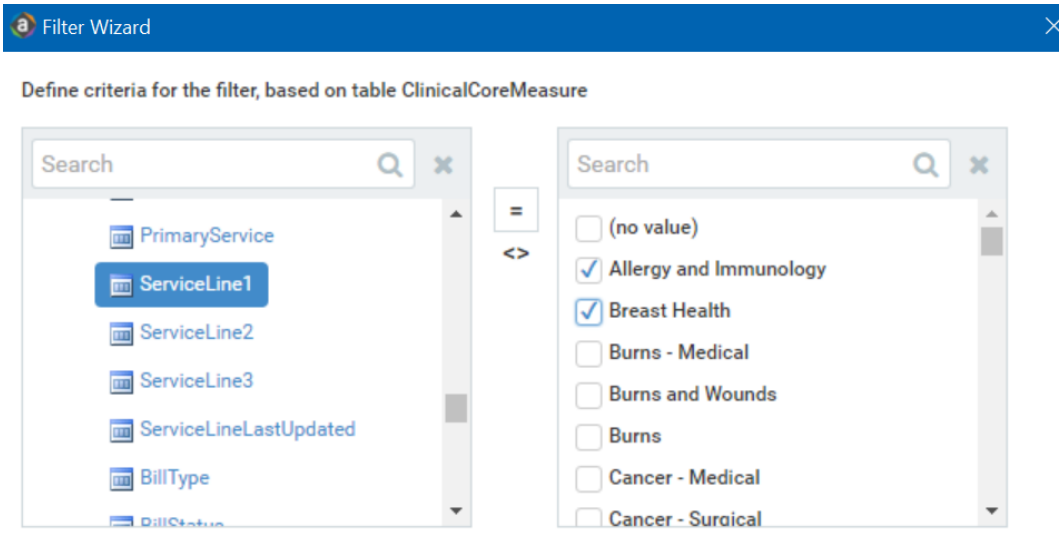
c. In the **Filter Wizard** dialog, click **Apply**.

d. Click **OK**.

Creating a filter

a. In the left side of the dialog, select the table column on which you want to base the filter.

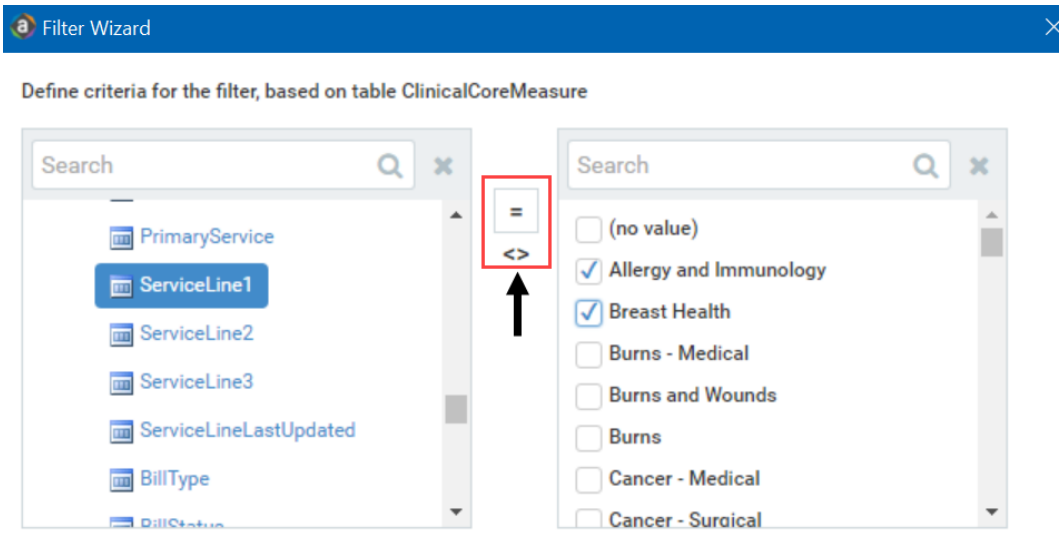
After you select a table column, the values in that column display in the right side of the dialog.



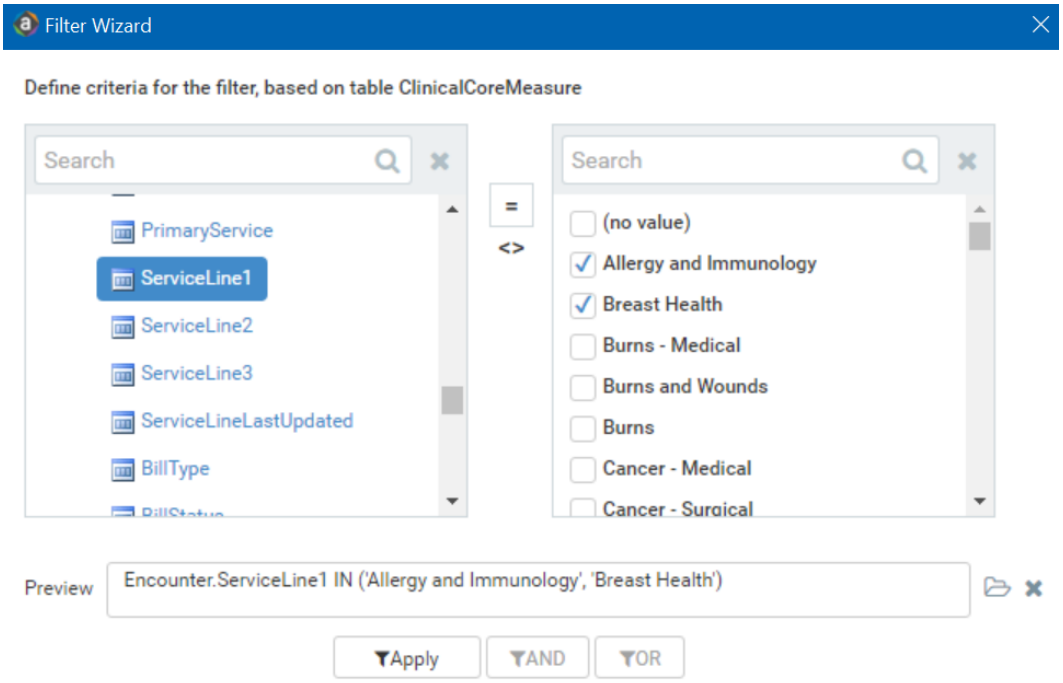
b. In the right side of the dialog, type or select the value on which to base the filter.

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.

c. 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.



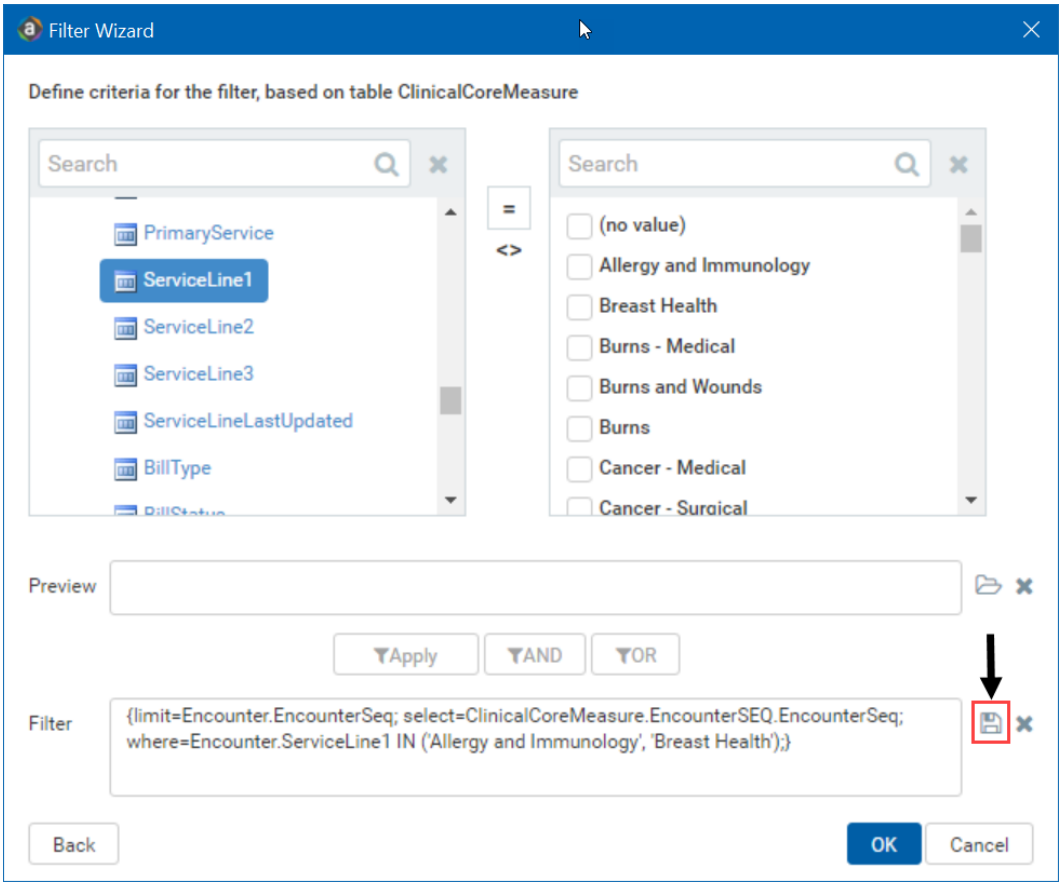
d. Review the filter criteria statement in the **Preview** box to ensure that it is as intended. If you need to make changes, edit your selections made above.



e. 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.

f. To save the filter, click the disk icon next to the **Apply** box.



g. In the **File name** field, type a name for the filter.

h. In the **Description** field, type a description of what the filter does.

i. Click **Save**.

j. In the Filter Wizard dialog, click **OK**.

Applying a Quick Filter to a report

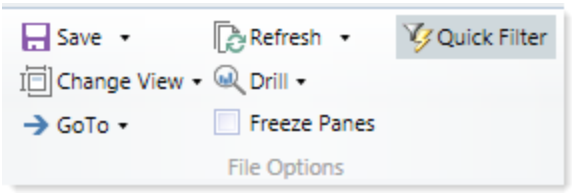
Using the Quick Filter feature, you can apply a temporary filter to a report. This allows you to quickly view the data at a different level of detail, without needing to alter the report configuration.

For example, you may be viewing an Income Statement report for the entire consolidated organization, and you want to view the same report at a different level of detail, such as for just North America or just the South region. You can use the Quick Filter to recalculate the report at the desired level of detail, and then clear the filter when you are done.

The Quick Filter is combined with your table security filters and any filters that are currently defined in the report, such as sheet filters and filters defined for Axiom queries.

To apply a Quick Filter to a report:

1. On the **Axiom** tab, in the **File Options** group, click **Quick Filter**.



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

2. At the top of the dialog, specify how the filter should be applied:
   - **Workbook** (default): The Quick Filter is applied to all sheets in the workbook.
   - **Active Sheet**: The Quick Filter is only applied to the currently active sheet.

   This selection may determine which hierarchies and tables are available in the dialog to build the filter. See Hierarchy and table availability in the Quick Filter dialog.

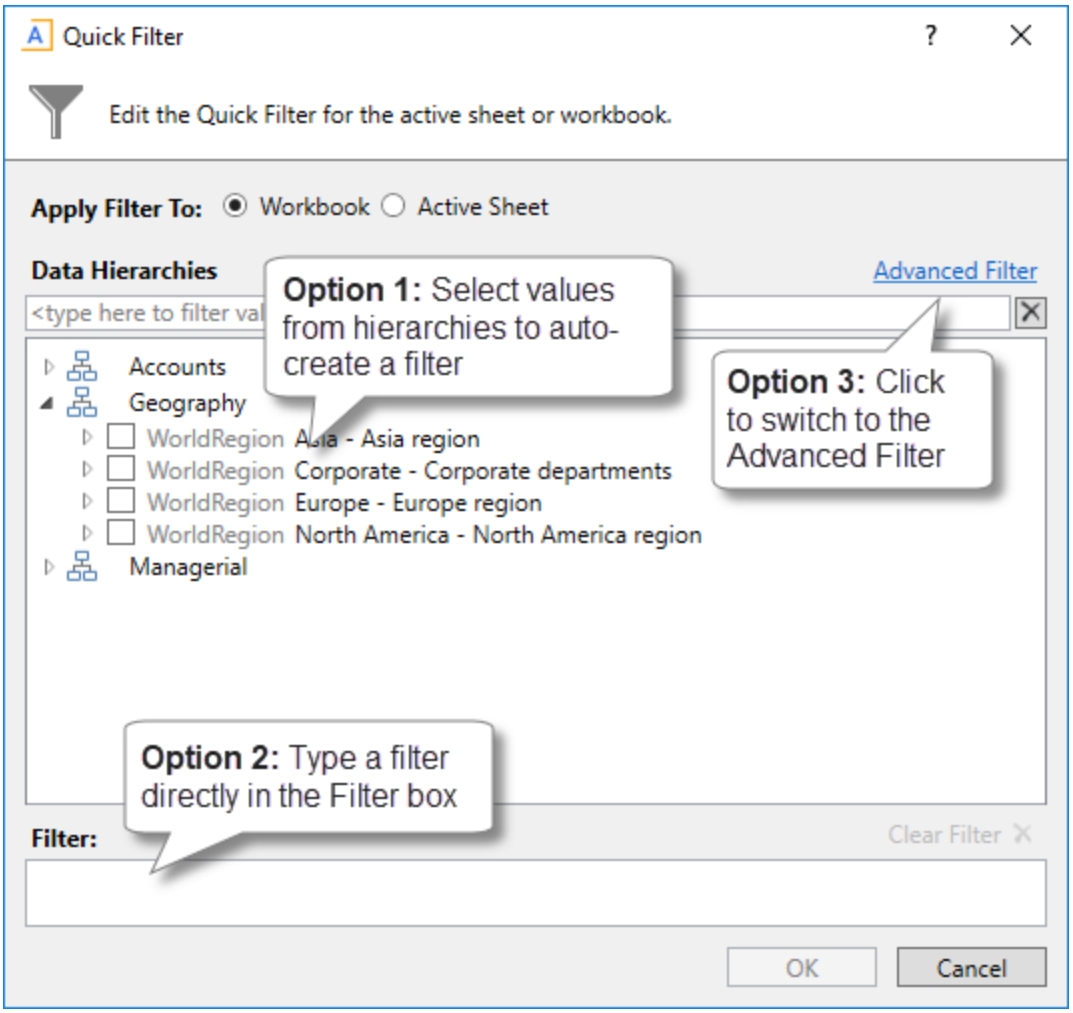
3. In the **Quick Filter** dialog, define a filter using one of the following methods:

   - **Data Hierarchies**: Select the desired hierarchy levels(s) from the hierarchies listed in the dialog. As you select items in the hierarchy, the corresponding filter is automatically built in the **Filter** box.

     For example, you might have a hierarchy named Geography, which has local regions rolling up into countries, and countries rolling up into world regions. You can select the desired items that you want to see in the report, such as Europe, Asia, or North America as world regions. For more information and examples, see Understanding hierarchy-based Quick Filters.

   - **Manual Filter**: You can manually type a filter into the **Filter** box using standard filter criteria statement syntax. Fully qualified Table.Column syntax must be used.

   - **Advanced Filter**: Click **Advanced Filter** to create a filter using any reference table columns (not just hierarchy columns).



Example Quick Filter dialog

4. Click **OK**.

   If the Quick Filter is applied to the entire workbook, a warning message informs you that the entire workbook will be refreshed. If you do not want to see this message again in the future, select **Don't show this message again**. Click **OK** to continue.

   If the Quick Filter is applied to the current sheet, that sheet is refreshed and no warning message appears.

If the file has been configured with GetCurrentValue("QuickFilter") functions, then these functions will display the currently applied Quick Filter for your reference. If not, you can view the current Quick Filter by clicking the **Quick Filter** button again. The current filter displays in the **Filter** box.

Clearing the Quick Filter

Once a Quick Filter has been applied to a report, the filter remains applied until one of the following occurs:

- The file is closed. Quick Filters cannot be saved in the file and are always cleared when the file is closed.
- A new Quick Filter is applied by using the **Quick Filter** button and selecting a different filter.
- The Quick Filter is manually cleared. To clear the Quick Filter, click the **Quick Filter** button again and then click **Clear Filter**.

Hierarchy and table availability in the Quick Filter dialog

The hierarchies and tables shown in the Quick Filter dialog are based on the Axiom queries in the report. Axiom Rolling Forecasting looks up the primary tables for the queries, and only shows the hierarchies and reference tables that are relevant to those primary tables. This is done to help ensure that the Quick Filter will be applicable to at least one query in the report.

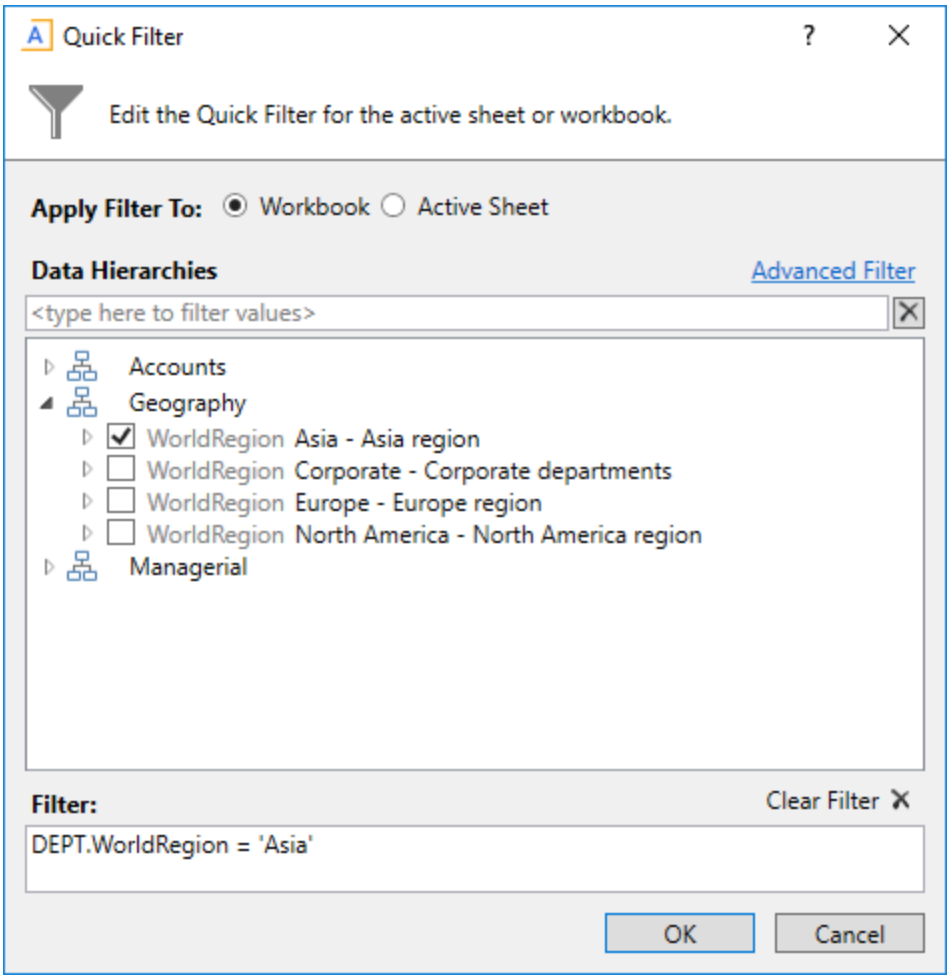
If the filter applies to the entire workbook, then Axiom Rolling Forecasting looks at the primary tables for all Axiom queries in the workbook. If the filter applies to the active sheet only, then Axiom Rolling Forecasting looks at only the primary tables for the Axiom queries defined on the active sheet.

NOTE: In the Advanced Filter view, only reference tables are shown unless the primary table has potentially ambiguous lookup relationships. In that case, the primary data table is also shown so that the selections can be made directly on these lookup relationships, to avoid any ambiguity. For example, if the primary data table has columns PrimaryPhysician and SecondaryPhysician that both look up to Physician.Physician, then the selection must be made through the primary data table so that the correct path to Physician.Physician is used.

If the report uses GetData functions instead of an Axiom query, then all hierarchies and reference tables are listed in the dialog because Axiom Rolling Forecasting cannot determine the "primary table" in this context. In this case, it is possible to define a Quick Filter that does not apply to any GetData functions in the workbook. If this occurs, the filter will simply have no effect.

Understanding hierarchy-based Quick Filters

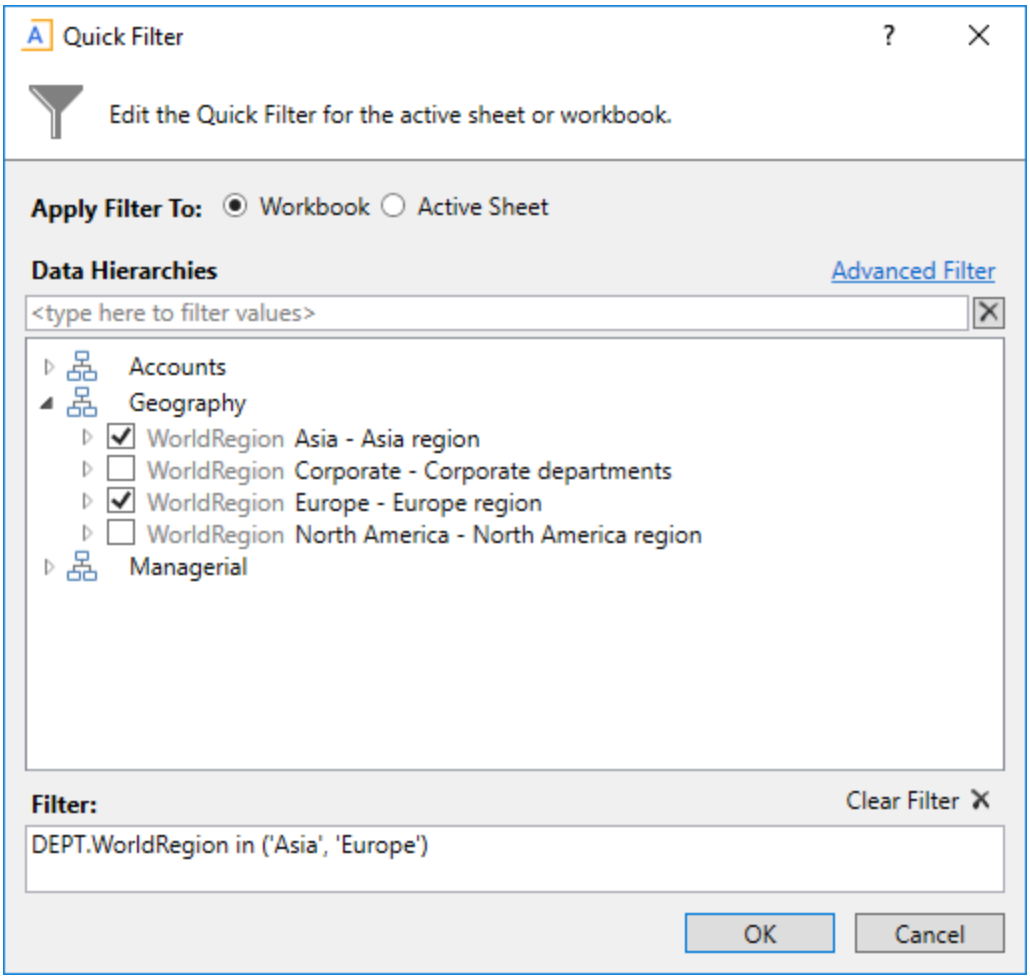
When you use hierarchies to create a Quick Filter, Axiom Rolling Forecasting automatically creates the filter based on your selections. When only one item it selected, the filter is simple—only data that matches the selected item is included. For example, if you select Asia from a Geography hierarchy, you will get a filter something like: `Dept.WorldRegion='Asia'`.



Simple Quick Filter

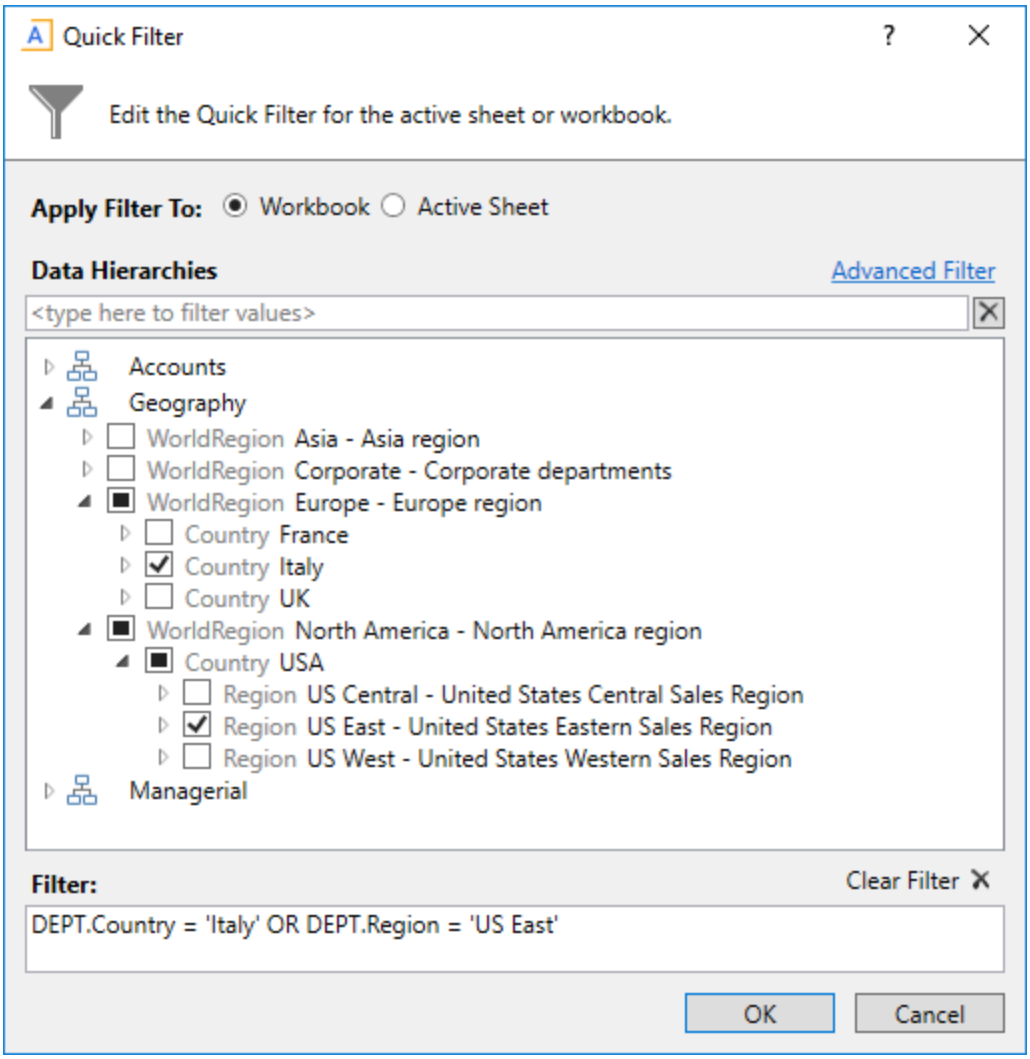
NOTE: Sometimes when you select a single "child" item underneath a "parent" item, the child and parent will be joined with AND. For example: `DEPT.VP='Jones' AND DEPT.Manager='Smith'`. This means that the DEPT table has other instances of Manager Smith that belong to different VPs, so the compound statement is to ensure that you only get the data where Manager Smith is under VP Jones. (You can manually edit the filter to remove the Jones portion of the statement if you want to see all data for Manager Smith, regardless of VP). If instead Axiom Rolling Forecasting constructs the filter as just `Dept.Manager='Smith'`, that means all instances of Manager Smith are also under VP Jones.

You can select multiple items in the same hierarchy or from different hierarchies. Items from the same hierarchy are combined using OR, which means data matching any of the selected items is included. Items from different hierarchies are combined using AND, which means only data that matches both selected items is included.



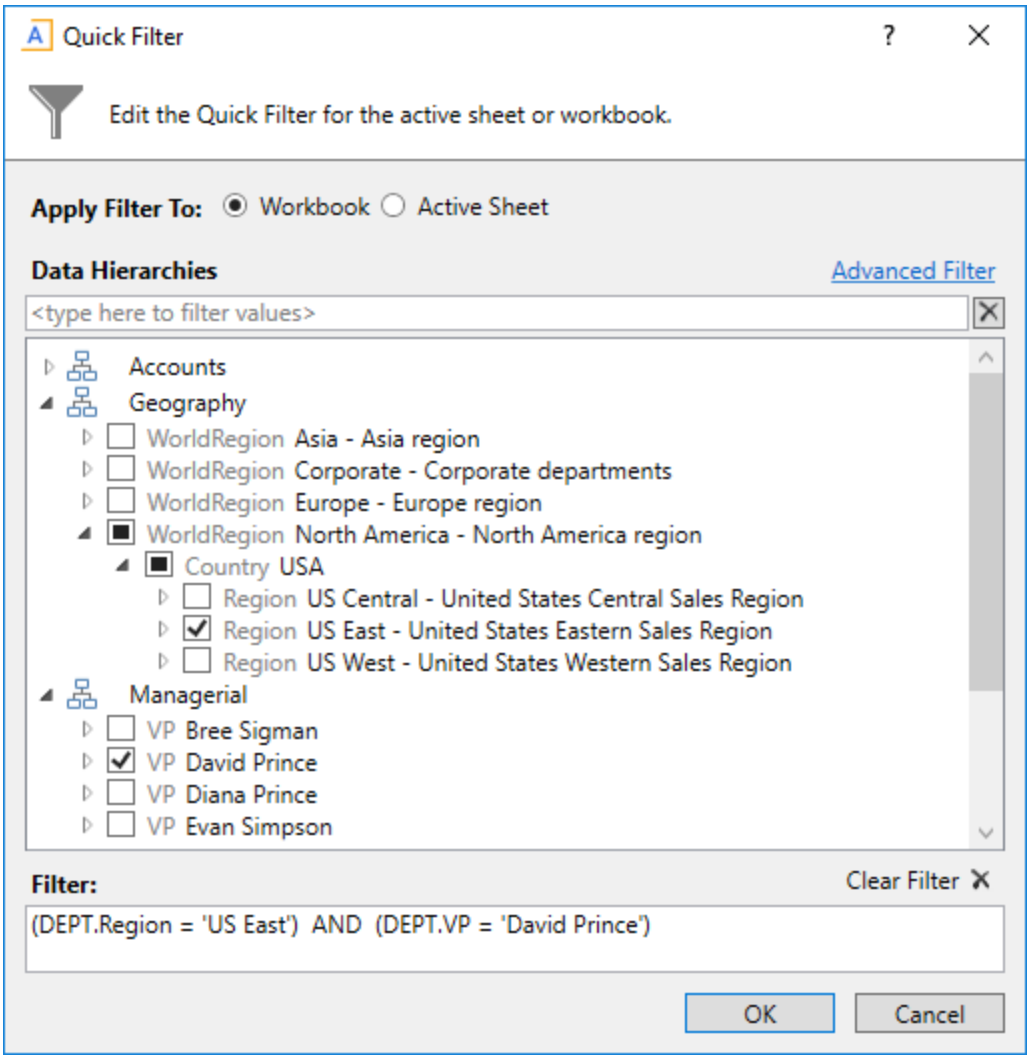
Example 1

In example 1, we have selected two items from the same grouping level in a single hierarchy, so a simple filter criteria statement is created using IN. The resulting filter will include all data from Asia and Europe.



Example 2

In example 2, we have selected two items from different grouping levels, but within the same hierarchy. In this case a compound filter criteria statement is created using OR. The resulting filter will include all data that belongs to either Italy or US East.



Example 3

In example 3, we have selected two items from different hierarchies, so a compound filter criteria statement is created using AND. The resulting filter will include only data that belongs to both US East and VP David Prince.

Working with Report Processing

Some reports support automated processing. If so, the File Processing task pane displays collapsed on the left side of the screen when you open the report.

By using file processing, you can automatically refresh a file, such as a report, and then perform various actions on it. The file can be processed as-is, or you can leverage Multipass processing to cycle through each element of a dimension or grouping, with an appropriate data filter automatically applied to each pass.

You can use processing to perform the following actions:

- **Save snapshot of file** – Create a snapshot copy of the current file, and then save and/or email it.
- **Print** – Print the current file, using one or more print views.
- **Export to delimited text file** – Export data in the current file to a delimited text file, and then save and/or email it.
- **Save data** – Perform a save-to-database from the current file.
- **Alerts** – Process alert conditions defined in the file.
- **File collect** – Combine multiple spreadsheet files into a single file, and then save and/or email it.
- **Batch** – Perform file processing on multiple files in a batch process, including the ability to override certain file processing settings for the file.

One common use for file processing is report distribution, which allows you to automatically deliver report files to multiple recipients. This frequently involves using several different features of file processing, for example:

- Multiple reports configured for snapshot file processing and using Multipass processing. For example, an income statement processed by department, region, or VP, and creating a separate snapshot file for each element.
- A report configured for file collect, to collect all of the snapshots into targeted report packages, including adding things like cover sheets and other supporting information. These packages could be saved to designated file locations and/or emailed to the appropriate recipients.
- A report configured for batch processing to run everything at once. For example, the batch would contain an entry for each report configured for snapshot processing, and then finish with the file collect report.

File processing is set up on a per-file basis. File processing can be set up on any Axiom file, but the primary use case is in reports.

NOTE: To set up a report for processing, some processing actions require set up before they can be performed. For example, to run a file collect process, the report must have a File Collect sheet defined. For more information, see *File Processing* in Axiom Help (**Main** ribbon tab > **Help**).

After the file has been configured to use file processing, you can process it by using **File Output > File Processing**. From this menu, you can choose to **Process File** or **Process File Multipass**. File processing can also be performed using Scheduler and from a task pane.

Processing a report

If a report is set up to use file processing, you can process the report to automatically perform actions such as:

- Save snapshot copies of the file and automatically email them to various recipients
- Export data in the file to a CSV or TXT file

- Save data in the file to the database as part of a multipass process
- Collect multiple output files into a single report package
- Process multiple reports in batch

This topic explains how to process a file that has already been configured for file processing. For details on how to set up a file for file processing, see the *Axiom File Processing Guide*.

NOTES:

- The File Processing menu command and the associated task pane are only available to administrators or to users with the **Allow File Processing** permission for the current file.
- Other file types can be set up to use file processing, but the most common use is in a report.

To process a file using file processing:

1. Open the file. If you want to see what the file is configured to do during file processing before executing it, you can check the settings in the **File Processing** task pane.
2. In the **File Processing** task pane, in the **Actions** section, click one of the following options to start processing:
   - **Process File**: The file is processed once "as is." The file is refreshed and the file processing action is performed. No multipass filter or settings are applied.
   - **Process File Multipass**: The file is processed multiple times, with a unique filter applied for each pass. For example, if the file is set up to process by DEPT, then the file is processed once for each department. The data queries in the file are automatically filtered to return data for the current pass department only.

   TIP: You can also process the file using the **File Processing** menu on the Axiom tab. (In systems with installed products, this feature may be located on the **Main** tab.)

Once file processing is initiated, the following occurs:

- The file is refreshed. If you are performing multipass processing, the file is refreshed using a data filter for the current pass item.
- The file processing action is performed. If you are performing multipass processing, the action may be performed after each pass, or it may be performed once all passes are complete, depending on the file processing settings.

A status bar displays the progress of the file processing. When the processing is complete, a confirmation box displays information about the process, such as how many passes were performed, how many files were created, etc.

Note that the file itself is not saved as part of file processing. You can process a file even if you have read-only rights to the file. However, if the file processing is set up to save to the database, you must have rights to save data for that file.

Using report packages

Report Package files contain snapshots of multiple reports for a given department, account, and so on. Axiom Rolling Forecasting can generate report packages using a batch process, and then automatically save or email each package to its designated recipient (usually the department manager or VP). This is an extremely useful tool that allows you to distribute a given set of reports to your managers or executives on a regular basis.

Before you can generate report packages, you need to configure a file collect package, listing each of the reports to include, along with related settings.

Axiom Rolling Forecasting comes with two pre-defined file collect packages:

Monthly Manager Package – Collects the following reports by department:

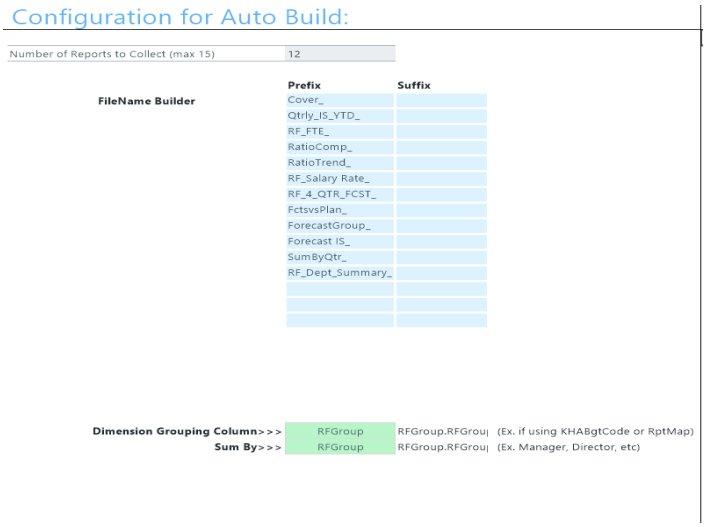
- Accounts Payable
- Accrued Receipts
- Target Variance by Department
- General Ledger Distribution
- Materials Management
- Payroll (JobCode, etc.)
- Revenue & Usage
- Variance Alert

Monthly VP Package – Collects the following reports by department:

- Target Variance Summary
- Target Variance Rollup
- Consolidated Financial Statement
- Department Variance
- Pay Summary
- Statistic Summary
- Variance Overview

Processing file collect packages

There are two sheets used to create the report package: BuildSetup and FileCollect. The BuildSetup sheet lists the reports to include in the package, the Dimension Grouping Column for which reports will be processed, and the Sum By field that the utility references to determine how reports are collected and distributed. For example, VP to group reports into packages for each vice president.



Configuration for Auto Build:

Number of Reports to Collect (max 15)	12		
	Prefix	Suffix	
FileName Builder	Cover_		
	Qtrly_IS_YTD_		
	RF_FTE_		
	RatioComp_		
	RatioTrend_		
	RF_Salary Rate_		
	RF_4_QTR_FCST_		
	FctsvsPlan_		
	ForecastGroup_		
	Forecast IS_		
	SumByQtr_		
	RF_Dept_Summary_		
Dimension Grouping Column>>>	RFGroup	RFGroup.RFGrou	(Ex. if using KHABgtCode or RptMap)
Sum By>>>	RFGroup	RFGroup.RFGrou	(Ex. Manager, Director, etc)

The FileCollect sheet has a column for each package to be generated (continuing with the previous example, a column for each Vice President). Each column in the File Collect Configuration sheet (except the Common Files column) defines a file collect package.

FILE COLLECT CONFIGURATION	15400	17840	17870	
2	.xls .pdf	.xls .pdf	.xls .pdf	.xls .pdf
Package name (Optional)				
Active	On	On	On	On
Manager	Charlie Credit	Patrick Herbert	Pete Augusta	Elsie East
Auto-generate file list	Off	Off	Off	Off
Continue On Error	On	On	On	On
Include common files in package	Off	Off	Off	Off
	File_List	File_List	File_List	File_List
	\\Axiom\Reports Library\Management Reporting U	\\Axiom\Reports Library\Management Reporting U	\\Axiom\Reports Library\Management Reporting U	\\Axiom\Reports Library\Management Repo
	RFCover_15400.xlsx	RFCover_17840.xlsx	RFCover_17870.xlsx	RFCover_17879.xlsx
	Fcst_15400.xlsx	Fcst_17840.xlsx	Fcst_17870.xlsx	Fcst_17879.xlsx
	GL_15400.xlsx	GL_17840.xlsx	GL_17870.xlsx	GL_17879.xlsx
	AP_15400.xlsx	AP_17840.xlsx	AP_17870.xlsx	AP_17879.xlsx
	MM_15400.xlsx	MM_17840.xlsx	MM_17870.xlsx	MM_17879.xlsx
	AR_15400.xlsx	AR_17840.xlsx	AR_17870.xlsx	AR_17879.xlsx
	RU_15400.xlsx	RU_17840.xlsx	RU_17870.xlsx	RU_17879.xlsx
	JC_15400.xlsx	JC_17840.xlsx	JC_17870.xlsx	JC_17879.xlsx
	ID_15400.xlsx	ID_17840.xlsx	ID_17870.xlsx	ID_17879.xlsx

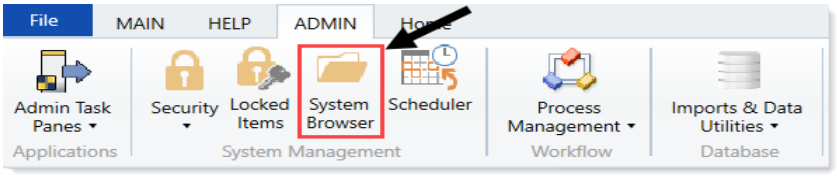
Each package consists of the following:

- An optional name, such as Monthly Report Package.
- A list of source files to be collected into the output file. This list can be hard-coded by manually typing in file names, or you can automatically generate the list by looking up the contents of one or more designated source folders.
- The name and file type of the output file.
- The target folder path, if the output file is to be saved. The file can be saved to a shared network drive or to a folder within the Reports Library.
- Email information, if the output file is to be emailed.

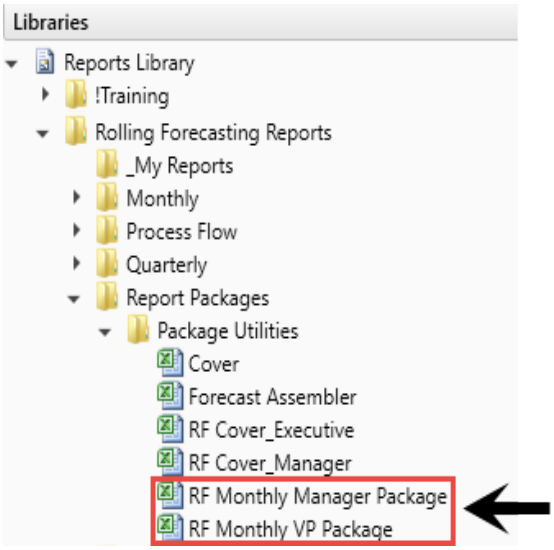
This topic covers creating a file process specific to distributing reports, but there are many other tasks you can perform using this feature. For more information, see **File Processing** in Help (**Main**> **Help**).

To process file collect packages:

1. In the **Admin** ribbon tab, click **System Browser**.

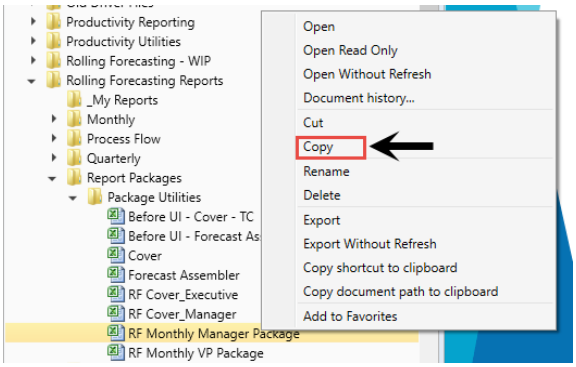


2. In the **Axiom Explorer**, in the **Libraries** section, click **Reports Library > Rolling Forecasting Reports > Report Packages > Package Utilities**.



3. In the list of Report Package utilities, do one of the following:

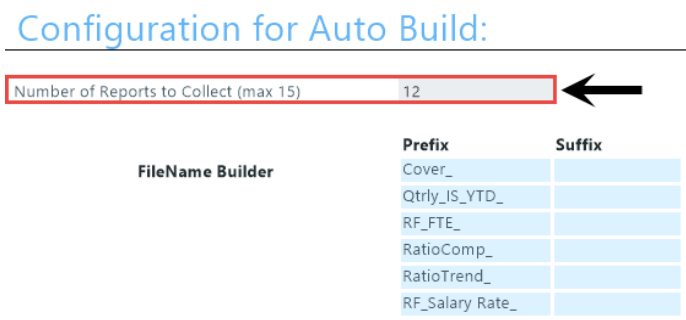
   - To create a new Report Package utility, select a utility to use as the basis for a new utility, right-click it, and select **Copy**. Rename the utility, and double-click it.



   - To configure an existing Report Package utility, double-click it.

4. In the **BuildSetup** tab, the **Number of Reports to Collect (max 15)** field automatically displays the

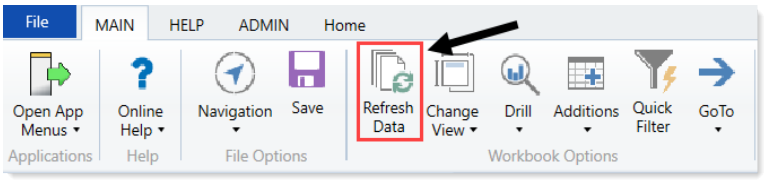
number of reports you enter in the FileName Builder fields.



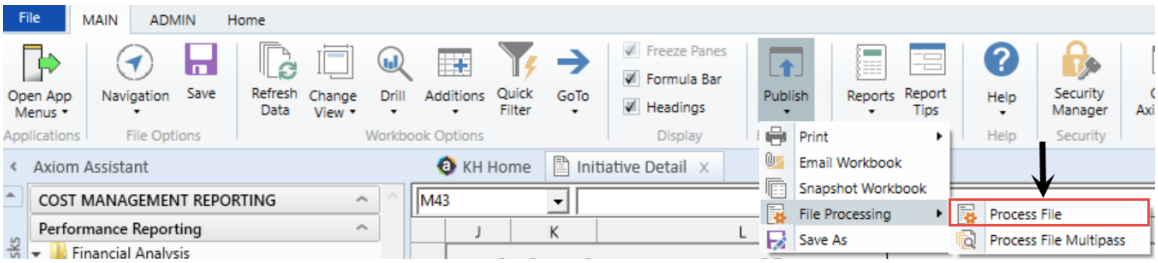
5. In the **FileName Builder** fields, do the following:
   - In the **Prefix** column, type the portion of the file name before the underscore (_).
   - In the **Suffix** column, type the portion of the file name after the underscore.
6. For Axiom Rolling Forecasting, in the **Dimension Grouping Column** field, select the dimension name from the drop-down. For Rolling Forecasting, you will likely use the DEPT dimension for all your reports.
7. In the **Sum By** field, select who to distribute the reports to.
8. In the **FileCollect** tab, complete the appropriate fields.

   NOTE: To see all of the fields, click the plus icon (+) in the furthest left column.

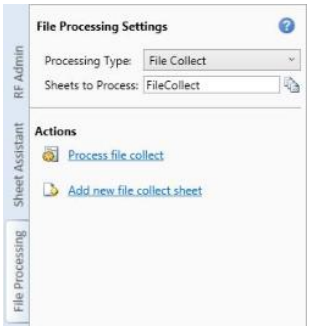
9. To ensure that columns are created for each grouping item (For example, each vice president) in the database, do one of the following:
   - In the **Main** ribbon tab, in the **Workbook Options** group, click **Refresh Data**.



   - Press **F9**.
10. To generate the report package, in the **Main** ribbon tab, in the **File Output** group, click **Publish > File Process > Process File**.



11. To generate report packages, open the **File Processing** task pane, and click **Process file collect**.



Report packages are saved to the folder(s) and emailed to the recipient(s) designated on the FileCollect sheet.

For details on how to design your own report packages, see the **Custom Reporting** section of the Axiom help (**Main > Help**).

Updating the File Collect Configuration Sheet

The File Collect Configuration sheet defines settings for the file collect action of file processing. You can use the first column of the sheet, titled Common Files, to maintain a list of common files to automatically add to each package when processing file collect. You can use each subsequent column in the sheet to define a file collect package.

By default, the sheet contains columns for ten file collect packages. If you need more, you can add them by using the **Add additional package columns** action in the File Processing pane.

You can only add File Collect Configuration sheets to a file that is enabled for file processing and where File Collect has been specified as the processing type. When you initially select the processing type, the system prompts you to add a configuration sheet to the file. You can subsequently add more configuration sheets to the file by using the **Add new file collect sheet** action in the File Processing pane.

When the file collect action is performed, only the configuration sheets listed in the file processing Sheets to Process are processed.

The File Collect Configuration sheet is only visible to administrators or to users with the Allow File Processing permission to the file. Otherwise, it is hidden by default.

General Settings

The following general settings are defined for each package:

Field	Description
Package name	Optional. The name for the file collect package, such as Monthly Report Package.
Active	Specifies whether the package is included when the file is processed (On/Off). By default, this is set to **Off**.

Email Settings

These settings only apply if **Save or email generated files** is set to **Email File** or **Save File and Send Email**.

Field	Description
Email to list	The email addresses to include on the To line of the email. Separate multiple addresses with a semicolon.
Email CC list	The email addresses to include on the CC line of the email. Separate multiple addresses with a semicolon.
Email from	The email address to include on the From line of the email.
Subject text	The subject line of the email.
Body text	The body text of the email.
Message priority	The priority of the message, either **Normal** (default) or **Urgent**.
Attach file to email	Specifies whether the output file is attached to the email. By default, this is set to On. You can set this to Off to exclude the output file from the email. For example, you might want to save the file to a network location and then send an email to recipients to let them know the file is available for viewing, without attaching the file to the email.

Source Folder Settings

To automatically generate the file list for a package, you must specify one or more source folders. By default, each package has settings for two source folders. If you need more source folders, use the **Add new source folder** section action in the File Processing pane.

Source folders are only used when **Refresh file list** is set to **On**.

Field	Description
File source (Axiom of Local)	Specifies the location of the source folder or folders: • **Local File System:** The source folders are located outside of Axiom Software—on a shared network drive or on your local machine. • **Axiom Repository:** The source folders are located in the Axiom Software file system, within the Reports Library. This setting applies to all source folders for this package.
Source folder path	The path to the desired source folder. This folder contains the source files that you want to include in the file collect operation. What you enter here depends on the file source. **Local File System**: The path should be entered as a UNC path. For example: \\ServerName\Reports\MonthlyReports If you use a folder on your local drive, it will only be valid when running file processing interactively from your own computer. If you want to process this file using Scheduler, the output folder should be a shared network drive. **Axiom Repository**: Specify the full path to the folder within the Reports Library. For example: \Axiom\Reports Library\File_Processing To browse to the desired location, right-click this cell and select **Select Reports Library Folder**. In the **Choose Folder** dialog, select the desired folder, and click **OK**.
File filter list	Optional. File filter(s) to specify which files in the source folder to add to the file list. Only Excel files can be collected (XLS, XLSX, or XLSM). If the filter is left blank, then Axiom Software will include all valid files in the folder. You can use wildcard characters (* or ?) to include groups of files that share naming conventions. For example: North*.xls to collect all XLS files where the file name starts with "North". You can also exclude files using the ! operator—such as !*Branch* to exclude all files that contain the word "Branch". If only exclusion filters are used, then it is assumed that all files are included except those that match the exclusion filters. If inclusion filters are used, then only the files that match the inclusion filters are included (minus any files that also match any exclusion filters). Separate multiple filters with commas. For example, the following filter would include XLS files and XLSX files, but exclude XLSM files: *.xls, *.xlsx

Output File Settings

These settings define the output file to crate for the package. The output file is the file that contains the

collected results of the source files.

Only one output file can be created for each package, saved to a single location.

Field	Description
Output location (local file or Axiom)	The location for the output file, either: **Local File System** (default): The output location is outside of Axiom, to either your local computer or a network share. The specific path is detailed in the **Output Folder** setting. Access to output files is not controlled by Axiom Software. **Axiom Repository**: The output location is the Axiom file system, within the Reports Library. The specific path is detailed in the **Output Folder** setting. Access to output files is controlled by security access to the designated folder within Axiom.

Field	Description
Output folder path	The folder location in which to save the output file. This setting only applies if **Save or Email Generated Files** is set to **Save File** or **Save File and Send Email**. **Local File System**: The path should be entered as a UNC path. For example: \\ServerName\Reports\ReportPackages If you use a folder on your local drive, it will only be valid when running file processing interactively from your own computer. If you want to process this file using Scheduler, the output folder should be a shared network drive. The ability to save the output file to the specified location and to create a new folder (if necessary) depends on the network permissions for the user processing file collect. Access to the file after it is created is also dependent your network permissions. **Axiom Repository**: The specified location in the Axiom file system must be within the Reports Library, and the location must use the full path (meaning: \Axiom\Reports Library\...). To browse to the desired location, right-click this cell, and select **Select Reports Library Folder**. In the **Choose Folder** dialog, select the desired folder, and click **OK**. The ability to save the output file to the specified location and to create a new folder (if necessary) depends on the Axiom Software security permissions for the user processing file collect. Users can only create a new folder if they have read/write permissions to the parent folder, and they can only create a new file if they have read/write permissions to the target folder. After the file is created within the Axiom file system, access to the output file is dependent on the user's permissions to the output folder. Typically you should create the output folder in advance (or if you want to create output folders on-the-fly, create a parent folder to hold the output folders), and then set permissions for that folder as appropriate in Axiom Software security, so that the appropriate users can access the file after it is created.
Output file name (no extension)	The name of the output file, without a file extension. For example, enter MonthlyReports (not MonthlyReports.xlsx).
Output file type	The file type of the output file: **XLS**, **XLSX**, **XLSM**, or **PDF**.

Field	Description
Save or email generated files	Specifies the action to take after the output file has been created: • **Save File**: The output file is saved to the output folder path. • **Email File**: The output file is emailed to the specified recipients. • **Save File** and **Send Email**: The output file is saved and emailed. To save the file to a folder and then send a notification email to recipients (without attaching the file to the email), then **select Save File and Send Email**. In the email settings, set **Attach file to email** to **Off**.
Open output file after collect	Specifies whether to open the resulting output file once the file collect process is complete (**On**/**Off**). By default, this option is set to **Off**. If set to **On**, then the output folder path setting is optional. If a folder path is defined, then the file is saved as normal and then opened in Axiom Software. If a folder path is not defined, then the file is opened as a temporary file, and you must manually save it if you want to retain it. Keep in mind that if this option is enabled for multiple packages, and/or if the output files are very large, the process of opening files after collection may slow the system.

File List Settings

These settings impact the file list for the package.

Field	Description
Auto-generate file list	Specifies whether the file list for the package is automatically generated: • If **On** (default), then the file list is automatically generated based on the source folder settings defined for the package. The auto-generation occurs when the file lists are refreshed manually, and whenever file collect is processed. Any existing content in the file list is cleared when the list is auto-generated. • If **Off**, then the file list is not automatically-generated. Only the files that are currently listed in the column will be included when processed.

Field	Description
Continue on error	Specifies whether the file collect process will continue or cancel if an error occurs that relates to the source files or the file list—for example, if a listed file is missing. • If **On**, then errors will be ignored and the file collect process will continue. Errors will be listed in the confirmation dialog shown at the end of the process. • If **Off** (default), then any errors will cancel the process. This setting should be set to On if you want packages to be created even if some or all of the source files cannot be found.
Include common files in package	Specifies whether common files are included in the package: • If **On** (default), then when file collect is processed, any files listed in the Common Files column will be added to the beginning of the package. If the Common Files column uses auto-generation to create its file list, that auto-generation will occur before any of the packages are processed. • If **Off**, then common files are ignored and will not be added to the package.

File List

The file list section contains the list of source files to be collected within the output file. This list can be generated automatically (using the source folder settings), or it can be created manually.

When File Collect processes the file list and collects the contents of each file into the collect package, it takes a snapshot of each file. The result of each snapshot is the same as if you had manually snapshot the file and selected to **Retain Excel Native Formulas** while including **All Sheets in File**. The snapshot version of the file is what gets included in the collect package.

Understanding file output options

Axiom Rolling Forecasting provides a variety of file output options to share data with people throughout your organization. This section explains the file setup to use these features.

- **Print view setup**: You can set up one or more custom print views for each sheet in an Axiom file. You can associate these print views with sheet views to automatically hide and/or format rows and columns in the print copy.
- **Snapshot setup**: Users can take snapshot copies of Axiom files without requiring any advance setup. However, if desired, you can flag certain rows and columns in the sheet to be deleted in the snapshot copy. The primary use for this would be to delete work areas or Axiom query artifacts that are no longer necessary in the snapshot copy.

Printing an Axiom file

You can print a spreadsheet Axiom file on a per sheet basis. You can decide to print one or more sheets, or all available sheets.

Each sheet can have one or more defined print views. The print views can be used to print different "views" of the sheet, and to set certain standard print options such as the print orientation. For example, for a plan file, you might have one print view that prints a "summary" view of the sheet (with certain columns and rows hidden for printing), and another print view that prints a "detail" view of the sheet (with all columns and rows visible).

If a sheet has no predefined print views, then the sheet can be printed using the settings defined for the spreadsheet using standard Excel printing features. For more information on defining print settings for a spreadsheet, see the Microsoft Excel Help. In the Windows Client, the spreadsheet print settings are defined in the Workbook Explorer, in the **Page Setup** section for each sheet.

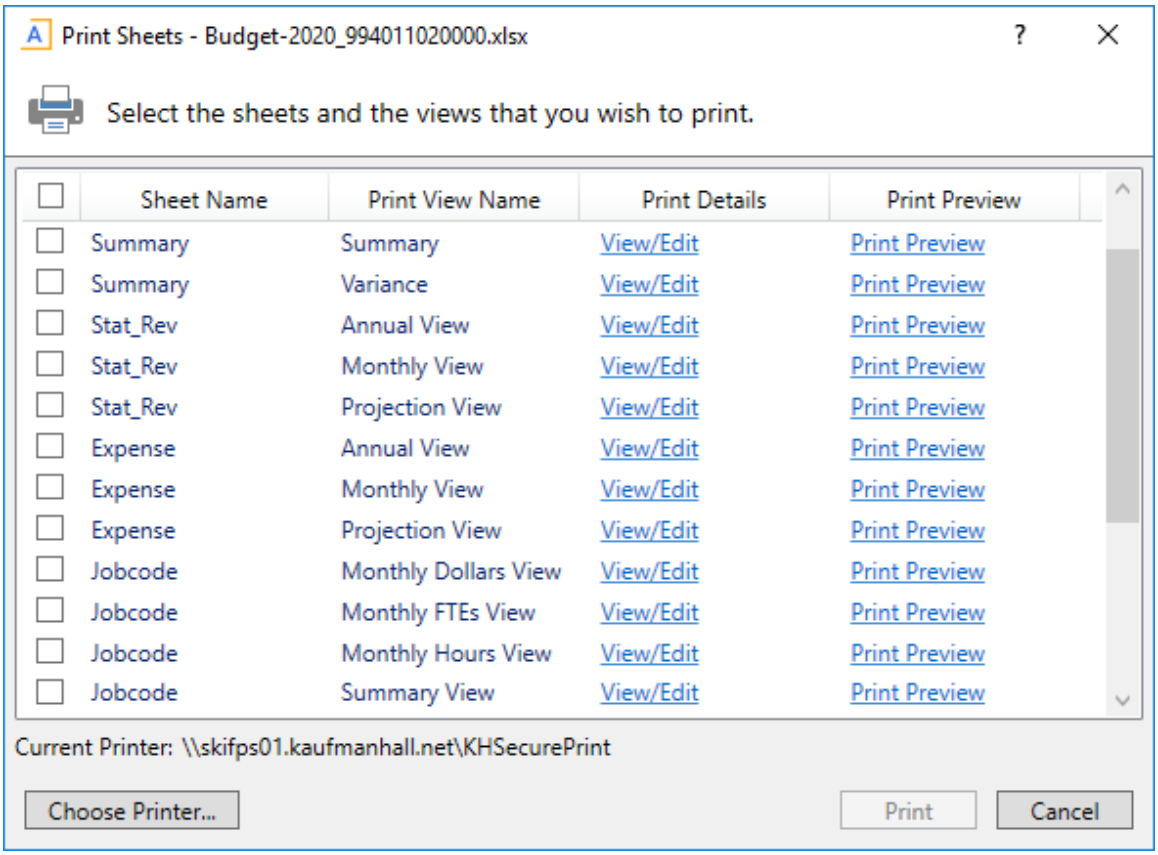
NOTE: You can always print the file using standard spreadsheet print functionality, even if Axiom Rolling Forecasting print views have been defined.

To print an Axiom file:

1. On the **Axiom** tab, in the **File Output** group, select one of the following:
    - If you want to be able to select print views from all sheets in the workbook, click **Print**.
    - If you want to print only the current sheet, then click the arrow to the right of the **Print** button, and then click **Print This Sheet**.

    NOTE: In systems with installed products, this feature may be located on the **Main** tab—either directly on the ribbon or under **Publish**.

    The **Print Sheets** dialog opens. This dialog lists the available print views for the entire workbook or for the current sheet, depending on how you entered the dialog. To sort this list by the Sheet Name or Print View Name, click the column header.



Example Print Sheets dialog

NOTES:

- If a sheet does not have a defined print view, then it is listed with a print view name of "Default," and will use the print settings defined for the spreadsheet.
- Control Sheets cannot be printed using the Axiom Rolling Forecasting printing feature, whether they are visible or hidden. If you want to print a Control Sheet, use the standard spreadsheet printing features.

2. In the **Print Sheets** dialog, select the sheet / print view combinations that you want to print.

   If you want to print all print views for all sheets, then select the check box in the column header to select all.

   If you opened this dialog by using **Print This Sheet** and the sheet has only one available print view, then that view is selected by default.

3. You can also do any of the following before printing:
   - **View and edit the print settings.** If you want to view and potentially change the print settings for a selected view, click the **View/Edit** link. In the **Print Options** dialog, you can

change any of the print settings, for the current print job only (the changes are not saved in the file).

- **Preview a print view.** If you want to preview a print view, click the **Print Preview** link. The native spreadsheet Print Preview feature will open to preview the print job. Only one view can be previewed at a time.
- **Select a printer.** If you want to print to a different printer than your default printer, click **Choose Printer** at the bottom of the dialog. In the **Printer Setup** dialog, select the printer that you want to use, and then click **OK**.

  NOTE: In the Windows Client, the printer is always your default printer unless you change it for a particular print job. In the Excel Client, the printer starts as your default printer, but if you change the printer for a print job, the changed selection will be remembered for any future print jobs in the current session.

4. Click **Print**.

The selected items are printed.

Print Options dialog

The **Print Options** dialog displays the print settings for the current print view. If desired, you can edit settings for the current print job only. Any changes made will not be saved in the file.

NOTE: Print options are read-only when using the **Print Plan Files** option to print multiple plan files.

This dialog displays all of the settings that will be applied to the print job, whether the setting is defined in the associated Print tag or inherited from the spreadsheet settings. If a setting is blank, then that print option is not defined and will not be applied to the print job.

Print View Options

Item	Description
Print View Name	The name of the current print view.
View Name	The name of the sheet view to be applied when printing. These are the same sheet views that are available from the **Change View** menu. For example, if the sheet view is configured to hide columns or rows, those columns and rows will be hidden in the print copy. Row and column sizing is also applied.
Paper Size	The paper size for the print job, either **Letter** or **Legal**.
Orientation	The print orientation for the print view, either **Portrait** or **Landscape**.
Repeat Rows	The rows to repeat at the top of the page. Rows must be specified as a range; for example: `1:3`.

Item	Description
Repeat Columns	The columns to repeat at the left of the page. Columns must be specified as a range; for example: `A:C`.

Scaling

Item	Description
Fit To Pages Wide	The number of pages on which to fit the print area. For example, if you want the print area to fit on one page, specify 1.
Percent Zoom	The percent zoom to apply to the print range. Specify the number without a percent sign. For example, to zoom by 90%, specify 90.

Headers and Footers

Item	Description
Left Header	Header text to display in the left-hand side of the header.
Center Header	Header text to display in the center of the header.
Right Header	Header text to display in the right-hand side of the header.
Left Footer	Footer text to display in the left-hand side of the footer.
Center Footer	Footer text to display in the center of the footer.
Right Footer	Footer text to display in the right of the footer.

Printing multiple plan files

You can print multiple plan files in batch by using the **Print Plan Files** feature. You can select multiple plan files within a file group, and then select one or more print views for each plan file. The available print views for each plan file are based on the template that was used to create the plan file.

To print multiple plan files from a file group:

1. On the **Axiom** tab, in the **File Output** group, click the down arrow to the right of the **Print** button, and then click **Print Plan Files**.

   NOTE: In systems with installed products, this feature may be located on the **Main** tab—either directly on the ribbon or under **Publish**.

   TIP: If you have access to the file group menu for a file group, then you can access **Print Plan Files** from the file group menu. In this case, the current file group is pre-selected in the dialog.

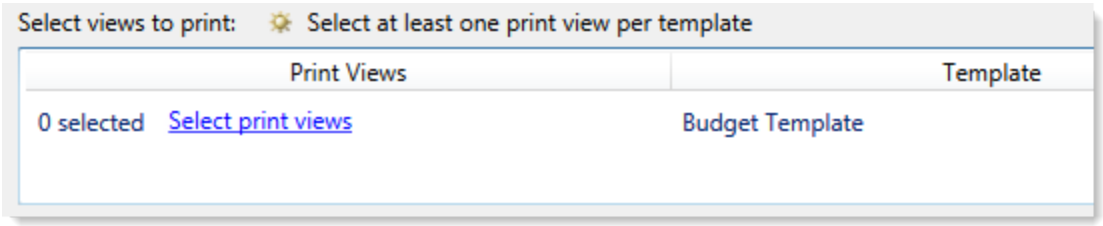
2. In the **Print Plan Files** dialog, use the **File Group** list to select the file group that contains the plan files that you want to print.

Only one file group can be printed at a time. Once a file group is selected, the dialog displays a list of the available plan files.

3. In the **Select plan files to print** section, select the plan files that you want to print.
    - You can sort and filter the list using standard Axiom grid functionality to find the plan files that you want to print.
    - To select multiple plan files at once, highlight the plan files, and then right-click and select **Select**. If you want to print all plan files that currently display in the dialog, select the check box in the header row.

    Once at least one plan file has been selected, you can select which print views to print.

4. In the **Select views to print** section (at the bottom of the dialog), select the views that you want to print. You must do this for each source template used for the selected plan files.



    - Click the **Select print views** link.
    - In the **Select Print Views** dialog, select the sheet / print view combinations that you would like to print, and then click **OK**.

      If you want to see the settings that will be applied to the print job, click the **View** link. Print settings are read-only in this context.

      NOTE: All template sheets are listed in this context (except for Control Sheets), including sheets that you may not normally see in plan files because they are hidden. If you select a sheet that is hidden in one of the selected plan files, it will not be printed. A message will inform you of the unprinted sheet when the printing process is complete.

    - Repeat this process for each source template.

    If all of the selected plan files were built using the same template, then there will be only one template listed. If the selected plan files were built using multiple templates, then multiple templates will be listed. The print selections for each template will only apply to the plan files that were built using that template.

5. If you want to print to a different printer than your default printer, click **Choose Printer** at the bottom of the dialog. In the **Printer Setup** dialog, select the printer that you want to use, and then click **OK**.

> **NOTE:** In the Windows Client, the printer is always your default printer unless you change it for a particular print job. In the Excel Client, the printer starts as your default printer, but if you change the printer for a print job, the changed selection will be remembered for any future print jobs in the current session.

6. Click **Print**.

The selected plan files are printed, using the print view selections.

If a selected print view is not found in a target plan file, a message displays at the end of the process, listing the affected plan file and the relevant sheet / print view. This may occur if the print views in either the template or the plan file have been modified after plan file creation.

Taking a snapshot copy of an Axiom file

You can take a "snapshot" of a spreadsheet Axiom file, so that you can save a copy as a normal Excel file and then open it in Microsoft Excel (without needing Axiom Rolling Forecasting). For example, you may want to send a copy of a report to someone that does not have access to Axiom Rolling Forecasting.

When you create a snapshot of an Axiom file, the file is copied as an XLSX file, and the following occurs:

- All Control Sheets and any hidden sheets are automatically removed. You can choose whether to include all remaining sheets, or only the active sheet.
- All Axiom formulas are replaced with values. You can choose whether to retain Excel formulas, or replace them with values. If Excel formulas are preserved, certain formulas will be replaced with values if they reference sheets or cells that are deleted as part of the snapshot processing.
- Rows and columns flagged for delete are deleted.

Due to the file format, any VBA macros in the file are also removed.

To take a snapshot of an Axiom file:

1. Open the file in Axiom Rolling Forecasting.
2. On the **Axiom** tab, in the **File Output** group, click **Snapshot**.

   > **NOTE:** In systems with installed products, this feature may be located on the **Main** tab—either directly on the ribbon or under **Publish**.

   The **Snapshot File** dialog opens.
3. In the **Formula Replacements** section, select one of the following:
   - **Convert All Formulas** (default): All formulas are replaced with values.
   - **Retain Excel Native Formulas**: All Excel formulas in the spreadsheet will be retained as is, with one exception. If a cross-sheet formula references a sheet that will not be present in

the snapshot (depending on the **Sheets To Snapshot** setting), that formula will be replaced with values.

> **NOTE:** If the file contains a pivot table, this option must be selected in order for the pivot table to work in the snapshot copy.

4. In the **Sheets to Snapshot** section, select one of the following:
   - **Limit to Active Sheet** (default): Include only the active sheet in the snapshot.
   - **All Sheets In File**: Include all sheets in the file (except any Control Sheets and hidden sheets, which are always removed).
5. Click **OK**.

The snapshot file is created and is opened in Axiom Rolling Forecasting. The navigation tab for the file is titled either ***Sheetname*_snapshot** (if the snapshot contains only one sheet) or ***FileName*_snapshot** (if the snapshot has multiple sheets). You can now use **Save As** features to save the file locally or to a network location.

> **NOTE:** If you are using the Excel Client and you want to save a copy of the snapshot as a PDF file, you can use standard Excel functionality to do so. Use **File > Save As**, and then select PDF as the file type. This is an Excel-specific feature that is not available in the Windows Client.

If you want to email a snapshot to someone directly, you can use the **E-Mail Workbook** feature. This creates a snapshot and attaches it to an email (instead of opening it in Axiom Rolling Forecasting).

Emailing a snapshot of an Axiom file

You can email a snapshot of a spreadsheet Axiom file using the **E-mail** feature. Axiom Rolling Forecasting creates a snapshot copy of the file and attaches it to an email. The copy can then be viewed outside of Axiom Rolling Forecasting by someone who may have no access to the system. When you use this feature, Axiom Rolling Forecasting creates a snapshot copy of the file just like it would if you used the **Snapshot** feature.

The email can be sent using your default email client (such as Microsoft Outlook), or you can send the file using the Axiom Rolling Forecasting Scheduler email service. Note that the Scheduler email service does not support HTML format for email.

NOTES:

- The name of the emailed file is either ***Sheetname*_snapshot** (if the snapshot contains only one sheet) or ***FileName*_snapshot** (if the snapshot has multiple sheets). The name cannot be changed.
- You can also email snapshot copies using the File Processing feature. File processing is typically used when you want to automate the process and employ multipass processing to send the same file to different people using different data. The E-mail feature is best used to send "one-off" snapshots as needed.

To email a snapshot copy of an Axiom file:

1. Open the file in Axiom Rolling Forecasting.
2. On the **Axiom** tab, in the **File Output** group, select **E-mail**.

   NOTE: In systems with installed products, this feature may be located on the **Main** tab—either directly on the ribbon or under **Publish**.

   The **E-mail Active Workbook** dialog opens.
3. For **Send As**, select **Snapshot**.
4. For **Send using**, select one of the following:
   - **Outlook**: Send the email using the default email client on your local machine (for example, Microsoft Outlook). The name of this option may be customized for your organization.
   - **Axiom Mail Service**: Send the email using the Axiom Rolling Forecasting Scheduler email service.
5. Complete the following **Snapshot Options** in the dialog:

Option	Description
Send file as	Select **XLS**, **XLSX**, **XLSM**, or **PDF**. XLSX is selected by default.
Include	Select one of the following: • **Entire Workbook**: All sheets are included in the snapshot (except Control Sheets and hidden sheets, which are always removed). • **Active Worksheet Only** (default): Only the active worksheet is included in the snapshot.

Option	Description
Formulas	• **Convert All Formulas** (default): All formulas are converted to values. • **Retain Excel Native Formulas**: Axiom formulas are converted to values, but Excel formulas are left as is. Note that if an Excel formula references a sheet that is not included in the snapshot, that formula will be converted to a value. **NOTE:** If the file contains a pivot table, this option must be selected in order for the pivot table to work in the snapshot copy. This option does not apply if PDF is the selected file type.

6. Click **OK**.

If you selected to send the file using your default email client, then a new email message opens, with the snapshot file attached. You can then specify the recipient, subject, and body text for the email, and then send it.

If you selected to send the file using the Axiom mail service, then an **E-Mail** dialog opens so that you can specify the recipient, subject, and body text for the email. In the address boxes (**To**, **Cc**, and **BCC**), you can either type an email address, or click the button to select an Axiom Rolling Forecasting user. If you select a user, the email will be sent using the user's email address as defined in Axiom Rolling Forecasting security. When you click **OK**, the email settings are saved to the database, to be sent the next time the Scheduler SMTP Email Delivery task is run.

Emailing a hyperlink to an Axiom file

You can email a hyperlink to a spreadsheet Axiom file using the **E-mail** feature. Axiom Rolling Forecasting creates a URL hyperlink to the file and includes it in an email. The email recipient can click on the link to launch the system and open the file directly, assuming that the recipient is an Axiom Rolling Forecasting user who has rights to access the file.

The email can be sent using your default email client (such as Microsoft Outlook), or you can send the file using the Axiom Rolling Forecasting Scheduler email service. Note that the Scheduler email service does not support HTML format for email.

NOTES:

- Alternatively, you can obtain a URL to an Axiom file using a variety of ways and then paste it into an email that you create manually. For example, you can use GetDocumentHyperlink or right-click a file in Axiom Explorer to obtain a URL. The email hyperlink feature is provided as a convenience to quickly send a hyperlink to the current file.
- The email hyperlink feature cannot be used to send a hyperlink to open a form-enabled file as an Axiom form; the source file will always be opened as a spreadsheet.
- The hyperlink included in the email uses the same format as hyperlinks generated using GetDocumentHyperlink, including the differing URL format for systems using SAML or OpenID Authentication.

To email a hyperlink to an Axiom file:

1. Open the file in Axiom Rolling Forecasting.
2. On the **Axiom** tab, in the **File Output** group, select **E-mail**.

   NOTE: In systems with installed products, this feature may be located on the **Main** tab—either directly on the ribbon or under **Publish**.

   The **E-mail Active Workbook** dialog opens.
3. For **Send As**, select **Document Link**.
4. For **Send using**, select one of the following:
   - **Outlook**: Send the email using the default email client on your local machine (for example, Microsoft Outlook). The name of this option may be customized for your organization.
   - **Axiom Mail Service**: Send the email using the Axiom Rolling Forecasting Scheduler email service.
5. Optional. Complete the **Document Link Options** in the dialog:

Option	Description
Sheet Filter	If desired, enter a filter to apply to the file when it is opened. You can type the filter statement or use the Filter Wizard. The filter is applied like a Quick Filter and affects any data queries in the file. For example, `Dept.Region='West'` means that all data queried will be limited to the West region.

Option	Description
Cell Address	If desired, specify the cell to be made active when the document is opened. For example: `Sheet1!D22` If the specified location would not be in view normally then the file will be scrolled to that location; otherwise the file will open in its default view with the cursor placed at that location.

6. Click **OK**.

If you selected to send the hyperlink using your default email client, then a new email message opens, with the hyperlink included in the body text. You can then specify the recipient, subject, and additional body text for the email, and then send it.

If you selected to send the hyperlink using the Axiom mail service, then an **E-Mail** dialog opens so that you can specify the recipient, subject, and additional body text for the email. In the **To** and **Cc** boxes, you can either type an email address, or click the button to select an Axiom Rolling Forecasting user. If you select a user, the email will be sent using the user's email address as defined in Axiom Rolling Forecasting security. When you click **OK**, the email settings are saved to the database, to be sent the next time the Scheduler SMTP Email Delivery task is run.

9

Working with Axiom Rolling Forecasting Calculators

In addition to viewing data in reports, Axiom Rolling Forecasting includes specialized reports that allow you to calculate data and save it back to the database. In certain circumstances, it may be more appropriate to use a report to save data rather than plan files, driver files, or imports.

Axiom Rolling Forecasting includes the following calculators:

- RF Balance Sheet and Cash Flow – Computes budgeted balance sheet and cash flow based upon selected inputs and assumptions.
- RF Benefits Allocations – Allows you to allocate benefits based on Paid Hours (FTW) or Salaries at the RFCode level to RFGroups on a monthly basis.
- RF Benefits Calculator – Allows you to update the forecasted benefits for your financial database when your accounting practice is to post benefits to one central department within each entity.
- RF Deductions Allocation – Allows you to allocate inpatient deductions, outpatient deductions, other patient deductions, bad debt, and charity based on revenue at the RFCode level to RFGroups on a monthly basis.
- RF Deductions Calculator – Computes contractuals and allowances for the rolling forecast.

Saving data to the database

In addition to viewing data in reports, you can also use reports to calculate data and save data back to the database using our calculators and utilities. In certain circumstances, it may be more appropriate to use a report to save data rather than plan files, driver files, or imports.

If a report has been configured to save to the database, in the **Main** ribbon tab, click **Save** to save data back to the database or alternately, you could process the file on the File Processing tab of the report.

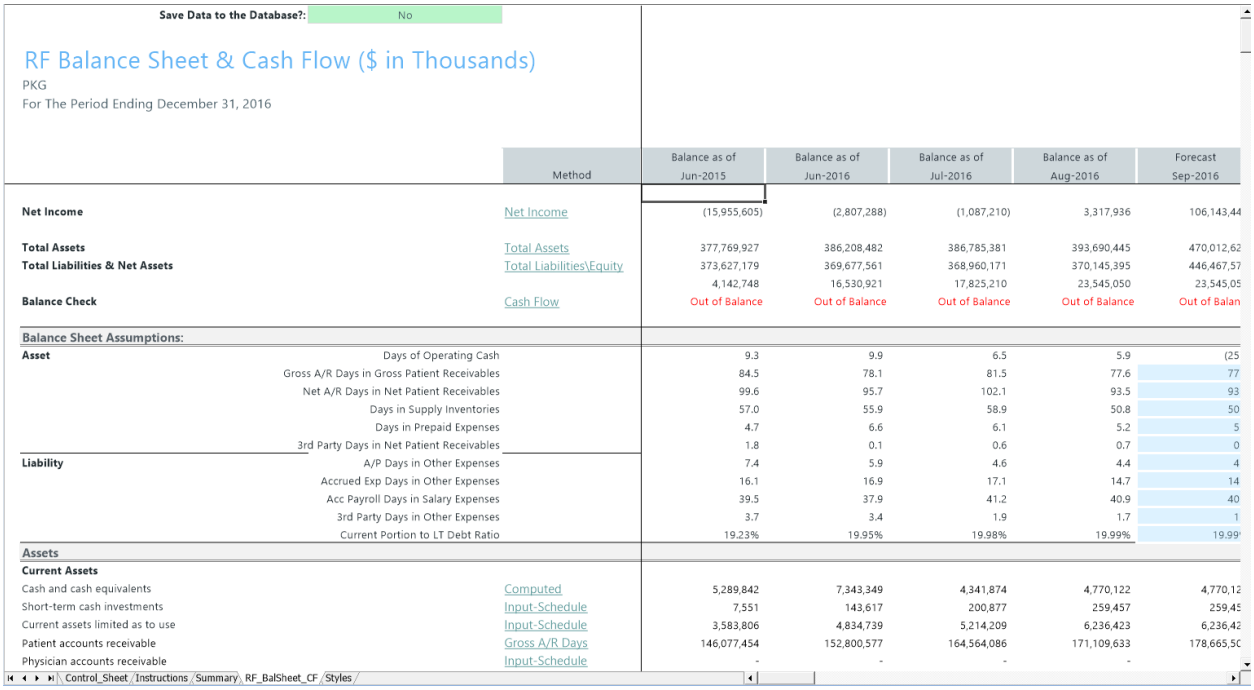
Using the RF Balance Sheet and Cash Flow calculator

The Axiom Rolling Forecasting RF Balance Sheet and Cash Flow calculator does the following:

- Summarizes historical financial statement data for the two previous completed fiscal years plus

YTD for the current year

- Creates a forecast for both the Balance Sheet and Cash Flow using the save-to-database functionality



Save Data to the Database?: No

RF Balance Sheet & Cash Flow ($ in Thousands)

PKG

For The Period Ending December 31, 2016

		Method	Balance as of Jun-2015	Balance as of Jun-2016	Balance as of Jul-2016	Balance as of Aug-2016	Forecast Sep-2016
Net Income		Net Income	(15,955,605)	(2,807,288)	(1,087,210)	3,317,936	106,143,44
Total Assets		Total Assets	377,769,927	386,208,482	386,785,381	393,690,445	470,012,62
Total Liabilities & Net Assets		Total Liabilities\Equity	373,627,179	369,677,561	368,960,171	370,145,395	446,467,57
			4,142,748	16,530,921	17,825,210	23,545,050	23,545,05
Balance Check		Cash Flow	Out of Balance	Out of Balance	Out of Balance	Out of Balance	Out of Balan
Balance Sheet Assumptions:							
Asset	Days of Operating Cash		9.3	9.9	6.5	5.9	(25
	Gross A/R Days in Gross Patient Receivables		84.5	78.1	81.5	77.6	77
	Net A/R Days in Net Patient Receivables		99.6	95.7	102.1	93.5	93
	Days in Supply Inventories		57.0	55.9	58.9	50.8	50
	Days in Prepaid Expenses		4.7	6.6	6.1	5.2	5
	3rd Party Days in Net Patient Receivables		1.8	0.1	0.6	0.7	0
Liability	A/P Days in Other Expenses		7.4	5.9	4.6	4.4	4
	Accrued Exp Days in Other Expenses		16.1	16.9	17.1	14.7	14
	Acc Payroll Days in Salary Expenses		39.5	37.9	41.2	40.9	40
	3rd Party Days in Other Expenses		3.7	3.4	1.9	1.7	1
	Current Portion to LT Debt Ratio		19.23%	19.95%	19.98%	19.99%	19.99
Assets							
Current Assets							
Cash and cash equivalents		Computed	5,289,842	7,343,349	4,341,874	4,770,122	4,770,12
Short-term cash investments		Input-Schedule	7,551	143,617	200,877	259,457	259,45
Current assets limited as to use		Input-Schedule	3,583,806	4,834,739	5,214,209	6,236,423	6,236,42
Patient accounts receivable		Gross A/R Days	146,077,454	152,800,577	164,564,086	171,109,633	178,665,5
Physician accounts receivable		Input-Schedule	-	-	-	-	-

Control_Sheet / Instructions / Summary / RF_BalSheet_CF / Styles /

The Balance Sheet and Cash Flow calculator includes the following sections:

- **Balance Sheet Assumptions** – Key metrics used to drive various balance sheet calculations. Valid entries are listed in the Balance Sheet Assumptions Inputs section.
- **Assets**
- **Liabilities and Net Assets**
- **Detailed Schedules** – Contains rows to input detailed schedules for each category.
- **Statement of Cash Flows**
- **Summary Income Statement**

RFCodes are summarized by balance sheet categories, and the resulting summary data can be posted back to the database for both the Current Year Projection and New Forecast as well as inclusion in all related Forecast Analysis reports. If necessary, you can adjust values for balance sheet categories or enter them directly.

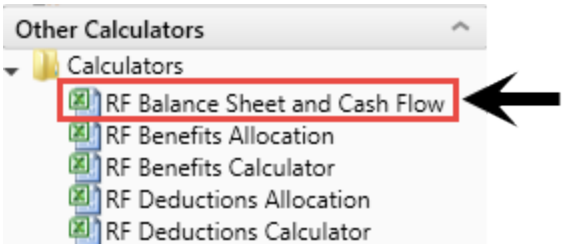
As forecasts and assumptions change, simply refresh the data in the RF Balance Sheet and Cash Flow calculator to update and post newly computed balance sheet information for calculating metrics driven by income statement parameters (assuming the balance sheet assumptions remain unchanged). For more information, see Refreshing a report with data.

The Axiom Rolling Forecasting Balance Sheet report assigns RFCodes to balance sheet categories per the FSSummary, FSDetail, and FPCode grouping columns on the RFCode dimension table.

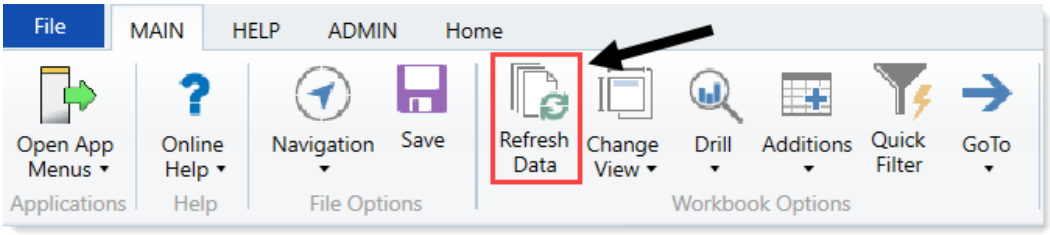
You can filter the report by entity or group, as defined in dimensions by using the Quick Filter feature from the **Main** ribbon tab. For more information, see Applying a Quick Filter to a report.

To use the RF Balance Sheet and Cash Flow calculator:

1. In the RF Admin task pane, in the **Other Calculators** section, click **Calculators**, and double-click **RF Balance Sheet and Cash Flow**.



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



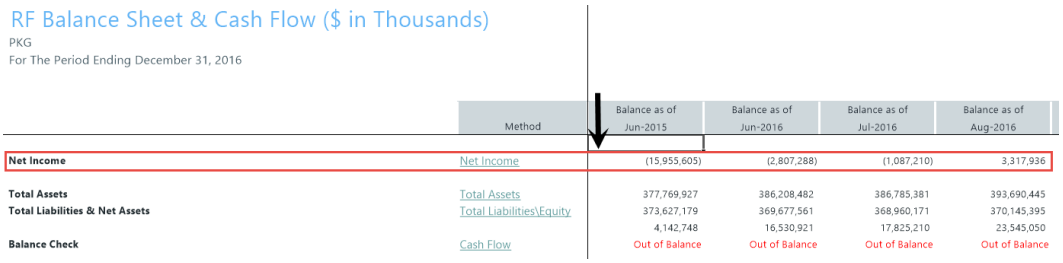
   - Press **F9**.

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

Option	Description
Select 'Yes' to add Net Income to Fund Balance	• To add Net Income, select **Yes**. • To not add Net Income, select **No**.
Choose Inputs view to update save RFCode	• To display all of the data in the calculator, including all of the non-input cells, select **All**. • To display only the input cells, select **Inputs**.
Choose Default Asset Dept	a. Click **Choose Value**. b. In the **Choose Value** dialog, select the default Asset Dept to post results to. c. Click **OK**.

Option	Description
Choose Default Liability Dept	a. Click **Choose Value**. b. In the **Choose Value** dialog, select the default Liability Dept to post results to. c. Click **OK**.
Choose Default Equity Dept	a. Click **Choose Value**. b. In the **Choose Value** dialog, select the default Equity Dept to post results to. c. Click **OK**.

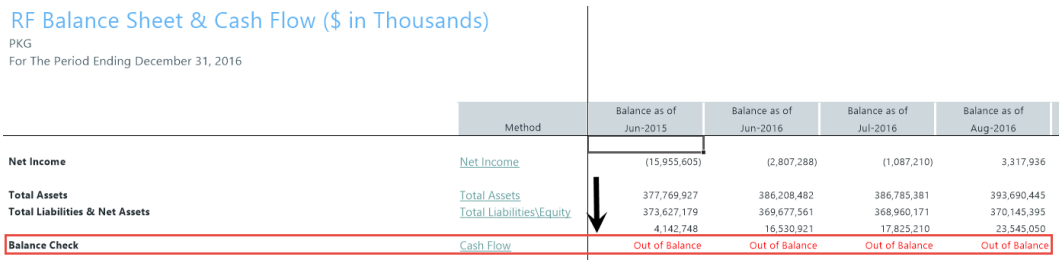
4. In the **Refresh Variables** dialog, click **OK**.
5. After the calculator populates, verify the following:
   - Data in the **Net Income** row at the top of the spreadsheet matches the balance sheet to be prepared.



RF Balance Sheet & Cash Flow ($ in Thousands)
PKG
For The Period Ending December 31, 2016

	Method	Balance as of Jun-2015	Balance as of Jun-2016	Balance as of Jul-2016	Balance as of Aug-2016
Net Income	Net Income	(15,955,605)	(2,807,288)	(1,087,210)	3,317,936
Total Assets	Total Assets	377,769,927	386,208,482	386,785,381	393,690,445
Total Liabilities & Net Assets	Total Liabilities\Equity	373,627,179	369,677,561	368,960,171	370,145,395
		4,142,748	16,530,921	17,825,210	23,545,050
Balance Check	Cash Flow	Out of Balance	Out of Balance	Out of Balance	Out of Balance

   - Historical information for the last six quarters.
   - Review to the **Balance Check** row in the header section to confirm that the model is in balance.



RF Balance Sheet & Cash Flow ($ in Thousands)
PKG
For The Period Ending December 31, 2016

	Method	Balance as of Jun-2015	Balance as of Jun-2016	Balance as of Jul-2016	Balance as of Aug-2016
Net Income	Net Income	(15,955,605)	(2,807,288)	(1,087,210)	3,317,936
Total Assets	Total Assets	377,769,927	386,208,482	386,785,381	393,690,445
Total Liabilities & Net Assets	Total Liabilities\Equity	373,627,179	369,677,561	368,960,171	370,145,395
		4,142,748	16,530,921	17,825,210	23,545,050
Balance Check	Cash Flow	Out of Balance	Out of Balance	Out of Balance	Out of Balance

> **NOTE:** If the model appears to be out of balance, consider refreshing the report and verify that the **Add Net Income to Fund Balance** setting was configured properly per your organization's accounting practice.

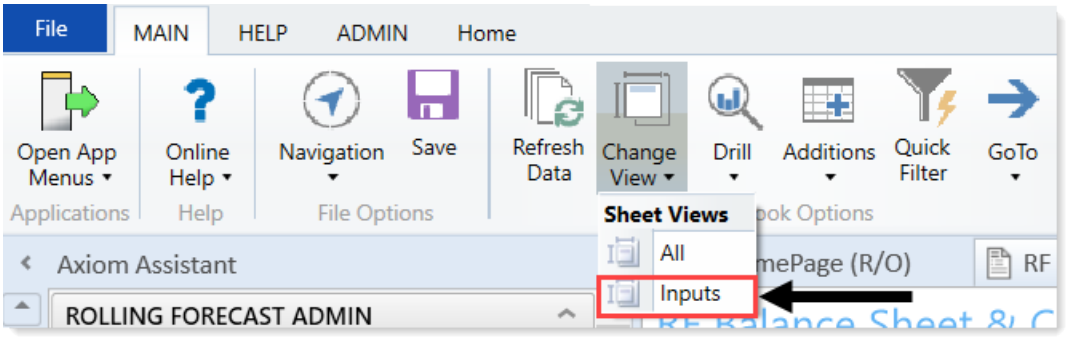
6. In the **RF_BalSheet_CF** tab, make adjustments to the values in any blue cells. After making your

changes, do the following:

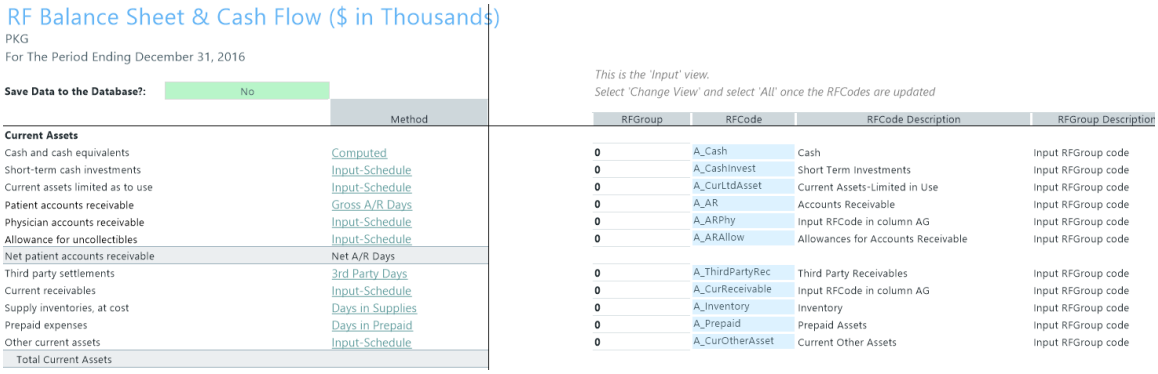
- Review the cash flow statement to make sure it balances to total cash.
- Make sure the summaries match your expectations on the **Summary** tab.

For more information on the asset and equity inputs, see Balance Sheet assumption inputs.

7. To display the inputs view for RFGroup and RFCode, in the **Main** ribbon tab, in the **Workbook Options** group, click **Change View > Inputs**.

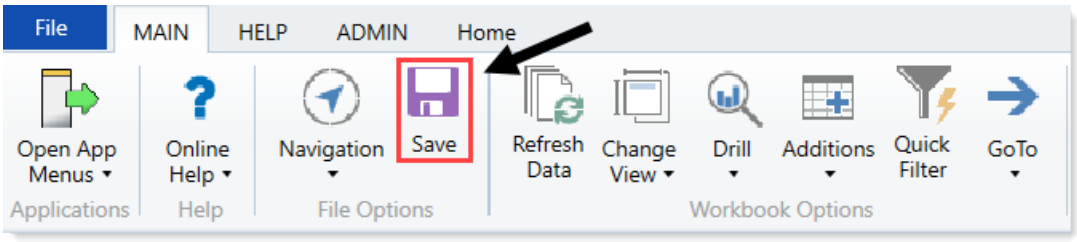


RFGroup will already be assigned per the settings in the refresh variable dialog. You can enter RFCodes in the blue cells for each category.



8. To save the changes back to the database, in the **Save to Database** drop-down at the top of the **RF_BalSheet_CF** tab, do one of the following:
   - To save changes, select **Yes**.
   - To not save changes, select **No** (if it is not already).

9. In the **Main** ribbon tab, click **Save**.



NOTE: To maintain separate models for different entities or groups, from the **Main** ribbon tab, click **Save As**, and save the model as **RF Balance Sheet and Cash Flow_[EntityName]** or **Balance Sheet and Cash Flow_[GroupName]**. If you have eliminating entries, you will need a separate model for these transactions.

Balance Sheet assumption inputs

NOTE: All inputs should be incremental, for example, if you want days in AR to change from 64 to 56, the input is 8 not 56.

Asset Inputs (All inputs should be in whole dollars)

Cash and cash equivalents	Computed through days of operating cash	
Short-term cash investments	Input Schedule	
Current assets limited as to use	Input Schedule	
Patient Accounts Receivable	Computed from Gross A/R Days in gross patient receivables	Configurable sections are netted from the total calculation on the first row.
Physician Accounts Receivable	Input Schedule	
Allowance for Uncollectibles	Calculated from Net A/R Days less Gross receivables	Configurable sections are netted from the total calculation on the first row
Third Party Settlements	Computed from 3rd Party days in Net Patient Receivables	Configurable sections are netted from the total calculation on the first row.
Current Receivables	Input Schedule	

Supply Inventories, at cost	Computed from Days in Supply inventories	Configurable sections are netted from the total calculation on the first row. Driven by total supplies expense from the income statement
Prepaid Expenses	Computed from Days in Prepaid Expenses	Configurable sections are netted from the total calculation on the first row. Driven by total other expenses from the income statement
Other Current Assets	Input Schedule	
Assets Limited as to use – Trusted Assets	Input Schedule	
Assets Limited as to use – Board Designated Investments	Input Schedule	
Assets Limited as to use – Other Assets Balance	Computed	
PPE – Land	Input Schedule	Net Capital Acquisitions Revaluation amount
PPE – Property and Equipment	Input Schedule	Net Capital Acquisitions +\- Revaluation amount
PPE – Accumulated Depreciation	Input Schedule	Depreciation Expense – Automatic flow from Income Statement +\- Disposals
PPE – Construction in Progress	Net Capital Acquisitions	+\- Revaluation amount
Unamortized Financing Fees	Input Schedule	
Amortization of existing fees	Input Schedule	
Investment in subsidiaries	Input Schedule	
Notes Receivable	Input Schedule	

Other Long-Term Assets	Input Schedule	Liability Inputs (All inputs should be in whole dollars)
Line of credit	Calculated	
Current maturity of long-term debt	Input Schedule	Estimates current portion of long-term debt Adjustment of current portion of long-term debt
Accounts Payable	Computed from A\P days in other expenses	Configurable sections are netted from the total calculation on the first row. Driven by total other expenses from the income statement
Accrued Payroll	Computed from Accrued Payroll days in salary expenses	Configurable sections are netted from the total calculation on the first row. Driven by total other expenses from the income statement
Accrued Expenses	Computed from Accrued Expense days in other expenses	Configurable sections are netted from the total calculation on the first row. Driven by total other expenses from the income statement
Third Party Settlements	Computed from 3rd party days in other expenses	Configurable sections are netted from the total calculation on the first row. Driven by total other expenses from the income statement
Other Accrued Liabilities	Input Schedule	
Other Long Term Liabilities 1	Input Schedule	
Other Long Term Liabilities 2	Input Schedule	
Long-Term Debt	Input Schedule	Net new loans Regular principal payments

Equity Inputs (All inputs should be in thousands)

Fund Balance	Input Schedule	Net Income – Computed and included in projection if Instructions tab says **Yes** to include in Fund Balance. Net Income is automatically added to fund balance for budget.
Temporarily restricted net assets	Input Schedule	
Permanently restricted net assets	Input Schedule	

Using the RF Benefits Allocation calculator

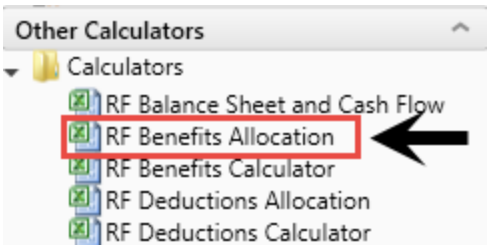
This calculator allows you to allocate benefits based on the Paid Hours (FTEs) or Salaries at the RFCode level to RFGroups on a monthly basis.

The following codes need to exist in the RFCode dimension table:

- D_Alloc_Benefits_FTE
- D_Alloc_Benefits_Salary

To use the RF Benefits Allocation calculator:

1. In the RF Admin task pane, in the **Other Calculators** section, click **Calculators**, and double-click **RF Benefits Allocation**.



2. In the **Refresh Variables** dialog, from the **Select a Filtering Method** drop-down, select how to filter the allocation information, and click **OK**.

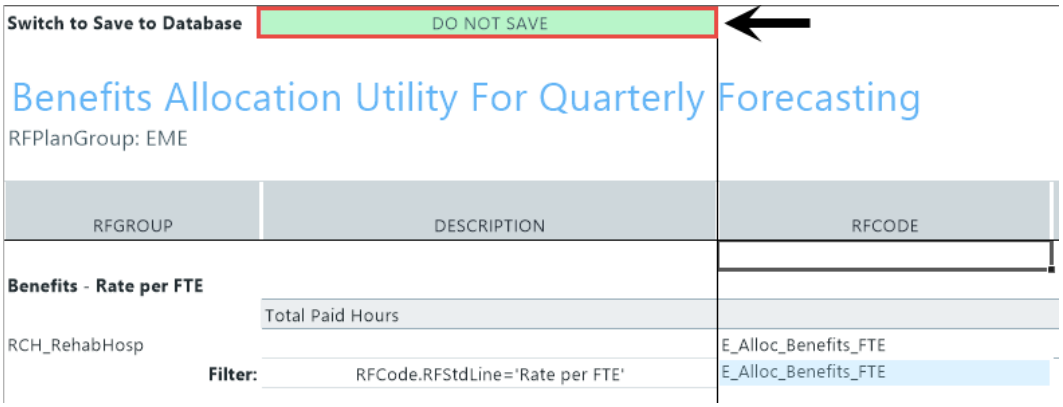
   NOTE: We recommend that you run this calculator by entity so that the benefits specific to that entity are allocated to the department within that entity.

3. In the **Select a *filtering method*** field, click **Choose Value**.
4. In the **Choose Value** dialog, select a value from the selected filtering method, and click **OK**.
5. In the **Refresh Variables** dialog, click **OK**.
6. Do the following:
   - Review the calculations.

- In the blue cells, filter the data.
- In the yellow cells, review the RFCode values for accuracy.

7. Do one of the following:

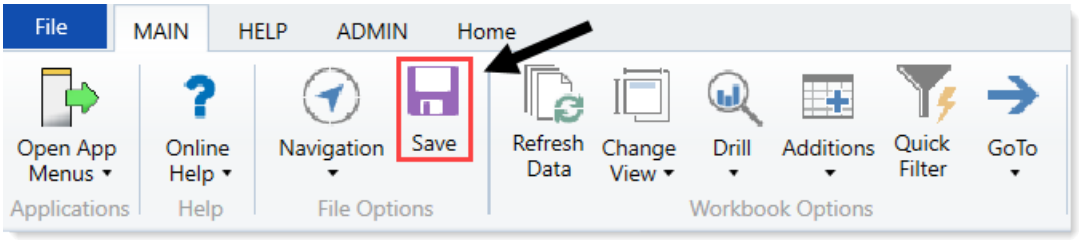
   - If you are satisfied with your changes and you want to post the values to the database, from the **Switch to Save to Database** drop-down at the top of the sheet, select **Save**.



   - If you are not ready to post the values to the database, from the **Switch to Save to Database** drop-down, select **DO NOT SAVE**.

     NOTE: If you select this option and click **Save**, the Axiom Rolling Forecasting saves the files, but does not post the values to the database.

8. In the **Main** ribbon tab, click **Save**.

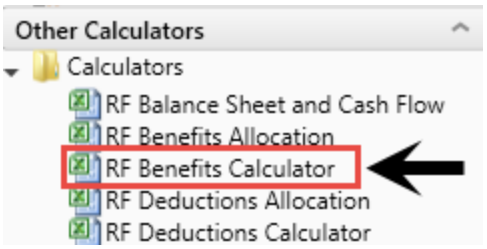


Using the RF Benefits Calculator

If your organization posts benefits to one central department within each entity, run the RF Benefits Calculator to post statistics for the benefits department.

To use the RF Benefits Calculator:

1. In the RF Admin task pane, in the **Other Calculators** section, click **Calculators**, and double-click **RF Benefits Calculator**.



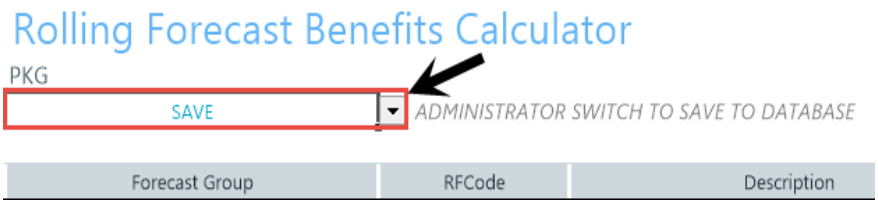
2. In the **Refresh Variables** dialog, do the following:

NOTE: Typically this is run by RFPlanGroup or entity for one type of method—Rate per FTE or Percent of Salaries.

Option	Description
Select Filtering Method	From the drop-down, select how to filter the data.
Select *filter method type*	a. Click **Choose Value**. b. In the **Choose Value** dialog, select a value based on the type of filtering method you selected in the **Select Filtering Method** drop-down. c. Click **OK**.
Select which RFGroup the benefits are housed within the selected filter	a. Click **Choose Value**. b. In the **Choose Value** dialog, select a value based on the type of filtering method you selected in the **Select Filtering Method** drop-down. c. Click **OK**.
Select RFCode for Benefits	a. Click **Choose Value**. b. In the **Choose Value** dialog, select an RFCode. c. Click **OK**.
User previous forecast method	Select the check box to use the previous forecast methods.

3. Do one of the following:

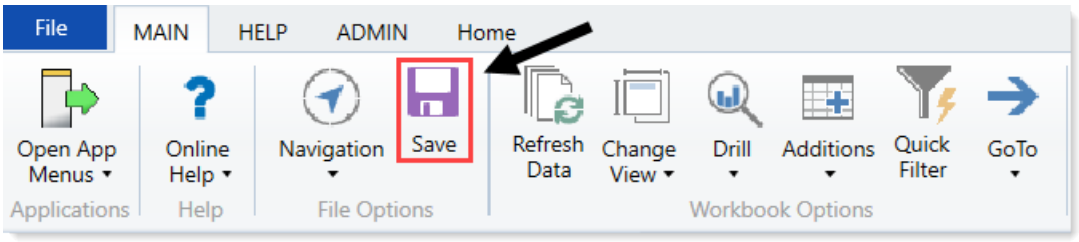
- If you are satisfied with your changes and you want to post the values to the database, from the **Administrator Switch to Save to Database** drop-down at the top of the sheet, select **Save**.



- If you are not ready to post the values to the database, from the **Administrator Switch to Save to Database** drop-down, select **DO NOT SAVE**.

  NOTE: If you select this option and click **Save**, the Axiom Rolling Forecasting saves the files, but does not post the values to the database.

4. In the **Main** ribbon tab, click **Save**.



5. Refresh the calculator, and select the other forecast method, such as Percent of Salaries to run it again for other benefits.

Using the RF Deductions Allocation

To allocate deductions to forecast group based upon gross revenue, you can run this allocation utility. Deduction accounts need to be defined in the utility for posting to the database.

The following codes need to exist in the RFCode dimension table:

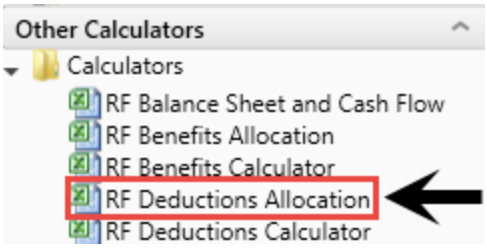
- D_Alloc_IPContractual
- D_Alloc_OPContractual
- D_Alloc_OthContractual
- D_Alloc_BadDebt
- D_Alloc_Charity

NOTE: If you choose not to allocate deductions or allocating deductions is part of your monthly close process, you do not need to use this utility.

To use the RF Deductions Allocation:

1. In the RF Admin task pane, in the **Other Calculators** section, click **Calculators**, and double-click **RF**

Deductions Allocation.

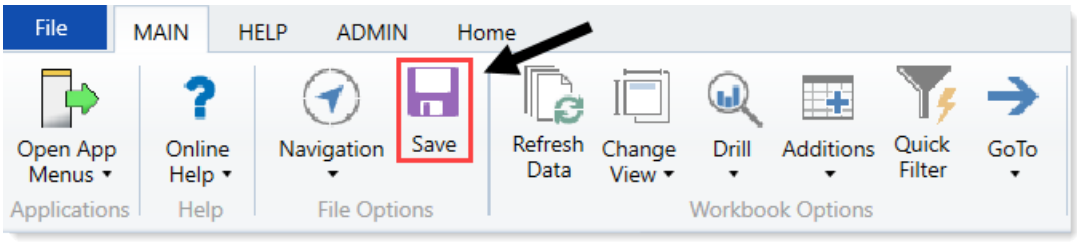


2. In the **Refresh Variables** dialog, in the **Select an Entity** field, click **Choose Value**.
3. In the **Choose Value** dialog, select an entity, and click **OK**.
4. In the **Refresh Variables** dialog, click **OK**.
5. Do the following:
   - Review the calculations.
   - In the blue cells, filter the data.
   - In the blue cells, review the RFCode values for accuracy.
6. Do one of the following:
   - If you are satisfied with your changes and you want to post the values to the database, from the **Switch to Save to Database** drop-down at the top of the sheet, select **Save**.

   - If you are not ready to post the values to the database, from the **Switch to Save to Database** drop-down, select **DO NOT SAVE**.

     NOTE: If you select this option and click **Save**, the Axiom Rolling Forecasting saves the files, but does not post the values to the database.

7. In the **Main** ribbon tab, click **Save**.



Using the RF Deductions Calculator

This section provides an overview of the RF Deductions Calculator and explains how to set up and use it.

About the RF Deductions Calculator

Use the RF Deductions Calculator to compute contractuals and allowances for the rolling forecast period. This topic provides an overview of the calculator's tabs.

Instructions tab

This tab provides very basic high-level instructions for using the Deductions Calculator. For more detailed instructions and examples, use the topics in this online help.

Summary tab

This tab compares the 4-quarter history with the 4-quarter forecast of Gross Revenue, Net Revenue, Net % of Gross, and Impact for the entire deductions model, based on your payers. Use the information on this tab to get an idea of what your history is and what assumptions (drivers) are included in your forecast.

The summary has two main sections: Inpatient and Outpatient. Within each section are rows for each payor, Administrative Adjustments, Charity, and Bad Debt. There is no overall total, but rather totals by Inpatient and Outpatient. As shown in the following example, the first column is of each set is historical data, the second is forecast.

Net Revenue - CLM01

4 Quarter History vs 4 Quarter Forecast

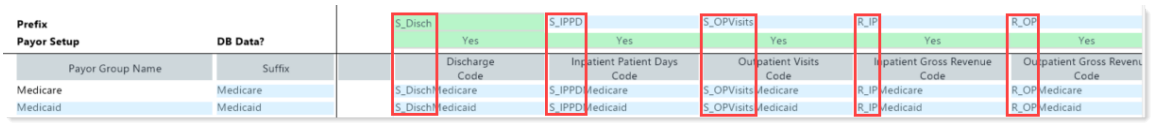
	Gross Revenue		Net Revenue		Net % of Gross		Impact
Inpatient	Jan-18 - Dec-18	Jan-19 - Dec-19	Jan-18 - Dec-18	Jan-19 - Dec-19	Jan-18 - Dec-18	Jan-19 - Dec-19	Jan-19 - Dec-19
	0	0	0	0	0.00%	0.00%	0
Medicare	349,884,826	356,814,018	69,362,112	68,714,511	19.82%	19.26%	(389,251)
Medicaid	56,633,439	57,953,967	11,938,187	2,122,409	21.08%	3.66%	(369,671)
Commercial	0	0	0	0	0.00%	0.00%	0
	0	0	0	0	0.00%	0.00%	0
Administrative Adjustments			0	0	0.00%	0.00%	0
Charity	History	Forecast	(33,434,457)	(36,633,515)	0.00%	0.00%	0
BadDebt			(12,538,180)	(7,394,213)	0.00%	0.00%	0
TOTAL Inpatient	406,518,265	414,767,985	35,327,663	26,809,192	8.69%	6.46%	(758,922)
Outpatient							
	0	0	0	0	0.00%	0.00%	0
Medicare	98,948,637	371,487,066	23,098,549	62,566,122	23.34%	16.84%	(4,067,991)
Medicaid	0	0	(9,038,817)	(18,213,946)	0.00%	0.00%	0
Commercial	0	0	0	0	0.00%	0.00%	0
	0	0	0	0	0.00%	0.00%	0
Administrative Adjustments			0	0	0.00%	0.00%	0
Charity			(33,434,457)	(36,633,515)	0.00%	0.00%	0
BadDebt			(12,538,180)	(7,394,213)	0.00%	0.00%	0
TOTAL Outpatient	98,948,637	371,487,066	(31,912,904)	324,448	(32.25%)	0.09%	(4,067,991)

PayorCodes tab

Set up your payor codes in this tab. When setting up a new RFGroup, Medicare is the first payor by default. You can add up to 24 additional payors.

As you type in your payors, three things happen:

- The payor name is automatically added to each column in the row. In each column, the payor name is concatenated with that column's prefix, as in the following example:



Prefix			S_Disch	S_IPPD	S_OPVisits	R_IP	R_OP
Payor Setup	DB Data?		Yes	Yes	Yes	Yes	Yes
Payor Group Name	Suffix		Discharge Code	Inpatient Patient Days Code	Outpatient Visits Code	Inpatient Gross Revenue Code	Outpatient Gross Revenu Code
Medicare	Medicare		S_Disch Medicare	S_IPPD Medicare	S_OPVisits Medicare	R_IP Medicare	R_OP Medicare
Medicaid	Medicaid		S_Disch Medicaid	S_IPPD Medicaid	S_OPVisits Medicaid	R_IP Medicaid	R_OP Medicaid

- Payors are automatically duplicated in the PayorSetup tab.
- Payors or payor codes that are not in the RFCODE table display highlighted in red to alert you that they need to be added to the table.

When you save the PayorCodes tab, your payors populate the Deductions tab. For more information about setting up payors, see Step 2: Set up your payors in Setting up the RF Deductions Calculator.

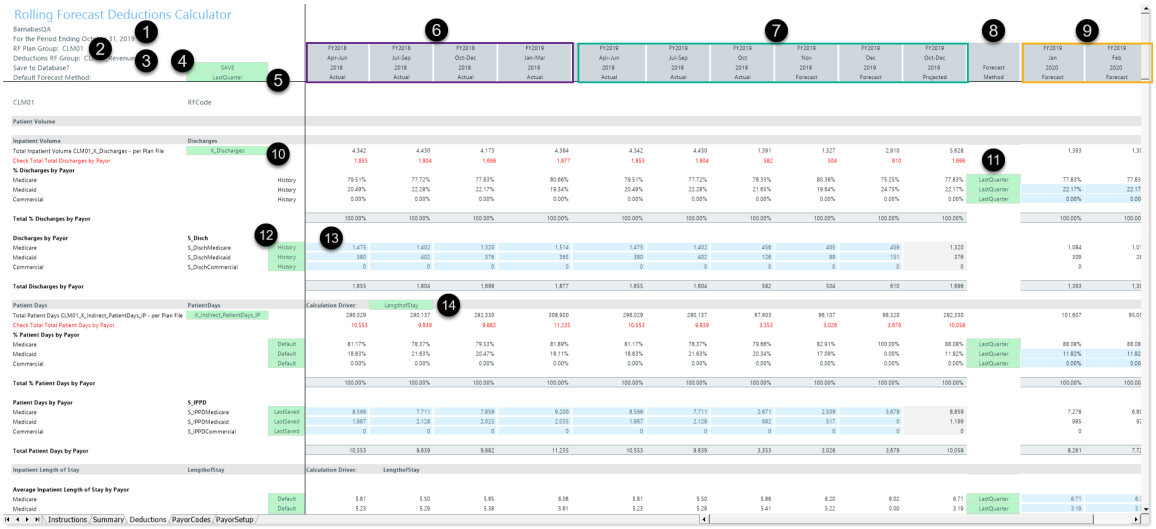
PayorSetup tab

The PayorSetup tab automatically populates with payor values from your PayorCodes tab. The layout of

this tab is the same as the default layout of your RFCODE table, so if you added a payor in the PayorCodes tab that is not in the table, you can copy and paste it from the PayorSetup tab to the table. For more information, see Step 3: Copy payor codes to the RFCODE table in Setting up the RF Deductions Calculator.

Deductions tab

Deduction calculations are performed and displayed on this tab. The Deductions tab allows you to split out the total revenue values by payor. If you currently store statistics at the payor level, they will populate for you. The calculator opens to this tab by default.



Key

1 = Period Ending set in your RF Driver period (note this is not your system current period)

2 = Plan Group you selected when opening the calculator

3 = RF Group you selected when opening the calculator

4 = Save option for the calculator

5 = Default forecast method for the tab (can be changed for individual payors)

6 = Historical quarter columns that bring in actuals from the previous year

7 = Actuals from the current year quarters

8 = Forecast Method column (this is populated with the default, but you can change it for each payor by block)

9 = Forecasted quarters for next year

10 = RF driver for the block

11 = Forecast method for each payor in the block

12 = Calc method for each payor in the block

13 = Input cells for adding data manually if needed

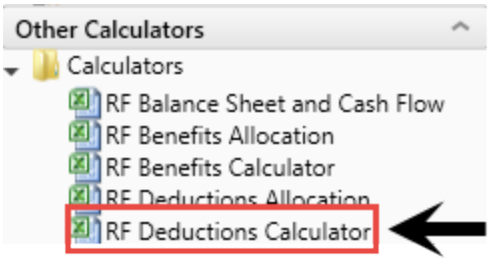
14 = Calculation driver for Patient Days

Setting up the RF Deductions Calculator

Use these instructions to configure the calculator for a new RFGroup. Setup includes selecting your RF Group and setting up payors.

Step 1: Open the calculator and select the RF Group.

1. In the RF Admin task pane, in the **Other Calculators** section, expand **Calculators**, and then double-click **RF Deductions Calculator**.



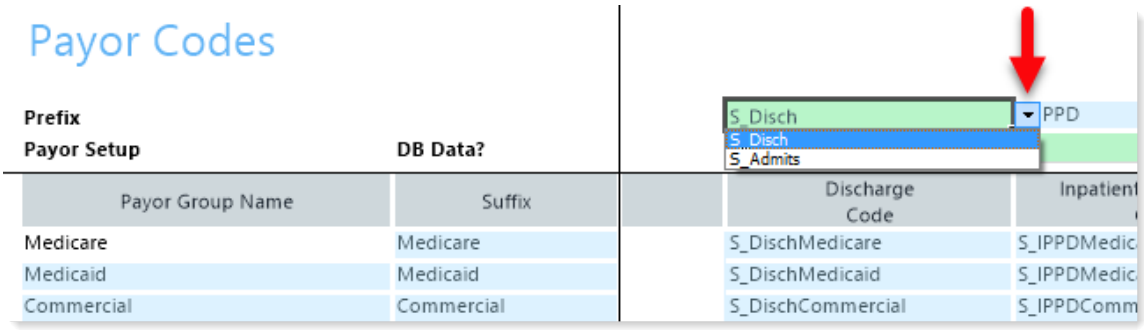
2. In the **Refresh Variables** dialog, select the following:
   a. For **Select an RFPlanGroup**, click **Choose Value**, and then select the plan group that contains the RF Group you want to use.
   b. For **RFGroup for Deductions**, click **Choose Value**, and then select the RFGroup in which to post the deductions.
   c. Click **OK**.

   The Deductions calculator opens to the Deductions tab.

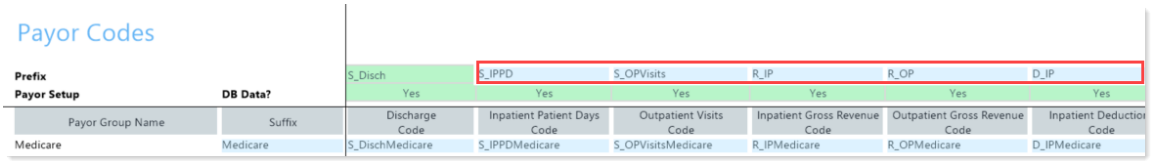
Step 2: Set up your payors

You can add up to 24 in addition to Medicare for a total of 25 payors.

1. In the RF Deductions Calculator, click the **PayerCodes** tab.
2. At the top of the PayorCodes sheet, in the first green cell of the **Prefix** row, select **Disch** (discharges) or **Admits** (admissions) from the drop-down, as applicable.



3. In the **Prefix** row, verify that the RF Codes shown are correct for the RF Code structure you are using.



If the defaults do not match your code structure, you can change them by entering the new code prefix in the blue cell. When you change a prefix, the prefix used by each data row in that column also changes.

IMPORTANT: The codes in these columns must match the entries in your RFCODE table columns.

NOTE: You can also change the code for a single data row in a column by typing the new code directly into the blue cell.

4. In the **Payor Group Name** column (column AJ), in the first available row after Medicare (the first row is Medicare by default), type the payor name and then press **Enter**.

   For every column cell in the row, the column prefix is automatically prepended to the payor name.

   NOTE: If your GL structure does not support statistics by payor, revenue by payor, or deductions by payor, then for those columns, click in the green cell above the gray column header, then click the drop-down arrow and select **No**. This clears all entries in that column.

5. Continue adding payors.

6. If any column cells are highlighted red, it means that either:

   - Those payor codes do not have a corresponding record in the RFCODE field of the RFCODE dimension table, . You need to add these manually. For a quick way to add them, see the following Step 3.
   - The length of the payor code is greater than the field limit. This is most likely to occur in the

two CMI fields. If you leave these as-is, they will save to the data table, but the names will be truncated to the field length.

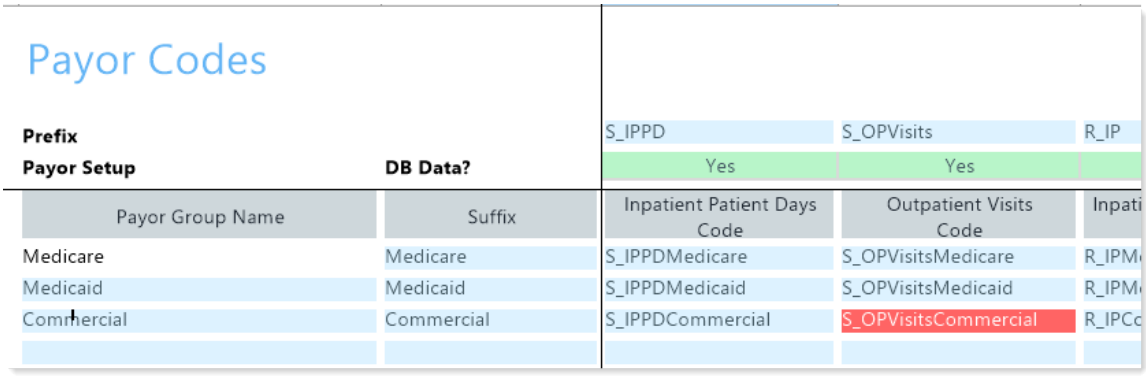
7. In the **Main** ribbon tab, click **Save** to populate the Deductions tab with your payor information.

> **NOTE:** You must save your entries while on the PayorCodes tab or they will not populate the Deductions tab.

Step 3: Copy payor codes to the RFCODE table

If a payor code in the PayorCodes tab is not mapped to the RFCODE table (does not have a matching entry in the table), it is highlighted in red. You will need to copy the code to the RFCODE table. Use the following instructions.

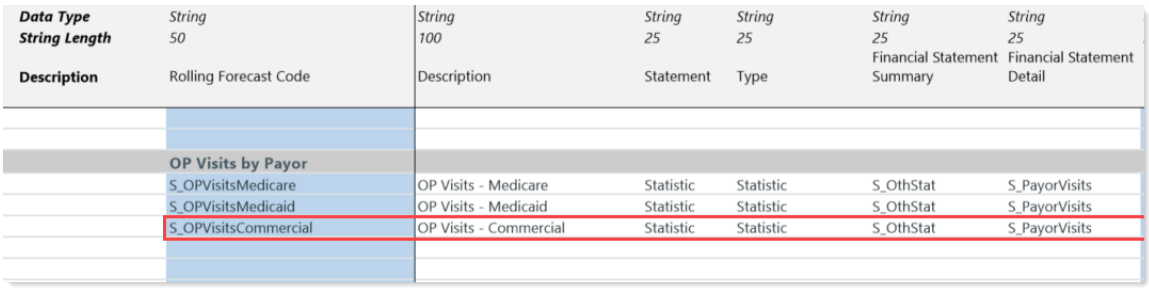
1. In the **PayorCodes** tab of the RF Deductions Calculator, note the column name of the red cell. In the following example, the column name is *Outpatient Visits* and the payor is *Commercial*.



Payor Codes

Prefix		S_IPPD	S_OPVisits	R_IP
Payor Setup	**DB Data?**	Yes	Yes	
Payor Group Name	Suffix	Inpatient Patient Days Code	Outpatient Visits Code	Inpati
Medicare	Medicare	S_IPPDMedicare	S_OPVisitsMedicare	R_IPM
Medicaid	Medicaid	S_IPPDMedicaid	S_OPVisitsMedicaid	R_IPM
Commercial	Commercial	S_IPPDCommercial	S_OPVisitsCommercial	R_IPCo

2. Click the **PayorSetup** tab. In the **RFCODE** column, scroll down the sheet until you locate the gray row that corresponds to the column in the PayorCodes tab (the name may be abbreviated). In the following example, it is *OP Visits by Payor*. Locate the entry that matches the red cell in the PayorCodes tab. Copy the entire row.



Data Type	*String*	*String*	*String*	*String*	*String*	*String*
String Length	*50*	*100*	*25*	*25*	*25*	*25*
Description	Rolling Forecast Code	Description	Statement	Type	Financial Statement Summary	Financial Statement Detail
	OP Visits by Payor					
	S_OPVisitsMedicare	OP Visits - Medicare	Statistic	Statistic	S_OthStat	S_PayorVisits
	S_OPVisitsMedicaid	OP Visits - Medicaid	Statistic	Statistic	S_OthStat	S_PayorVisits
	S_OPVisitsCommercial	OP Visits - Commercial	Statistic	Statistic	S_OthStat	S_PayorVisits

3. Navigate to and open the **RFCODE** data table. Do the following:
   a. Insert a new blank row where the copied row should go.
   b. Put your cursor in the **RFCODE** column and paste the copied data. By default, the column

order in the PayorSetup tab matches the column order in the RFCODE table, so if you have not changed either, the data will be pasted into the correct columns. If you have changed the column order, you will need to paste the data into the columns individually.

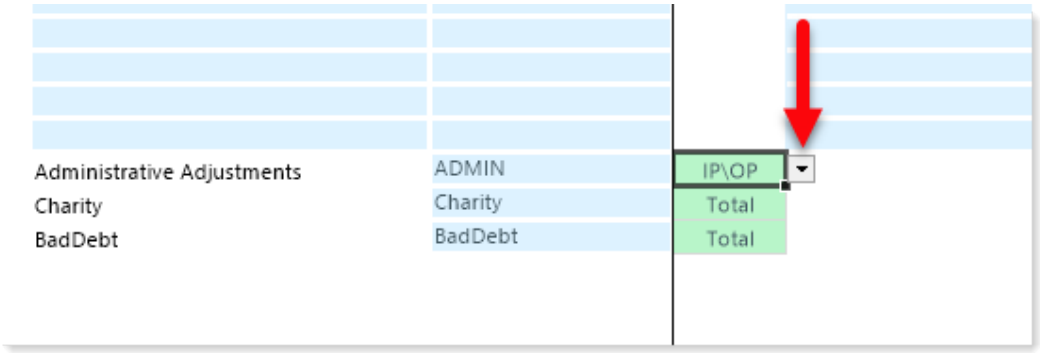
c. In the **Main** ribbon tab, click **Save**.

4. In the **RF Deductions Calculator**, in the **Main** ribbon tab, click **Refresh Data**. In the **Refresh Variables** dialog, click **OK**. When the data refreshes, click the **PayorCodes** tab. The cell that was previously highlighted red should now be blue.

Step 4: Set Total types for Administrative Adjustments, Charity, and Bad Debt

This feature determines whether the totals in the corresponding sections on the Deductions tab are displayed as two amounts, one for inpatient and one for outpatient, or combined into a single total.

1. At the bottom of the **PayorCodes** tab are three rows, one each for Administrative Adjustments, Charity, and Bad Debt. For each, select one of the following from the drop-down:
   - **Total** – One total amount is displayed for the section.
   - **IP\OP** – Two totals are displayed for the section: inpatient total and outpatient total.



2. If you select IP\OP for any item, be sure to update the RFCODE table with any unmapped RF Codes that result. See Step 3: Copy payor codes to the RFCODE table.

Step 5: Refresh the calculator

Refreshing the calculator allows you to see the payors added to the Deductions tab.

1. In the **Main** ribbon tab, click **Refresh Data**.
2. In the **Refresh Variables** dialog, click **OK** (this assumes that the correct RFPlanGroup and RFGroup are already selected in the dialog).
3. Continue to Calculating deductions.

Calculating deductions

The RF Deductions Calculator computes the contractuals and allowances for the rolling forecast period. After you set up payors, most of the work is performed on the calculator's Deductions tab.

The Deductions tab has four main sections: Volume, Revenue, Reimbursement, and Administrative and Other Adjustments.

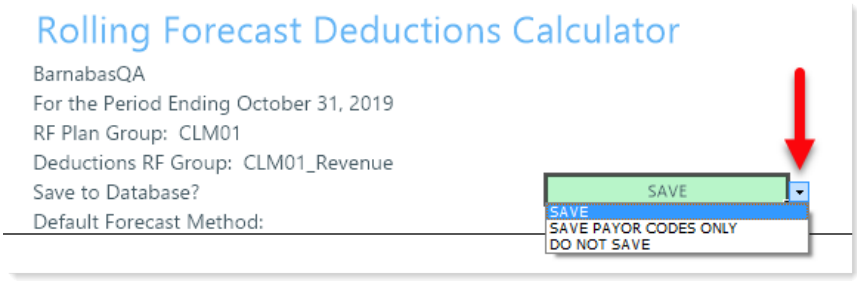
To use the RF Deductions Calculator:

> **TIP:** When working in the Deductions tab, to quickly navigate to a section in the sheet, in the **Main** ribbon tab, click **GoTo** > **Section** > [**listed section**].

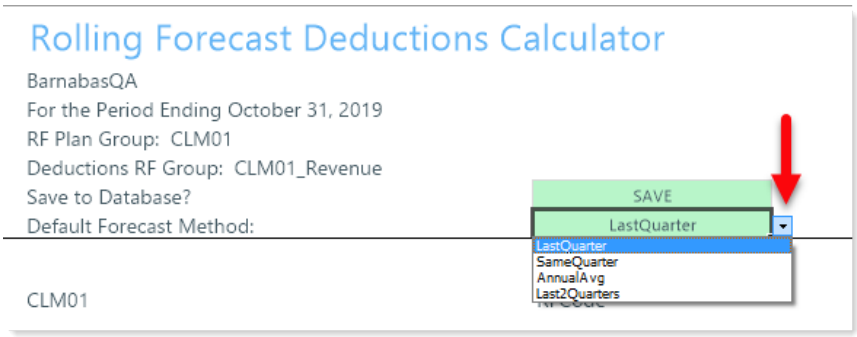
Step 1: Select calculator defaults

1. Do one of the following:
   - Set up payors for the RFGroup if you have not already done so.
   - If the RF Deductions Calculator is already open and you have just finished payor setup, continue to step 2.
   - Open the RF Deductions calculator:
     a. In the RF Admin task pane, in the **Other Calculators** section, click **Calculators**, and then double-click **RF Deductions Calculator**.
     b. In the **Refresh Variables** dialog, in the **Select an RFPlanGroup** field, click **Choose Value** to select a budget group to include.
     c. In the **RFGroup for Deductions** field, click **Choose Value** and select the RFGroup in which to post the deductions.
     d. Click **OK**.
2. Select a Save option for the calculator: at the top of the sheet in the **Save to Database?** drop-down, select one of the following:
   - **Save** – Saves all data in the calculator to the database.
   - **Save Payor Codes Only** – Saves to the database only Payor codes entered in the PayorCodes tab.
   - **Do Not Save** – Does not save anything to the database. Saves your temporary work in the calculator only. Select this option if you are working in the sheet and do not want your work to save to the database.

     > **IMPORTANT:** Be careful about saving to the database, because when you select **Last Saved** as the calc method for any item, the calculator will retrieve whatever was last saved to the database for that item.



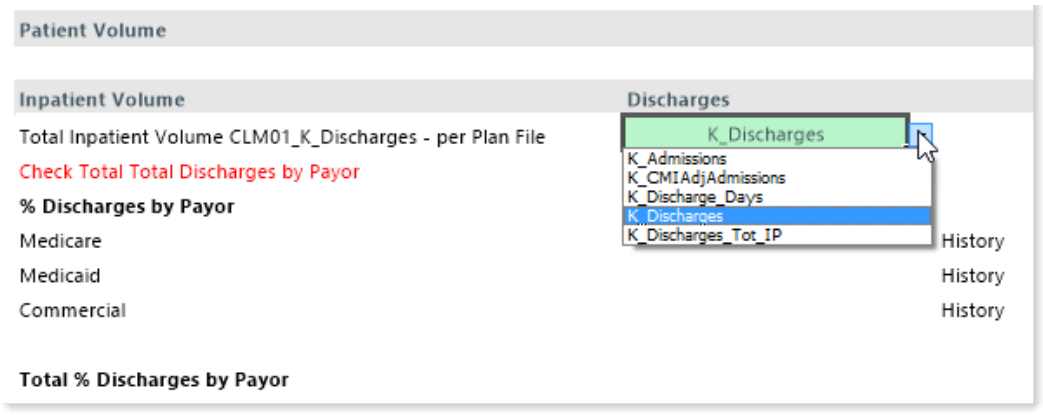
3. Select a default Forecast Method: in the **Default Forecast Method** drop-down, select the default forecast method to use. This sets the forecast method in the Forecast Method column as the default for all payors. You can override this default at the individual payor level in other sections of the sheet.



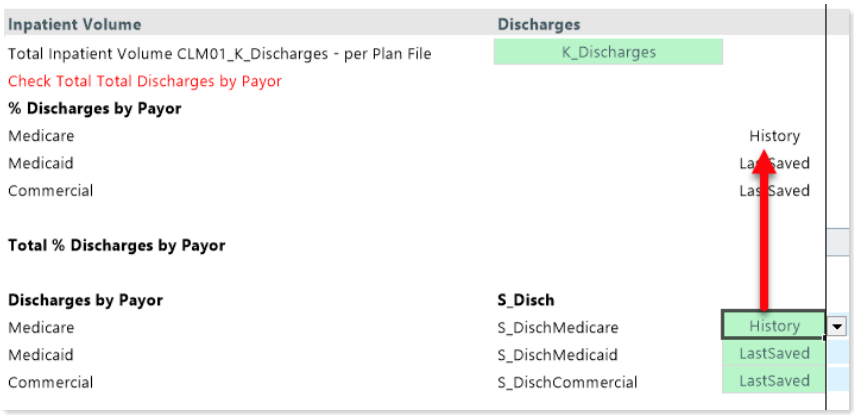
Step 2: Calculate Patient Volume

1. For **Inpatient Volume**, select the section data driver and calculation methods for payors:

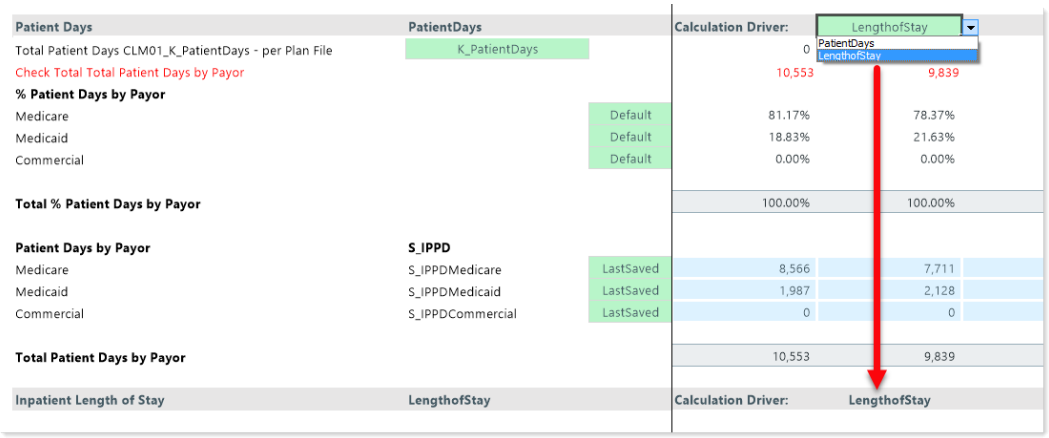
    a. From the drop-down, select the desired data driver. In the following example, a discharges RF Code is selected as the driver for the Inpatient Volume. However, you can select an Admissions RF Code, which changes the entire block to Admissions, pulling in admissions data based on the selected RF Code.



b. To change the calc method for any payor in this section, in the **Discharges/Admissions by Payor** block, select the desired option from the drop-down for that payor. Notice that this also changes the calc method in the %Discharges/Admissions by Payor section.



2. In the **Patient Days** row, make the following selections:
   a. In the **PatientDays** drop-down, select the desired data driver.
   b. For **Inpatient Length of Stay**, in the **Patient Days** header on the right side of the sheet, select the driver from the **Calculation Driver** drop-down (column AB). Your selection displays in the Inpatient Length of Stay header row, as shown in the following example:



   c. Select calc methods for any payor that needs to be different from the default.
   d. To select a forecast method different from the sheet default for any payor, in the **Forecast Method** column of the payor's row, select a forecast method from the drop-down.

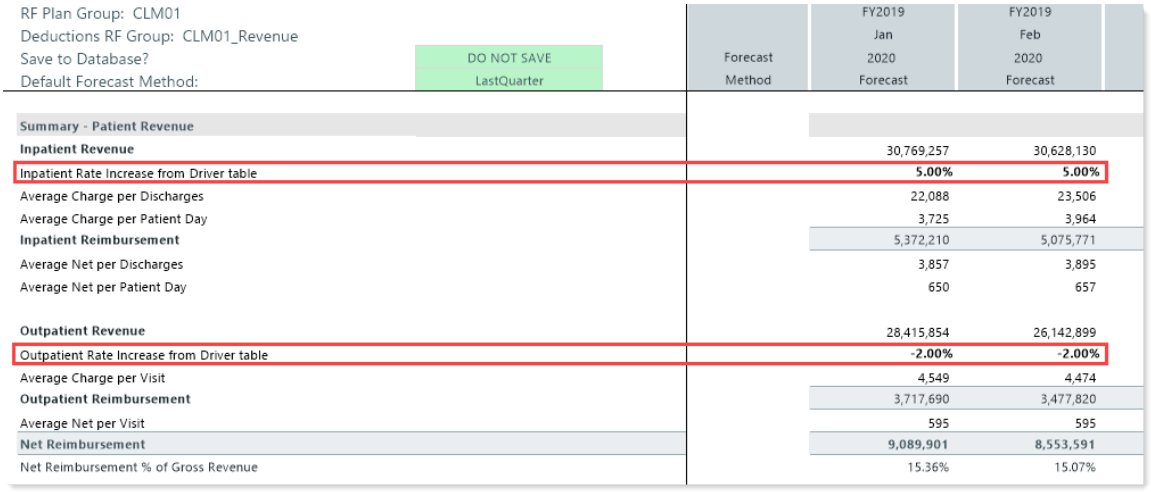
3. For **Outpatient Visits**, select the following:
   a. From the **OPVisits** drop-down, select the RF Code data driver. This drop-down is populated with any RF Code that contains the word "visit."
   b. For **% Outpatient Visits by Payor**, select a calc method for the payors that you want to be different from the default.

c. For **Outpatient Visits by Payor**, select a calc method for any payors that you want to be different from the default.

Step 3: Calculate Patient Revenue

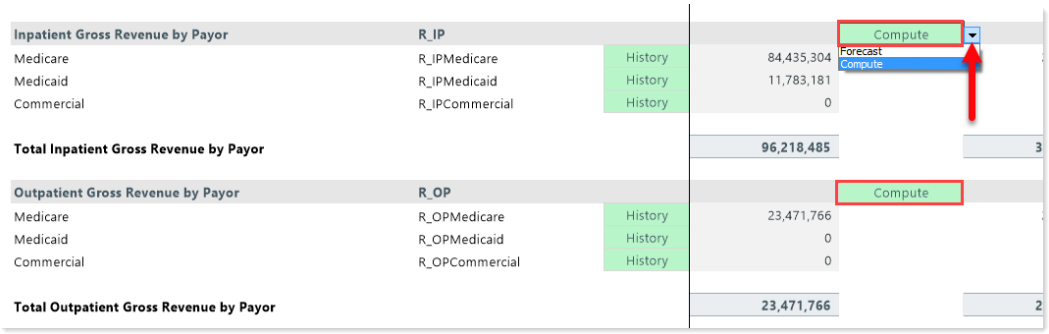
The patient revenue section brings in all your revenue and any rate increases or decreases from your driver table.

In the following example, for the forecast year, a 5% inflation factor is pulled from the driver table for Inpatient Rate Increase, and a -2% factor is pulled in for Outpatient Rate Increase. The calculator uses these adjustments when calculating the Inpatient Revenue and Outpatient Revenue amounts.



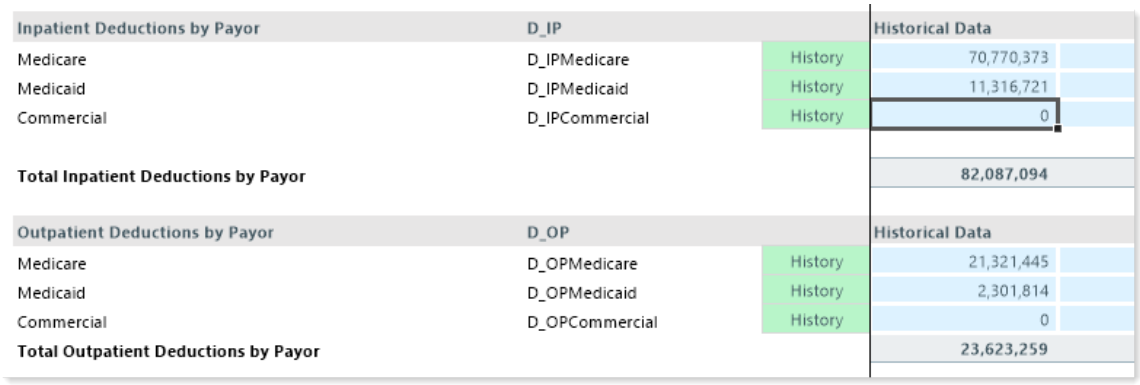
RF Plan Group: CLM01 Deductions RF Group: CLM01_Revenue Save to Database? Default Forecast Method:	DO NOT SAVE LastQuarter	Forecast Method	FY2019 Jan 2020 Forecast	FY2019 Feb 2020 Forecast
Summary - Patient Revenue				
Inpatient Revenue			30,769,257	30,628,130
Inpatient Rate Increase from Driver table			**5.00%**	**5.00%**
Average Charge per Discharges			22,088	23,506
Average Charge per Patient Day			3,725	3,964
Inpatient Reimbursement			5,372,210	5,075,771
Average Net per Discharges			3,857	3,895
Average Net per Patient Day			650	657
Outpatient Revenue			28,415,854	26,142,899
Outpatient Rate Increase from Driver table			**-2.00%**	**-2.00%**
Average Charge per Visit			4,549	4,474
Outpatient Reimbursement			3,717,690	3,477,820
Average Net per Visit			595	595
Net Reimbursement			9,089,901	8,553,591
Net Reimbursement % of Gross Revenue			15.36%	15.07%

1. For the **Inpatient Gross Revenue by Payor** and **Outpatient Gross Revenue by Payor** blocks, you can set to pull data from History or Last Saved. However, if you do not have Revenue by Payor in your Axiom system, you can enter this data manually in the blue cells.
2. To change the forecast method for Inpatient / Outpatient gross revenue by payor, in the **Forecast Method** column, select one of the following:
   - **Compute** – Performs a calculation to derive the amount.
   - **Forecast** – Uses the values set in the RF Forecast table.



Inpatient Gross Revenue by Payor	**R_IP**			Compute
Medicare	R_IPMedicare	History	84,435,304	Forecast / Compute
Medicaid	R_IPMedicaid	History	11,783,181	
Commercial	R_IPCommercial	History	0	
Total Inpatient Gross Revenue by Payor			**96,218,485**	
Outpatient Gross Revenue by Payor	**R_OP**			Compute
Medicare	R_OPMedicare	History	23,471,766	
Medicaid	R_OPMedicaid	History	0	
Commercial	R_OPCommercial	History	0	
Total Outpatient Gross Revenue by Payor			**23,471,766**	

3. The **Inpatient Deductions by Payor** and **Outpatient Deductions by Payor** blocks function similarly to the Gross Revenue blocks: data is brought in based on the RF Code displayed in the D_IP and D_OP columns for each payor; or, you can enter the amounts manually.



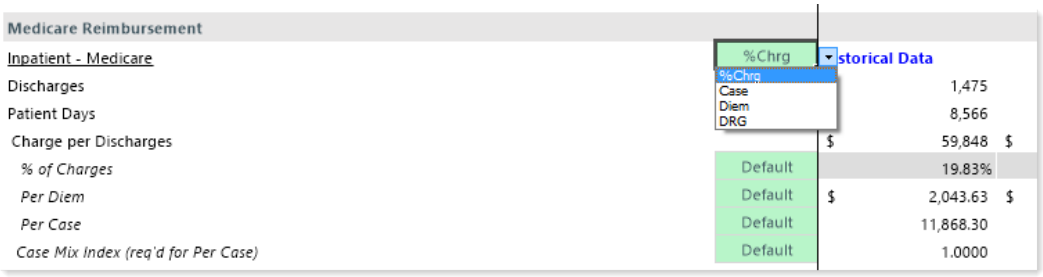
Inpatient Deductions by Payor	D_IP		Historical Data
Medicare	D_IPMedicare	History	70,770,373
Medicaid	D_IPMedicaid	History	11,316,721
Commercial	D_IPCommercial	History	0
Total Inpatient Deductions by Payor			82,087,094

Outpatient Deductions by Payor	D_OP		Historical Data
Medicare	D_OPMedicare	History	21,321,445
Medicaid	D_OPMedicaid	History	2,301,814
Commercial	D_OPCommercial	History	0
Total Outpatient Deductions by Payor			23,623,259

Step 4: Calculate Reimbursement

Reimbursements calculated in this section include Medicare followed by your configured payors.

1. In the **Medicare Reimbursement** section, do the following:
   a. For **Inpatient - Medicare**, select the reimbursement methodology from the drop-down (column Z). Note that the selected item causes the corresponding row in that block to be highlighted. For example, if you select **%Chrg**, the *% of Charges* line in the block is highlighted for easy reference.



Medicare Reimbursement			storical Data	
Inpatient - Medicare	%Chrg			
Discharges	%Chrg		1,475	
Patient Days	Case		8,566	
Charge per Discharges	Diem	$	59,848	$
% of Charges	DRG	Default	19.83%	
Per Diem	Default	$	2,043.63	$
Per Case	Default		11,868.30	
Case Mix Index (req'd for Per Case)	Default		1.0000	

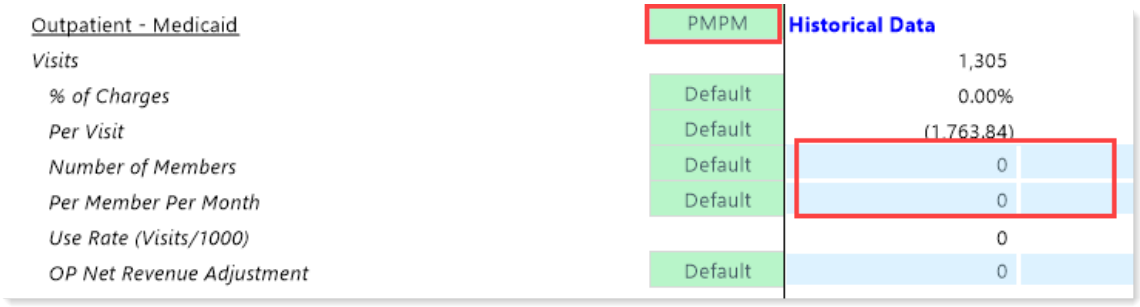
   The calculations displayed in the month and quarter columns reflect the selected reimbursement methodology.

   b. In the rows for each item, select one of the following:
      - **Default** – Uses the default formulas that were used prior to the changes you made.
      - **Last Saved** – Uses the data from the last time you saved the calculator.

   c. In the **Outpatient - Medicare** section, select the reimbursement methodology, and, if desired, change the calc method.

2. In the **Medicaid Reimbursement** section, if you select **PMPM** (Per Member Per Month) as the

reimbursement methodology for the Inpatient or Outpatient blocks, you will need to manually enter the amounts in the blue cells of the Per Member Per Month row.



3. For the rest of the payors in this section, select the reimbursement methodology and calc methods as desired. Remember that you can also change the forecast method in the Forecast Method column for any payor.

Step 5: Calculate Administrative and Other Adjustments

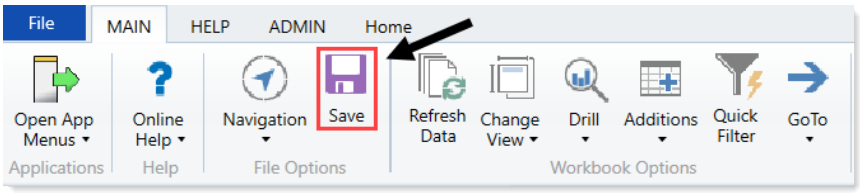
This section includes Administrative Adjustments, Charity, and Bad Debt.

You can select to have the total amounts in each section broken out by inpatient and outpatient totals or display a single total that combines both. This setting is controlled on the PayorCodes tab. For information on setting this, see Set Total types for Administrative Adjustments, Charity, and Bad Debt in Setting up the RF Deductions Calculator.

For Administrative and Other Adjustments, Charity, and Bad Debt, you can select the calc methods from the drop-downs for each item, and you can also set the forecast method to be different from the default by scrolling right to the Forecast Method column and selecting from the drop-down.

Step 6: Review and save

1. Review the results of the calculations.
2. Do one of the following:
   - If you are satisfied with your changes and you want to post the values to the database, from the **Save to Database?** drop-down at the top of the sheet, select **Save**.
   - If you are not ready to post the values to the database, from the **Save to Database?** drop-down, select **DO NOT SAVE**.
   - If you want to post only the payor codes to the database, select **Save Payor Codes Only**.
3. In the **Main** ribbon tab, click **Save**.


File
MAIN
HELP
ADMIN
Home
Open App Menus
Online Help
Navigation
Save
Refresh Data
Change View
Drill
Additions
Quick Filter
GoTo
Applications
Help
File Options
Workbook Options

10

Setting Up Forecasting for the Current Year

Syntellis Performance Reporting includes a set of reports and utilities that allow you to forecast the remaining periods of the current year based on actuals to date.

NOTE: This chapter applies only if your organization has purchased the Syntellis Performance Reporting application.

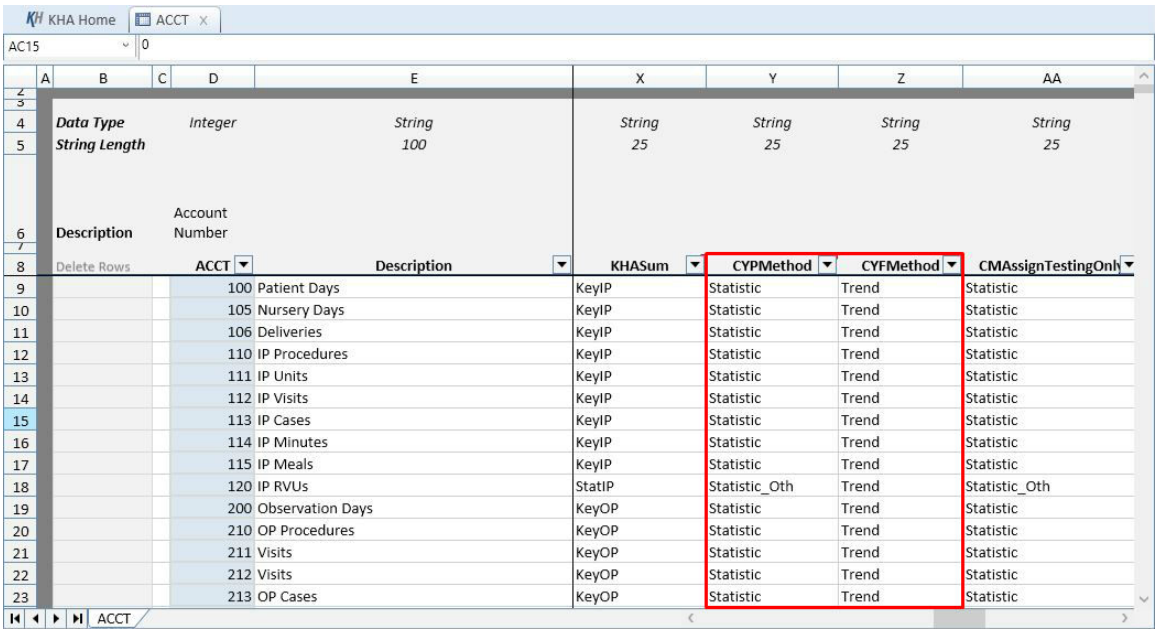
Setting up dimensions for current-year forecasting

Before you can take advantage of the Current Year Forecasting reports, you need to populate the following columns in the following dimensions:

- **CYFMethod** column in the **ACCT** table: Determines which forecasting method gets applied to each account. Refer to the Monthly Forecast Utility report for a list of account types and the methods most commonly used for each of them.
- **CYFDimGrp** column in the **DEPT** table: Determines which CYFMethod column each department uses to forecast accounts.

To set up dimensions for current-year forecasting:

1. Open the **ACCT** dimension table. For more information, see Editing a dimension .
2. In the **CYFMethod** column, make the following changes:



Data Type		Integer		String	String	String	String	String
String Length				100	25	25	25	25
Description		Account Number						
Delete Rows		ACCT		Description	KHASum	CYPMethod	CYFMethod	CMAssignTestingOnly
		100		Patient Days	KeyIP	Statistic	Trend	Statistic
		105		Nursery Days	KeyIP	Statistic	Trend	Statistic
		106		Deliveries	KeyIP	Statistic	Trend	Statistic
		110		IP Procedures	KeyIP	Statistic	Trend	Statistic
		111		IP Units	KeyIP	Statistic	Trend	Statistic
		112		IP Visits	KeyIP	Statistic	Trend	Statistic
		113		IP Cases	KeyIP	Statistic	Trend	Statistic
		114		IP Minutes	KeyIP	Statistic	Trend	Statistic
		115		IP Meals	KeyIP	Statistic	Trend	Statistic
		120		IP RVUs	StatIP	Statistic_Oth	Trend	Statistic_Oth
		200		Observation Days	KeyOP	Statistic	Trend	Statistic
		210		OP Procedures	KeyOP	Statistic	Trend	Statistic
		211		Visits	KeyOP	Statistic	Trend	Statistic
		212		Visits	KeyOP	Statistic	Trend	Statistic
		213		OP Cases	KeyOP	Statistic	Trend	Statistic

Row	Description
Current Year Budget	*RemBud = Remaining Budget from CYB*
Straight Line	*Annual = YTD / Calendar Days * Remaining Calendar Days*
Historical Weighting Trend	*Rolling12 = YTD Actual / YTD Budget * Remainder of LYA*
Budget Weighted Trend	*PctBud = YTD Actual / YTD Budget * Remainder of CYB*
Variable	*Actual Rate per Unit * Forecast Volume*
Trend	*Trend Method (standard spreadsheet formula)*
CapBud	*Remaining Budget Not to exceed the annual budget*

3. In the **Main** ribbon tab, click **Save**.
4. To apply different sets of methods for different departments, create an additional column and enter a method for each account. You will determine which column each department refers to in the CYFDimGrp column of the DEPT dimension table. For more information, see Creating a grouping column.
5. Open the **DEPT** dimension table.
6. In the **CYFDimGrp** column, make the following changes:

Row	Description
CYFMethod	Uses the method specified in ACCT.CYFMethod.
NA	For Not Applicable.

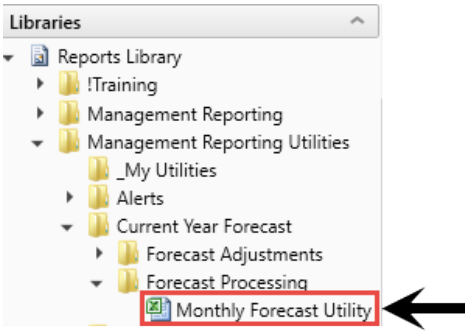
Row	Description
[Other Column Name]	Uses the method specified in the corresponding column on the ACCT dimension table.

Configuring the Monthly Forecast Utility

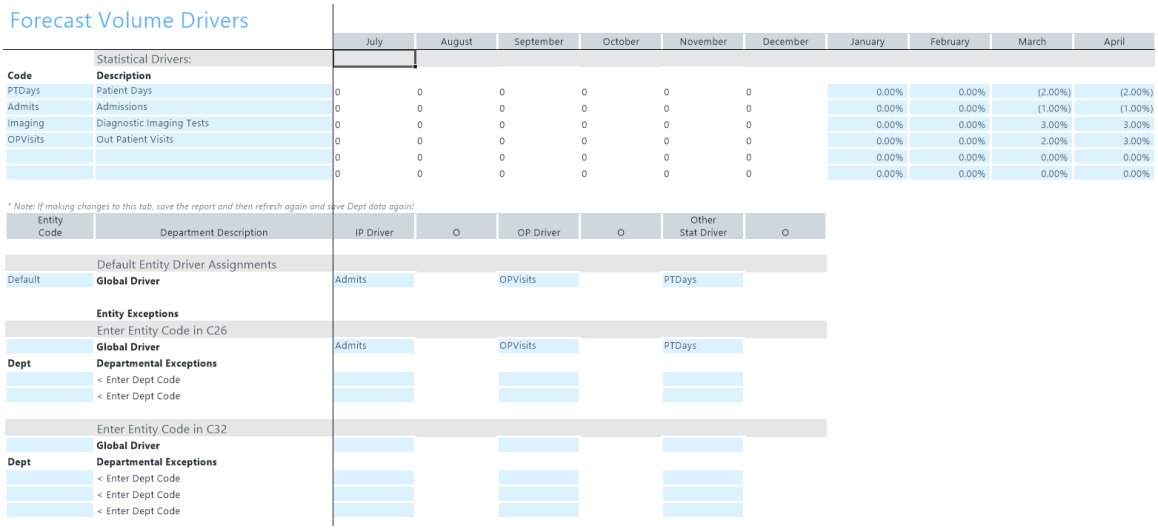
After setting up dimensions for current year forecasting, you need to configure some settings and key statistics on the PROJDriver tab of the Monthly Forecast Utility. In this tab, you define high-level statistical drivers that Axiom Rolling Forecasting applies when calculating the individual departmental forecast volumes.

To configure the Monthly Forecast Utility:

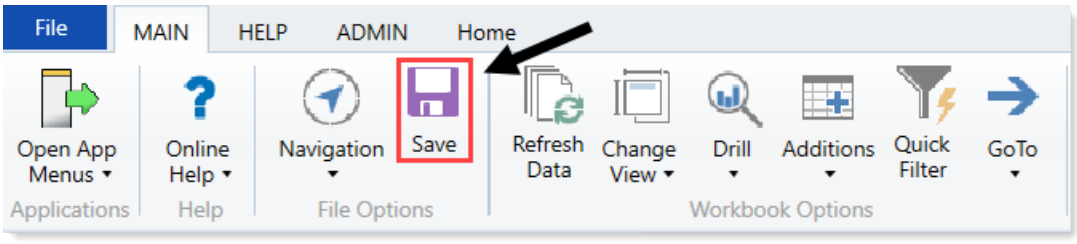
1. In the Explorer task pane, in the **Libraries** section, click **Reports Library > Management Reporting Utilities > Current Year Forecast > Forecast Processing**, and double-click **Monthly Forecast Utility**.



2. Click the **PROJDriver** tab, and make the appropriate changes in the blue cells.



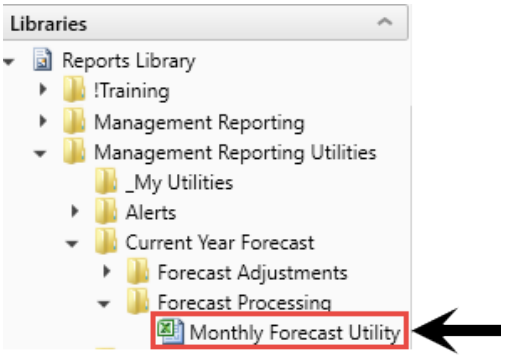
3. After you are done making changes, in the **Main** ribbon tab, click **Save**.



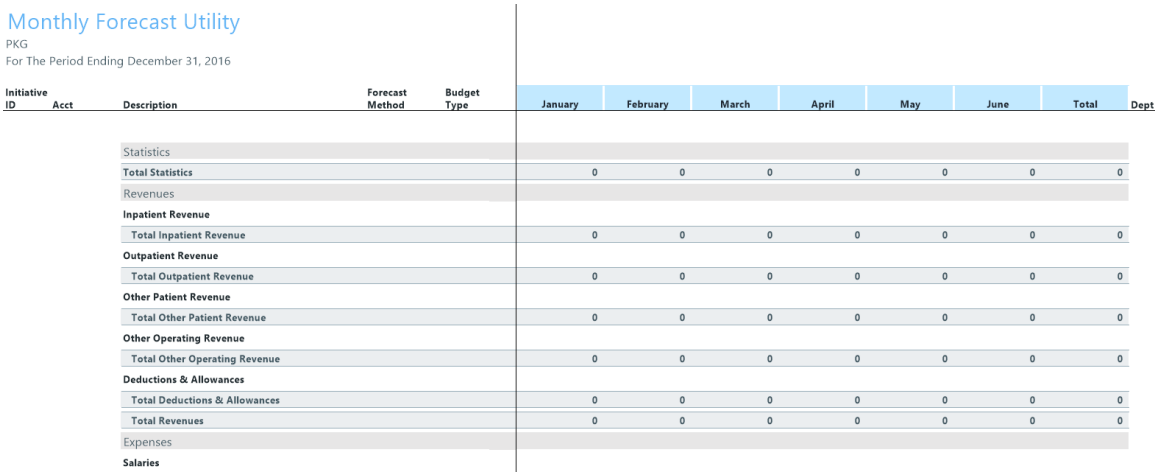
Processing and reviewing the Monthly Forecast

To process and review the Monthly Forecast:

1. In the Explorer task pane, in the **Libraries** section, click **Reports Library > Management Reporting Utilities > Current Year Forecast > Forecast Processing**, and double-click **Monthly Forecast Utility**.



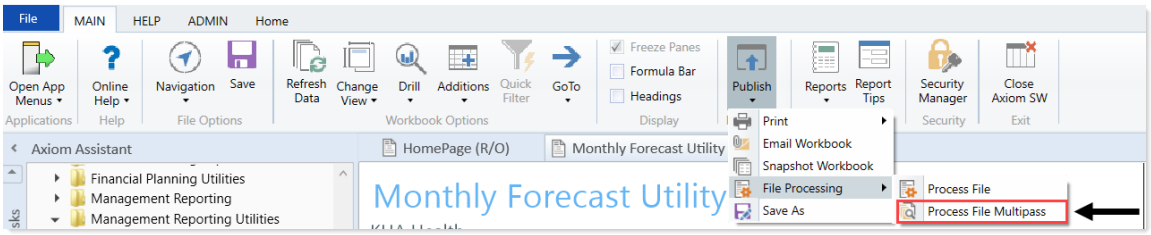
2. Click the **Mthly_Fcst_Utility** tab, if it is not already selected.



A view of the Monthly Department Forecast Utility displays.

3. After you have saved the drivers as discussed above, in the **Main** ribbon tab, click **Publish > File**

Processing > Process File Multipass.



4. To view the report, click the **Report** tab.

Review the results to verify that all computations on the report are as you expected.

If everything is in order, then all of your Axiom Healthcare Suite products can use the forecast data.

Making forecast adjustments

There are two different reports you can use to enter overrides for current-year forecasts:

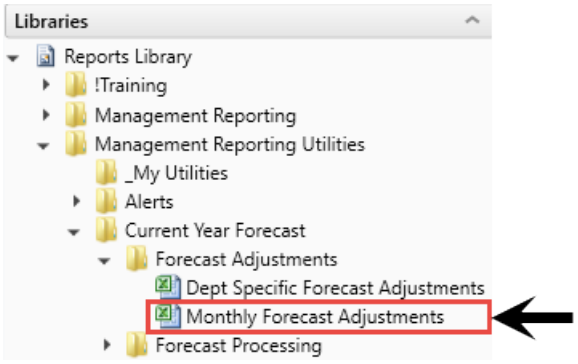
- **Monthly Forecast Adjustments** – Allows for overrides at an Income Statement category level.
- **Dept. Specific Forecast Adjustments** – Allows for overrides for a specific dept/acct level.

NOTE: After making adjustments using either of these two reports, running the Monthly Forecast Utility again will remove these adjustments.

Processing monthly forecast adjustments

This report allows you to change the monthly forecast at an Income Statement Summary level:

1. In the Explorer task pane, in the **Libraries** section, click **Reports Library > Management Reporting Utilities > Current Year Forecast > Forecast Adjustments**, and double-click **Monthly Forecast Adjustments**.



2. Click the **Mthly_Fcst_Utility** tab, and make changes in the blue cells for future months by entering

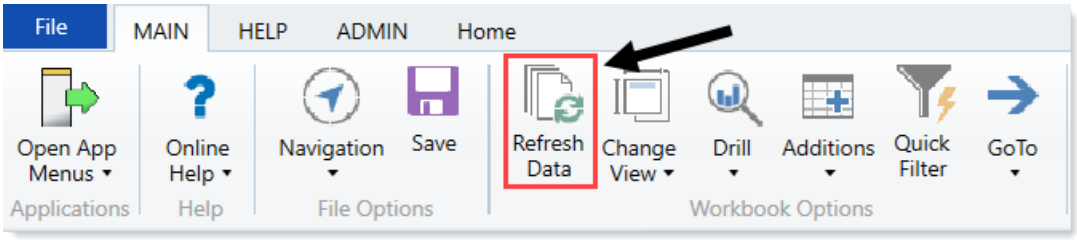
a positive or negative percent, or whole number by each category.

Summary Forecast Adjustment Utility
PKG
For The Period Ending December 2017
Consolidated

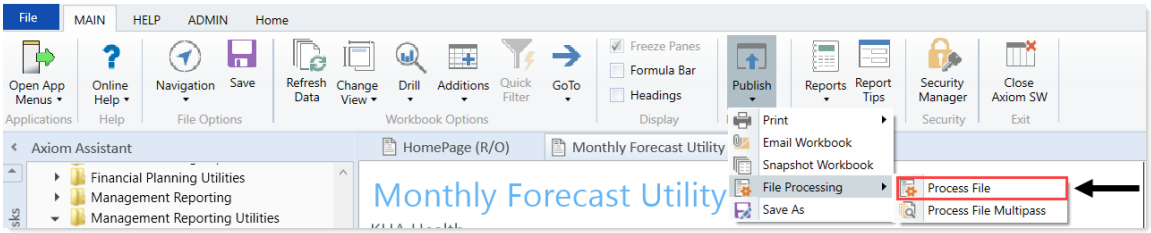
	Actual July	Actual August	Actual September	Actual October	Actual November	Actual December	Forecast January	Forecast February
Revenues								
Inpatient Revenue	29,414,756	29,714,316	28,441,698	28,795,099	29,821,151	28,425,988	0	0
% Adjustment							0.00%	0.00%
Amount Adjustment	0	0	0	0	0	0	0	0
Total Inpatient Revenue	**29,414,756**	**29,714,316**	**28,441,698**	**28,795,099**	**29,821,151**	**28,425,988**	**0**	**0**
Outpatient Revenue	12,868,134	14,851,177	13,308,008	13,855,068	13,828,683	13,127,527	0	0
% Adjustment							0.00%	0.00%
Amount Adjustment	0	0	0	0	0	0	0	0
Total Outpatient Revenue	**12,868,134**	**14,851,177**	**13,308,008**	**13,855,068**	**13,828,683**	**13,127,527**	**0**	**0**
Other Patient Revenue	19,677,338	18,950,831	22,829,058	20,558,124	20,853,578	21,317,519	0	0
% Adjustment							0.00%	0.00%
Amount Adjustment	0	0	0	0	0	0	0	0
Total Other Patient Revenue	**19,677,338**	**18,950,831**	**22,829,058**	**20,558,124**	**20,853,578**	**21,317,519**	**0**	**0**
Total Patient Revenue	**61,960,228**	**63,516,323**	**64,578,764**	**63,208,292**	**64,503,411**	**62,871,034**	**0**	**0**

3. To apply the adjustments to categories, you must first create a dummy department/account combination for each category in Dimensions, then enter the dummy department/account combinations on the **Control** tab.

4. To make sure that you have the latest data, in the **Main** ribbon tab, in the **Workbook Options** group, click **Refresh Data**.

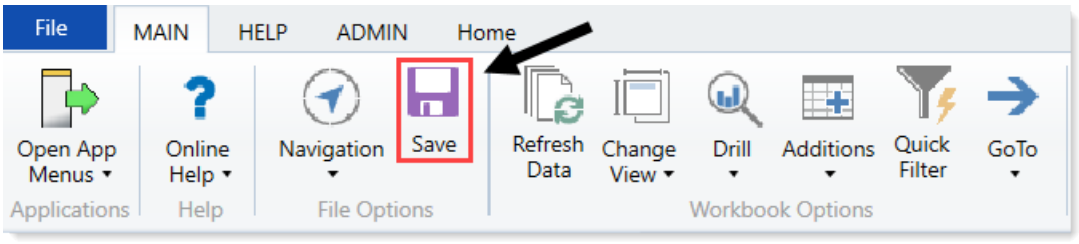


5. In the **Main** ribbon tab, click **Publish > File Processing > Process File**.



The report runs by KHABgtCode in the DEPT dimensions. It posts the results by department and account to the CYF20XX table (where *20XX* is the current year), using the projection methods that you selected earlier.

6. In the **Main** ribbon tab, click **Save**.



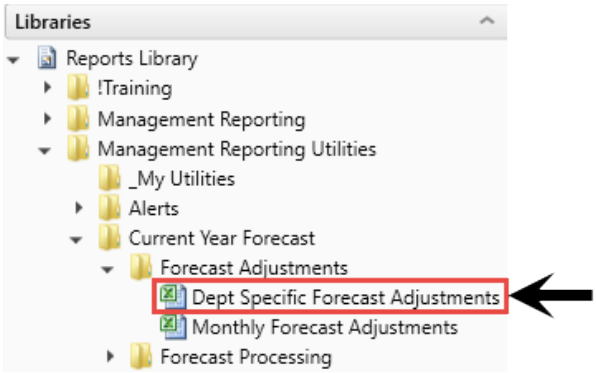
Review to verify that all of the computations on report are as you expected.

The final forecast will be the original forecast calculated by the Monthly Forecast, plus any manual changes made in Monthly Forecast Adjustments. All changes post to CYF20XX.

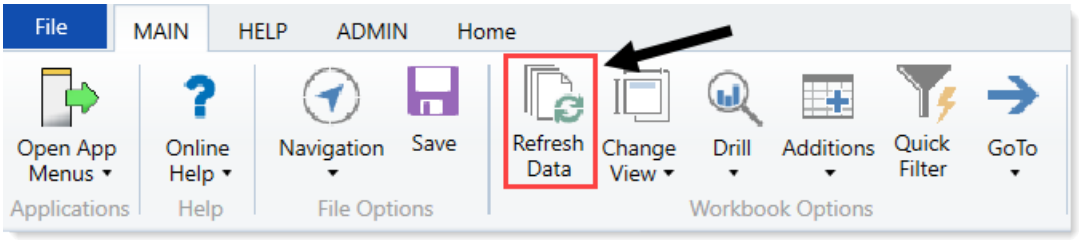
Processing department-specific forecast adjustments

This report allows you to change the monthly forecast at a department/account level.

1. In the Explorer task pane, in the **Libraries** section, click **Reports Library > Management Reporting Utilities > Current Year Forecast > Forecast Adjustments**, and double-click **Dept Specific Forecast Adjustments**.



2. In the **Main** ribbon tab, in the **Workbook Options** group, click **Refresh Data**.



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

Option	Description
Select RptMap	a. Click **Choose Values**. b. In the **Choose Values** dialog, select the departments to include. c. Click **OK**.
Select Yes to recompute variable costs	• To recompute the variable account forecast for the department or departments you will include, select **Yes**. • If you feel that it is not necessary to recompute variable costs, click **No**.
Select Yes to post results to the database	• To post the results to the database, select **Yes**. • To view the results on the screen without posting, select **No**.

4. On the **DeptSpecificFcstAdj** tab, make changes in the yellow cells for future months by entering positive or negative whole numbers for each expense account.

   NOTE: You can only change revenue by making changes to the key stats in the department. Only then will the report calculate the change to revenue.

5. To make sure you have the latest data, in the **Main** ribbon tab, in the **Workbook Options** group, click **Refresh Data**.
6. To process, do any of the following:
   - To process selected departments only, in the **Main** ribbon tab, click **Publish > File Processing > Process File**.
   - To process for all departments, in the **Main** ribbon tab, click **Publish > File Processing > Process File Multipass**.

The final forecast will be the original forecast calculated by the Monthly Forecasting Utility, plus any manual changes made in this utility.

11

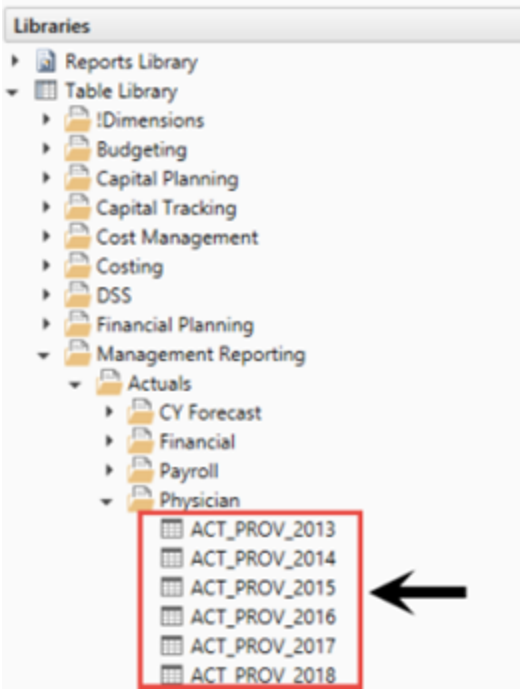
Working with Provider Volume Modeling

IMPORTANT: To use this feature, you must license Provider Modeling.

The Provider Volume Forecast tab allows you to model one key data type by Provider within the Rolling Forecasting template. This tab displays the volume at the Provider level and allows you to make adjustments for each time period.

Setting up Provider Volume Modeling

Ensure that you have actual data loaded into the Provider tables for at least the current fiscal year. To navigate to the tables, in the **Explorer** task pane, in the **Table Library** section, click **Table Library > Management Reporting > Physician**.



Complete the following steps:

1. Update the RFGROUP dimension table.
2. Update the RFCODE dimension table.
3. Update security for the Provider tab.
4. Update the plan files by provider.
5. Post the Rolling Forecasting process.

1. Update the RFGROUP dimension table

To use the provider modeling, you need to update the RFGROUP dimension table. Assign the proper template option and provider volume type in the RFGroups where you will model provider volume.

To update the RFGROUP dimension table:

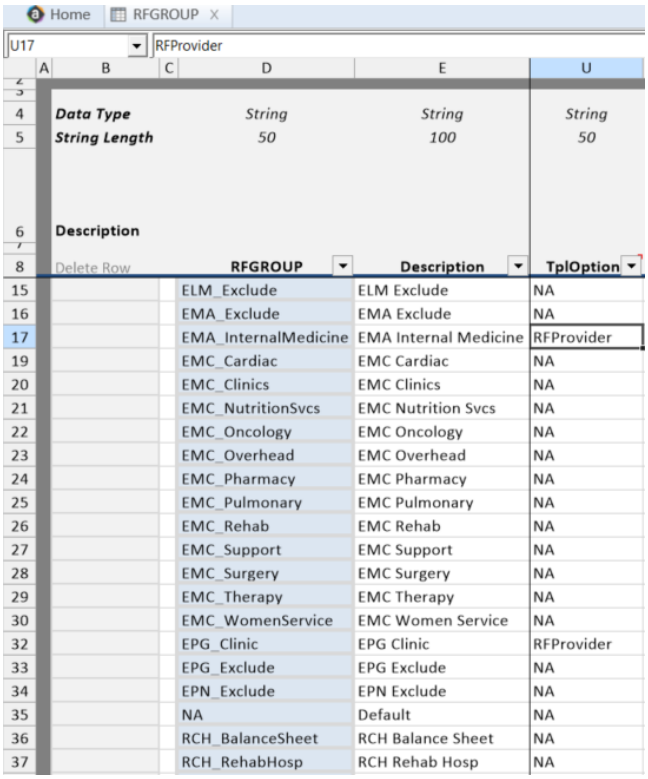
a. To assign the RFGroups to use the ProviderVolume tab, from the **Explorer** task pane, in the **Libraries** section, click **Table Library > Dimensions**, and double-click **RFGROUP**.

b. In the RFGroup table, for each RFGroup, in the **TplOptions** column, do the following:

- For any RFgroup that will use the ProviderVolume tab, type **RFProvider**.

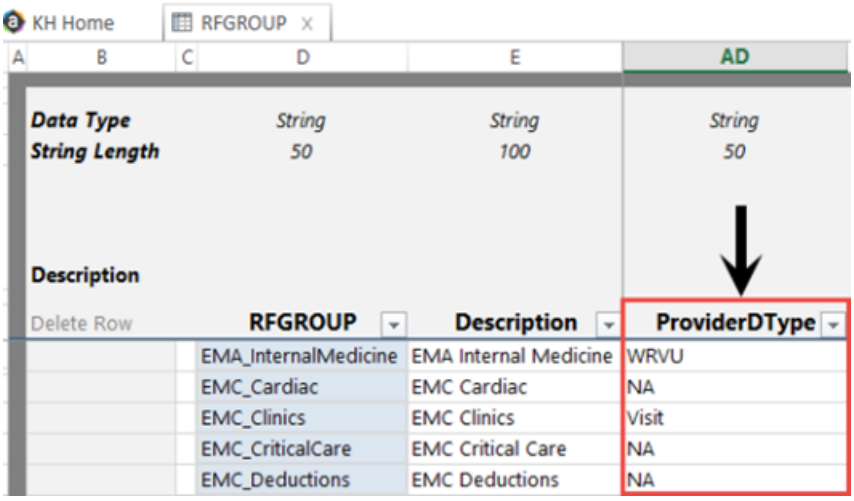
  NOTE: You can also double-click the cell, and select **RFProvider** from the dialog.

- For any RFGroup that will not use the ProviderVolume tab, type **NA**.



c. In the **ProviderDType** column, for each RFGroup, do the following:

- For the RFGroups that will use the ProviderVolume tab, type one of the following volume types to use: **WRVU**, **Encounter**, or **Visit**.
- For any RFGroup that will not use the ProviderVolume tab, type **NA**.



d. In the **Main** ribbon tab, click **Save**.

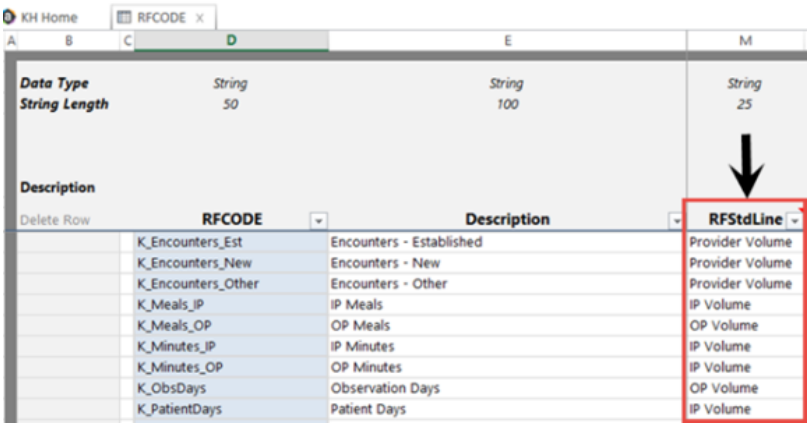
2. Update the RFCODE dimension table

You need to update the RFCODE dimensions table to assign the proper calculation method for the statistics account where the modeled provider volume will be mapped on the Forecast tab.

To update the RFCODE dimension table:

a. In the **Explorer** task pane, in the **Libraries** section, click **Table Library > Dimensions**, and double-click **RFCODE**.

b. For each RFCode where the data will be calculated using the ProviderVolume tab, in the **RFStdLine** column, type **Provider Volume**.



KH Home | RFCODE

	A	B	C	D	E	M
				Data Type	*String*	*String*	*String*
				String Length	*50*	*100*	*25*
				Description			
				Delete Row	**RFCODE**	**Description**	**RFStdLine**
					K_Encounters_Est	Encounters - Established	Provider Volume
					K_Encounters_New	Encounters - New	Provider Volume
					K_Encounters_Other	Encounters - Other	Provider Volume
					K_Meals_IP	IP Meals	IP Volume
					K_Meals_OP	OP Meals	OP Volume
					K_Minutes_IP	IP Minutes	IP Volume
					K_Minutes_OP	OP Minutes	IP Volume
					K_ObsDays	Observation Days	OP Volume
					K_PatientDays	Patient Days	IP Volume

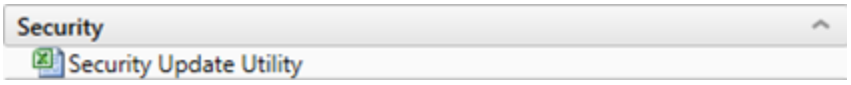
c. In the **Main** ribbon tab, click **Save**.

3. Update security for the Provider tab

You will need to update security to allow the ProviderVolume tab to display. Without assigning the proper security to each user, including administrators, the ProviderVolume tab will not display.

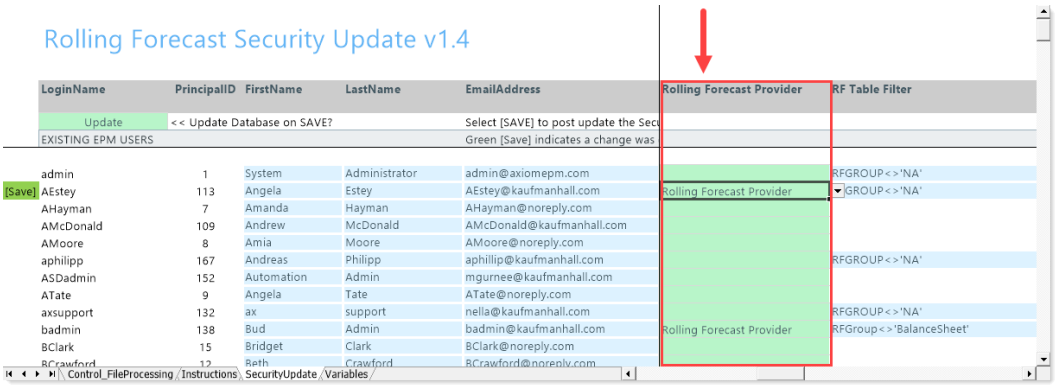
To update security for the Provider tab:

a. In the **RF Admin** task pane, in the **Security** section, double-click **Security Update Utility**.



b. In the **Rolling Forecasting Provider** column, do the following:

- To allow a user to access the ProviderVolume tab in the plan file, select **Rolling Forecast Provider**.
- To exclude access for a user, leave the cell blank.



c. In the **Main** ribbon tab, click **Save**.

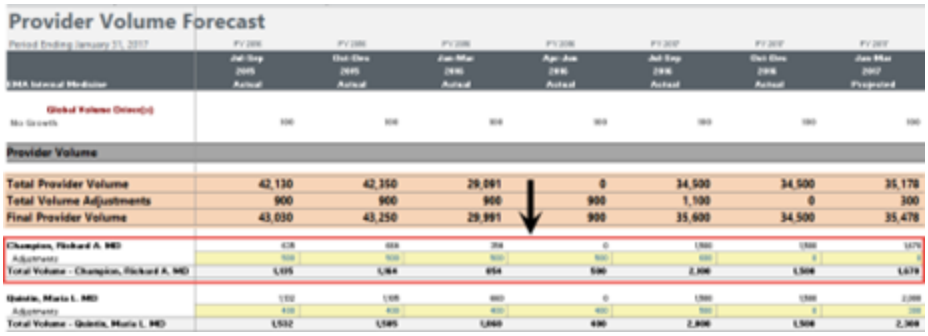
After you complete all the setup steps, you can build and process your Rolling Forecasting plan files with the ProviderVolume tab.

4. Update plan files by provider

Provider Volume Forecast

This tab displays and allows you to make adjustments at the Provider level for each time period. The providers that display are based on the actual data loaded in table ACT_Provider_XXXX and how you grouped the departments to the RFGroup column in the DEPT dimensions table. The datatype that you model is based on the selection you made on the RFGRoup dimensions table in the ProviderDType column instructed in Step 1.

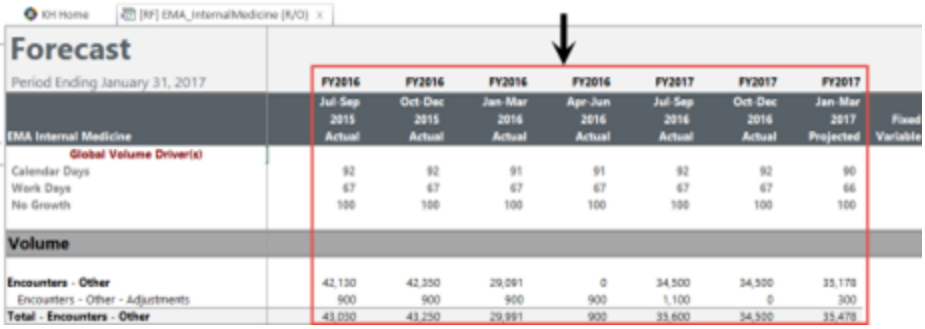
The driver for growth of each provider is based on the **Other Driver** assigned on the RFStatCodes tab in the RF Assumptions driver, as discussed in . You can make adjustments on the **Adjustments** row for each provider block.



Forecast

The total results of all providers on the ProviderVolume tab feed into the volume section of the Forecast

tab. The account where the volumes are mapped is determined on the **RFStdline** of the RFCode table as instructed in Step 2.

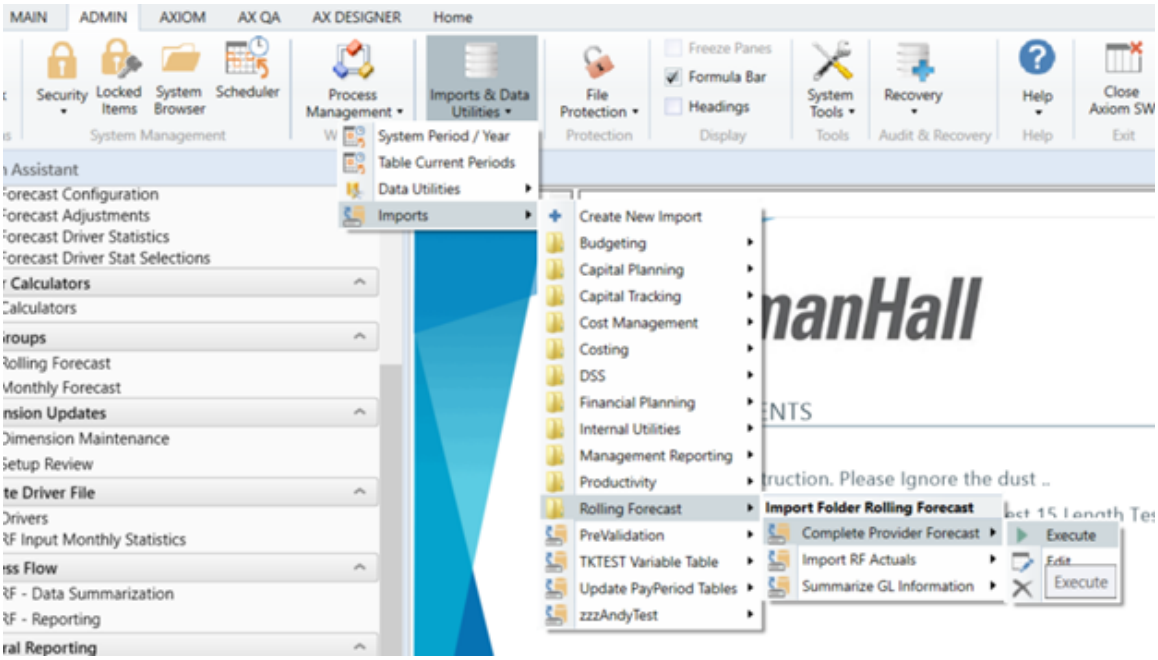


5. Post the Rolling Forecasting process

After you complete each Rolling Forecasting process, run the Complete Provider Forecast utility to update the data in the RF_Provider table from the data in the RF_Forecast table. This utility runs with the Waterfall utility.

To post the Rolling Forecasting process:

- In the **Admin** ribbon tab, click **Imports & Data Utilities > Imports > Rolling Forecast > Complete Provider Forecast > Execute**.



12

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 Rolling Forecasting. All necessary steps can be detailed in the process, including steps that happen outside of Axiom Rolling Forecasting (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 Rolling Forecasting, 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.

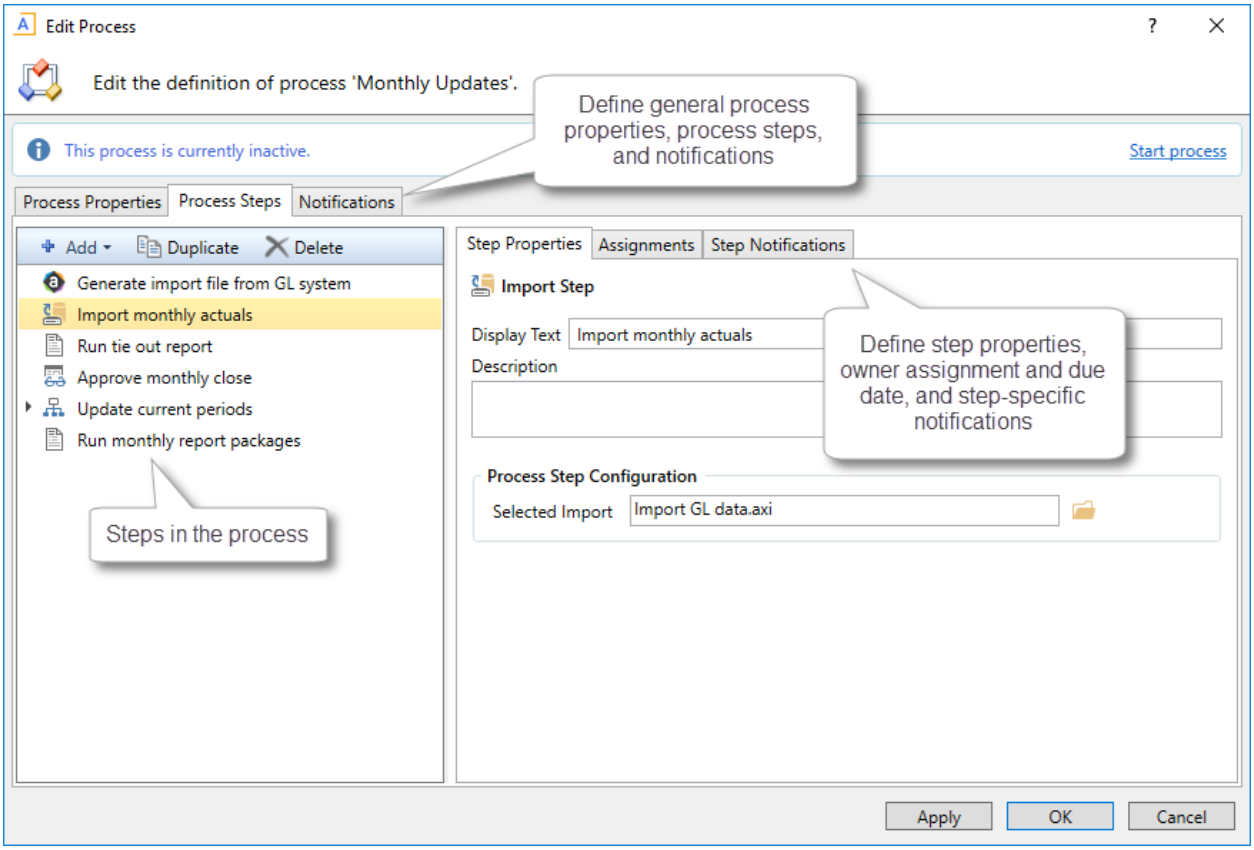
About process management

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



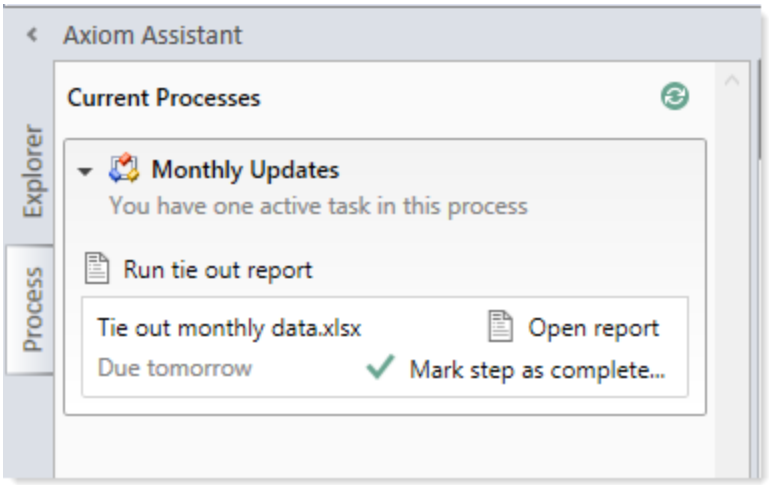
Example process definition

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.

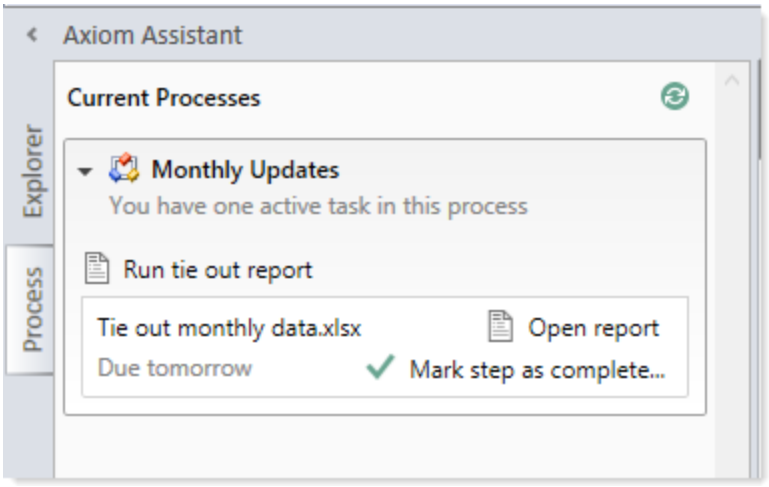
Once the currently active step is complete, the process moves to the next step, and so on until all steps are complete. Generally speaking, only one step at a time is active in a process. However, there can be multiple active steps at the same time if a Parallel Subprocess step is used in the process. 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).



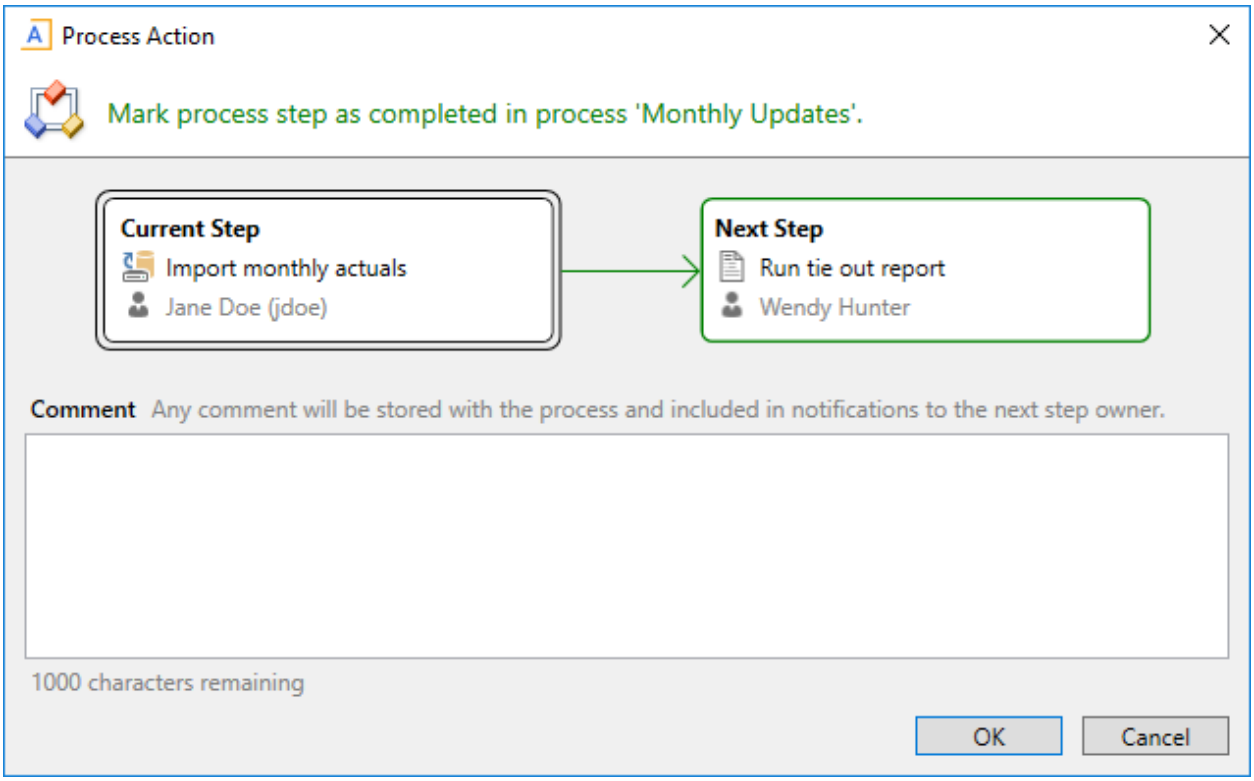
Example active task in task pane

The process task may be an activity that the assigned user performs in Axiom Rolling Forecasting, 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 Rolling Forecasting 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 Rolling Forecasting. 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 Rolling Forecasting 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.

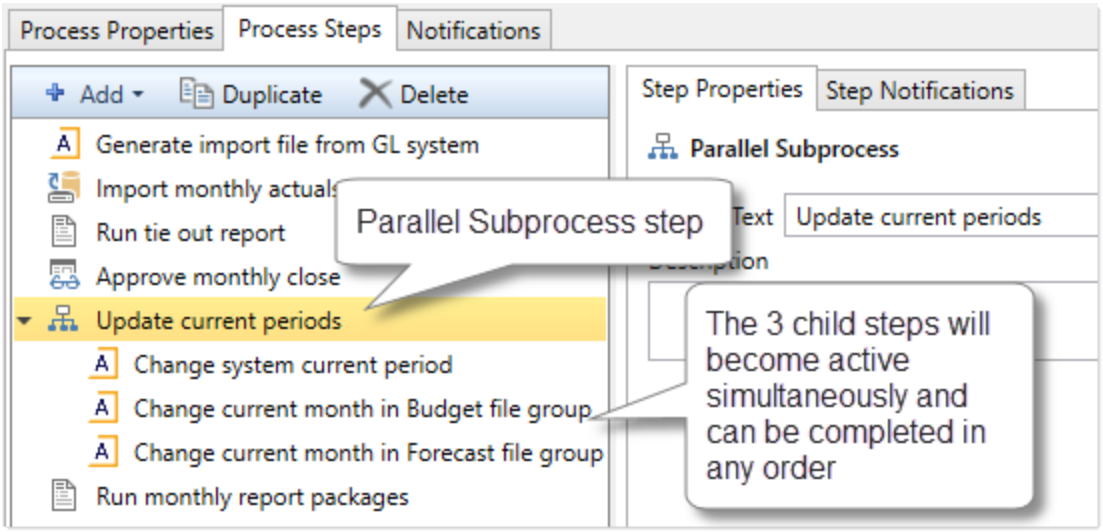
Performing process steps in parallel

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 Rolling Forecasting that the sub-steps of the subprocess can be completed in any order.



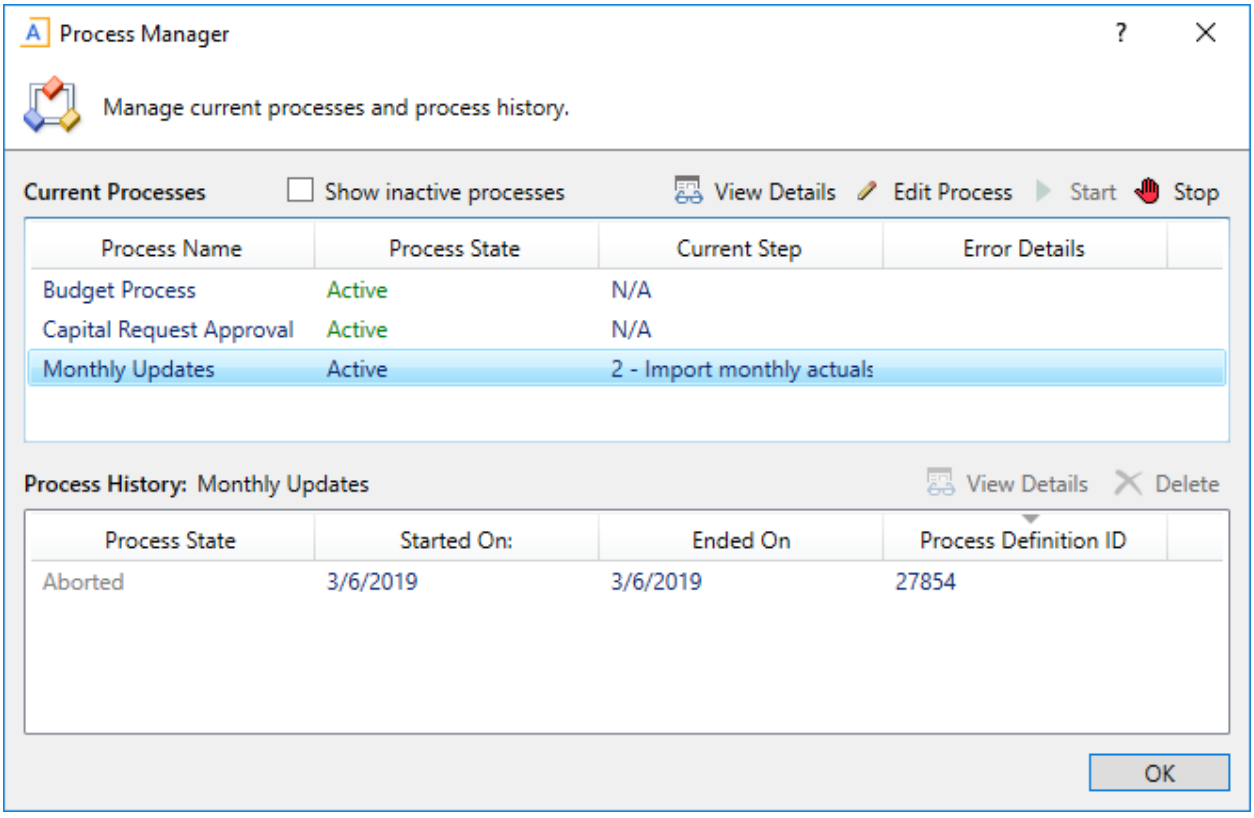
When the Parallel Subprocess step becomes the active step, all sub-steps are also made active. Once all sub-steps in the subprocess are completed, then the Parallel Subprocess step is automatically marked as completed, and the process moves to the next step.

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.

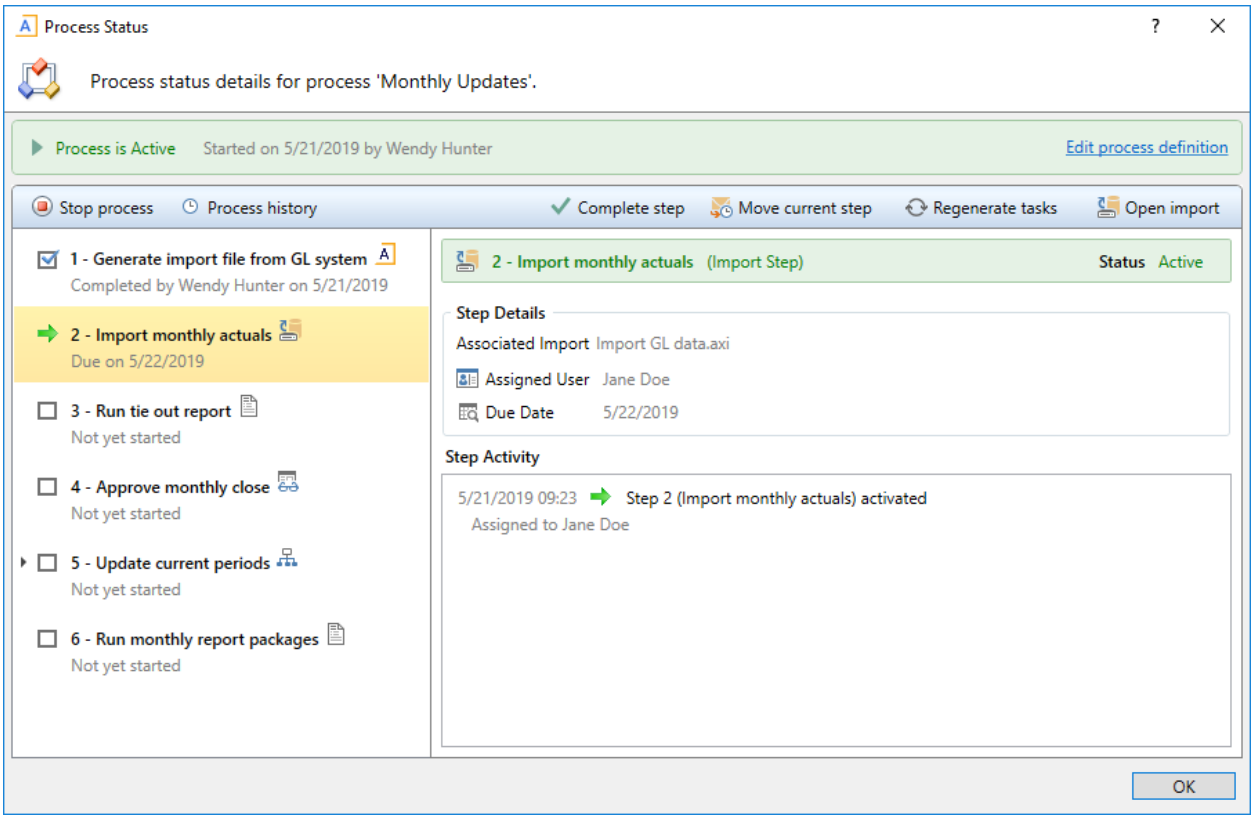
Tracking process status and history

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.



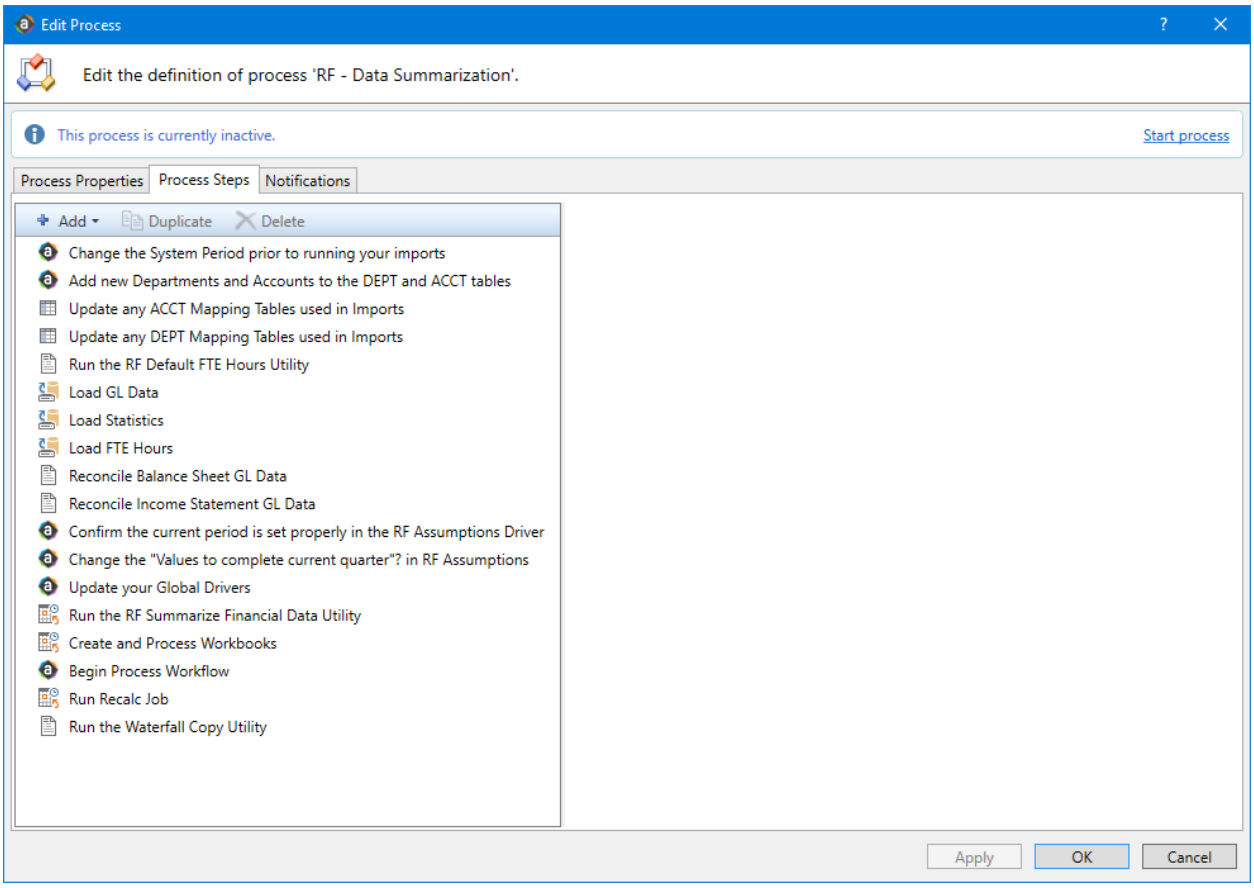
Example process details in the Process Status dialog

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.

Configuring the RF - Data Summarization process

Many Axiom Healthcare Suite products come with pre-defined processes for common tasks. For Axiom Rolling Forecasting, the RF Admin task pane includes the RF - Data Summarization process.

The steps for the RF - Data Summarization process include:

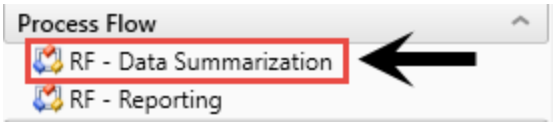


1. **Change the System Period prior to running your reports** – Ensures that your reports are based on the most recent period.
2. **Add new Departments and Accounts to the DEPT and ACCT tables** – A required step when exceptions appear as a result of loading new data.
3. **Update any ACCT Mapping Tables used in Imports** – A possible required step to add new account mappings when exceptions appear as a result of loading new data if mapping tables have been used.
4. **Update any DEPT Mapping Tables used in Imports** – A possible required step for adding new Dept mappings when exceptions appear as a result of loading new data if mapping tables have been used.
5. **Run the RF Default FTE Hours Utility** – A report used to post hours if they are not imported on a monthly basis using the import process. It leverages the Forecast Group and Forecast Codes to summarize the data.
6. **Load GL Data** – Loads your financial data.
7. **Load Statistics** – Loads any statistics not loaded in your GL Data file.
8. **Load FTE Hours** – Loads your FTE Hours.

9. **Reconcile Balance Sheet GL Data** – Reconcile your Balance Sheet in Axiom to your internal data.
10. **Reconcile Income Statement GL Data** – Reconciles your Income Statement in Axiom to your internal data.
11. **Confirm the current period is set properly in the RF Assumptions Driver** – Ensures that you have the proper period set in the assumption driver.
12. **Change the "Values to complete current quarter"? in RF Assumptions** – Ensures that you have properly updated the values to use for the current quarter.
13. **Update your Global Drivers** – Ensures that Global Drivers have been updated.
14. **Run the RF Summarize Financial Data Utility** – Ensures that you have summarized your financial data prior to creating and processing your plan files.
15. **Create and Process Plan Files** – Creates and processes the plan files to use to update your rolling forecast.
16. **Begin Process Workflow** – Ensures that you activate the current workflow process.
17. **Run Recalc Job** – Ensures that all global driver changes take effect in the plan files.

To view or edit the RF - Data Summarization process:

1. In the RF Admin task pane, in the **Process Flow** section, double-click **RF - Data Summarization**.



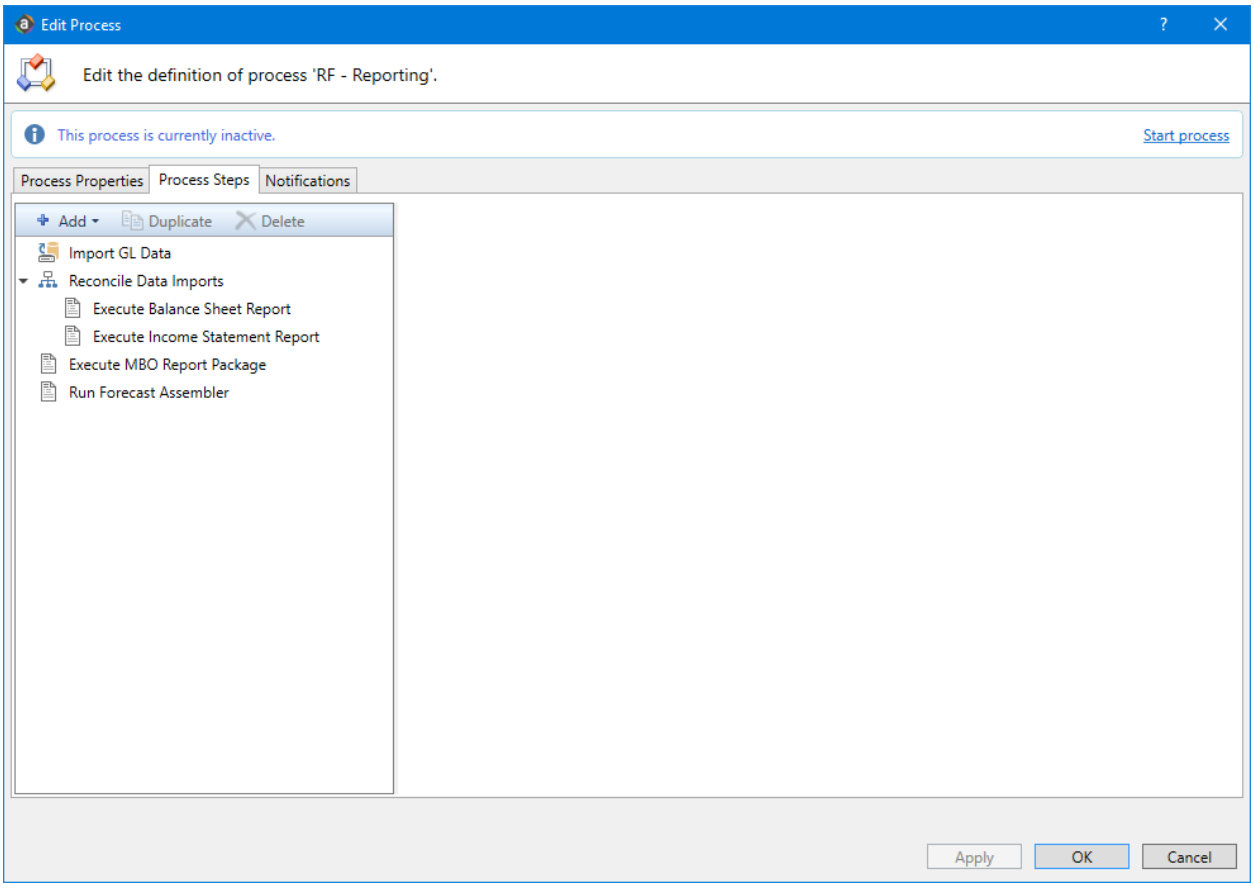
2. To view or edit the process steps, click the **Process Steps** tab.

   For more information on how to modify a process, see Creating or modifying a process definition.

Configuring the RF - Reporting process

This process generates forecasts using common budget and forecast techniques. Forecasts are calculated using historical relationships to project the financial results of operations given current operating relationships.

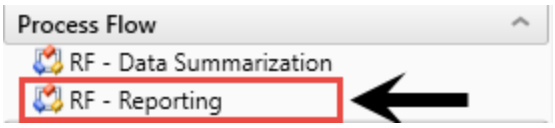
The steps for the RF - Reporting process include:



1. **Import GL Data** – Loads GL, Statistics, and payroll files.
2. **Reconcile Data Imports** – Reconciles all data imports.
3. **Executive MBO Report Package** – Processes all the reports in your executive package for distribution.
4. **Run Forecast Assembler** – Assembles executive reports for email.

To view or edit the RF - Data Summarization process:

1. In the RF Admin task pane, in the **Process Flow** section, double-click **RF - Reporting**.



2. To view or edit the process steps, click the **Process Steps** tab.

   For more information on how to modify a process, see Creating or modifying a process definition.

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 Rolling Forecasting 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 Rolling Forecasting 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.

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.

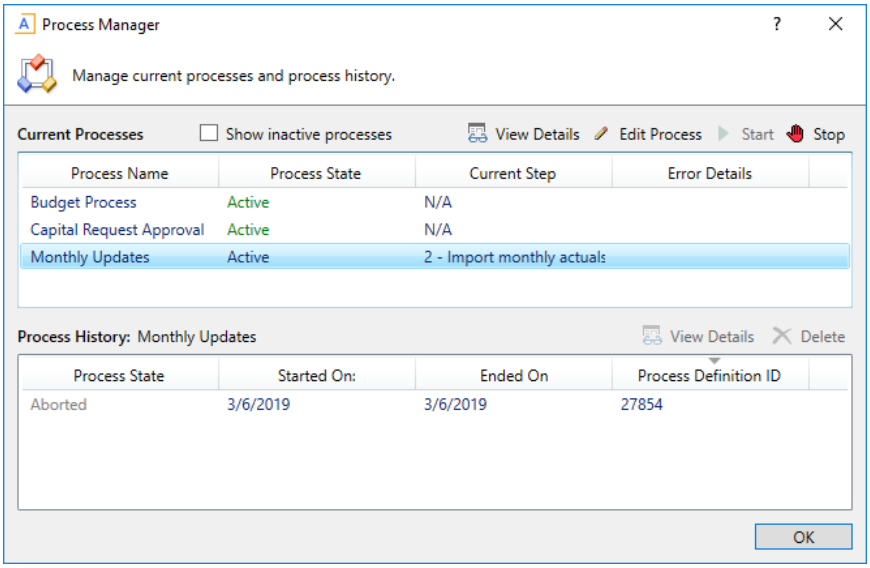
Process status summary

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.

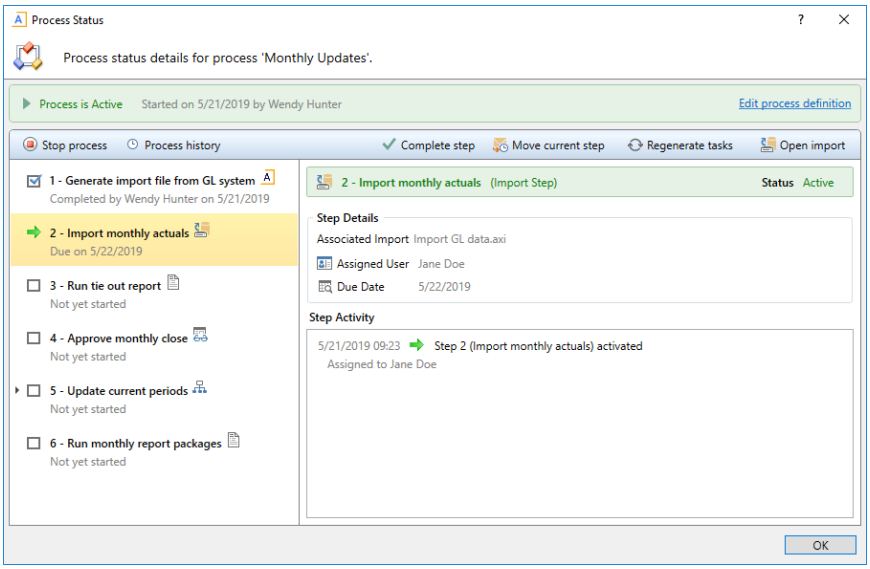
Viewing individual process details

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.

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:

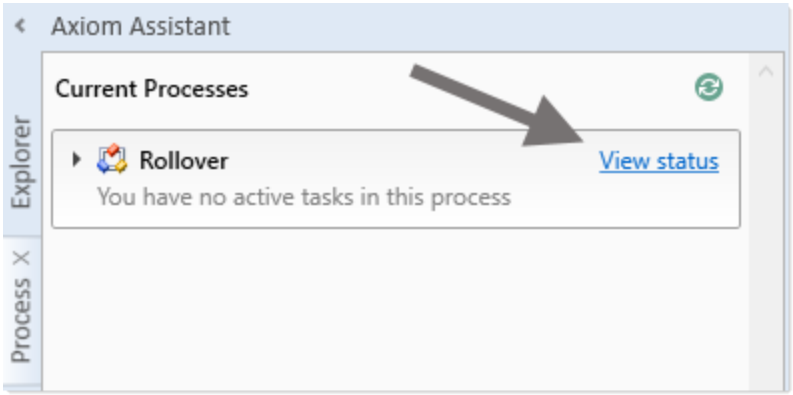
- If you add a step before the currently active step, then that step will not be part of the progression unless you move the process back to that step, or unless it is possible for the process to be rejected back to that step.
- If you move the currently active step to an earlier point in the process, 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.

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).



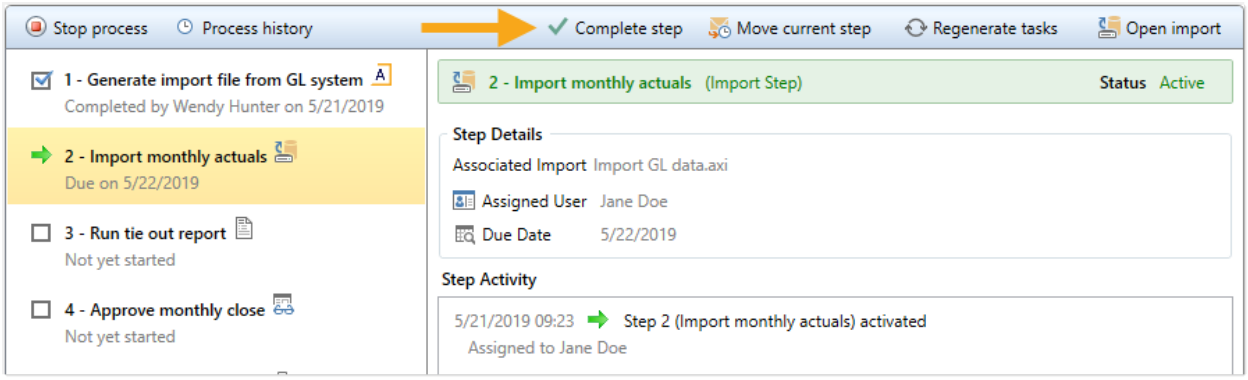
The process definition also contains a **View status details** link to open the Process Status dialog, when the process is active.

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.

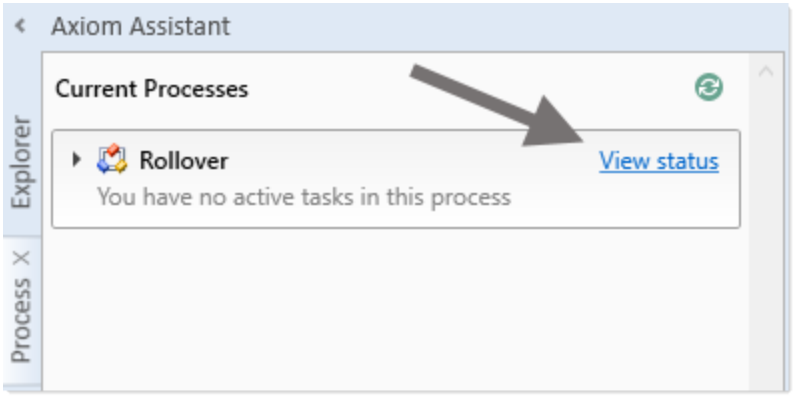
The current step is aborted, and the target step is made active.

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).



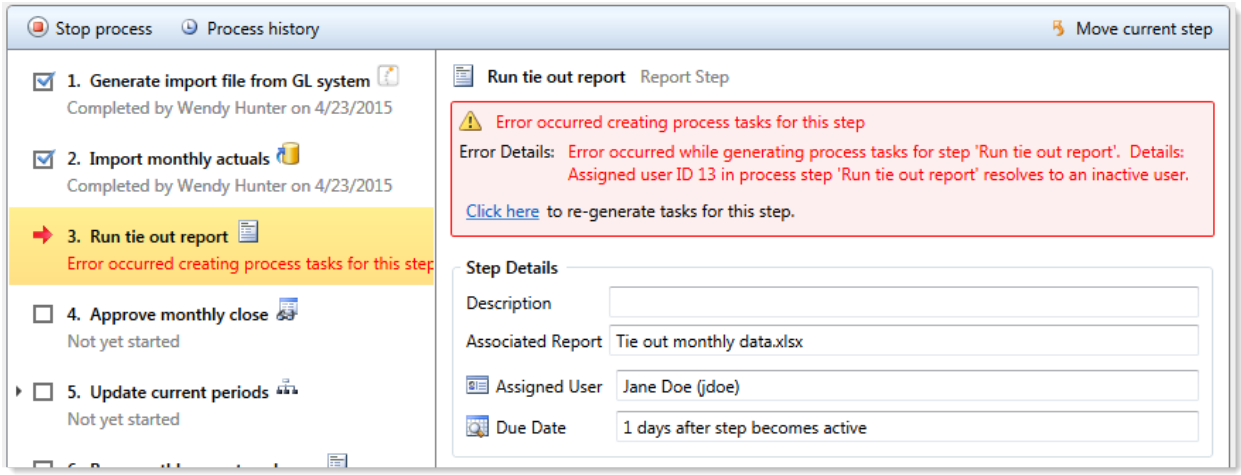
The process definition also contains a **View status details** link to open the Process Status dialog, when the process is active.

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 Rolling Forecasting 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.

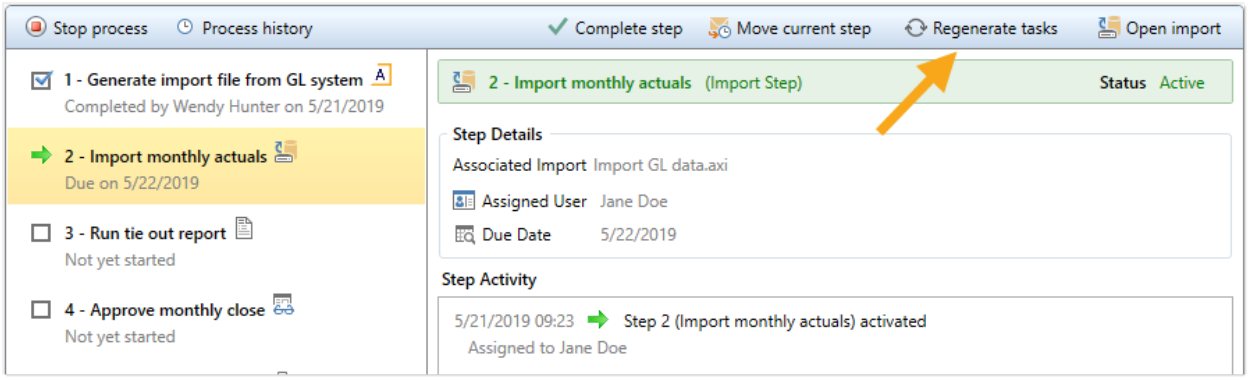
Regenerating tasks to reflect process or security changes

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**.

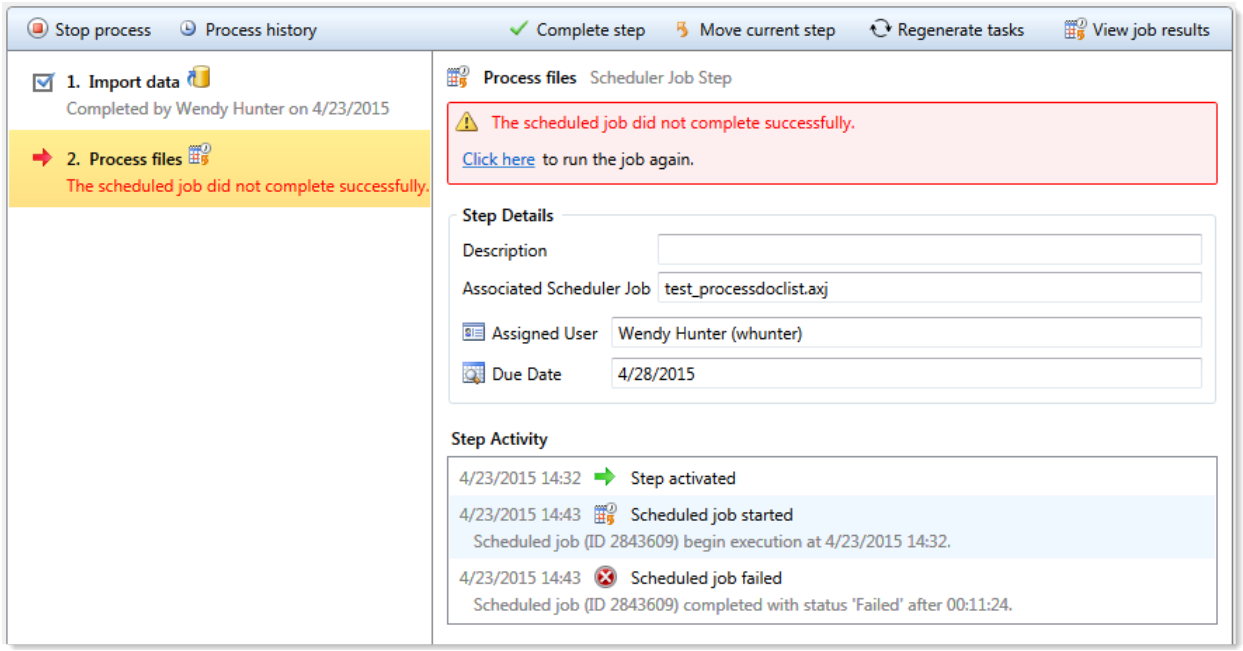


A message box informs you that all current tasks for the step will be deleted and new tasks will be created. Click **OK** to continue.

Restarting Scheduler jobs after errors

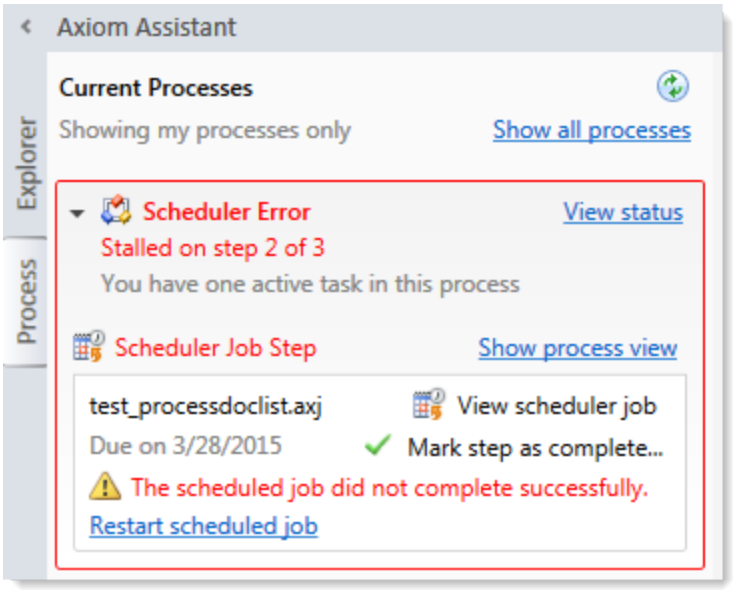
If a Scheduler Process Step experiences an error when attempting to run a Scheduler job, then you have the option to restart the job. You should restart the job if the error was the result of a temporary condition that no longer applies, or if the underlying condition that caused the error has since 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.



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.

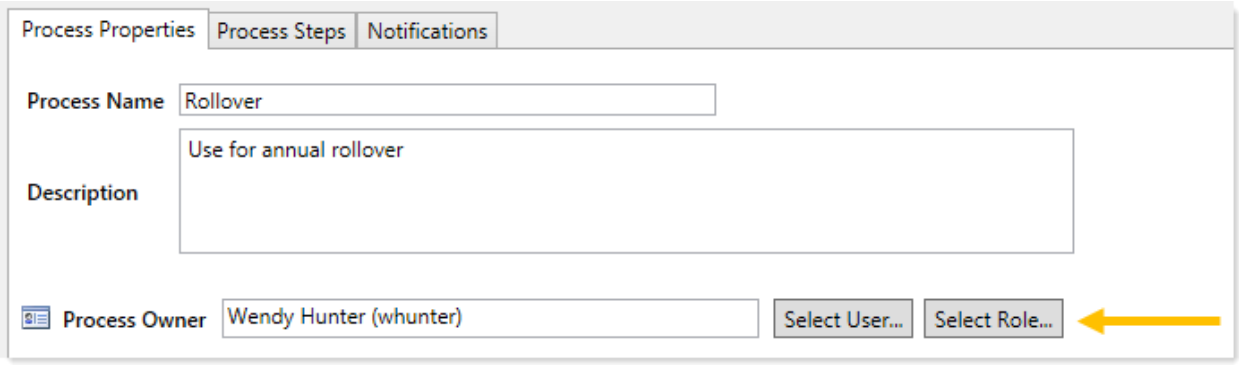
Designating the process owner

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.

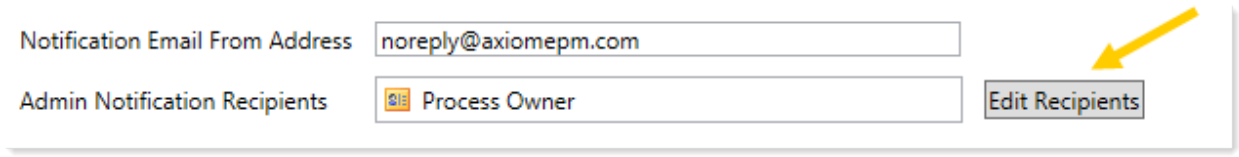
Administrative notifications

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:

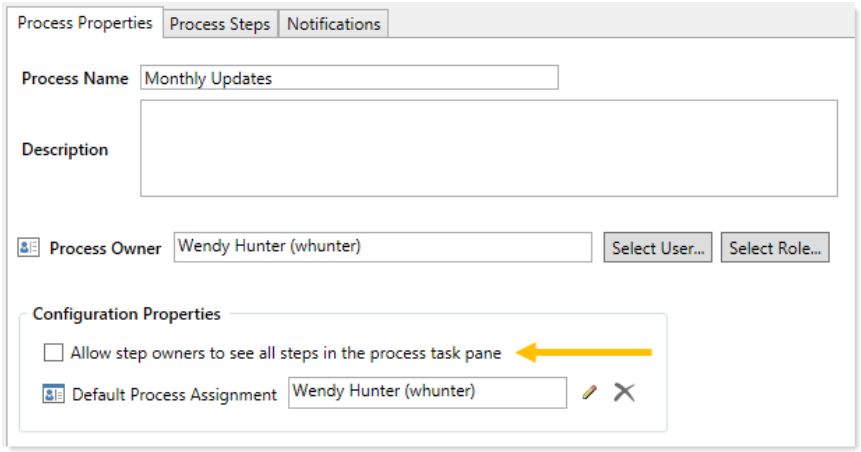
- To add a recipient, click **Add Recipients>User** or **Add Recipients> Role** to choose a user or role.
- To remove a recipient, select the user or role in the Notification Recipients list and then click **Delete**.

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**.

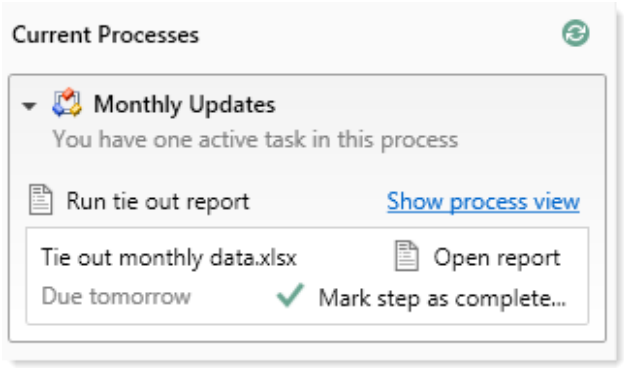


This setting is disabled by default, which means that step owners only have access to the Task View in the Process task pane. The Task View displays the currently active step as follows:

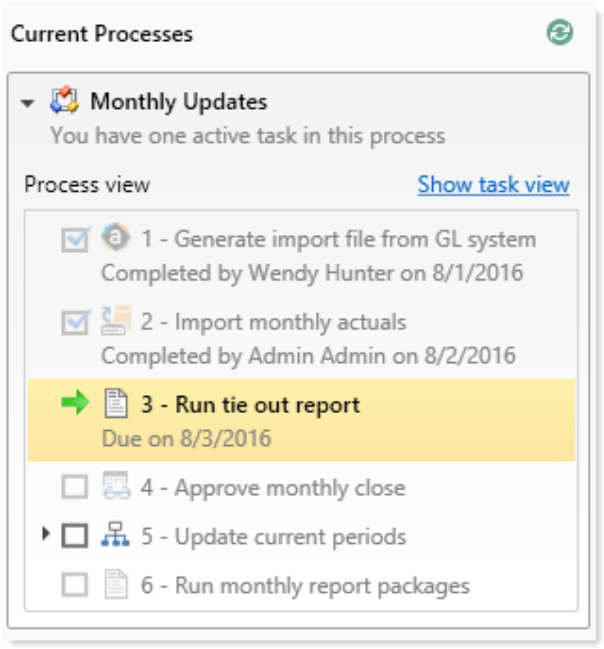
- The name and details of the currently active step are displayed without any reference to the step number. However, the user can see the step number in the tooltip.
- The step owner cannot see any other steps in the process, within the Process task pane. When the user completes the step, they can see 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.

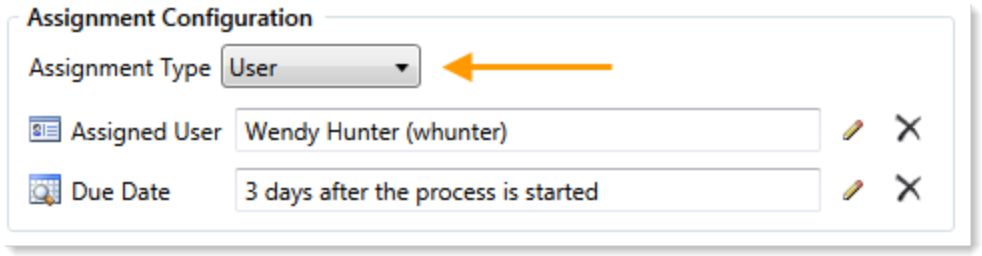
When a step is made active, the assigned owner is notified that they have a task to complete in the process (if notifications are enabled for the process and for the step). The owner can view the active task in the Process task pane, perform actions associated with the task, and then mark the step as 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:

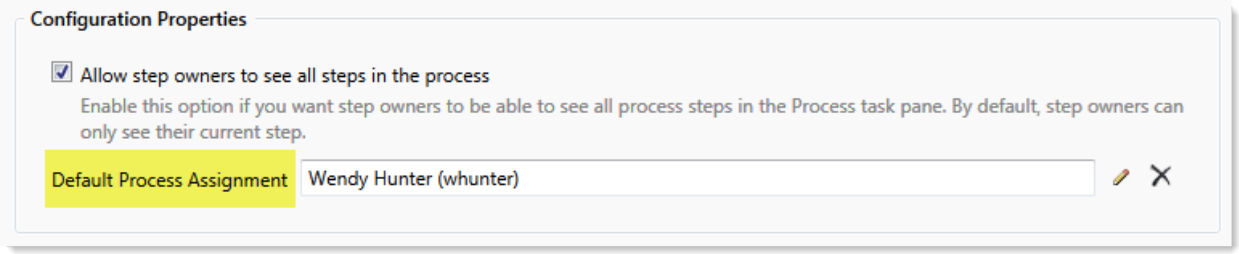
Assignment Type	Description
User	Assign a specific user as the owner of the step. When the step becomes active, a process task will be generated for the user to complete the step. Click the Edit button to the right of the **Assigned User** box to select a user. You can select any user in the Axiom Rolling Forecasting 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 Rolling Forecasting 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).

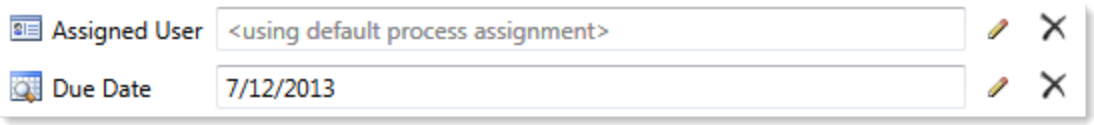
Defining a default user assignment for the process

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.

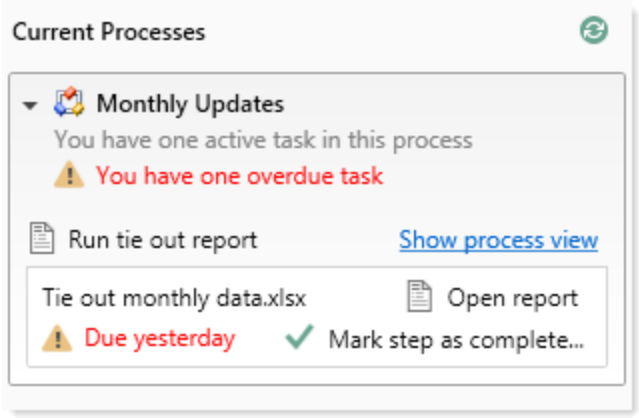
Step ownership and security permissions

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.

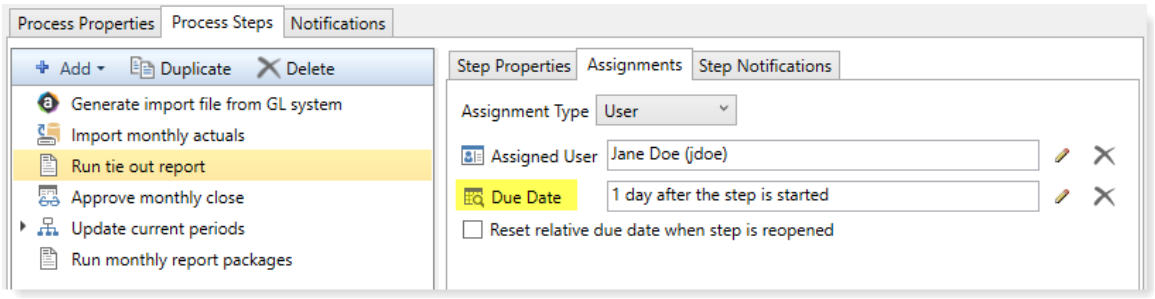


Example display of overdue step

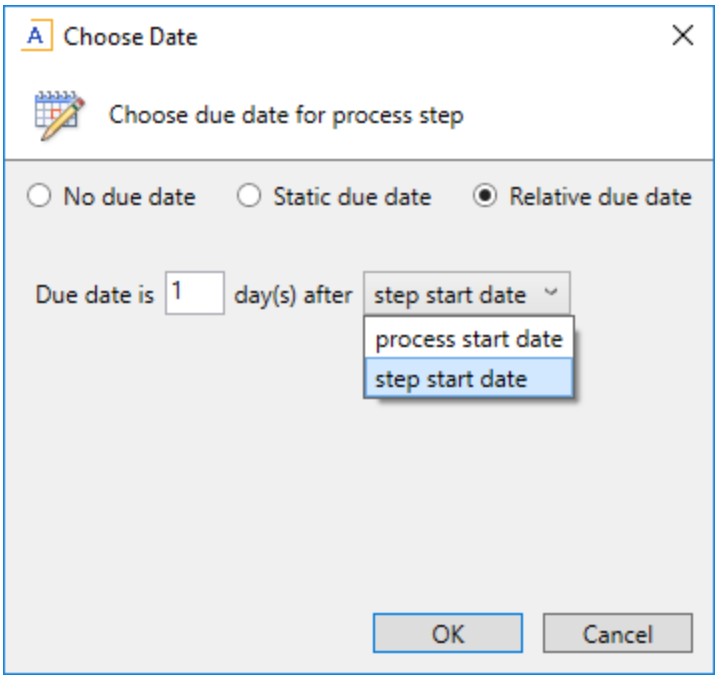
In the process definition, step due dates are defined per step on the **Process Steps** tab, in the **Assignments** sub-tab.

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 6/1/2020 when the step is first started, and then later the step is reopened on 6/2/2020, the step due date will remain at 6/1/2020 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 6/2/2020 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 6/5/2020.

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 Rolling Forecasting. 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:

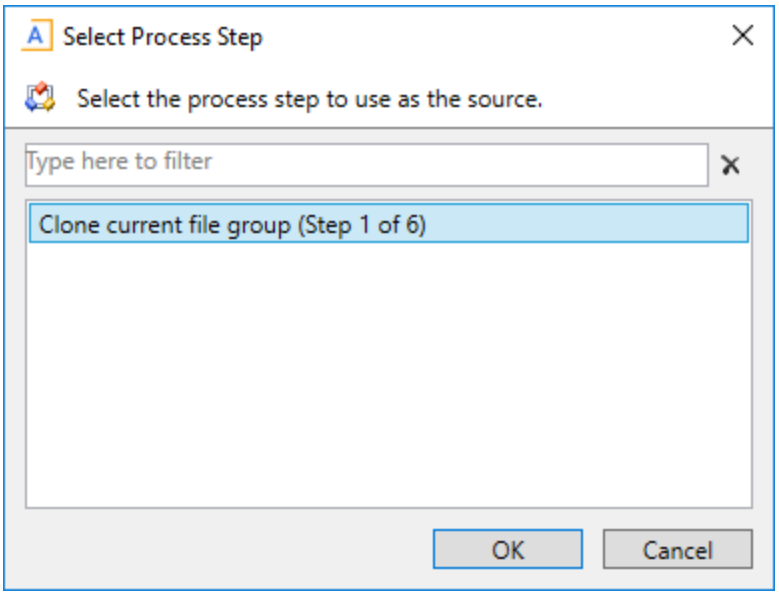
- Step 1 uses the Clone File Group action to create a new file group for the new cycle of planning.
- Step 2 creates the plan files for the new file group that was created in Step 1.
- Step 3 processes the plan files for the new file group that was created in Step 1.

For Step 1, you would point the step to an existing file group such as Budget 2020. When the process is activated, the step owner would perform the cloning process and create a new file group such as Budget 2021. However when setting up the process definition, you can't point Step 2 to the Budget 2021 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:

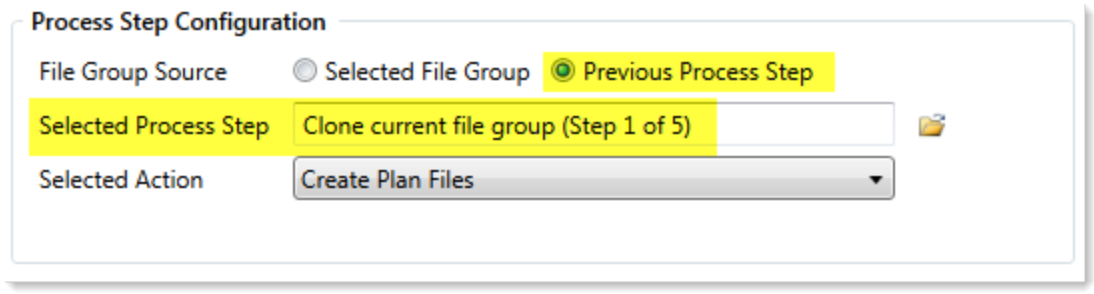
1. For **File Group Source**, select **Previous Process Step**.
2. For **Selected Process Step**, click the Browse button to select the step where the file group is created.



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:

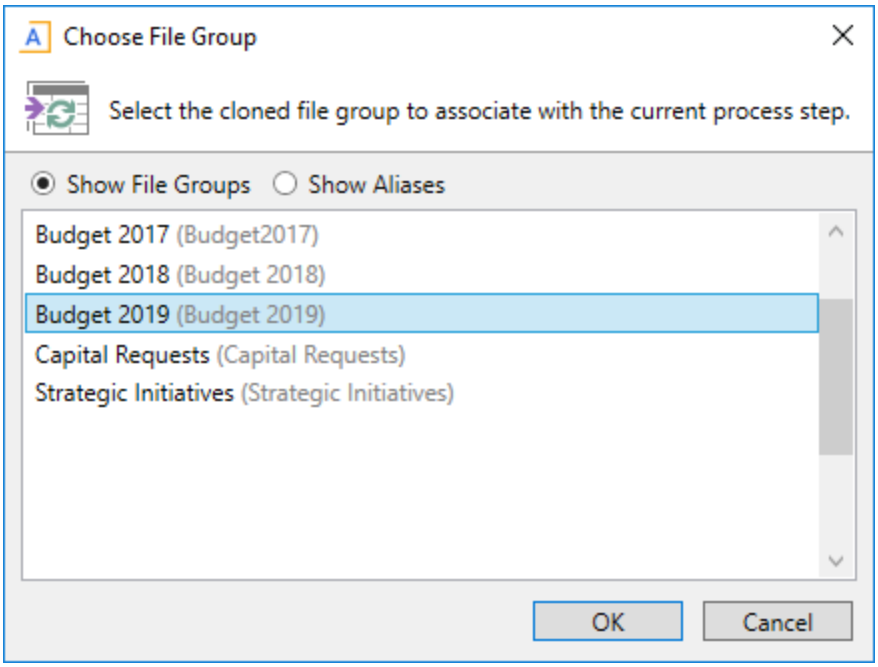


This means that Step 2 will create plan files for the file group that was created in Step 1.

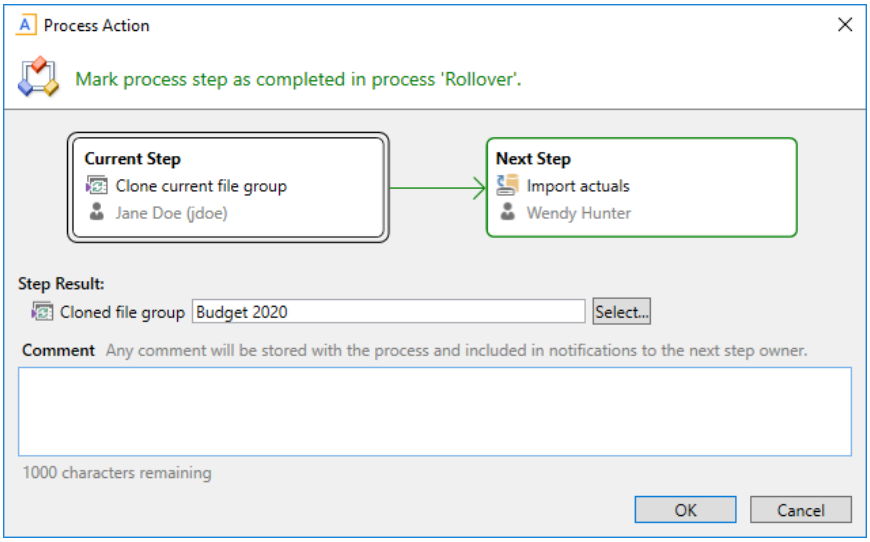
Tracking the step result in active processes

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.

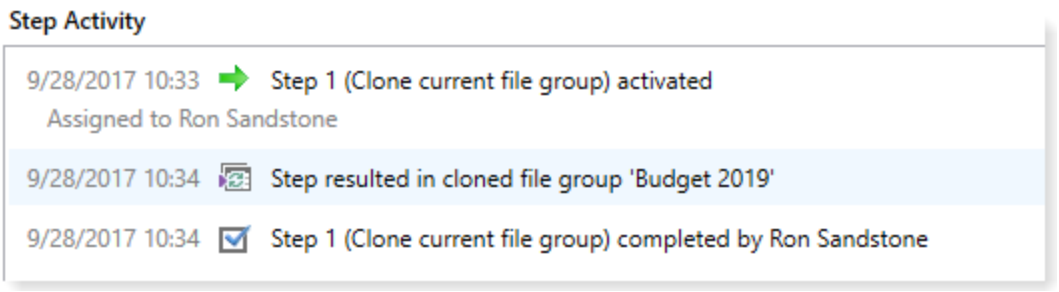
When a step owner completes a step where the created file group is used by a subsequent step, then as part of the completion process they must specify the name of the file group that was created.



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 Rolling Forecasting.

You might use this step for:

- A task that a user needs to compete outside of Axiom Rolling Forecasting.
- A task that uses an Axiom Rolling Forecasting 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 Rolling Forecasting, 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 Rolling Forecasting. 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 Rolling Forecasting 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 Rolling Forecasting 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 Rolling Forecasting 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 Rolling Forecasting 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

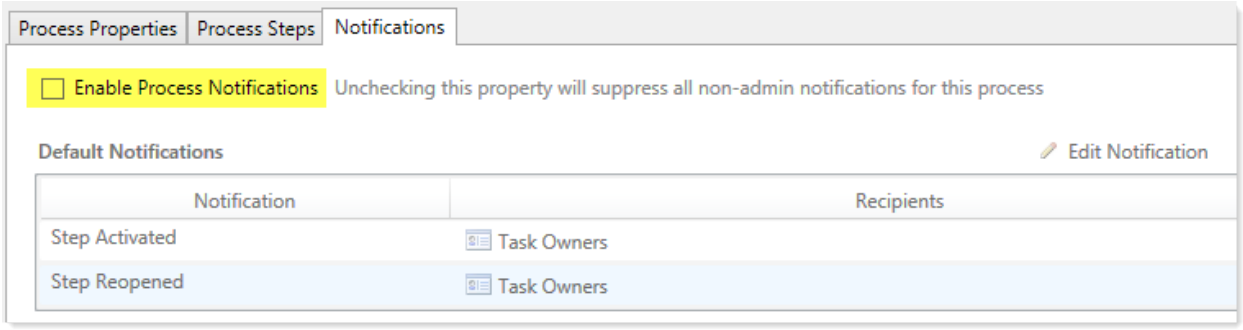
By default, each process includes "built-in" notifications intended to inform step owners about new and reopened tasks in the process. You can define additional notifications and customize the built-in notifications as needed.

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

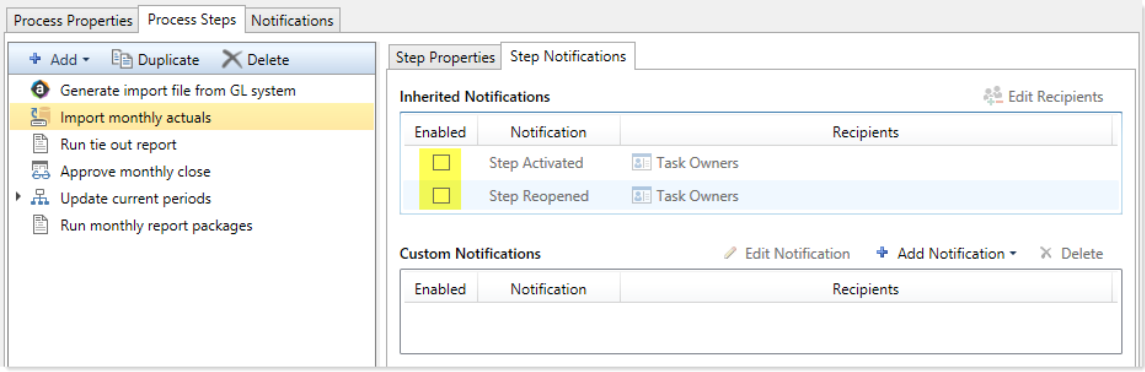
Administrative notifications are always sent and cannot be disabled. For more information on these notifications, see Designating the process owner.

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.

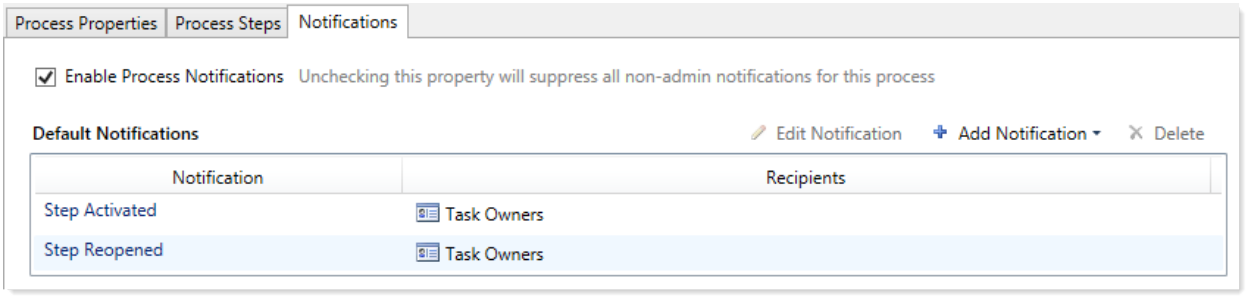
Default notifications are best for notifications that you want to use for all or most of the steps in the process. If many steps use the same notification, then it is easier to define it at the process level rather than for each individual step. If you don't want a default notification to apply to a 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.



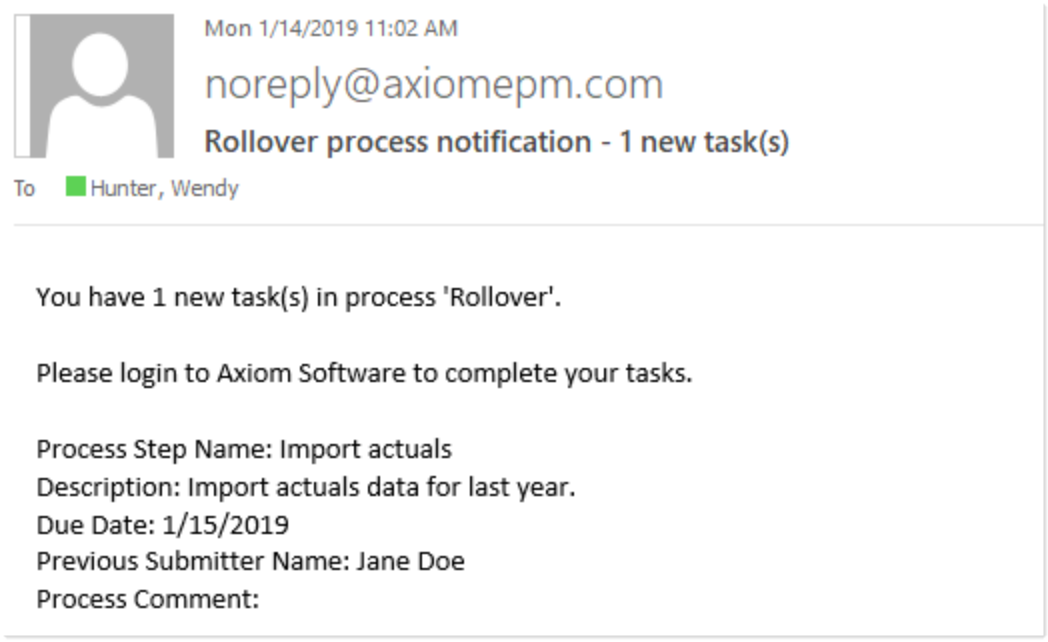
Built-in default notifications for a process

These built-in notifications are configured as follows:

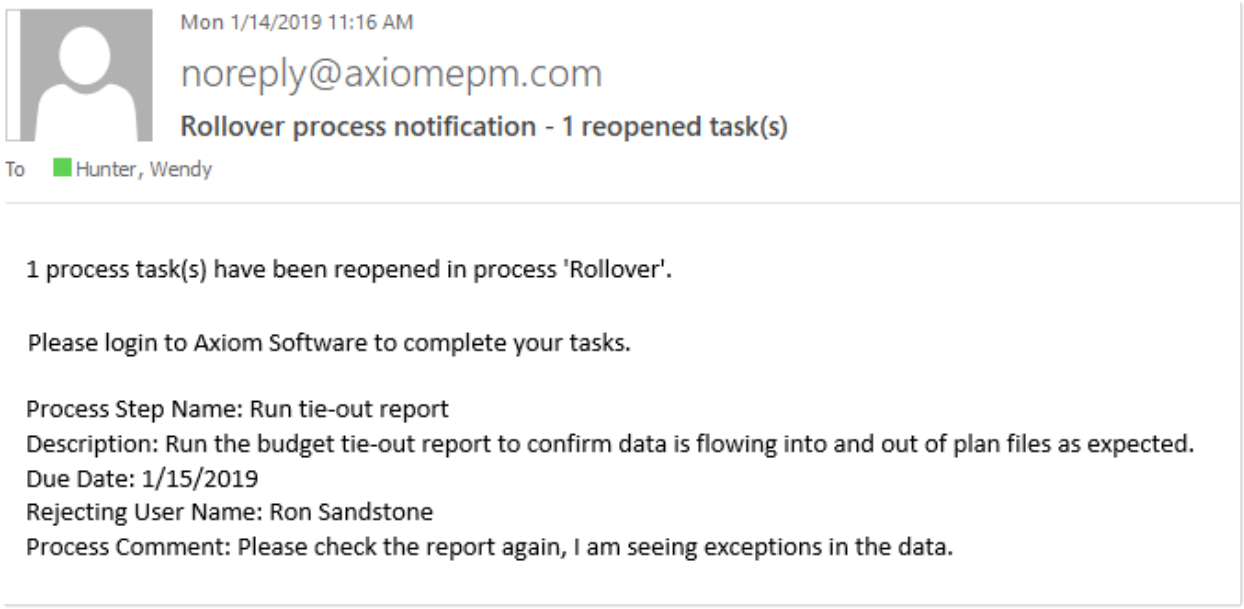
- Notification recipients are set to task owners.
- Notification delivery is set to use the process-level setting (which by default is email delivery).
- The messages contain basic details about the process and the current task.

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**.

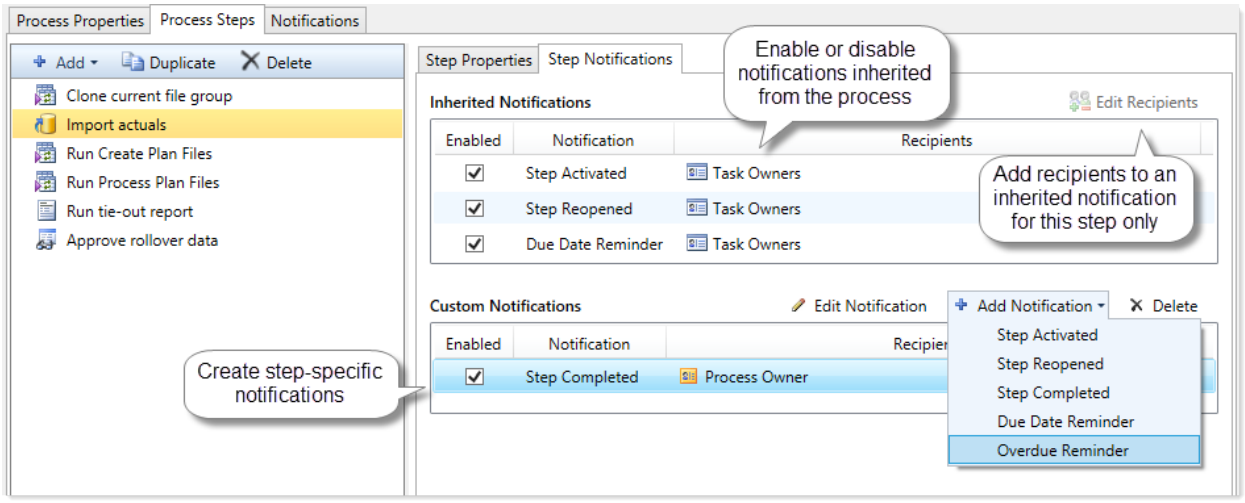
Within the **Edit Process Notification** dialog, you can edit notification properties such as:

- 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.

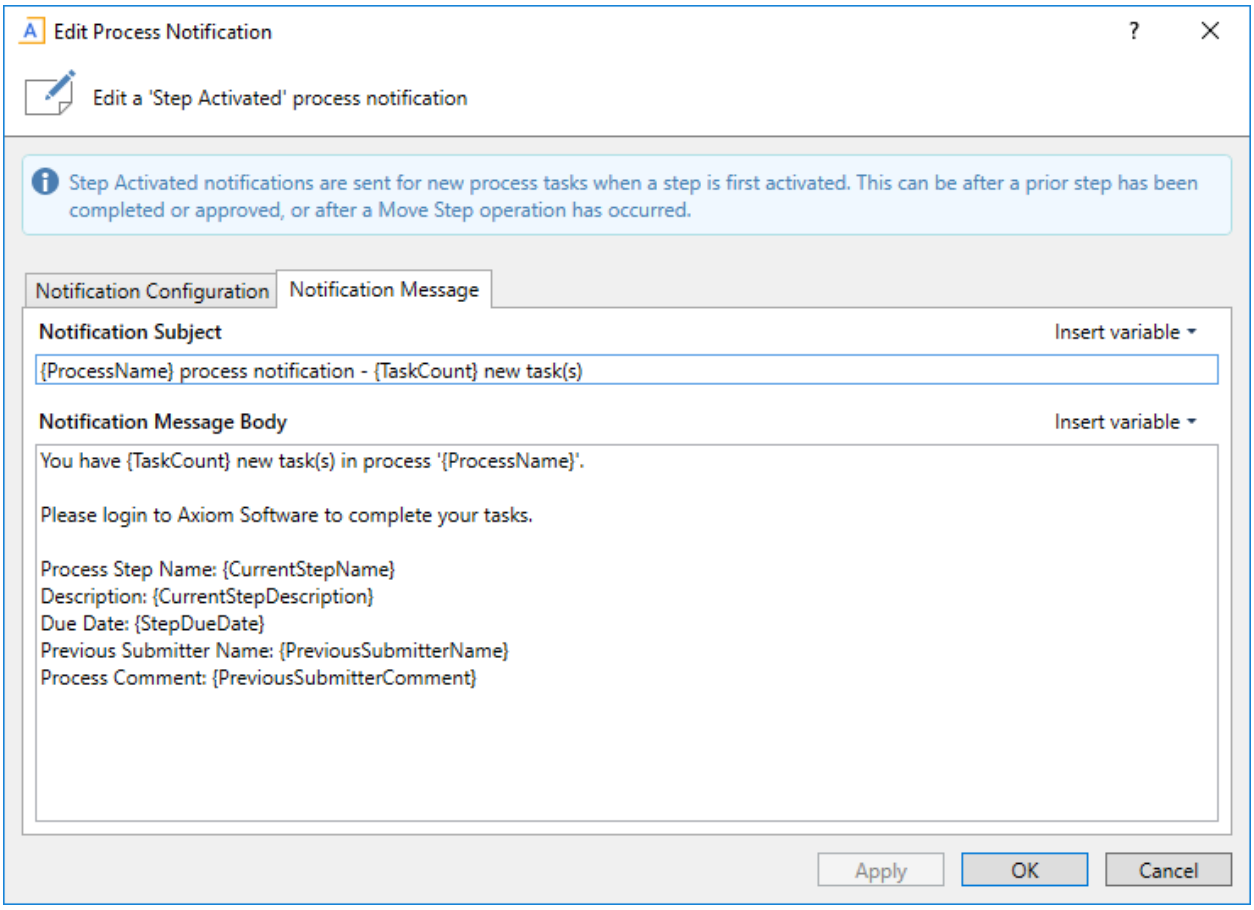
NOTE: If a step has inherited a notification from the process level, the content of that notification cannot be edited at the step level. You must go to the process level to edit the content of the inherited notification.

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 Rolling Forecasting—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.

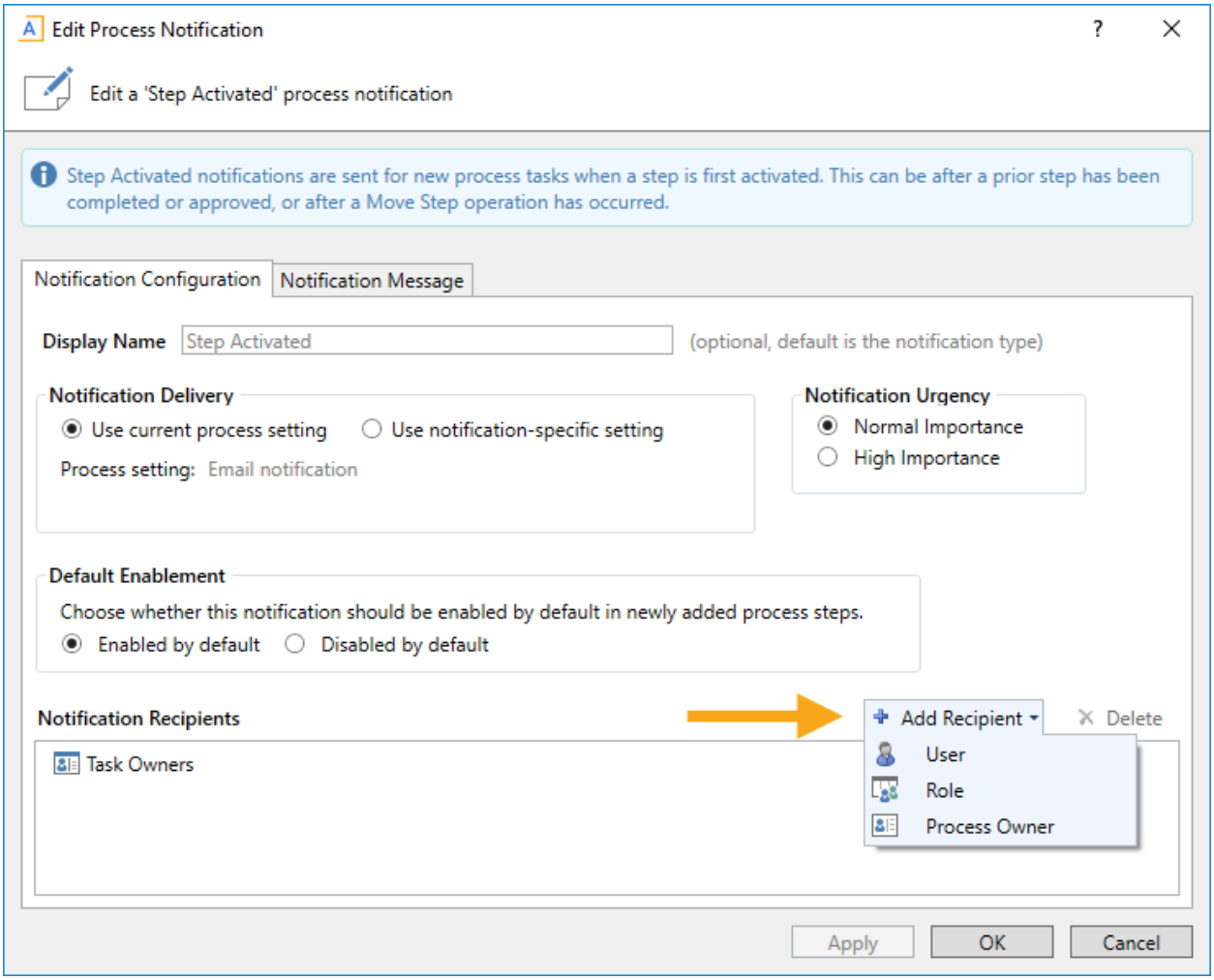
Recipient Types	Description
Task Owners	The notification will be sent to the current task owners for the step. This recipient type is not available for the Step Completed or Step Rejected notification types, because once the step is completed it has no current owners.
User	Select any named user defined within Axiom Rolling Forecasting security to send the notification to that user. This recipient type is available for any notification.
Role	Select any named role defined within Axiom Rolling Forecasting 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.

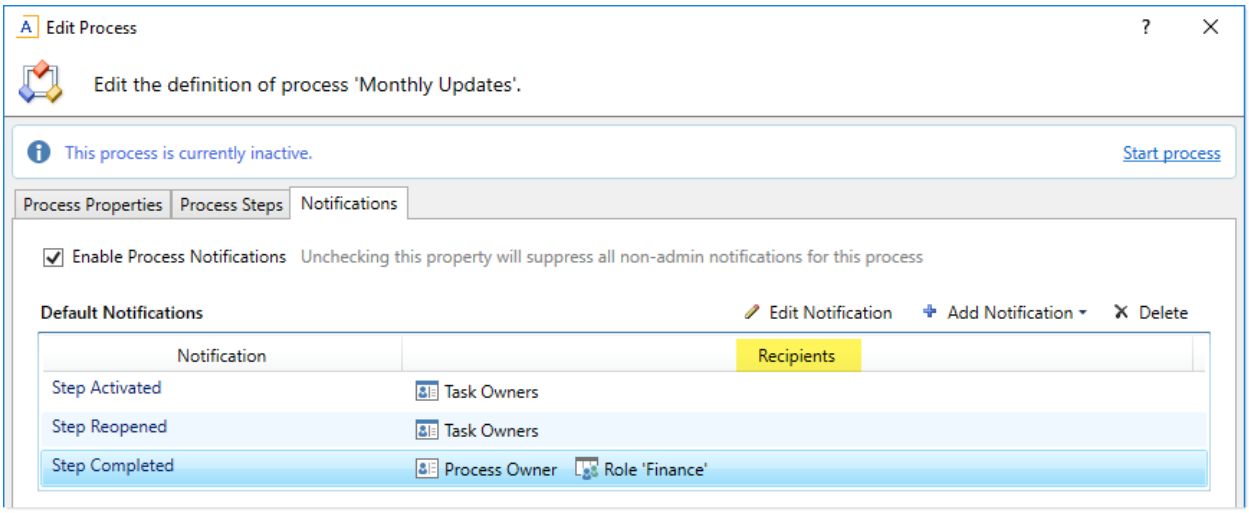
When using different types of recipients for the same notification type, in most cases you should define multiple notifications with different text. The text for task owners should be action-oriented (such as "You have a new task to complete for process Rollover"), whereas the text for interested parties 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:

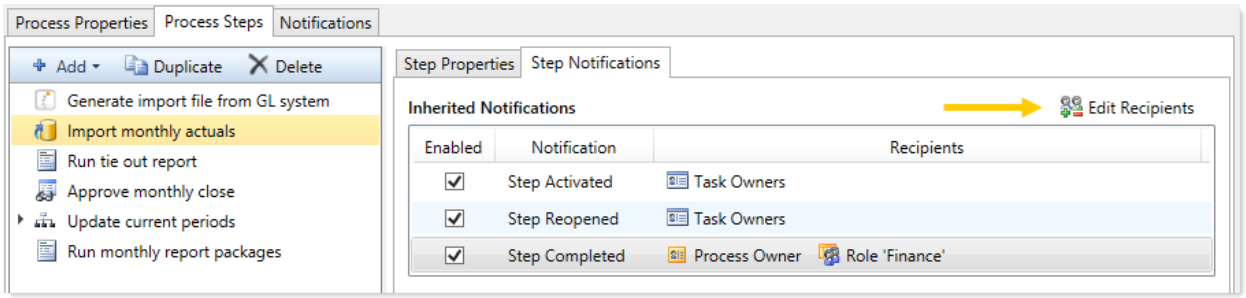


Adding step-specific recipients to inherited notifications

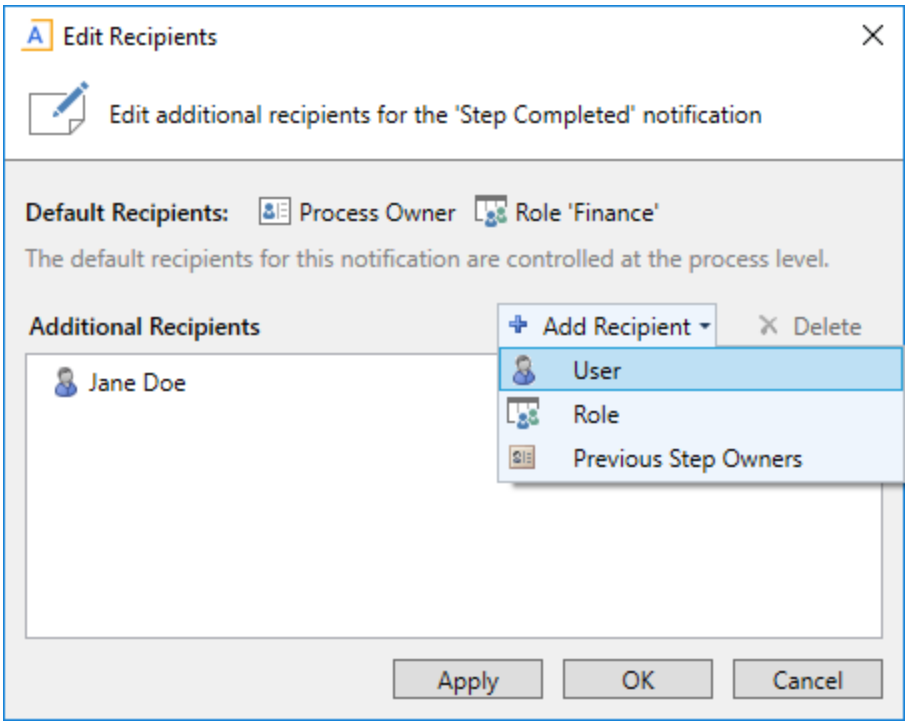
When a step inherits a notification from the process level, you have the option of adding recipients for that step only.

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.

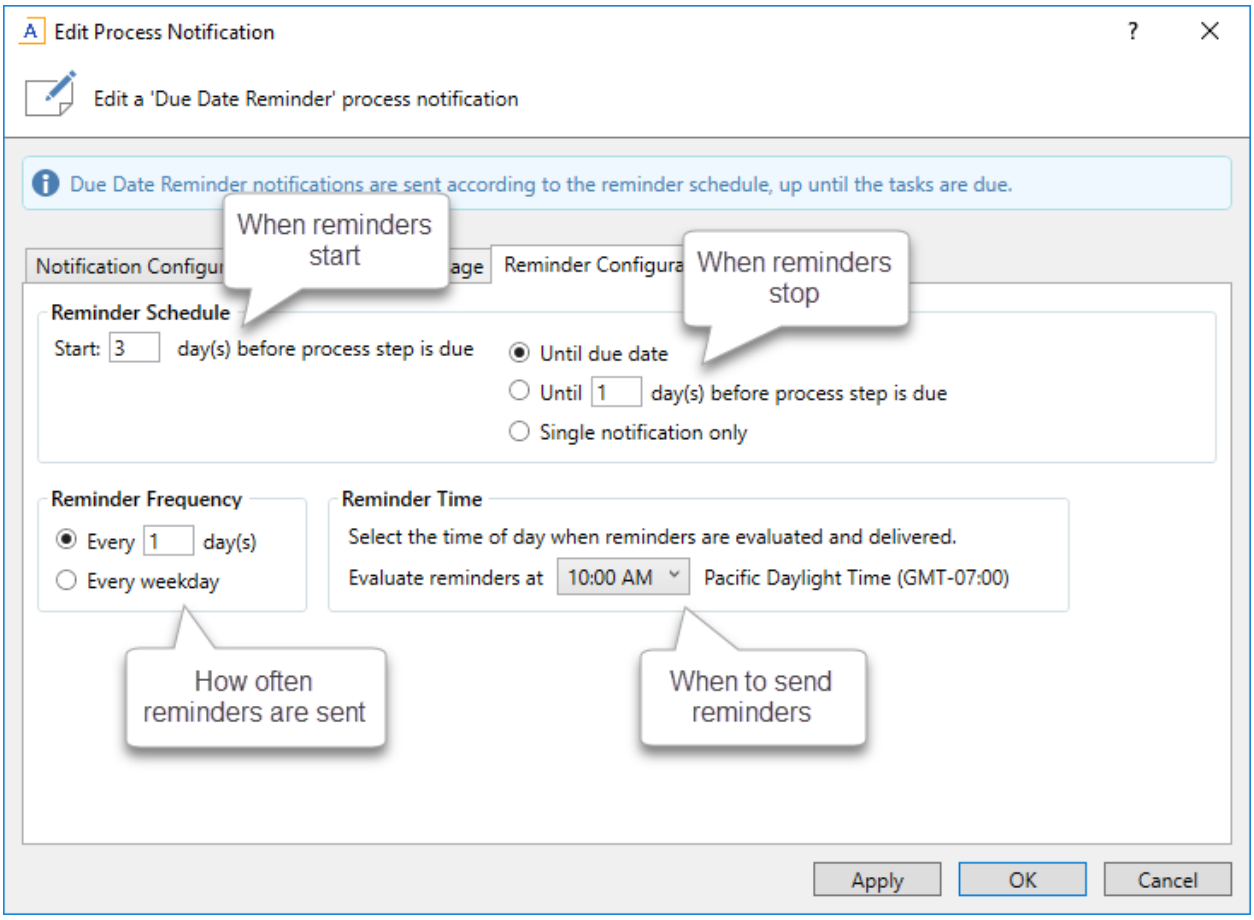
If a process definition contains a parallel subprocess (including multiple approvals), the previous step owners are treated as follows:

- 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.
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.

Item	Description
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.
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.

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.

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.

Managing System Administration

This section includes topics related to system administration tasks for Axiom Rolling Forecasting.

Topics in this section include:

- Axiom EPM Security Primer
- Security
- Working with Scheduler
- Setting up home pages

Axiom Healthcare Security Primer

Introduction to Product Security

Welcome to the Axiom Healthcare Security Primer. This primer is intended to help security administrators understand and configure Axiom security. This guide covers basic security concepts, such as Axiom subsystems and roles, and explains the different components that work together to comprise security, the utilities and tools used to configure security, and the steps needed to set security for new and existing users. Additionally, security setting reference tables are provided in the Appendix.

Security Basics

Security is configured by the four areas described in the following table, and further covered in the Roles, and Axiom Healthcare Product Roles sections.

Permissions	These are for general administrative functions. Many of these permissions span all products. Many of the permissions can and are granted in the other sections. This permission level is suite wide.
File Groups	Permissions in this section determine access to file groups, plan files, and abilities.
Tables	Permissions in this section determine access to Data tables. Tables are categorized by type (e.g., Financial type contains all GL financial tables).
Files	Permissions in this section determine access to select Axiom Security files.

Security Tools

The following table describes the various security utilities and when to use them.

Security Manager	Use the Security Manager to access the complete security options for all users and roles. This is the recommended tool for on-going maintenance and Individual Security Adjustment.
Security Spreadsheet	This provides a spreadsheet view of File Group and Table options for all users and roles. **IMPORTANT:** Be careful when using this tool, because two or more security members saving this file with overlapping filters at shared times will overwrite one another.
Product Security Setup Utilities	Use these configured security tools to bulk assign roles and data filters. Each product has a configured set in one of its Utilities. The file is usually named <product>Security Setup. You must be a member of Security Admin to post changes. This is the recommended tool for initial Product and Role assignment.

Dimension Security Utility	Use this configured security tool to assign permissions for Admin and Local Admin members to maintain dimensions. You must be a member of Security Admin to post changes.
Product Driver Security Utility	Use this configured security tool to assign permissions for Admin or Analyst members to maintain dimensions. You must be a member of Security Admin to post changes.
Active Directory Import	Use the Active Directory Import to map directory groups to Axiom Healthcare Product Roles to automate enabling new members.

Security Design

Security is preconfigured per Axiom product. Each product provides three primary roles: Product Admin, Product Analyst, and Product User. Each role has preconfigured security to access specific locations, files, and features based on each role. You apply data filters to control each user's reach into the data.

- **Roles** provide access to features and files, but not data. Roles define what you can do. Each Role is further defined and explained in Axiom Healthcare Product Roles and in Axiom Healthcare Product Role general security settings.
- **Filters** provide access to data and plan files. Standard filters are built in to each role. The filters are directly referenced from the dimension tables. This provides the ability to maintain data access through the dimensions for additional disseminated control. These are explained in the User-level Security section.

Security setup requires you to assign each member to a required product role or roles and apply unique filters to control access to the data and plan files.

Overview

Axiom Healthcare Suite security is comprised of three major components: Subsystems, Roles, and User-level security.

- **Subsystems** define the maximum product-level security. These subsystems are predefined as part of the installation. Subsystem security is managed by KHA and should not be changed by client or field personnel. New subsystem definitions should not be created.
- **Roles** define which assets (files) a user can access. These roles are predefined as part of the installation. Roles do *not* provide access to data. Roles provide access to specific assets (files).

  Currently, 2-3 roles per product are delivered.

  - **Product Admin:** Person(s) responsible for configuring the product and overseeing the administration of the process.
  - **Product Analyst:** Person(s) assisting product users in the planning process. This role provides the ability to read/write reports and facilitate Q&A on the plan files.
  - **Product User:** Typical end-user of the product.
  - Additional Axiom Healthcare provided roles are used to grant/restrict access to specific areas within plan files. See the following Role section for further explanation.
  - Roles are provided by KHA are managed by KHA. These roles should not be modified by client or field personnel.
  - Additional roles may be created to facilitate process ownership needs. Please see the following Roles section for additional information and guidelines.
- **User security** grants access to data tables and plan files by assigning filters to each user.

  - Users and product administrators will not have access to any data until a filter is applied to them.
  - KHA provides tools to apply standard data filters in bulk.
  - Each user-level security can be modified to the user-specific circumstances to include unique data filters as well as additional access levels beyond what the assigned role may provide. A user's security cannot exceed the parameters dictated by the subsystem. For example, data imports are restricted to product admins. However, you can grant a specific user who is assigned to a "user" role access to data imports at the User level without re-assigning a new role. However, if the corresponding subsystem does *not* grant maximum permissions to the data import folder, then no user, regardless of role, will have access to those imports. Subsystem security sets the top limit on the permission.

Security has the following three significant areas of impact:

- Plan file access
- Data access
- File / Asset security

Plan file access

This document outline three approaches for user access to plan files.

- Users can only access their plan files when in their assigned stage.
- Users can access their plan files at any time. Read/write when in stage, Read-only when out of stage.
- Users can access their plan files with read/write anytime.

Data Access

- Data access is the ability to write and report from specific tables with user-specific filters.
- Key: data access is assigned and managed at the user level.

File / Asset Security

- Security for files and assets is the ability to access specific files and folders.
- Key: file and asset security is assigned and managed at the role level.

Axiom Healthcare Suite has active directory integration that provides the ability to import a group of users from a client's internal network security. Contact Axiom Support for additional information.

Subsystems

Definition

A subsystem is a licensed Axiom product that is part of the Axiom Healthcare Suite. A subsystem does not grant rights but rather it defines the maximum rights allowed for that subsystem.

- KHA manages these rights. Clients should not modify these because subsequent software patches will replace any modifications.
- Basically, for each subsystem (product), we grant full access to Reports, Data, Plan files, etc., *within* the Product.
- Subsystem rights do *not* cross products.
- Axiom Healthcare Suite uses roles and user-level security to adjust these rights down. If something is not granted at the subsystem level, then it cannot be granted at the role or user level.

Axiom Healthcare Subsystem Examples

- Budget Planning
- Capital Planning
- Capital Tracking
- Cost Accounting
- Decision Support
- Financial Planning
- Management Reporting
- Productivity
- Rolling Forecasting
- Strategy Management
- Comparative Analytics

Roles

Definition

To streamline security settings, KHA provides a number of security roles. Users inherit the security settings defined for their assigned roles.

Axiom Healthcare supports role-based security. Each user can be assigned to one or more roles and will inherit the security settings defined for each of those roles. In general, role rights are additive. Users are granted the most permissive set of rights among their own personal user security settings and any roles that they are assigned to. Roles are intended to grant permissions, not deny permissions.

Additionally, Axiom Healthcare provides a built-in Everyone role for security settings that apply to all users.

Role inheritance for file group permissions is handled differently than in other areas of Security. See the Product File Group settings section for additional information.

Axiom Healthcare Product Roles

Each Axiom Healthcare license / product comes with the following Roles and general permission sets:

Role	Description	Configuration Abilities	Table Abilities	Plan File Abilities	Report Abilities
System Admin	Person with all-access security. No restrictions. Admin box checked in User security. Recommend no person have this right. Recommend one generic login in case of rare need.	• All Access	• All Access	• All Access	• All Access
Suite Admin	Manages overall suite, table, and system configuration. Typically limited to 1-2 members.	• Home Page • File Group Mgmt. • Apply SW Updates • System Browser • Admin Ribbon	• Current Period Settings • Table Modifications • New Dimension Grouping Columns • Open Tables (R/W)	• None	• R/W access to all Suite Files

Role	Description	Configuration Abilities	Table Abilities	Plan File Abilities	Report Abilities
Product Admin	Product administrator. Responsible for configuration, process, and structure. Data Imports, Dimension Maintenance, Drivers, Report Writing.	• Audit History • Imports • System Browser • Drivers • Dimensions • Exports • Admin Ribbon • Scheduled Jobs • Process Definitions	• Filtered Access to Data Tables • Dimension Edit • Driver Edit • View Tables (R/O) • Custom Tables (R/W)	• Create New • R/W Filtered Access • Unprotect • Recalculate	• Product Reports – R/O • Product Utilities – R/W • Create New
Product Local Admin	Local product administrator. Data imports, Dimension Maintenance, Drivers, Report Writing	• Drivers • Dimensions • Imports • Admin Ribbon • Scheduled Jobs • Process Definitions	• Filtered Data Access • Dimension Edit • Driver Edit • View Tables (R/O) • Custom Tables (R/W)	• Create New • R/W Filtered Access • Unprotect • Recalculate	• Product Reports – R/O • Product Utilities – R/W • Create New

Role	Description	Configuration Abilities	Table Abilities	Plan File Abilities	Report Abilities
Product Analyst	Designated to support plan owners during planning process. R/W access to filtered plan files	• Main Ribbon	• Filtered Data Access	• R/W Filtered Access • Unprotect	• Product Reports – R/O • Product Utilities – R/W • Create New
Product User	General consumer of the process and information.	• Main Ribbon	• Filtered Data Access	• R/O Access until Step Owner.	• Product Reports- R/O
Security Admin	Manages security settings	• Security Access	• None	• None	• Product Security Tools
Table Admin	Ability to create & edit table structure	• None	• Create • Edit • Delete	• None	• None
Tech Admin	Ability to apply updates and scheduled jobs	• Admin Ribbon	• None	• None	• None

Budget Planning Additional Roles

Role	Description	Configuration Abilities	Table Abilities	Plan File Abilities	Report Abilities
Budgeting Physician Admin	Manages Provider Budget Configuration & Data Access to Provider Reports, Utilities, & Drivers	• Provider Drivers • Imports	• View Provider Dimensions • Provider Drivers • View Provider Dimensions • Edit Provider Dimensions	• See Provider Tabs • Need Budget Admin Role	• Provider Reports • Provider Utilities
Budgeting Physician	Access to Provider Reports, Drivers	• None	• Filtered Data Access	• See Provider Tabs • Need Budget User Or Analyst role	• Provider Reports
GlobalDriverMgmt	Ability to manage Budget Planning Drivers for all Budget Groups. Provides Full Access to all Budget Planning Driver data	• Budget Planning Drivers Global Configuration Parameters	• Read Access to Budget Planning Driver Tables – no data restrictions	• None	• None

Other Product Specialty Roles

Role	Purpose / Use
Budgeting CDM	Provides access to the CDM Rev/Usage Budget Tables and Related Budget Reports folder
Budgeting Hide Labor	Hides Labor tabs in Budget workbooks
Budgeting Hide ProvComp	Hides provider volume and labor tab in budget workbooks

Role	Purpose / Use
Budgeting Physician	Provides access to the Budget Provider Reports folder
Capital Planning Approver	Provides access to the Capital Approval Report Folder
Capital Tracking Accounting	Capital Tracking > Utilities > Accounting Tools
Capital Tracking Approver	Capital Tracking > Approval Tools
Capital Tracking Purchasing	Work Flow Role
Capital Tracking PurchReq Approver	Cap Tracking > Approval > Purchase Request Approval File
Capital Tracking Transfer	Cap Tracking > Utilities > Capital Transfer File
Security Admin	Provides access to the Security Module
Suite Administrator	Provides access to the platform and product software updates

User-level Security

Definition

User-level security is defined and assigned by user. This allows clients to tailor each user to specific needs of access and data filters.

Each user requires a two-part setup:

1. Role and Data security setup
2. Plan File security setup

Data Security

User-level security provides access to data. Roles do not provide access to data. Until each user is assigned a data filter, they will not have access to any data. This includes product administrators. Assigning a product administrator role to a user does not grant rights to data. The roles defined in the Axiom Healthcare Product Roles section provide access to physical files and features but not data itself.

Data security is assigned via Security Setup tools within each Axiom Healthcare product. Each product security setup tool will compute a default data filter for each of your users automatically. The next section explains the recommended setup sequence and process. You must repeat this process for each licensed product. Axiom Healthcare leverages the table dimensions to assign data filters. This provides the added benefit of users' data access dynamically changing as dimensions change, without the need for you to edit each user's security.

The following table explains the default data filters for each product by major role.

Product User

Product	Filter
Performance Reporting	Dept.Owner=<login> or Dept.Reviewer=<login> or Dept.Approver=<login> Provides access based on Dept Dimension leveraging the owner, reviewer, and approver fields. If my login is assigned as either owner, reviewer or approver for four departments, this filter will give me access to the data for those four departments.
Budgeting	Dept.Owner=<login> or Dept.Reviewer=<login> or Dept.Approver=<login> Provides access based on Dept Dimension leveraging the owner, reviewer, and approver fields. If my login is assigned as either owner, reviewer or approver for four departments, this filter will give me access to the data for those four departments.

Product	Filter
Capital	Capreq.Dept.Owner=<login> or Capreq.Dept.Reviewer=<login> or Capreq.Dept.Approver=<login> Provides access based on Dept Dimension leveraging the owner, reviewer, and approver fields. If my login is assigned as either owner, reviewer or approver for four departments, this filter will give me access to the data for those four departments.
Financial Planning	Node.Model.ReportGrp=<Dimension Element> Provides access based on Model Dimension leveraging the ReportGrp field. If three models are assigned to “EastSide” ReportGrp, and I am assigned to “EastSide” in the security setup tool, then I will have rights to the data for those three models.
Rolling Forecast	RFGroup.Owner=<login> or RFGroup.Reviewer=<login> or RFGroup.Approver=<login> Provides access based on RFGroup Dimension leveraging the owner, reviewer, and approver fields. If my login is assigned as either owner, reviewer, or approver for four RFGroups, this filter will give me access to the data for those four RFGroups.

Product Admin

Product	Filter
Performance Reporting	Dept>0 Provides access to all department data
Budgeting	Dept>0 Provides access to all department data
Capital	Capreq.Dept>0 Provides access to all department data
Financial Planning	Node.Model.ModelGrp<>’X’ Provides access to all model data
Rolling Forecast	RFGroup<>’X’ Provides access to all RFGroup data

Plan Files

Plan files (Models, Budgets, etc.), require an additional setup step. This is explained further in Set up file group security for product users.

- Scenario 1: User can view and modify plan files only when in an assigned process stage.
    - No required setup. Process Management elevates the security from No Access to Read/Write when the user is in an assigned stage and then returns to No Access once the user exits the assigned stage.
- Scenario 2: User can view in all stages but can modify plan files only when in an assigned process stage.
    - Requires a User-level plan file filter + Change access level to “Read.”
- Scenario 3: User can view and modify in all stages. This should be restricted to Product Admins/Analyst as needed.
    - Requires a User-level Plan file filter + Change access level to “Read/Write” and select the save data option.

Setting up initial product security

Initial security setup involves two main steps:

1. For each user, establish Roles and Files and Data Access.
2. For each user, establish Plan File Filters and Access.

Set up table (data access) and file folder security for existing users

Use these instructions to set up table and file folder security for users that have already been added to the system.

NOTE: All existing Axiom Healthcare System users appear in the Existing EPM[1] Users section of the Security Update utility.

1. For the desired product, from the Admin task pane, launch the **Security Update** or **Security Setup** utility. The following table lists the path to the utility for various products.

Product	Path to Security Setup file from the Admin task pane
Budget Admin	Budget Admin > Budget Reporting > Budget Utilities > Security > **Budget Security Update**
Capital Planning	Capital Planning Admin > Administration > Administrative Utilities > Security Setup > **Cap Plan Security Update**
Capital Tracking	Capital Tracking Admin > Administration > Administration Utilities > Security Setup > **Cap Tracking Security Update**
Cost Management	Cost Mgmt Admin > System Maintenance > **Security Setup Utility**
Financial Planning	Financial Planning Admin > Administration > Administrative Utilities > Security Setup > **FinPlan Security Update**
Performance Reporting	Budget Admin > Financial Reporting > Financial Utilities > Security Setup > **Performance Reporting Security Update**
Rolling Forecast	Rolling Forecast Admin > Security > **Security Update Utility**

NOTE: To set up new Axiom Healthcare users, use the New EPM User section located at the bottom of the spreadsheet. See the section on setting up access and folder security for new users for more information.

2. In the **Existing EPM Users** section, working left to right, assign each user to the appropriate

[1]Enterprise Performance Management

subsystem.

- TRUE = Access
- FALSE = No Access

Input			Select	Select	Select
FirstName	IsEnabled	IsAdmin	Budget Planning System	Management Reporting System	Productivity System
System	TRUE	TRUE	TRUE	TRUE	TRUE
Angela	TRUE	TRUE	TRUE	TRUE	TRUE
Amanda	TRUE	FALSE	FALSE	FALSE	FALSE
Andrew	FALSE	FALSE	FALSE	TRUE	FALSE

3. Working left to right, assign the appropriate product role to each user you assigned to the subsystem.
    a. Assign Admin, Analyst, and User roles as needed. See Axiom Healthcare Product Roles for rights assigned to each role.
    b. Assign any additional roles each product may have as needed. See the Role definition section for impact understanding.

    Based on the role assigned, the required filters per Table Type are highlighted blue, and a default data filter is computed.
4. Ensure that each blue cell has a filter if the user is to have access to that table type.
    - No Filter = No Data Access
    - Using the proper syntax, you can change the filter if desired. The user is retained and re-appears the next time you launch this tool.

FirstName	Financial Table Filter
Diane	Dept> =0
Dan	
Delois	DEPT.Approver = 'DSims' OR DEPT.Owner = 'DSims' OR DEPT.Reviewer = 'DSims'
Daniel	FullAccess
Elsie	DEPT.Approver = 'EEast' OR DEPT.Owner = 'EEast' OR DEPT.Reviewer = 'EEast'
Erik	FullAccess

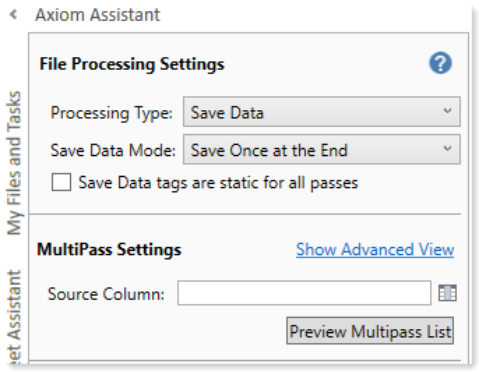
5. Modifying the filter for any specific user requires the following syntax:
   - Budget / Performance Reporting / Cost Management / Costing requires Dept.<Grouping Column> syntax.
   - Capital requires a CapReq.Dept. < Group Column> syntax
   - Financial Planning requires Node.Model. <Grouping Column> syntax
   - Rolling Forecast requires RFGroup. <Grouping Column> Syntax
6. If the user is assigned Full Access to the data table using the Security Manager, they will appear with FullAccess as their filter. This permission gives them full, unfiltered access to every data table under the Financial Table type. Dept>=0 will accomplish the same purpose.
7. If you do not want a user to have access to a data table, either leave the filter blank or enter a filter that excludes any results (e.g., Dept=0).
8. Any changed row is highlighted with a pink or green [Save] tag. This indicates either a change was made or an unexpected previous parameter was found and modified.

   NOTE: This utility only assigns subsystems and Roles to a user; it will not remove a Role from a user. To remove a role from a user, access the Security Manager.

   NOTE: If you assign a user to a product subsystem but not a Role, this tool automatically assigns them to the Product User role, thereby creating a change.

9. When finished, click **Save** or, from the **File Processing** task pane on the left, from the **Processing Type** field, select an option to save to the database.

   IMPORTANT: Do *not* execute a Save-as or open in Read/Write mode. Structural modifications to this tool could negatively impact your security setup.



This completes Part I of user security setup. At this point, the configured new users have rights to specified products, reports, and corresponding data.

10. Continue to Set up file group security for product users to configure security for Plan Files (Models, Budgets, Plans, etc.).

Set up file group security for product users

This section covers setting plan file access with Process Management for product users.

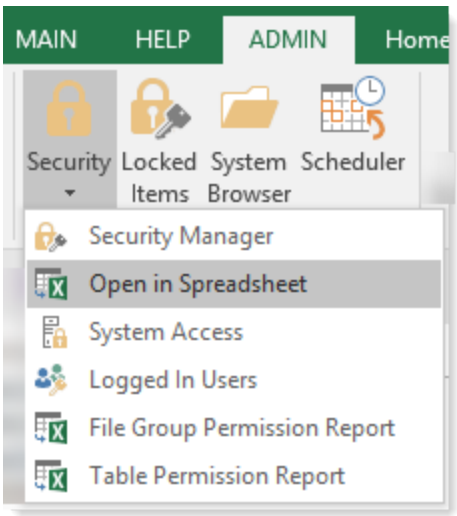
NOTE: This process assumes the use of Process Management (Workflow).

This setup is recommended for Budgeting, Cost Management, Capital Planning, and Capital tracking.

IMPORTANT: Financial Planning should not use this configuration.

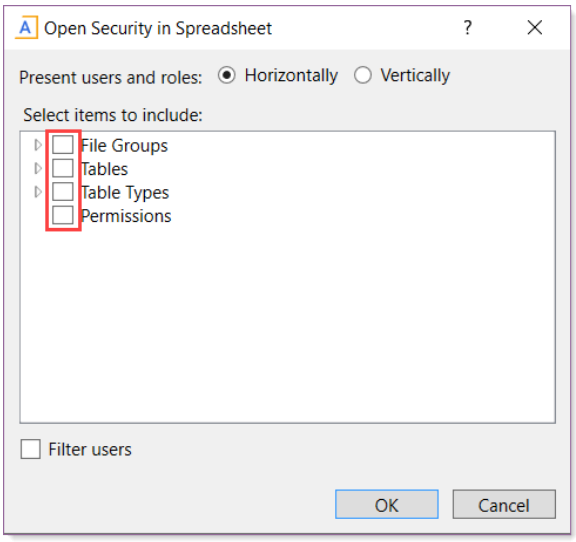
To set up plan file access for product users:

1. In the **Admin** ribbon tab, click **Security** > **Open in Spreadsheet**.

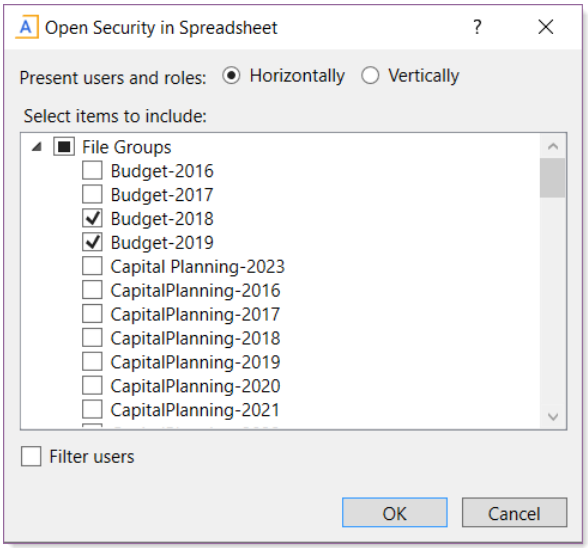


The purpose of the next two steps is to filter for only the roles and users you are configuring. Take each step carefully per the instructions.

2. In the **Open Security in Spreadsheet** dialog, clear all options (remove checkmarks).



3. Expand the **File Groups** section, and then select the desired file groups. Select filters for only the specific File Group instead of selecting all File Groups:

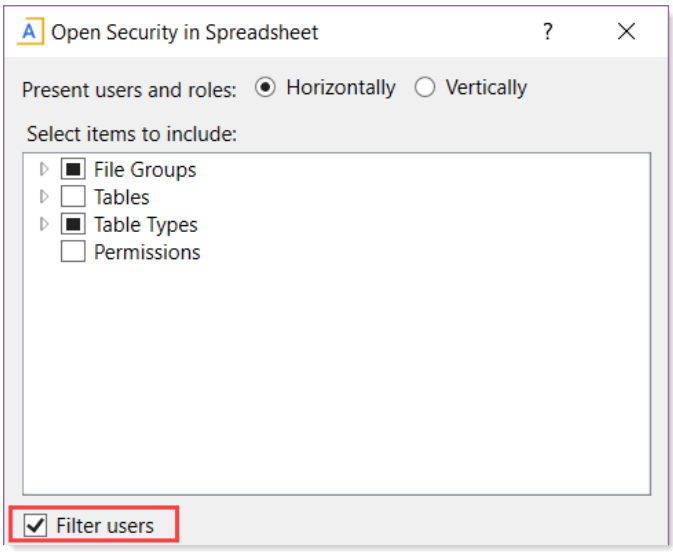


Exception: Capital Tracking has two File Groups to set up. You can select them both or do one at a time, but both File Groups need to have security established.

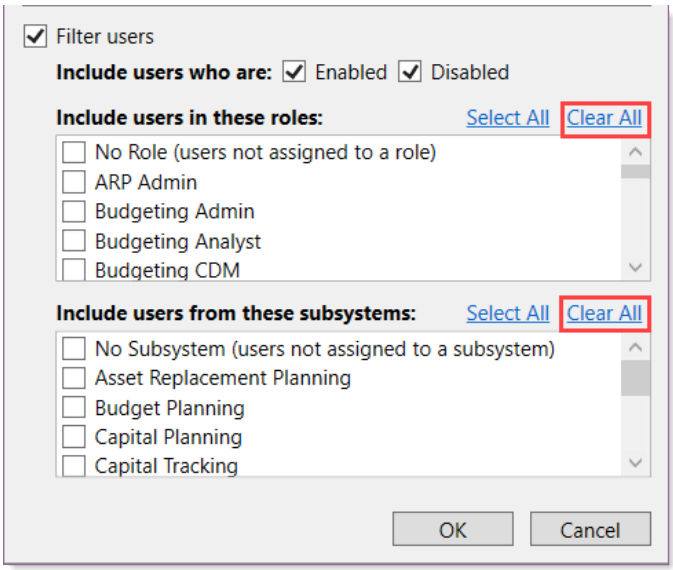
- Capital Tracking-Projects
- Capital Tracking-Purchase Requests

4. Expand **Table Types**.

5. Select according to the following matrix based on the product to which you are applying security:
   - Budget/Performance/Cost Management: select **Financial**.
   - Capital Planning / Capital Tracking: select **Capital**.
   - Financial Planning: select **Financial Planning**.
   - Rolling Forecasting: select **RF**.
6. At the bottom of the **Open Security in Spreadsheet** dialog, click the **Filter Users** option as shown in the following image:

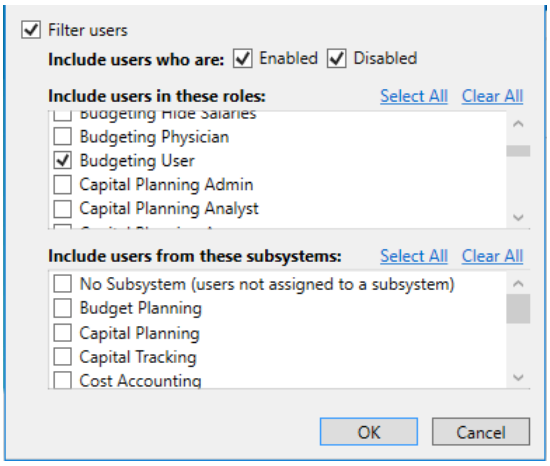


7. In the **Filter users** section, click **Clear All** for both sections, as shown by the highlights in the following image:



8. In the **Include users in these roles** section, select the first non-admin product user role to update.

> **NOTE:** We recommend that you not mix roles during this edit session. Configure members of the User role first, and then configure Admin and Analyst roles in a repeat exercise. **Do not select subsystem options**. The goal is to filter for only those to update. If you select a subsystem, you will receive all users regardless of roles for that system, increasing the complexity of this task.

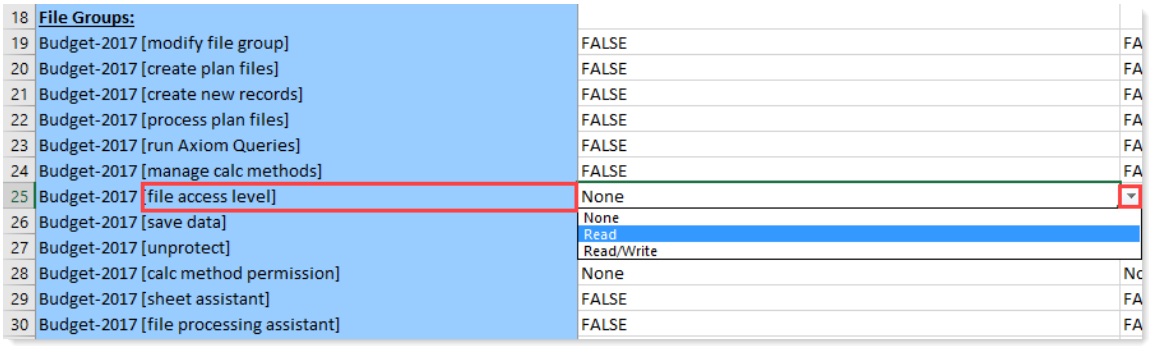


9. Click **OK**.

   The Security spreadsheet opens.

10. In the **File Groups** list, locate the row for **file access level**, and then click the drop-down arrow on the right and select one of the following:

    - **Read** – Provides Read-Only Access except when the user is the stage owner, in which case they have Read/Write access when in that stage. After the plan file advances to the next stage owner, the previous stage owner will only be able to view the plan file (this is the most common setup).
    - **None** – Provides no access to the plan file until user is the stage owner, in which case they then have Read/Write access when in that stage. Once the plan file moves to the next stage owner, the previous stage owner will no longer be able to access the plan file.



11. Set **Interact with process management** to **TRUE**.
12. To enable the user to insert new accounts, projects, etc., into the plan files, set **Calc Method permission** to **Insert**.
13. Make the same three elections for the remaining non-admin users.

    IMPORTANT: The last few columns are the role definitions. You *do not* want to replace the role definition with these user settings. Identify in advance the column at which your user list ends, and only copy these element changes within that range.

14. Scroll down to the **Table Types** section. For each user, copy each user filter from the Table Type you selected to the Plan File Access row for that user.
15. Verify that your screen is similar to the following:

File Groups:	
Financial Planning-2017 [modify file group]	FALSE
Financial Planning-2017 [create plan files]	FALSE
Financial Planning-2017 [create new records]	FALSE
Financial Planning-2017 [process plan files]	FALSE
Financial Planning-2017 [run Axiom Queries]	FALSE
Financial Planning-2017 [manage calc methods]	FALSE
Financial Planning-2017 [file access level]	Read
Financial Planning-2017 [save data]	FALSE
Financial Planning-2017 [unprotect]	FALSE
Financial Planning-2017 [calc method permission]	Insert
Financial Planning-2017 [sheet assistant]	FALSE
Financial Planning-2017 [file processing assistant]	FALSE
Financial Planning-2017 [interacts with process management]	TRUE
Financial Planning-2017 [all plan files]	FALSE
Financial Planning-2017 [access filter, ignored if all plan files]	
Financial Planning-2017 [role inheritance mode]	Independent
Financial Planning-2017 [inherit role, blank means all]	

16. To save your settings, in the **Main** ribbon tab, click **Save**.

Exception: Capital Planning and Capital Tracking-Projects – must do the following:

1. For the filters to work properly for the plan files, you need to replace the "CapReq." text for the user in the Capital Type Filter column. You can use Excel's Find and Replace function to do this.
   a. Select the entire filter row or cells in which to make the replacement, then open the Excel Find and Replace feature or use the keyboard shortcut **Crrl+r**.
   b. In the **Find what:** field, type "CapReq." including the period but without the quotes.
   c. Leave the **Replace with:** field empty.

d. Click the **Replace All** option.

e. Verify that the filters for each user are now "Dept.Approver=<User> or Dept.Owner=<User> or Dept.Reviewer=<User>."

2. To save your settings, in the **Main** ribbon tab, click **Save**.

Exception: Capital Tracking-Purchase Requests – must do the following:

1. Replace the "CapReq." text so the filters work properly for the Plan Files.
2. Using the Replace Function in Excel, do the following:
   a. Select the filter row or cells with the filters, and then press **CtrlL+r**.
   b. In the **Find what:** field, type "CapReq." including the period but without the quotes.
   c. In the **Replace with:** field, type "POTRANS.CapReq." including the periods but without the quotes.
   d. Click **Replace All**.
3. To save your settings, in the **Main** ribbon tab, click **Save**.

Set up file group security for administrators and analysts

This section covers setting plan file access for Product Administrator / Analyst and Financial Planning user roles.

NOTE: This setup ignores workflow and provides Read/Write to each filtered plan file full-time.

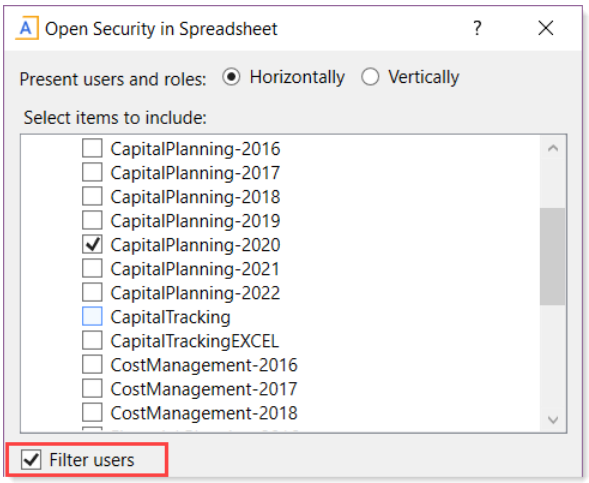
This setup is recommended for Budgeting, Cost Management, Capital Planning, and Capital Tracking and Financial Planning Product Admins and Analysts and Financial Planning User Roles.

To set up plan file access for product users:

1. In the **Admin** ribbon tab, click **Security** > **Open in Spreadsheet**.

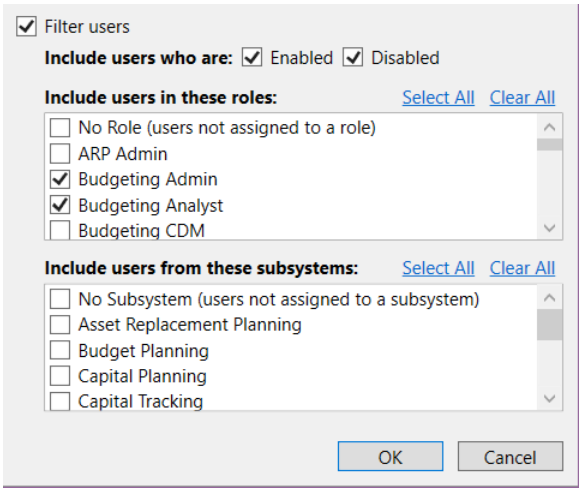
   The purpose of the next few steps is to filter for only the roles and users you are configuring. Take each step carefully per the instructions.

2. Filter for only specific File Groups and Table Types:
   a. In the **Open Security in Spreadsheet** dialog, clear all options (remove checkmarks).
   b. Expand **File Groups**, and then select the desired File Group.



c. Expand **Table Types** and select only the desired tables according to the following matrix:
   - Budget/Performance Reporting: Financial
   - Capital Planning / Capital Tracking: Capital
   - Financial Planning: FinancialPlanning
   - Rolling Forecast: RF

3. Select Filter user options:
   a. Select the **Filter users** check box.
   b. In both the **Include users in these roles** section, click **Clear All**.
   c. Select the [product] Admin and Analyst roles to be updated.
   d. In the **Include users from these subsystems** section, click **Clear All**.
   e. Click **OK**.



The Security spreadsheet opens.

4. Modify the following for the selected role members (Admin/Analyst Members):
    a. Set **file access level** to **Read/Write** – Provides Read/Write Access regardless of stage or if Workflow is active. You will apply a filter to each user at a later step.
    b. Set **Save Data** to: **TRUE**.

    > **IMPORTANT:** This is very important. If File Access is set to Read/Write, then Save Data should *always* be set to TRUE. If not Read/Write, then always set to FALSE. Read/Write allows a user to save the plan files regardless of workflow ownership but *not* the data. You have to set Save Data to True to allow data to save to the database but only if Read/Write is the File Access method.

    c. Change **Calc Method** permission to one of the following:
        - **Insert Only** – Select to allow members the ability to insert new accounts, projects, etc., into the plan files.
        - **Insert/Change** – Select to allow members to either insert new methods or change existing methods.

    > **NOTE:** To enable each user to leverage the role-level configuration of the preceding items, you need to change the Role Inheritance Mode to "Combine." "Combine" combines the role permissions with the individual user permissions. "Independent" ignores the role permissions and leverages only the "independent" user permissions.

    d. Open the **Security Manager** and make the preceding security changes to the Product Role under Plan Files for the appropriate File Group, and then click **OK**.
    e. In the **Security** spreadsheet, change the role inheritance mode for the first user to **Combine**.

    f. Copy the selections to the remaining users to the right.

    > **IMPORTANT:** The last few columns are the role definitions. You do *not* want to replace the role definition with these user settings. Identify in advance at which column your user list ends. And only copy these element changes within that range.

    g. Further down the spreadsheet are the data filters you created in Step 1. Copy each user filter from the Table Type you selected to the Plan File Access row.
        - Blank Plan File Access Filter = No Access
        - Each filter per user (column) established when you set up Data security is unique (Step 1).
5. To save your settings, in the **Main** ribbon tab, click **Save**.

Exception: Capital Planning and Capital Tracking - Projects – must do the following:

Replace the “CapReq.” text (using Excel’s Find and Replace function) so that the filters work correctly for the plan files:

1. Select the entire filter row or the cells containing the filters, and then press **Ctrl+r**.
2. In the **Find what:** field, type “CapReq.” including the period but without the quotes.
3. Leave the **Replace with:** field empty.
4. Click the **Replace All** option.
5. Verify that the filters for each user now have the Dept.<Grouping Column> = Syntax.
6. To save your settings, in the **Main** ribbon tab, click **Save**.

Exception: Capital Tracking-Purchase Requests – must do the following:

1. Replace the “CapReq.” text so the filters work properly for the Plan Files. In Excel, open the Find and Replace function.
2. Highlight the Filter Row or cells with the filters using CTRL+R.
3. In the **Find what:** field, type “CapReq.”
4. In the **Replace with:** field, type “POTRANS.CapReq.”
5. Click **Replace All**.
6. To save your settings, in the **Main** ribbon tab, click **Save**.

Adding new users: product security setup

New user security setup involves the following steps:

1. For each user, establish Roles and Files and Data Access
2. For each user, establish Plan File Filters and Access.

NOTE: Follow the same procedures as Setting up Initial Product Security, except as modified by the following procedure.

Set up table (data access) and file folder security for new users

NOTE: The new users section is located at the bottom of the Security Update utility spreadsheet.

1. For the desired product, from the Admin task pane, launch the **Security Update** or **Security Setup** utility. The following table lists the location of each product's utility.

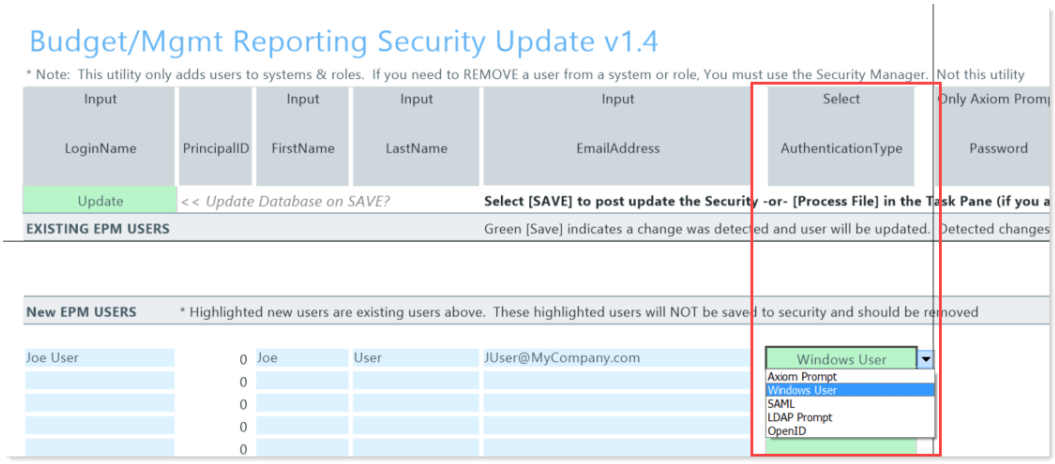
Product	Path to Security Setup file from the Admin task pane
Budget Admin	Budget Admin > Budget Reporting > Budget Utilities > Security > **Budget Security Update**
Capital Planning	Capital Planning Admin > Administration > Administrative Utilities > Security Setup > **Cap Plan Security Update**
Capital Tracking	Capital Tracking Admin > Administration > Administration Utilities > Security Setup > **Cap Tracking Security Update**
Cost Management	Cost Mgmt Admin > System Maintenance > **Security Setup Utility**
Financial Planning	Financial Planning Admin > Administration > Administrative Utilities > Security Setup > **FinPlan Security Update**
Performance Reporting	Budget Admin > Financial Reporting > Financial Utilities > Security Setup > **Performance Reporting Security Update**
Rolling Forecast	Rolling Forecast Admin > Security > **Security Update Utility**

2. In the Security Update spreadsheet, scroll to **New EPM Users** section at the bottom.

   NOTE: Change settings for existing users in the Existing EPM Users section. See the section on setting up security for existing users for more information.

3. Complete the new user demographic section:
   a. Login Name
   b. First, Last Name and Email Address.

c. Select Authentication type.



4. See the sections in Setting up Initial Product Security for configuring the remaining options for each user.

   NOTE: This utility only adds subsystems and Roles to a user; It will not remove a Role from a user. To remove a role from a user, use the Security Manager.

5. In the File Process task pane on the left, Save or select file process to save to database when complete.

   IMPORTANT: Do *not* execute a Save-as or open in a read/write mode. Structural modifications to this tool could negatively impact your security setup.

   This completes Part I of user security setup. At this point, the configured new users have rights to specified products, reports, and corresponding data.

6. Next, configure security for Plan Files (Models, Budgets, Plans, etc.).

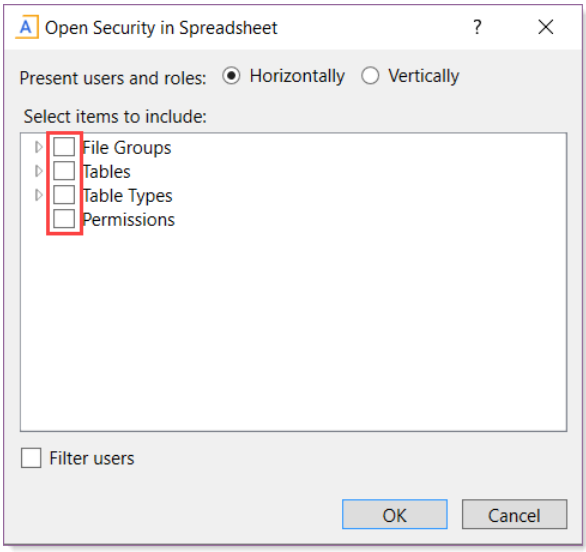
Set up file group security with Process Management

Follow the same instructions listed previously in Setting up Initial Product Security, or you can use the Security Manager to establish or update security for one user at a time.

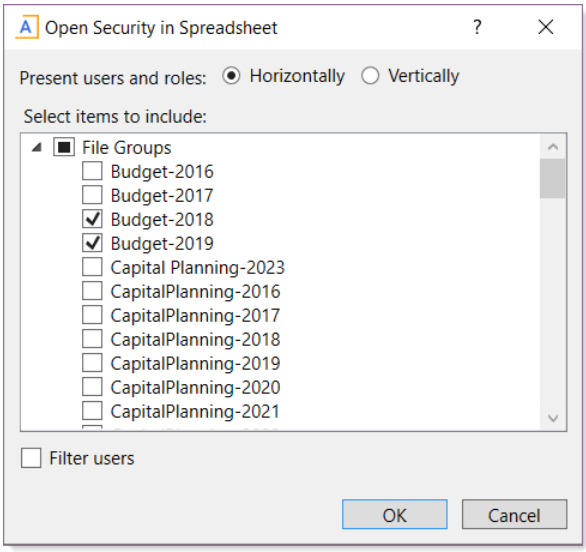
Copying Plan File security to a new File Group

If you have established security for prior file group (e.g., Budget 2019), the following steps are required to activate the security for a next year file group (e.g., Budget 2020). If the product file group security is not established, then please follow the security setup instructions provided by your implementation consultant.

1. In the **Admin** ribbon tab, click **Security** > **Open in Spreadsheet**.
2. In the **Open Security in Spreadsheet** dialog, clear all check boxes so that none is selected.



3. In the **Filter** dialog, expand **File Groups**.



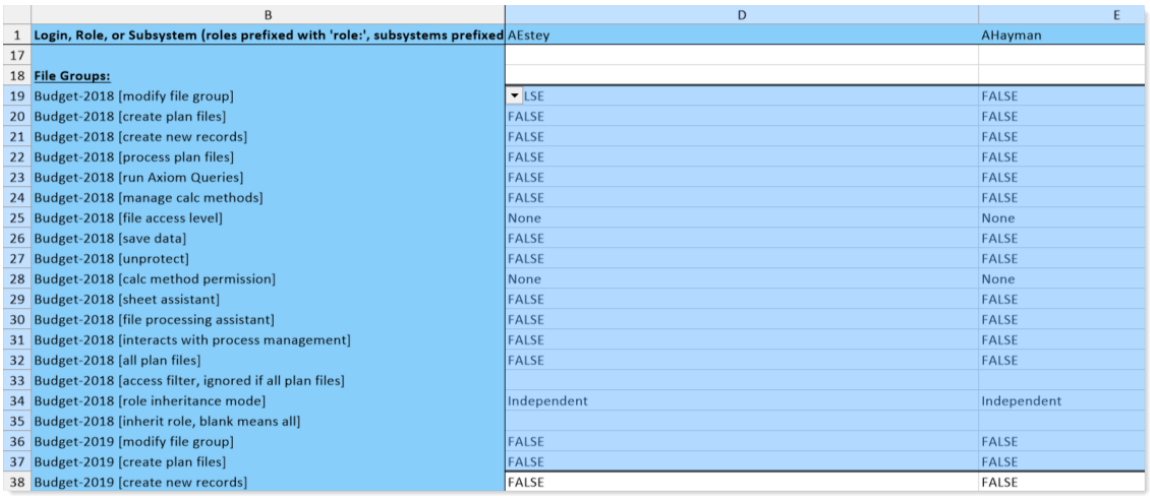
4. Select the current file group and the next year file group:

   For example, Budget–2018 and Budget –2019.

5. Click **OK**.

6. Beginning in the column of the first username, highlight the cells for each row prefixed with Budget–[year] for all users.

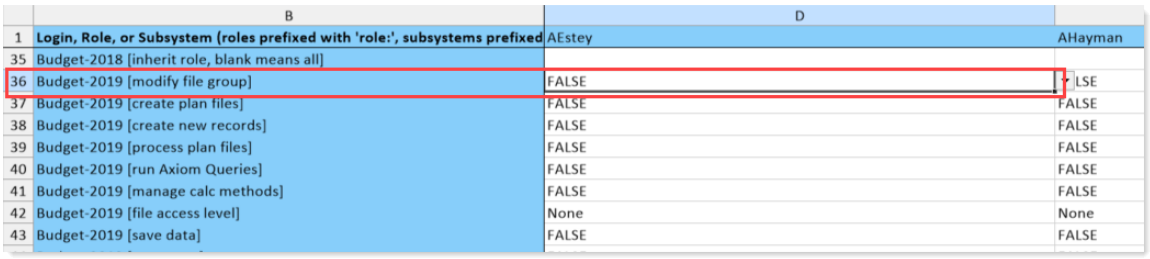
   - Include only the users; do *not* include the Roles.
   - You can determine that by row 1 of the spreadsheet. The spreadsheet lists users from left to right, then lists Roles, and then Subsystems. You only need to highlight the Users.



	B	D	E
1	**Login, Role, or Subsystem (roles prefixed with 'role:', subsystems prefixed**	AEstey	AHayman
17			
18	**File Groups:**		
19	Budget-2018 [modify file group]	LSE	FALSE
20	Budget-2018 [create plan files]	FALSE	FALSE
21	Budget-2018 [create new records]	FALSE	FALSE
22	Budget-2018 [process plan files]	FALSE	FALSE
23	Budget-2018 [run Axiom Queries]	FALSE	FALSE
24	Budget-2018 [manage calc methods]	FALSE	FALSE
25	Budget-2018 [file access level]	None	None
26	Budget-2018 [save data]	FALSE	FALSE
27	Budget-2018 [unprotect]	FALSE	FALSE
28	Budget-2018 [calc method permission]	None	None
29	Budget-2018 [sheet assistant]	FALSE	FALSE
30	Budget-2018 [file processing assistant]	FALSE	FALSE
31	Budget-2018 [interacts with process management]	FALSE	FALSE
32	Budget-2018 [all plan files]	FALSE	FALSE
33	Budget-2018 [access filter, ignored if all plan files]		
34	Budget-2018 [role inheritance mode]	Independent	Independent
35	Budget-2018 [inherit role, blank means all]		
36	Budget-2019 [modify file group]	FALSE	FALSE
37	Budget-2019 [create plan files]	FALSE	FALSE
38	Budget-2019 [create new records]	FALSE	FALSE

7. Right-click and select **Copy** or use the keyboard shortcut **Ctrl+c** to copy the selected material.

8. Select the first cell in the first username column for the first Budget-2019 row, as shown in the following example.



	B	D	
1	**Login, Role, or Subsystem (roles prefixed with 'role:', subsystems prefixed**	AEstey	AHayman
35	Budget-2018 [inherit role, blank means all]		
36	Budget-2019 [modify file group]	FALSE	LSE
37	Budget-2019 [create plan files]	FALSE	FALSE
38	Budget-2019 [create new records]	FALSE	FALSE
39	Budget-2019 [process plan files]	FALSE	FALSE
40	Budget-2019 [run Axiom Queries]	FALSE	FALSE
41	Budget-2019 [manage calc methods]	FALSE	FALSE
42	Budget-2019 [file access level]	None	None
43	Budget-2019 [save data]	FALSE	FALSE

9. Paste the copied contents.

10. In the **Main** ribbon tab, click **Save**.

11. Close the Security spreadsheet.

12. Budget-[year] security has been configured.

The Budget-[year] Plan File Group is now activated for use. Proceed with the typical budget preparation process.

Appendix – Security Settings

This appendix contains security setting reference tables.

Axiom Healthcare Product Role general security settings

Category	Everyone	Prod User	Prod Admin	Analyst
Permissions				
Exports	No	No	Read/Write	No
File Groups	No	Yes	Yes	No
Imports	No	No	Read/Write	No
Tables	No	No	Read/Write	No
Security	No	No	No	No
Updates	No	No	No	No
Task Panes – Edit	No	No	No	No
Workflow	No	No	Read/Write	No
Audit	No	No	Read	Read
Remove Protection	No	No	Yes	Yes
Sched. Jobs	No	No	Read/Write	Read/Write
User Folder	No	No	Yes	Yes
Table Types				
Dimensions	Read Only	No	Read/Write	Read Only
Drivers	Read Only	No	Read/Write	Read/Write
Validation Tables	Read Only	No	Read/Write	Read Only
Custom Data	No	Read Only	Read/Write	Read/Write

Category	Everyone	Prod User	Prod Admin	Analyst
Product Data	No	Read/Write	Read/Write	Read/Write
EPM Home Page	Read Only	No	Read/Write	Read Only
Product Files				
Product Reports	No	Read Only	Read Only	Read Only
Prod Rpt Custom	No	Read Only	Read/Write	Read/Write
Product Utilities	No	Read Only	Read/Write	Read/Write
Prod Utility Custom	No	Read Only	Read/Write	Read/Write
System Files				
Prod Doc User	No	Read Only	Read/Write	Read/Write
Prod Doc Admin	No	Read Only	Read/Write	Read/Write
Product Forms	No	Read Only	Read Only	Read Only
Home Page	Read Only	No	Read/Write	Read Only
Product Drills	No	Read Only	Read Only	Read Only
Suite Variables	Read Only	Read Only	Read/Write	Read Only
Ribbons				
Admin	No	No	Read Only	Read Only
Main	Read Only	No	No	No

Product permission settings

Category	Subsystem	Everyone	Prod User	Prod Analyst	Prod Local Admin	Prod Admin	Suite Admin	Notes
Announcements	Yes	No	No	No	No	No	Yes	Not needed. Currently not in use.
Explorer	Yes	No	No	No	No	Yes	Yes	Access to the System Browser via the Admin task pane. All users have access to explorer task pane
Exports	Yes	No	No	No	No	Yes	Yes	Ability to create new data Exports Ability to run existing Exports is managed in FILES.
File Groups	Yes	No	No	No	No	No	Yes	Clone and edit file groups.
Imports	Yes	No	No	No	No	Yes	Yes	Ability to create new Imports. Ability to run existing imports is managed in FILES.
Locked Items	Yes	No	No	No	Yes	Yes	Yes	Ability to unlock items.
Security	Yes	No	No	No	No	No	No	Access to the Security Module
Tables	Yes	No	No	No	No	No	Yes	Ability to create/ delete/modify Table structure. Ability to change table current periods
Task Panes-Edit	Yes	No	No	No	No	No	No	Do not modify the provided task panes. Permission should be granted at the User level.
Updates	Yes	No	No	No	No	No	Yes	Ability to apply Axiom updates. System Admin role
Audit History	Yes	No	No	No	No	Yes	Yes	Ability to view full system activity log for the suite. Use caution granting this. User Level exceptions
Remove Protection	Yes	No	No	No	No	No	Yes	Ability to unprotect any file accessible. Unprotect rights is granted in the Files section. Not here.
Sched. Jobs	Yes	No	No	No	Yes	Yes	Yes	Ability to edit/ create/Delete scheduled jobs
User Folder	Yes	No	No	Yes	Yes	Yes	Yes	Access to “my documents”. Typically applied to users who will be writing “in-progress” reports

Product File Group settings

File Groups – File Group							
Category	Subsystem	Everyone	Prod User	Prod Analyst	Local Prod Admin	Prod Admin	Notes
Modify	Yes	No	No	No	No	Yes	Edit file group configuration and clone. Limited Membership
Create Plans	Yes	No	No Yes=CP,FP	No Yes=CP,FP	Yes	Yes	Ability to create new plan files for the file group. Data population is the role of Process Plan Files.
Create Records	Yes	No	Yes	Yes	Yes	Yes	Only used with on-demand FGs. Yes for Capital Planning, Tracking, and Financial Planning
Process Plan	Yes	No	No	No	Yes	Yes	Ability to Rebuild the plan files via data interface.
Run Queries	Yes	No	No	No	No	Yes	Ability to refresh a plan file on demand.
Calc Methods	No	No	No	No	No	No	Refrain from making calc method changes. Calc methods are replaced with each update thereby removing any modifications you may have made.

File Groups – Plan Files							
Category	Subsystem	Everyone	Prod User	Prod Analyst	Local Prod Admin	Prod Admin	Notes
File Access	R/W	Not Config	Read Only	R/W	R/W	R/W	Product Users are dependent on Process Management to escalate them to R/W
Save Data	Yes		No	Yes	Yes	Yes	Required if R/W above is selected.
CM Insert	Yes		Yes	Yes	Yes	Yes	Ability to add new Accts/Jobcodes/Other Records

File Groups – Plan Files							
Category	Subsystem	Everyone	Prod User	Prod Analyst	Local Prod Admin	Prod Admin	Notes
CM Change	Yes		No	No	Yes CP=No	Yes CP=No	Ability to change a calc method from one to another.
Unprotect	Yes		No	Yes	Yes	Yes	Ability to unprotect the workbook.
Sheet Assistant	Yes		No	No	Yes	Yes	Ability to view the Plan File Sheet Assistant
File Processing	Yes		No	No	No	No	Not needed
Interacts with Process Mgmt	Yes		Yes	Yes	Yes	Yes	Should be marked TRUE. Will not interfere even if you don't use Process Management for that file group.
All or Filtered	All		Filtered	Filtered	Filtered	All Access	All = Access ALL Plan Files with no filter. Optional User filters can be applied Filtered = Limited access to Plan Files

Data Table Type settings

Table Types							
Category	Subsystem	Everyone	Prod User	Prod Analyst	Local Prod Admin	Prod Admin	Notes
No Type (Drivers)	Full	Full	NC	NC	NC	NC	Driver & Reference tables. Everyone has full access to these tables. Enables
Budget Drivers	Full/Read	Full RO/CW	NC	NC	NC	NC	Exception: Everyone has full read access & no write. Editors of Drivers must be assigned a filter via Budget Driver Security tool.
Dimension Validation	R/W Full	Full OTIS=None	NC	NC	NC	NC	Everyone has full Read access to these tables. Editing requires the “Table Admin” Role
Dimensions	R/W Full	Full Read Custom W. No Filter OTIS-None	NC	NC	NC	NC	Everyone has ReadOnly, No write dimension access. Requires product admin/analyst user to have a write filter to product dimensions to be able to modify. Use Dimension Security tool to assign filters.

Table Types							
Category	Subsystem	Everyone	Prod User	Prod Analyst	Local Prod Admin	Prod Admin	Notes
Budget Exceptions:		Full Access: GLPeriod CalDate			OTIS = READ for: Acct CDMCode Dept Entity Initiative ID	OTIS = READ for: Acct CDMCode Dept Entity Initiative ID	See Physician Admin or Physician user for Provider related data & dimensions. Product Admins can view the listed CDM codes with read.only table view access for viewing. Editing Dimensions is accomplished in Dimension Maintenance Utility
Capital Exceptions:		Full Access: CapAcct Code CPReq20XX CTReq Payor POTrans TempPOTrans				OTIS=Read For: CapAcct Code CPReq20XX CTReq Payor POTrans TempPOTrans	The listed dimensions are not part of the Dimension Maintenance Utility. Everyone has Full access managed by forms & utilities. Product Admins get OTIS Read for additional rights.

Table Types							
Category	Subsystem	Everyone	Prod User	Prod Analyst	Local Prod Admin	Prod Admin	Notes
Fin Plan Exceptions		Full Access: Code GlobalSet Model Node Node_Type Payor Scenario				OTIS=READ For: Code GlobalSet Model Node Node_Type Payor Scenario	The listed dimensions are not part of the Dimension Maintenance Utility. Everyone has Full access managed by forms & utilities. Product Admins get OTIS Read for additional rights.
RF Exceptions:		Full Access: RFCode RFID RFGroup				OTIS=Read RFCode RFID RFGroup	The listed dimensions are not part of the Dimension Maintenance Utility. Everyone has Full access managed by forms & utilities. Product Admins get OTIS Read for additional rights.
Product Custom Data	R/W Full	No	Full OTIS=None	Full OTIS=None	Full OTIS=None	Full Access OTIS=RW Allow Change	Full Access. Only Product Admin members can change structure. This is the table Type to assign all Non-Filtered custom tables & mapping tables. Custom Tables with data filters should be assigned an existing table type with similar filter.
MR-BP: EmpRoster	Full/RW/Chg	NC	Role Filter OTIS=None	Role Filter OTIS=None	Role Filter OTIS=RW	Full Access OTIS=RW	Employee Roster.

Table Types							
Category	Subsystem	Everyone	Prod User	Prod Analyst	Local Prod Admin	Prod Admin	Notes
MR-BP: Financial	Full/RW/Chg	NC	Role Filter OTIS=None	Role Filter OTIS=None	Role Filter OTIS=Read	Full Access OTIS=RW	Financial Data: GL & GL Transactions
MR-BP: Payroll	Full/RW/Chg	NC	Role Filter OTIS=None	Role Filter OTIS=None	Role Filter OTIS=Read	Full Access OTIS=RW	Bi-weekly & Monthly Payroll
MR-BP: Provider	Full/RW/Chg	NC	Role Filter OTIS=None	Role Filter OTIS=None	Role Filter OTIS=Read	Full Access OTIS=RW	Physician Billing & Budget Data
MR-BP: RU	Full/RW/Chg	NC	Role Filter OTIS=None	Role Filter OTIS=None	Role Filter OTIS=Read	Full Access OTIS=RW	Revenue & Usage
CP: Cap comments	Full/RW/Chg	NC	Role Filter OTIS=None	Role Filter OTIS=None	Role Filter OTIS=Read	Full Access OTIS=RW	Capital Planning Comments
CP: Capital	Full/RW/Chg	NC	Role Filter OTIS=None	Role Filter OTIS=None	Role Filter OTIS=Read	Full Access OTIS=RW	Capita Planning Data
CP: Cap Def	Full/RW/Chg	NC	Full OTIS=None	Full OTIS=None	Full OTIS=None	Full Access OTIS=RW	Capital Planning Definition & Configuration
FP: FinancialPlan	Full/RW/Chg	NC	Role Filter OTIS=None	Role Filter OTIS=None	Role Filter OTIS=Read	Full Access OTIS=RW	Financial Planning Data
FP: FPDefaults	NC	NC	Full Read Custom W OTIS=None	Full Read Custom W OTIS=None	Full Read Custom W OTIS=Read	Full Access OTIS=RW	Financial Planning Default Template Configuration
EPM	Full/RW/Chg	Full/None	NC	NC	NC	NC	Home page announcements. Only Product Admins can make announcement changes.

Table Types							
Category	Subsystem	Everyone	Prod User	Prod Analyst	Local Prod Admin	Prod Admin	Notes
CM: CostMgmt	Full/RW/Chg	NC	Role Filter OTIS=None	Role Filter OTIS=None	Role Filter OTIS=Read	Full Access OTIS=RW	Cost Management Data
Cost: Costing Data	Full/RW/Chg	NC	Role Filter OTIS=None	Role Filter OTIS=None	Role Filter OTIS=Read	Full Access OTIS=RW	Costing Tables. Filtered
Cost: Costing Reference	Full/RW/Chg	NC	Full OTIS=None	Full OTIS=None	Full OTIS=Read	Full Access OTIS=RW	Full Access. Reference Data
Cost: Costing Reference Data	Full/RW/Chg	NC	Full OTIS=None	Full OTIS=None	Full OTIS=Read	Full Access OTIS=RW	Full Access. Reference Data
Cost: CostingGL	Full/RW/Chg	NC	Role Filter OTIS=None	Role Filter OTIS=None	Role Filter OTIS=Read	Full Access OTIS=RW	Costing GL Tables. Filtered
PR: Daily	Full/RW/Chg	NC	Role Filter OTIS=None	Role Filter OTIS=None	Role Filter OTIS=Read	Full Access OTIS=RW	
DSS: DSS Reference	Full/RW/Chg	NC	Full OTIS=None	Full OTIS=None	Full OTIS=None	Full Access OTIS=RW	Full Access. Reference Data
DSS: DSS Reference Data	Full/RW/Chg	NC	Full OTIS=None	Full OTIS=None	Full OTIS=None	Full Access OTIS=RW	Full Access. Reference Data
DSS: DSSCosting Data	Full/RW/Chg	NC	Full OTIS=None	Full OTIS=None	Full OTIS=None	Full Access OTIS=RW	Full Access. Reference Data

Table Types							
Category	Subsystem	Everyone	Prod User	Prod Analyst	Local Prod Admin	Prod Admin	Notes
DSS: DSS Encounter Data	Full/RW/Chg	NC	Full OTIS=None	Full OTIS=None	Full OTIS=None	Full Access OTIS=RW	Full Access. Reference Data
DSS: DSS Encounter Reference	Full/RW/Chg	NC	User Filter OTIS=None	User Filter OTIS=None	User Filter OTIS=Read	Full Access OTIS=RW	Filtered data. No Role Level filter. Should assign user filter via the DSS Security Setup Utility
RF: RF	Full/RW/Chg	NC	Role Filter OTIS=None	Role Filter OTIS=None	Role Filter OTIS=Read	Full Access OTIS=RW	Filtered Access. Rolling Forecasting Data

Product file settings

FILES Category	Subsystem	Everyone	Prod User	Prod Analyst	Local Prod Admin	Prod Admin	Notes
Product Files							
Product Reports	R/W Full	NC	RO/E	RO/E/SA/FP	RO/E/SA/FP	RO/E/SA/FP	General: all reports in the Product reports folder are Read Only for all roles. If you want to edit a report you must save as to the custom folder to gain rights.
Product Report Custom	NC	NC	NC	RW/E/SA/U/FP	RW/E/SA/U/FP	RW/E/SA/U/FP	
Product Utilities	R/W Full	NC	NC	RW/E/SA/U/FP	RW/E/SA/U/FP	RW/E/SA/U/FP	General: all reports in the Product Utility folder are Read Write for admin & analyst roles.
Prod Utility Custom	NC	NC	NC	RW/E/SA/U/FP	RW/E/SA/U/FP	RW/E/SA/U/FP	
Security Setup	NC	NC	NC	No Access	RO/E/SD	RO/E/SD	Requires the Security Admin role to modify
System Files							
Dimension Maint Folder	RW/E/SD/U	NC	NC	NC	NC	NC	
Dimension Maint File	NC	NC	NC	NC	RO/E/SD	RO/E/SD	Dimension security filter must be established to modify.
Prod Doc Admin	RW/E	NC	NC	RW/E	RW/E	RW/E	
Prod Doc User	RW/E	NC	RO	RW/E	RW/E	RW/E	
Product Forms	RO	NC	RO	RO	RO	RO	

FILES Category	Subsystem	Everyone	Prod User	Prod Analyst	Local Prod Admin	Prod Admin	Notes
Suite Forms	RO	RO	NC	NC	NC	NC	
Home Files	RO/SD	RO	NC	NC	NC	RO/SD	
Images	RO	RO	NC	NC	NC	NC	
Product Drills	RO	NC	RO	RO	RO	RO	
Suite Variables	RW/E/SD	Read Only	NC	NC	NC	RW/E/SD	
Scheduler - Product	RW/E	NC	NC	NC	RW/E	RW/E	
Exports - Product	RW/E/E	NC	NC	NC	RW/E/E	RW/E/E	
Imports - Product	RW/E/E	NC	NC	NC	RW/E	RW/E	
Task Pane - Product	RO/E	NC	RO-no admin	RO	RO	RO	
Task Pane - Suite	RO/E	RO	NC	NC	NC	NC	
Ribbons	RO	NC	RO	RO/E	RO/E	RO/E	
Admin	NC	NC	No access	RO	RO	RO	
Main	NC	RO	NC	NC	NC	NC	
Process Definition – Product	RW/E	NC	RO	RO	RW/E	RW/E	
Data Diagrams							
File Groups – Product	Max Access	NC	NC	RW/E/SD	RW/E/SD	RW/E/SD	

FILES Category	Subsystem	Everyone	Prod User	Prod Analyst	Local Prod Admin	Prod Admin	Notes
Drivers	NC	NC	NC	RO/E/SD/SA	RO/E/SD/SA	RO/E/SD/SA	
Process Def	NC	NC		RO/E		RW/E	
Templates	No Access	NC		RO		RO	
Utilities	NC	NC		RW/E/SD/SA/FP		RW/E/SD/SA/FP	

Legend

RO	Read Only	SD	Save Data	CW	Custom Write Filter	None	No table access
RW	Read/Write	E	Explorer	U	Unprotect	NC	Not Configured

Security

All users of Axiom Rolling Forecasting 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 Rolling Forecasting Security, you can create users and roles, and assign access rights. This section explains how security is applied in Axiom Rolling Forecasting.

Users can be created manually within Axiom Rolling Forecasting, 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 Rolling Forecasting 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 Rolling Forecasting 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 Rolling Forecasting. 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 Rolling Forecasting.

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 Rolling Forecasting. For more information, see Axiom Rolling Forecasting 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 Rolling Forecasting are controlled in the **Security Management** dialog. To access this dialog:

- On the **Axiom** tab, in the **Administration** group, click **Manage > Security > Security Manager**.

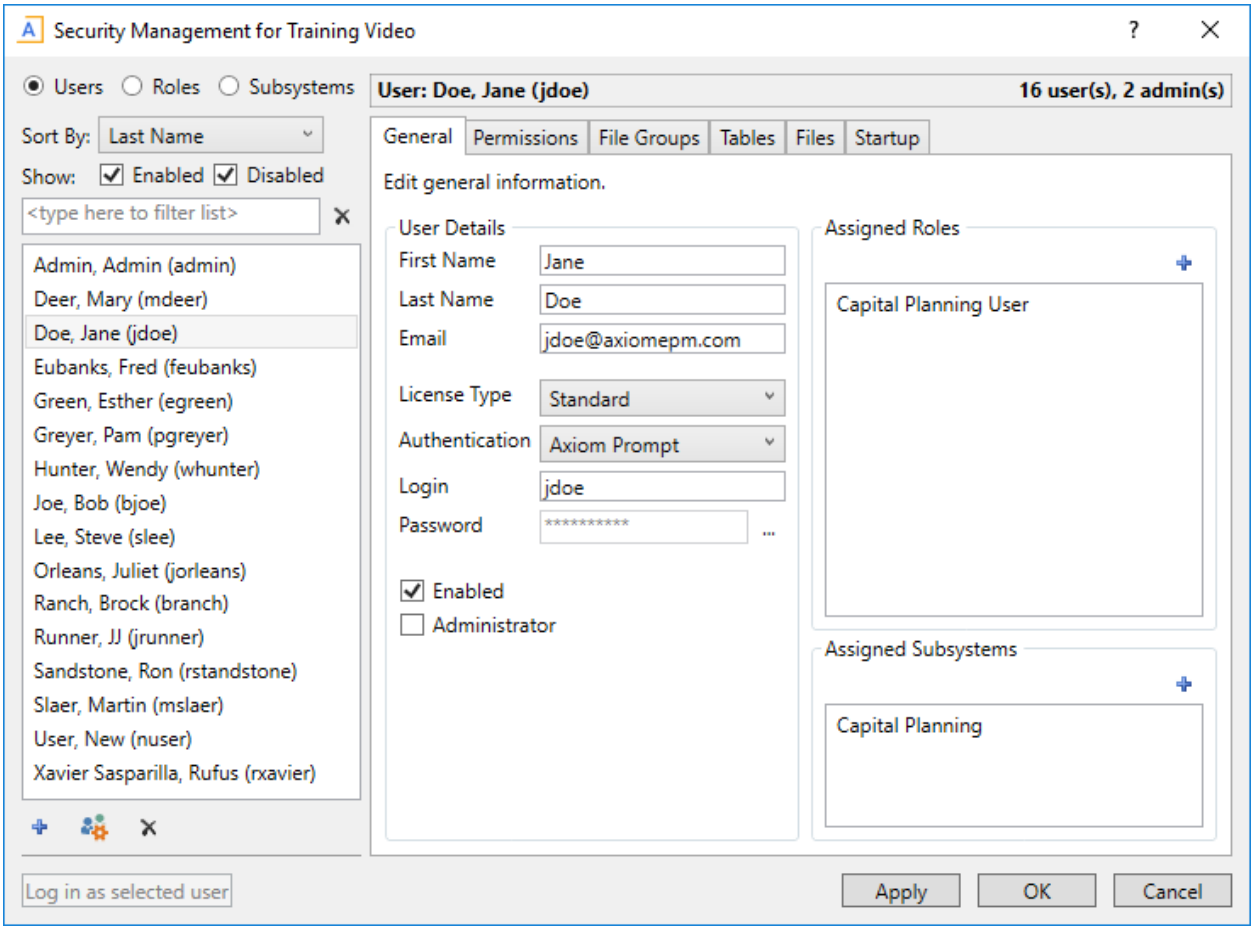
  NOTE: In systems with installed products, this feature may be located on the **Admin** tab. In the **System Management** group, click **Security > Security Manager**.

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

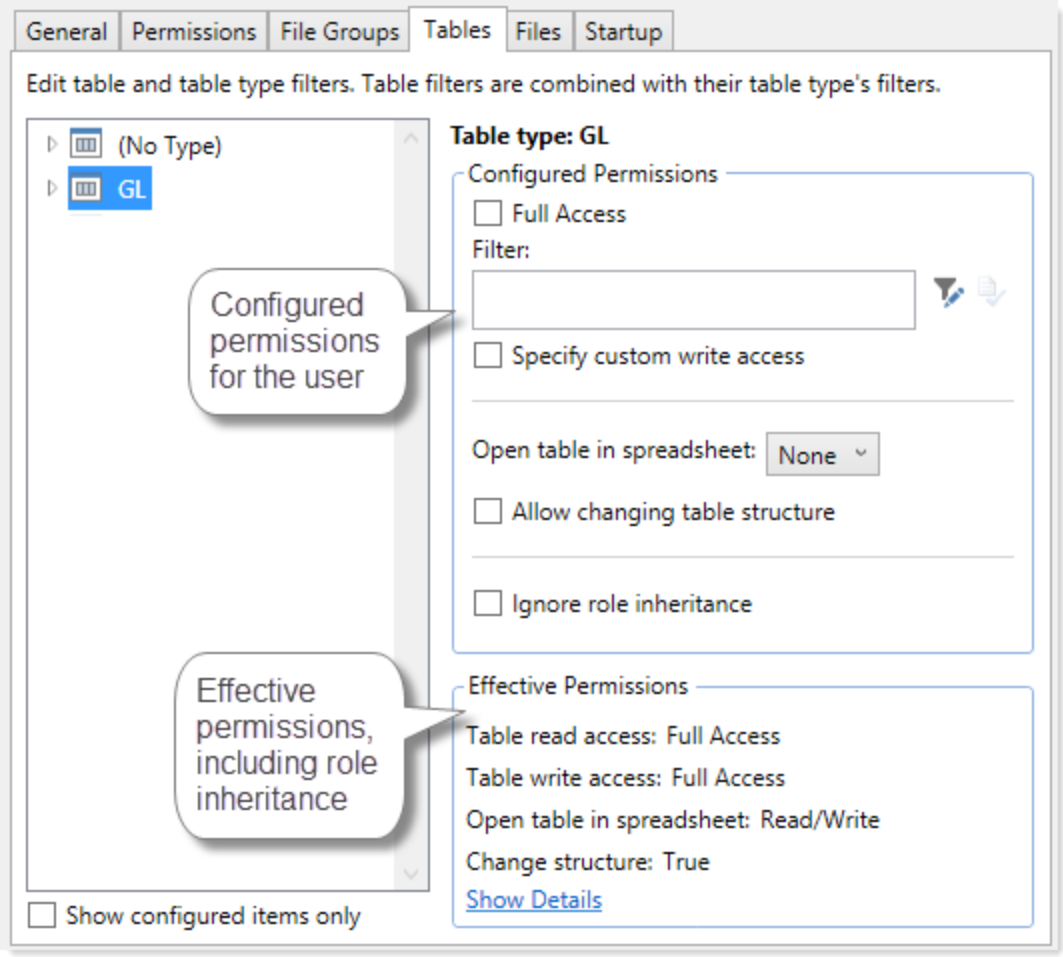
Changes made in the Security Management dialog are reflected in "real-time" within the dialog. If a required setting is missing, a validation message appears in the bottom left of the dialog. You can click on the message to be taken to the applicable setting. This issue must be resolved before you can 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 Rolling Forecasting 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 Syntellis. If you have any questions, please contact Axiom 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.

Axiom Rolling Forecasting user roles

You can assign each user in Security 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.

You can assign users 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.

The standard available roles in Axiom Rolling Forecasting include the following:

NOTE: Access to integrated products depends on your system's integrations. For example, if your system is integrated with Axiom Capital Planning, system users may have access to additional tables and files not listed in the following role descriptions.

▶ Rolling Forecast User

This is the baseline role in Axiom Rolling Forecasting. Grants end-user level access to plan files and reports.

Tab	Access to
Permissions	None
File Groups	Rolling Forecast – • Run Axiom queries • Plan files – Insert/change calc methods
Tables	• RF Monthly Data – Read/Write • RF Waterfall Data – Read

Files > Reports Library	• Rolling Forecasting Reports – Read Only, with show in Explorer, save data
	• Rolling Forecasting Utilities – No access except:
	  ◦ Rolling Forecasting Home Page – Read Only
	• System Files > No access, except:
	  ◦ Forms > Rolling Forecast – Read Only
	  ◦ Home Files > Suite – Read Only
	  ◦ RFVCC Drills – Read Only

Tab	Access to
Files > Task Panes Library	Rolling Forecast – Read Only* * No access to the Admin task pane
Files > Process Definition Library	Rolling Forecast Processes – Read Only

Rolling Forecast Analyst

Grants more access than a user but less than an administrator. Examples of additional access include access to drivers, utilities, and editing reports, but not security or platform access.

Tab	Access to
Permissions	• Administer Axiom Explorer • Administer Exports • Scheduled Jobs User • User Documents Folder Access
File Groups	Rolling Forecast – • Create plan files • Process plan files • Run Axiom queries • Plan files – Read/Write, with save data, unprotect plan files, insert/change calc methods
Tables	• RF Custom Data – Read/Write, OTIS: Read/Write, with can change table structure • RF Monthly Data – Read/Write • RF Waterfall Data – Read

Tab	Access to
Files > Reports Library	• Budgeting Reports > Custom Reports – Read/Write, with: ◦ Show in Explorer ◦ Save data ◦ Unprotect files ◦ Use Sheet Assistant ◦ Process files • Rolling Forecasting Reports – Read Only (except _My Reports, which is Read/Write), with: ◦ Show in Explorer ◦ Save data ◦ Unprotect files ◦ Use Sheet Assistant ◦ Process files • Rolling Forecast Utilities – Read/Write (except RF Deductions Calculator, which is No Access; Security Setup, which is No Access; RF Input Monthly Statistics form, which is Read Only, with save data) ◦ Show in Explorer ◦ Save data ◦ Unprotect files ◦ Use Sheet Assistant ◦ Process files • System Files > ◦ Forms > Rolling Forecast – Read Only ◦ Home Files > Suite – Read Only ◦ RFVCC Drills – Read Only
Files > Scheduler Jobs Library	Rolling Forecast – Read/Write, with show in Explorer
Files > Exports Library	Rolling Forecast – Read/Write, with show in Explorer, execute
Files > Task Panes Library	Rolling Forecast – Read Only, with show in Explorer

Tab	Access to
Files > Ribbon Tabs Library	Read Only, with show in Explorer, show Admin ribbon tab
Files > Process Definition Library	Rolling Forecast Processes – Read/Write, with show in Explorer
Files > File Groups	Rolling Forecast – • Drivers – Read/Write except RF Drivers is Read Only, with save data • Process Definitions – Read/Write, with show in Explorer • Templates – Read Only, with show in Explorer, save data, process files • Utilities – Read/Write, with show in Explorer, save data

Rolling Forecast Admin

Grants the user access to the Admin ribbon tab, the RF Admin task pane, as well as administrative rights to all file groups, reports, and utilities for the specified application.

Tab	Access to
Permissions	• Administer Axiom Explorer • Administer Exports • Administer File Groups • Administer Imports • Administer Locked Items • Administer Tables • Browse Audit History • Scheduled Jobs User • User Documents Folder Access
File Groups	Rolling Forecast – • Can modify file group • Can create plan files • Can process plan files • Can run Axiom queries • Plan files – Read/Write, with save data, unprotect plan files, insert/change calc methods

Tab	Access to

Tables	• RollingForecast_RFAdjustments – Full Access, OTIS: Read/Write
	• Dimensions >
	  ◦ ACCT, DEPT, ENTITY, RFCODE, RFGROUP – Read, OTIS: Read
	• Implementation >
	  ◦ ClientAcctCategoryMap – Full Access, OTIS: Read/Write, with can change table structure
	  ◦ FSDetailMap – Read, OTIS: Read
	• RF Custom Data – Full Access, OTIS: Read/Write, with can change table structure
	• RF Monthly Data – Read/Write
	• RF Waterfall Data – Read

Tab	Access to
Files > Reports Library	• Rolling Forecasting Reports – Read Only (except as noted in Exception) ◦ Show in Explorer ◦ Save data ◦ Unprotect files ◦ Use Sheet Assistant ◦ Process files **Exception:** ◦ _My Reports – Read/Write, with show in Explorer, save data, unprotect files, use Sheet Assistant, process files • Rolling Forecast Utilities – Read/Write (except as noted in Exceptions) ◦ Show in Explorer ◦ Save data ◦ Unprotect files ◦ Use Sheet Assistant ◦ Process files **Exceptions:** ◦ Database Updates > RF Input Monthly Statistics form – Read Only with save data ◦ Security Setup – Read Only, with show in Explorer, save data, and unprotect files; Rolling Forecast Security is No Access • System Files > No access except the following: ◦ Dimension Maintenance > Dimension Maintenance – Read Only, with show in Explorer, save data, and process files; ◦ Documents > Admin > Rolling Forecast – Read/Write, with show in Explorer, unprotect files ◦ Forms > Rolling Forecast – Read Only, with show in Explorer ◦ Home Files > Suite – Read Only ◦ Implementation – Read/Write, with show in Explorer, save data, and unprotect files ◦ RFVCC Drills – Read Only
Files > Scheduler Jobs Library	Rolling Forecast – Read/Write, with show in Explorer
Files > Exports Library	Rolling Forecast – Read/Write, with show in Explorer, execute

Tab	Access to
Files > Imports Library	• Implementation – Read/Write, with show in Explorer, execute • Rolling Forecast – Read/Write, with show in Explorer, execute
Files > Task Panes Library	• Rolling Forecast – Read Only, with show in Explorer • Suite – Read Only
Files > Ribbon Tabs Library	Read Only **Exception:** Admin – Read Only, with show in Explorer
Files > Process Definition Library	Read/Write, with show in Explorer
Files > File Groups	Rolling Forecast > • Drivers – Read/Write, with show in Explorer, save data, process files, except: ◦ RF Drivers – Read Only, with save data • Process Definitions – Read/Write, with show in Explorer • Templates – Read Only, with show in Explorer, save data, process files • Utilities – Read/Write, with show in Explorer, save data, process files

Rolling Forecast Global Driver Management

Grants the user the ability to configure and manage the Rolling Forecast configuration drivers (drivers available from the Configuration tab in Rolling Forecast Adjustments Setup: General, Workbook Visibility, Workday Period, Census Codes, and Revenue & Salary Codes). Rolling Forecast administrators need this additional role to manage configuration drivers.

NOTE: This role does not provide access to Axiom Rolling Forecasting by itself. Users with this role must also have a role that grants them access to Axiom Rolling Forecasting Admin task pane, such as the Admin role or Analyst role.

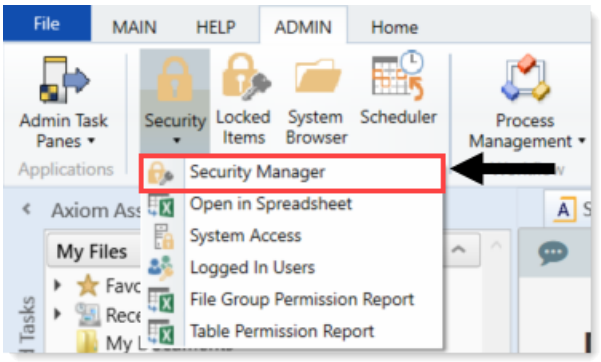
Rolling Forecast Provider

Grants the user access to the plan file Provider Volume tab.

NOTE: This role does not provide access to Axiom Rolling Forecasting by itself. Users with this role must also have a role that grants them access to Axiom Rolling Forecasting.

To access the Security Manager:

On the **Admin** ribbon tab, in the **System Management** group, select **Security > Security Management**.



How role settings are applied to users

Axiom Rolling Forecasting 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 Rolling Forecasting 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.

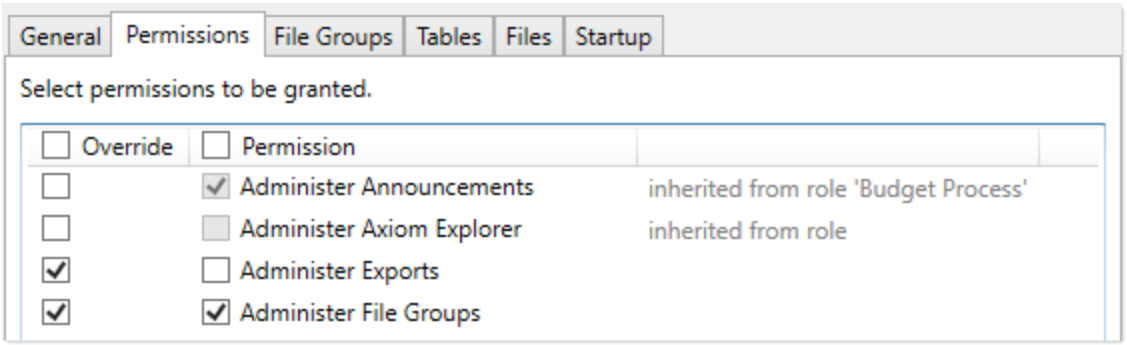
If a permission is set to inherited, then the user is granted the most permissive set of rights among any roles the user is assigned to. For example, imagine the following settings for the **Browse Audit History** permission:

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 Rolling Forecasting, 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.

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 Rolling Forecasting security entirely. Alternatively, you can disable a user if you want to keep the user record, but prevent the user from accessing Axiom Rolling Forecasting. 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.

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 Rolling Forecasting 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 Rolling Forecasting 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.

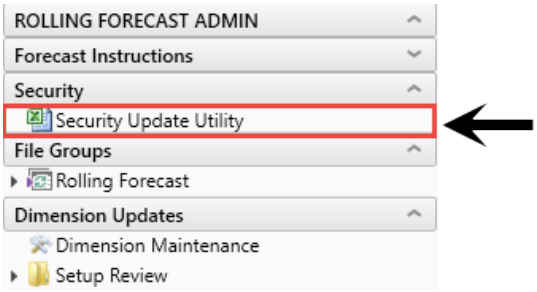
Configuring Axiom Rolling Forecast table (data access) and file folder security

The Security Update Utility is simply a spreadsheet version of the Security Manager that includes only a subset of security permissions specific to Axiom Rolling Forecasting. This utility allows you to give access and permissions to multiple users simultaneously instead of configuring user permissions individually. Any changes you make using this utility are also made in Security Manager.

NOTE: This utility in only additive. It does not remove a role from a user. You need access Security Manager to remove user roles. For more information, see Managing Users.

To configure table (data access) and file folder security:

1. In the RF Admin task pane, in the **Security** section, double-click **Security Update Utility**.



2. Edit the columns listed in the following table from left to right for the user.

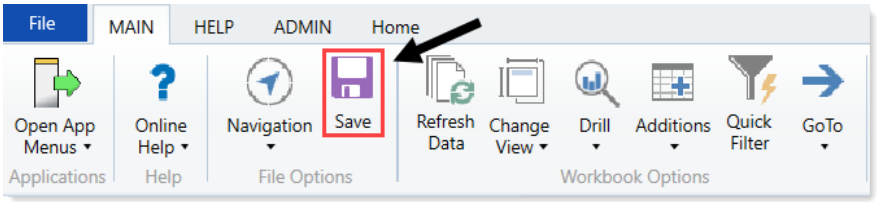
NOTE: To add a new user, navigate to the **New EPM Users** section at the bottom of the worksheet.

Field	Steps
LoginName	The login name for the user. If your organization uses the login information supplied by your IT department, then the login name is auto-generated.
PrincipalID	This entry is auto-generated by the system. Do not make changes to this cell.
FirstName	Type the user's first name.
LastName	Type the user's last name.
EmailAddress	Type the user's last name.
AuthenticationType	Click the drop-down to select how the user is authenticated to use the system.

Field	Steps
Password	If you use Windows authentication, then this field remains blank. If you are using the Axiom Prompt, then type the user's password.
IsSyncEnabled	This information is imported from Security Manager. Do not make changes to this cell.
UserLicenseType	This information is imported from Security Manager. Do not make changes to this cell.
IsEnabled	This information is imported from Security Manager. Do not make changes to this cell.
IsAdmin	This information is imported from Security Manager. Do not make changes to this cell.
Rolling Forecast System	Do one of the following: • To give a user access to Axiom Rolling Forecasting, type **TRUE**. • To not give access to a user, type **FALSE**.
Rolling Forecast Role	Do one of the following from the drop-down: • To assign the administrator role, select **Rolling Forecast Admin**. • To assign the analyst role, select **Rolling Forecast Analyst**. • To assign the user role, select **Rolling Forecast User**.
Rolling Forecast Provider	To give access to the provider module, from the drop-down, select **Rolling Forecast Provider**.

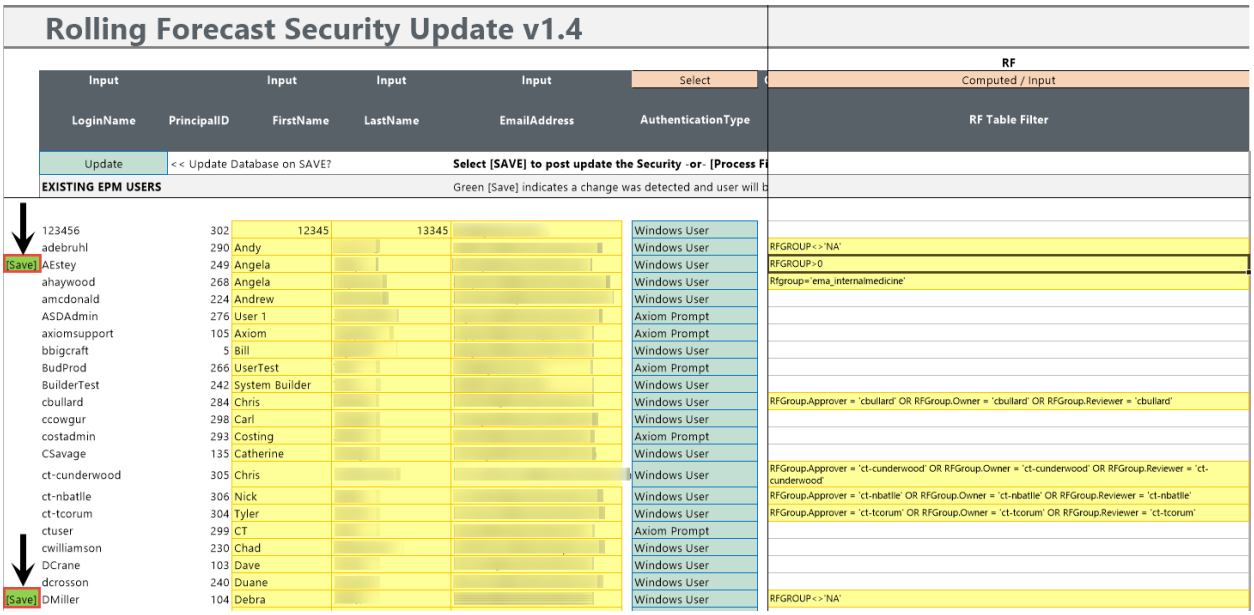
Field	Steps
RF Table Filter	Based on the role assigned, the required filters per Table Type are highlighted in yellow and a default data filter is computed. • To give the user access to a table, you must enter a filter for that table type. • To not give a user access to data, leave the field blank. You can change the filter using the proper syntax, if desired. They are retained and display the next time you launch this tool. Modifying the filter for Axiom Rolling Forecasting requires the following syntax: • For users in workflow, the default filter is **RFGroup.<Grouping Column> Syntax** – ex. RFGroup.Owner='NewUser' • For Administrators, you can change the filter to **RFGroup<>'NA'** Any changed row is highlighted with a green **[Save]** tag. This indicates a change was made or an unexpected previous parameter was found and modified. **NOTE:** If a user is assigned to a product subsystem but not a role, this tool automatically assigns them to the user role. Thereby, creating a change.

3. In the **Main** ribbon tab, in the **File Options** group, click **Save**.



IMPORTANT: DO NOT execute a save-as or open in a read/write mode. Structural modifications to this tool could negatively impact your security setup.

Any changed rows are highlighted with a green [Save] tag, as shown in the following example. This indicates that a change was made or an unexpected previous parameter was found and modified, thereby creating a change.



NOTE: If a user is assigned to a product subsystem but not a role, this tool automatically assigns the user to the User role, thereby creating a change.

This completes the first part of setting up user security. At this point, the configured users have rights to specified products, reports, and corresponding data.

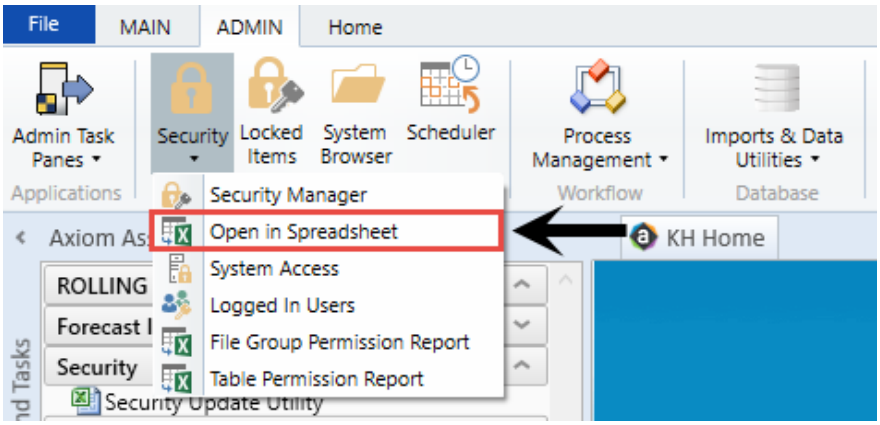
Configuring Axiom Rolling Forecast file group security (plan file access)

This utility allows you to filter for only roles and users to configure. Perform each step carefully.

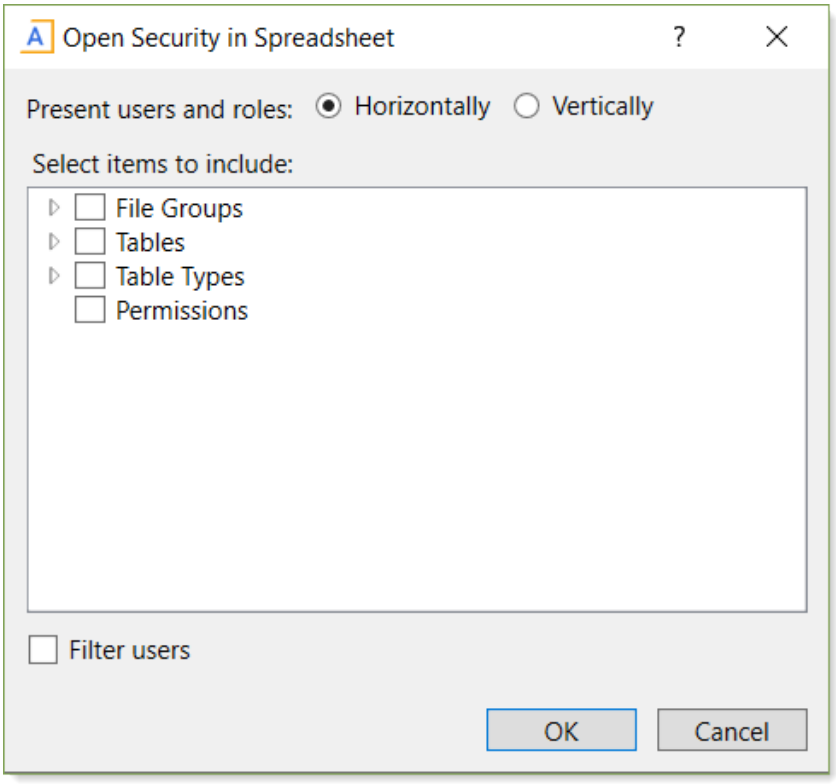
NOTE: This process assumes your organization uses Process Management (Workflow).

To configure file group security (plan file access):

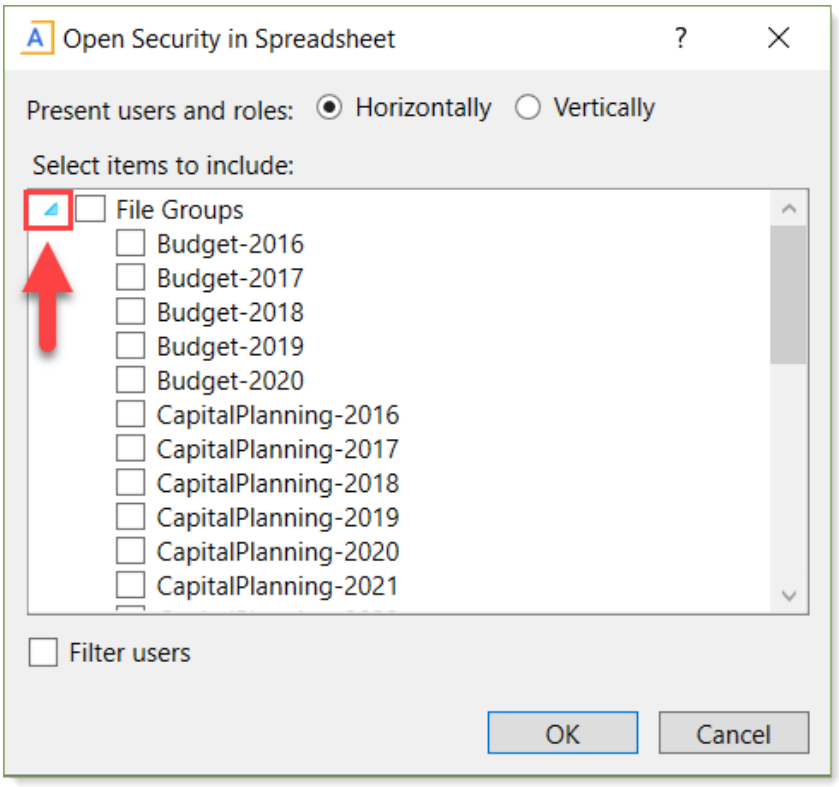
1. In the **Admin** ribbon tab, click **Security > Open in Spreadsheet**.



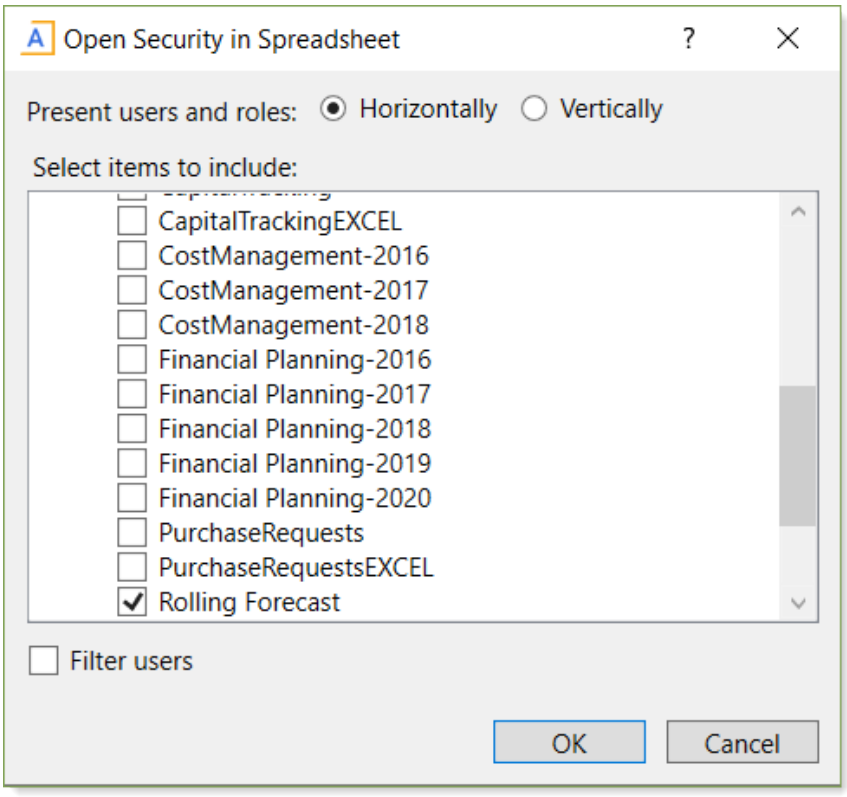
2. In the **Open Security in Spreadsheet** dialog, deselect all of the listed items.



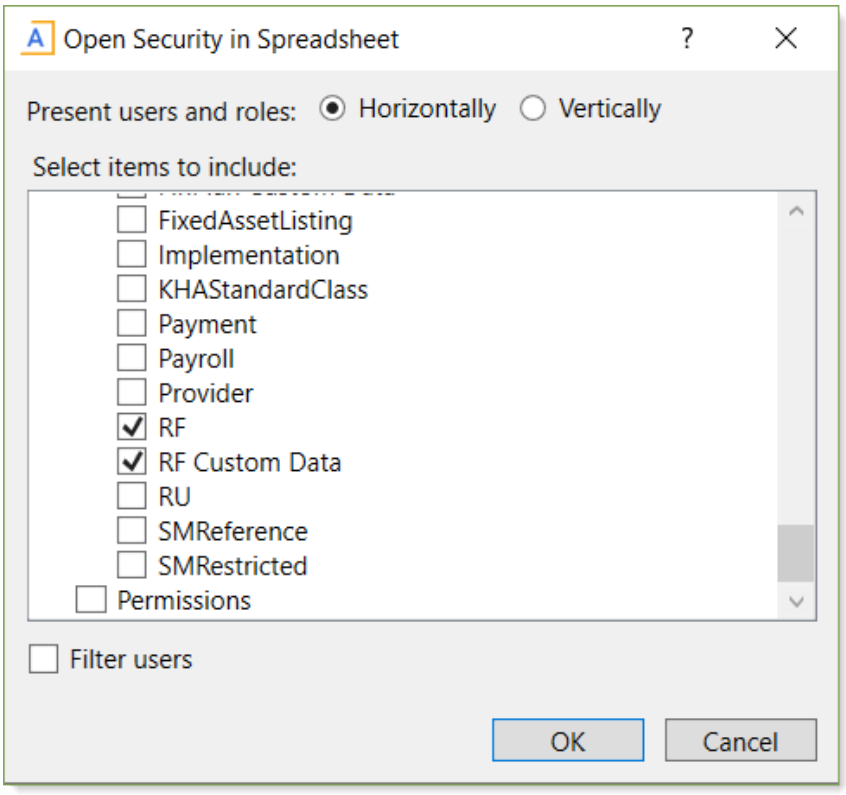
3. Click **File Groups** to expand it.



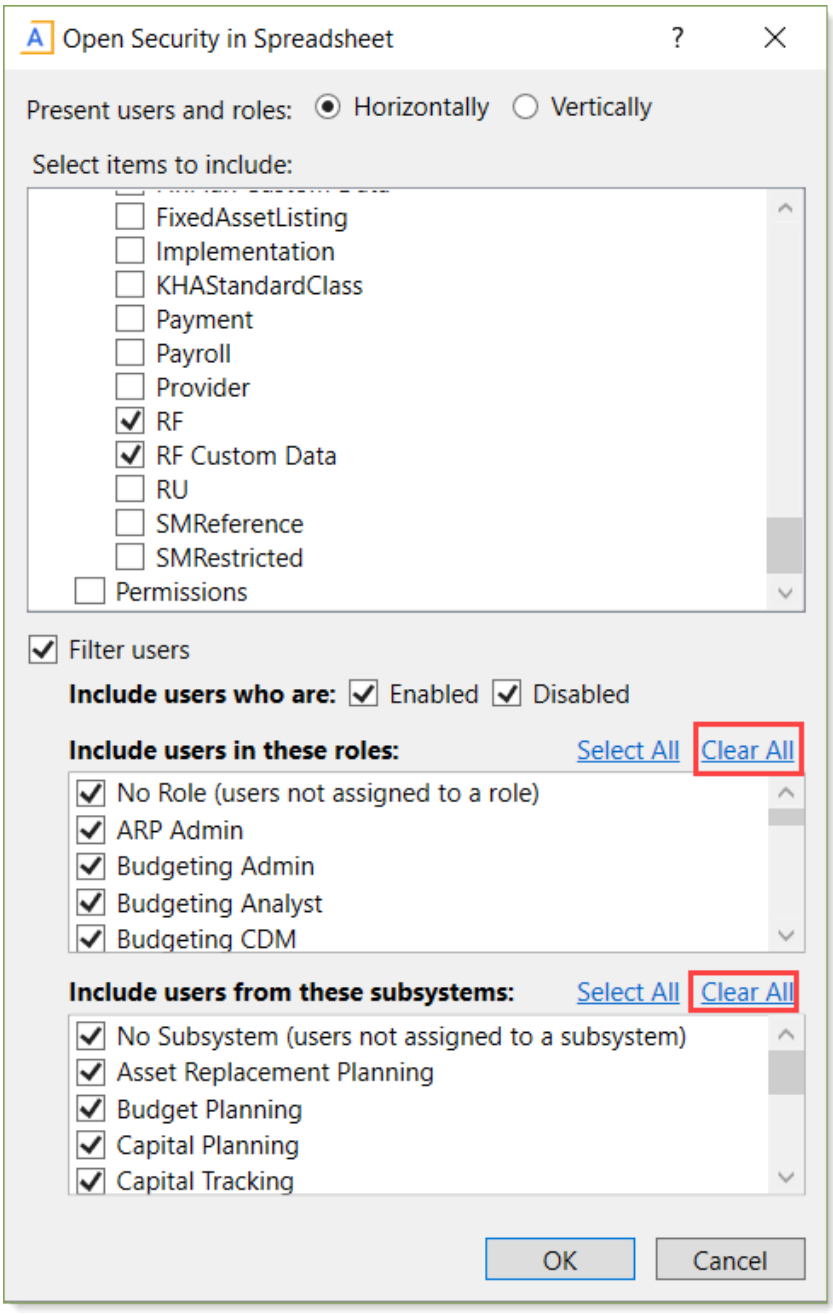
4. Select the file group to configure.



5. Click **Table Types** to expand it, and select the tables to configure.

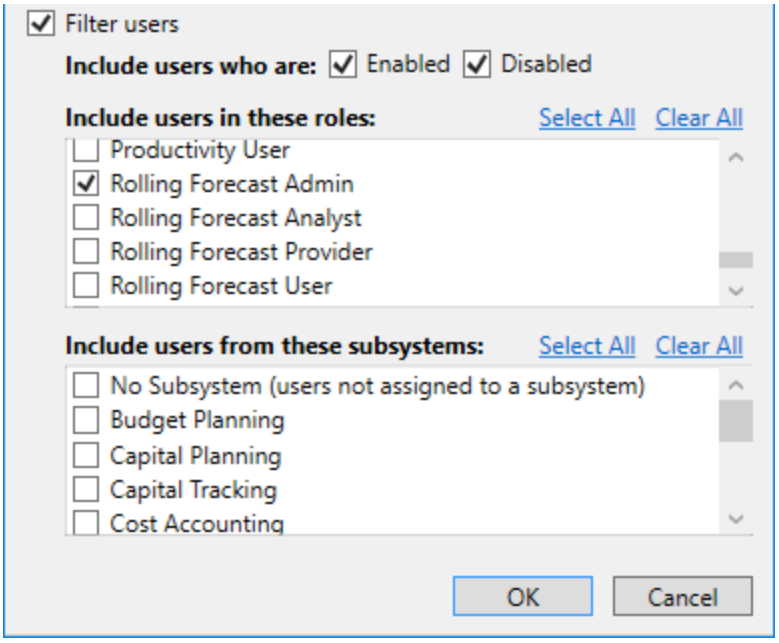


6. At the bottom of the dialog, click the **Filter users** checkbox.
7. Click **Clear All** for roles and subsystems.



8. In the **Include users in these roles** section, select the Axiom Rolling Forecasting role to update, and click **OK**.

IMPORTANT: We recommend that you do not mix roles during this edit session. Configure members of the User role first, and then configure Admin and Analyst roles in a repeat exercise. Do not select subsystem options. The intent is to filter for only those you want to update. If you select a subsystem, you will receive all users, regardless of roles for that system, increasing the complexity of this task.



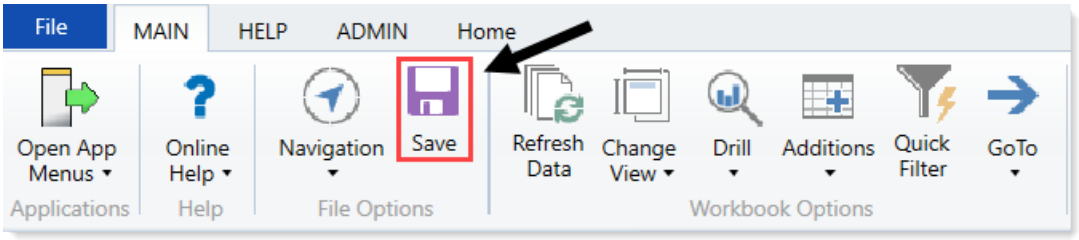
9. For the first non-administrator user in the spreadsheet, make the following changes:
    a. In the **Rolling Forecast [file access level]** row, from the drop-down, select one of the following:
        - **None** - Provides no access to the plan file until the user is the stage owner, of which they then become Read/Write when in stage. Once advanced, the previous stage owner can no longer access the plan file.
        - **Read** - Provides Read-Only Access except when the user is the stage owner, of which they become Read/Write when in stage. Once advanced, the previous stage owner can only view. This is the most common setup.
        - **Read/Write** - By default, non-administrators cannot perform read/write activities, but you can change these permissions, if needed.
    b. To allow users to insert new accounts, projects, and so on into the plan files, in the **Rolling Forecast [calc method permission]** row, from the drop-down, select **Insert**.
    c. In the **Rolling Forecast [interacts with process management]** row, from the drop-down, select **TRUE**.
10. In the **RF [read filter]** row, copy the information and paste it in the **Rolling Forecast [access filter,**

ignored if all plan files] row for all of the applicable users. Identify in advance what column your user list ends, and only copy these element changes within that range.

	B	C	D	E
1	**Login, Role, or Subsystem (roles prefixed with 'role:', subsystems prefixed**	123456	adebruhl	AEstey
8	Email Address	test@yahoo.com	adebruhl@kaufmanhall.com	AEstey@kaufmanhall.com
9	Password			
10	Enabled	TRUE	TRUE	TRUE
11	Directory Sync Enabled	TRUE	TRUE	TRUE
12	User License Type	Standard	Standard	Standard
13	Authentication Type	Windows User	Windows User	Windows User
14	Roles (semi-colon separated)		Rolling Forecast Admin;GlobalDriverMgmt;Rolling Forecast Provider	System Development;Budgeting Admin;Management Reportir
15	Subsystem		Budget Planning;Rolling Forecast	Budget Planning;Rolling Forecast;Management Reporting;Syst
16	Administrator	FALSE	TRUE	FALSE
17				
18	**File Groups:**			
19	Rolling Forecast [modify file group]	FALSE	FALSE	FALSE
20	Rolling Forecast [create plan files]	FALSE	FALSE	FALSE
21	Rolling Forecast [create new records]	FALSE	FALSE	FALSE
22	Rolling Forecast [process plan files]	FALSE	FALSE	FALSE
23	Rolling Forecast [run Axiom Queries]	FALSE	FALSE	FALSE
24	Rolling Forecast [manage calc methods]	FALSE	FALSE	FALSE
25	Rolling Forecast [file access level]	None	None	None
26	Rolling Forecast [save data]	FALSE	FALSE	FALSE
27	Rolling Forecast [unprotect]	FALSE	FALSE	FALSE
28	Rolling Forecast [calc method permission]	None	None	None
29	Rolling Forecast [sheet assistant]	FALSE	FALSE	FALSE
30	Rolling Forecast [file processing assistant]	FALSE	FALSE	FALSE
31	Rolling Forecast [interacts with process management]	FALSE	FALSE	FALSE
32	Rolling Forecast [all plan files]	FALSE	FALSE	FALSE
33	Rolling Forecast [access filter, ignored if all plan files]			RFGROUP>0
34	Rolling Forecast [role inheritance mode]	Independent	Independent	Independent
35	Rolling Forecast [inherit role, blank means all]			
36				
37	**Table Types:**			
38	RF [ignore roles]	FALSE	FALSE	FALSE
39	RF [full read access]	FALSE	FALSE	FALSE
40	RF [write filter enabled]	FALSE	FALSE	FALSE
41	RF [full write access]	FALSE	FALSE	FALSE
42	RF [read filter]			RFGROUP>0
43	RF [write filter]			
44	RF - [change structure]	FALSE	FALSE	FALSE
45	RF - [open table in spreadsheet]	None	None	None

IMPORTANT: The last few columns are the role definitions. DO NOT replace the role definition with these user settings.

11. After you are done making your changes, in the **Main** ribbon tab, in the **File Options** group, click **Save**.



Configuring Axiom Rolling Forecast driver security

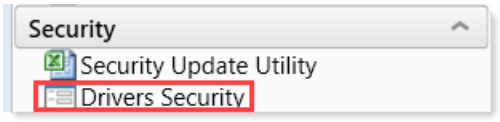
The Rolling Forecast Driver Security Setup form allows you to manage RF Admin and RF Analyst access to the drivers in the RF Drivers utility except the Configuration drivers. Users must be assigned the Rolling Forecast Global Driver Management role in the Security Manager to access the Configuration drivers.

Configuring driver security includes setting which RFPlanGroups a user can access within each driver.

NOTE: You must have the Security Admin role to use the RF Drivers Security utility.

To manage user access to the RF drivers:

1. In the RF Admin task pane, in the **Security** section, double-click **Drivers Security**.



   The RF Driver Security Setup form opens. This form displays all users who currently have the RF Admin or RF Analyst role.

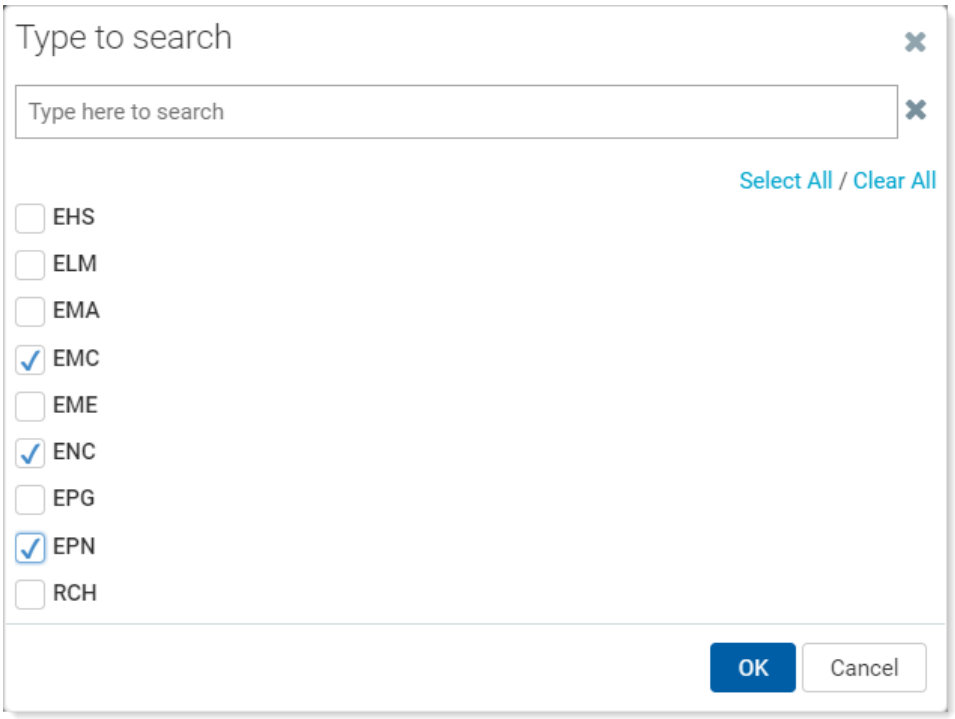
2. By default, the list of users is set to All, which includes both RF Admins and RF Analysts. To restrict the list, on the right side above the columns, from the **Filter for Role** drop-down, select the desired filter: RF Admin or RF Analyst.

   NOTE: Users who have the RF Global Driver Management role automatically have full Read/Write access to all drivers, including the RF Configuration drivers. For these users, "TRUE" displays in the Member of Global Driver Management column, and their rows display a solid gray bar instead of permission fields. These users cannot have their driver access set in this form.

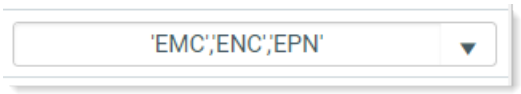
3. Locate the desired user in the list and then click the lock icon (🔒) to the left of the user's name to unlock the permission fields in that row.

4. In the desired driver column, click the down arrow and select the permission, as shown in the following example.

5. To set the RF Plan Groups the user can apply the drivers to, at the end of the row, in the **Select RFPlanGroup Filter(s)** column, click the down arrow in the field. In the dialog, select the check boxes for the desired listed RFPlanGroups and then click **OK**.



The selected RFPlanGroups are now listed in the field, as shown in the following example:



6. In the confirmation dialog, click **OK**.
7. At the top of the form, click **Save**.
8. To set driver access for another user, first click the open lock icon of the user you just set to close that row before unlocking another row. If you are done, you can close the form. The unlocked icon will reset to locked when the form closes.

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.

Tab	Description
Tables	Set access rights for tables.
Files	Set access rights for files in the Axiom Rolling Forecasting 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.

Item	Description
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 Rolling Forecasting, limited by their security permissions. In addition to standard users, the following user types are available: • **Axiom Support** users are intended to allow Axiom Rolling Forecasting 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 Rolling Forecasting. 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 Rolling Forecasting license.

Item	Description
Authentication	The method used to authenticate the user for access to Axiom Rolling Forecasting. 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 Rolling Forecasting 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 Rolling Forecasting 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 Rolling Forecasting 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 Rolling Forecasting 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 Rolling Forecasting. If this check box is *not* selected, the user cannot log into any Axiom Rolling Forecasting 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)

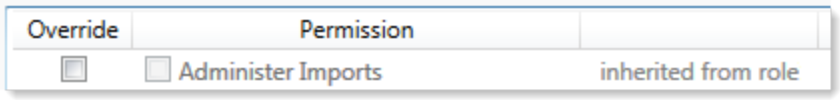
On the **Permissions** tab of the **Security Management** dialog, you can specify which features a user or role has access to. The **Permissions** tab works slightly differently depending on whether you are defining rights for a user or a role.

NOTE: If you are defining permissions for a subsystem, see Defining maximum permissions for subsystems.

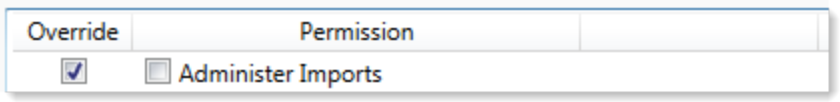
Setting permissions for users

For users, each permission has three available settings:

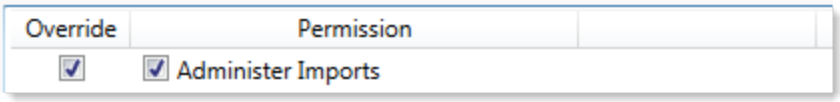
- **Inherited**: The permission is not set for the user. The permission is grayed out and the text "inherited from role" appears to the right of the permission name. If the user is assigned to a role, this permission can be inherited from the role.



- **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.



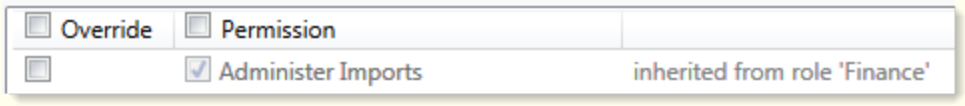
- **Allowed**: If the **Override** check box and the **Permission** check box are selected, this means that the user explicitly has access to the feature, regardless of any role settings.



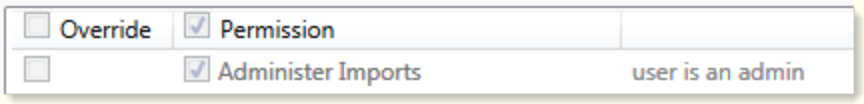
By default, all user permissions are left unset and are inherited from any role assignments. If you want to override role inheritance and explicitly set a permission for the user, then you must select the **Override** check box and then leave the permission unchecked (to deny the permission) or checked (to allow the permission).

NOTES:

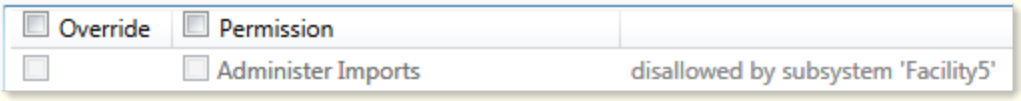
- When a permission is inherited from a role, it displays the effective permission for the user. For example, if a user is assigned to a role that has the **Administer Imports** permission, and that permission is eligible for inheritance, then the check box for that permission displays as grayed out 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 can 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 can access the Axiom Explorer dialog. 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 can 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 permissions 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 can create import utilities. 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 can remove file locks on documents and tables, and can remove save locks on Axiom forms. 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 can access and edit security settings 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 can 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 can download and apply updates to the Axiom Rolling Forecasting installation.
Browse Audit History	The user can view audit history for the system. **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 can remove workbook and worksheet protections, 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.

Permission	Description
Scheduled Jobs User	The user can 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 can access a 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: Generally speaking, 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:

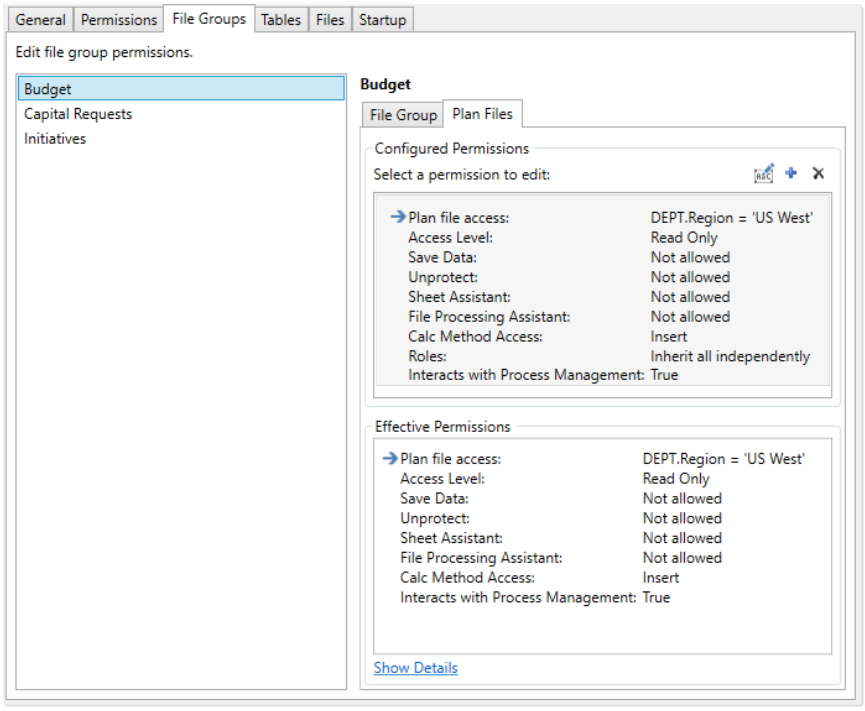
- The settings on this tab do not apply to administrators. Administrators have access to all plan files and all file group features.
- If you are defining permissions for a subsystem, see Defining maximum permissions for subsystems.

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.

Item	Description
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.
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 a plan file process, 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 a plan file process with this file group, select the level of access that you want the user to have when they are NOT the current step owner. For example, you may want the user to have no access if they are not the step owner, or read-only access. • If the file group uses virtual spreadsheet plan files, and you want file locking behavior to apply to the plan files, then users must have Read/Write access to the files instead of Read-Only access (even though the virtual files cannot be saved).

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 a plan file process to manage access to plan files, you do *not* need to select this option. When the user is a step owner of a plan file, the user's permissions will be "elevated" 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 a plan file process 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 a plan file process 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. 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: • If the access level of the permission set is No Access, the permission set will still be considered for step ownership when the user is directly assigned as the step owner. If "interacts" is disabled, then the permission set is only considered if the access level is at least Read Only. • 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 when evaluating the role permission.

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 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.

Generally speaking, you should configure security permissions for plan files to reflect the "baseline" permissions that you want the users to have when they are *not* process step owners. When the users are step owners, their permissions will be temporarily "elevated" as needed so that they can complete the process task. For example, a user may have Read-Only access to a plan file configured in security, so this is their baseline permission. But when the user is the step owner of an edit step, their permission will be elevated to Read/Write and Allow Save Data so that they can edit and save the plan file.

Additionally, the **Interacts with Process Management** setting for plan file permissions can be used as follows:

- If you want a user to only have access to the plan file when they are the step owner, you can configure a permission set to the plan file with **No Access** and **Interacts with Process Management** enabled. This causes the permission set to be considered for step ownership of a plan file even though the access level is **No Access**. The user must still have a plan file filter that includes the plan file.
- If the ownership assignment is through a role, enabling **Interacts with Process Management** tells the process to consider this permission set when evaluating which role members should be step owners. If "interacts" is not enabled when using a role assignment, 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 plan file 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 baseline level of security permissions that they will always have.

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 if the ownership assignment comes through a role (can be left unchecked if the user will be assigned directly) 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 the ownership assignment comes through a role (can be left unchecked if the user will be assigned directly)

These permissions can be set at the user level, or at a 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, the 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

When creating new permission sets for users, **Interacts with Process Management** is enabled by default. You can disable this permission for the user if:

- The permission set grants Read-Only access or higher.

  AND

- The permission set does not need to be considered when using role ownership assignments.

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.
- If the role assignment is configured to consider **All permissions**, then it is not necessary to enable **Interacts with Process Management** on the role that will be used as the assignment. In this case, the role simply defines the pool of eligible users. If a user has any permission set with access to the plan file and "interacts" enabled, then they will be a step owner.
- If the role assignment is configured to consider **Only permissions associated with the assigned role**, then either **Interacts with Process Management** must be enabled on the role so that users in the role inherit it, or the users must have an individual permission set with the "interacts" permission that is also configured to combine with the role.

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
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 GL2020:

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 GL2020:

If the table type GL is set to...	And the table GL2020 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')

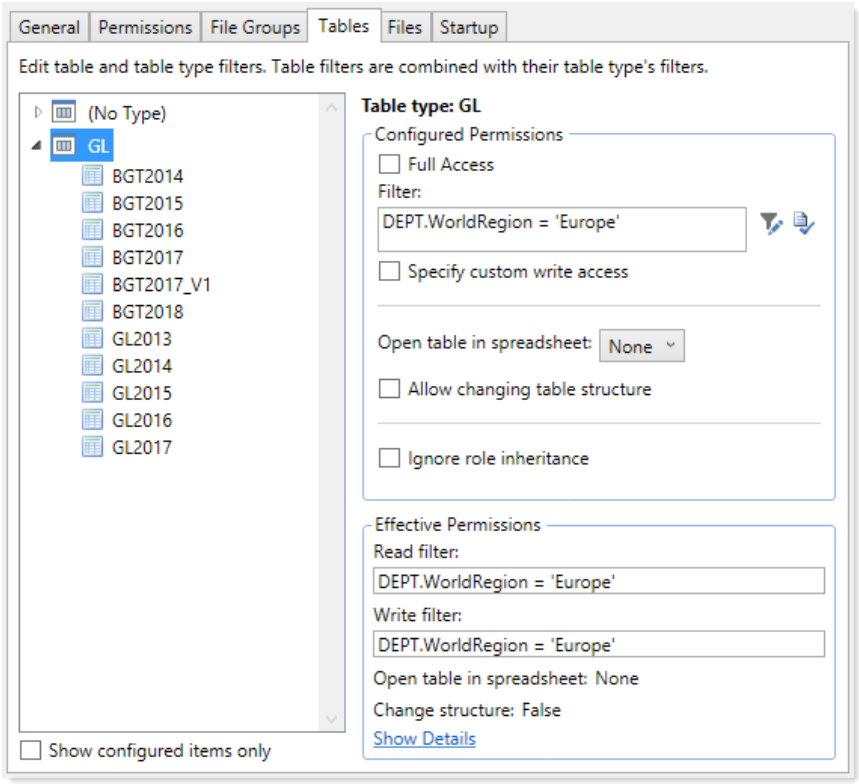
Tables that do not belong to a table type only have their individual table access rights.

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 GL2020 data table, the filter wizard automatically uses `ACCT.ACCT` in the filter (instead of `GL2020.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 GL2020 data table, the filter wizard automatically uses `ACCT.ACCT` in the filter (instead of `GL2020.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 Rolling Forecasting file system. The following areas can be controlled:

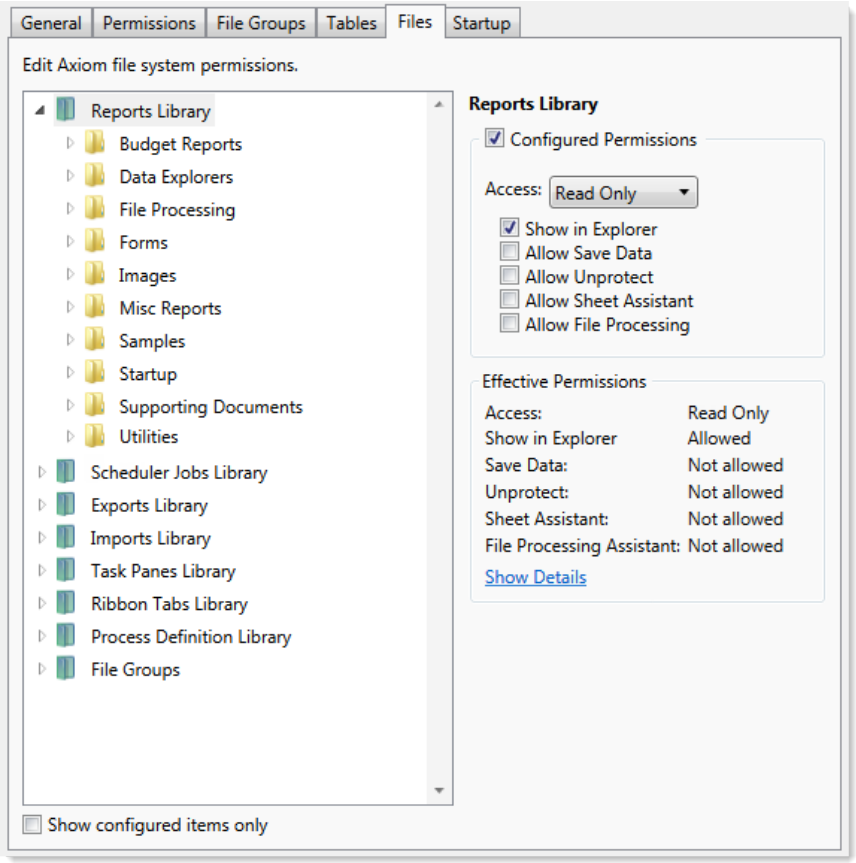
- The Reports Library
- The Data Diagrams Library
- The Filter Library
- The Imports Library and the Exports Library
- The Process Definitions Library
- The Scheduler Jobs Library
- The Task Panes Library
- The Ribbon Tabs Library
- Certain supporting files for file groups: Templates, Drivers, Utilities, 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.

IMPORTANT: Users do not have to have any file permissions to a Scheduler job in order to execute that job via an event handler (such as when using Run Event or Raise Event).

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.

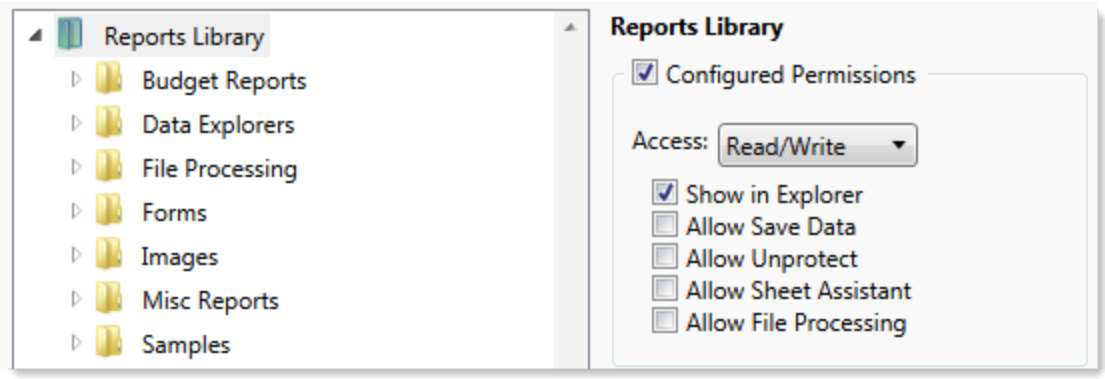
Option	Description
Show in Explorer	Select this check box if you want the file to display in the Explorer task pane and other "Explorer views" of the file library (such as Axiom Explorer, libraries displayed on the ribbon menu, and libraries displayed when saving files). This check box becomes selected 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.

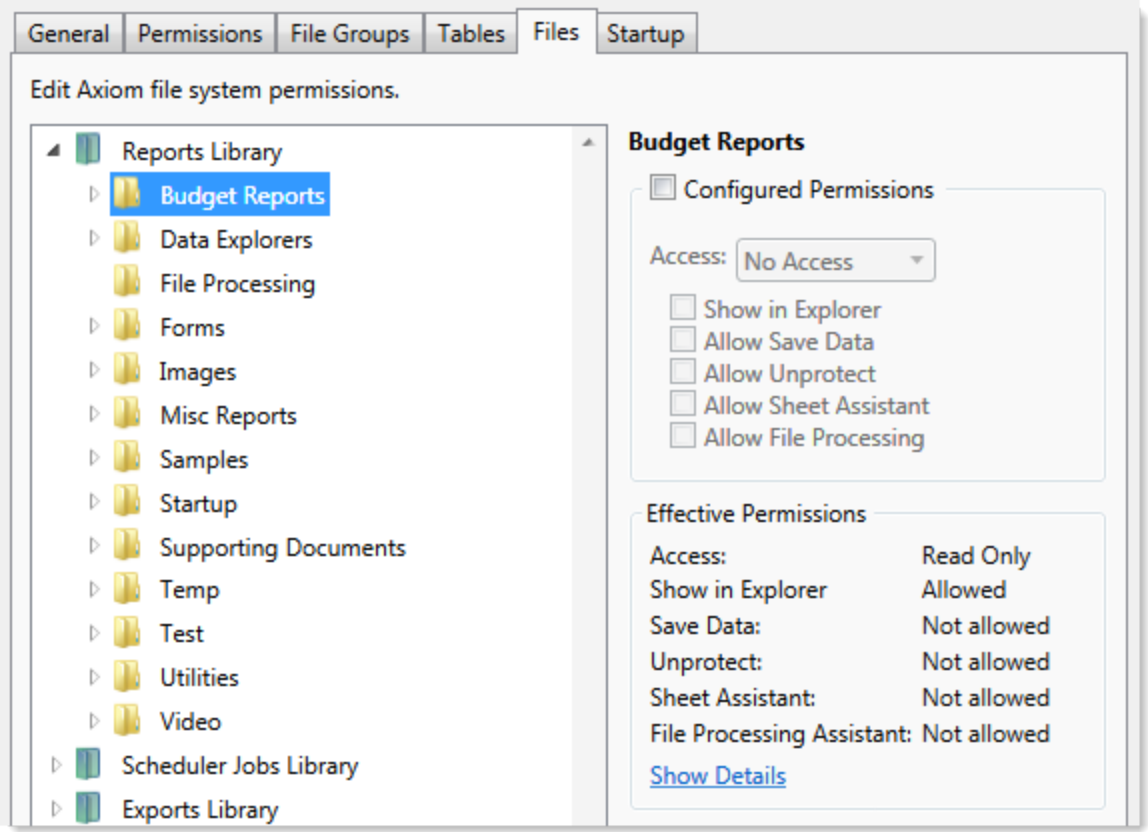
File permission examples

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:

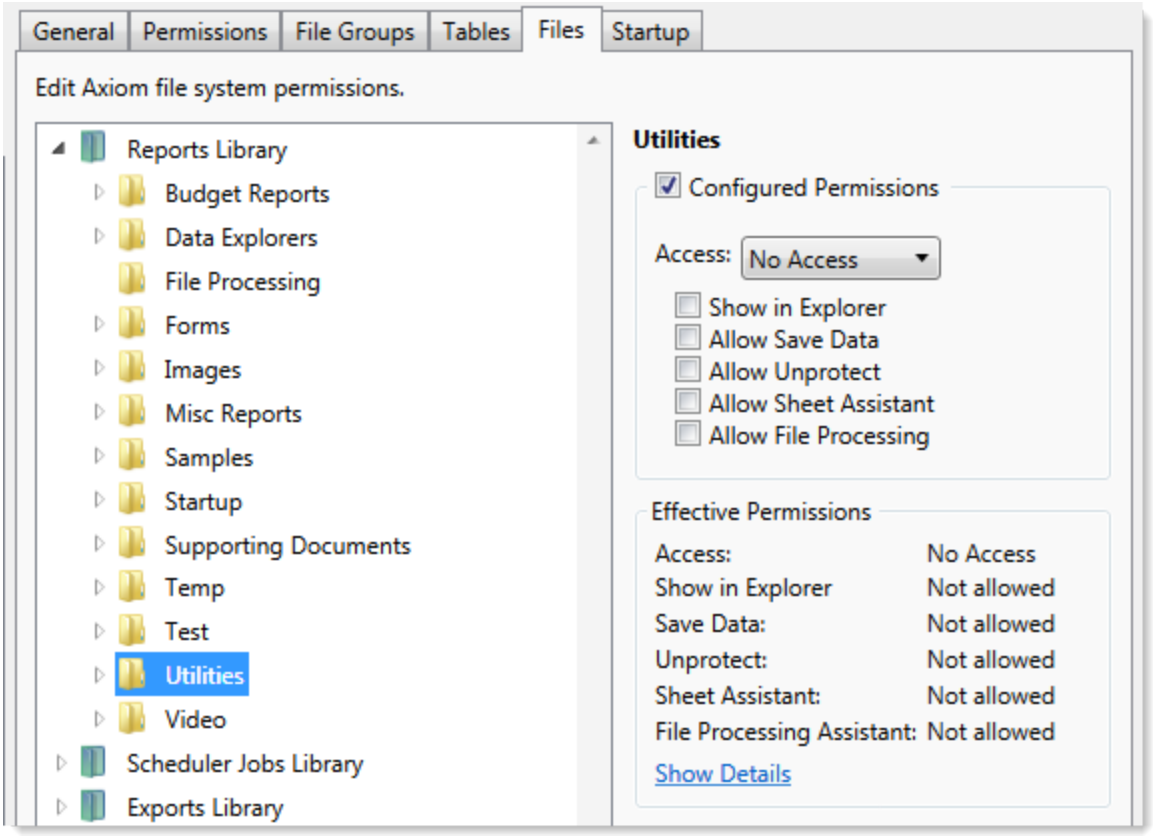


Sub-folders and files inherit the rights defined for the parent folder, unless permissions are explicitly set for the sub-folder or file. When you select a sub-folder or file in the folder tree, you can tell if it is inheriting permissions by whether the **Configured permission** check box is selected. 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.



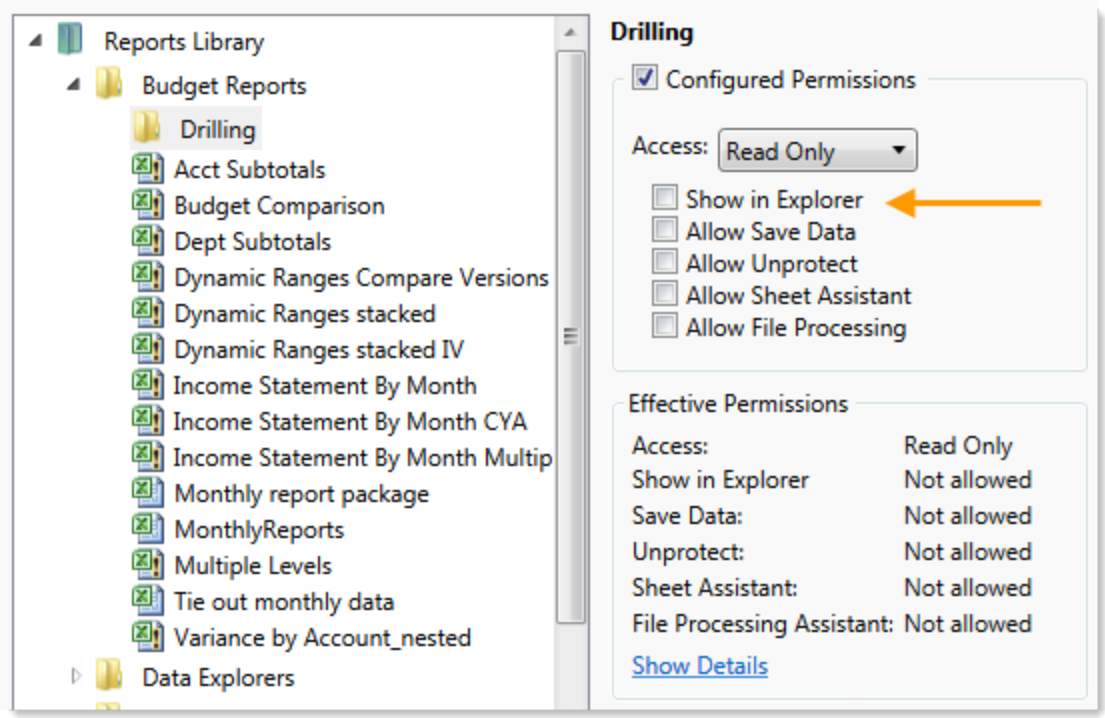
NOTE: The effective permissions also take into account role inheritance and administrator rights (if applicable). Therefore, the sub-folder or file might show a different level of permissions than its parent folder, if it is inheriting from a role.

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)

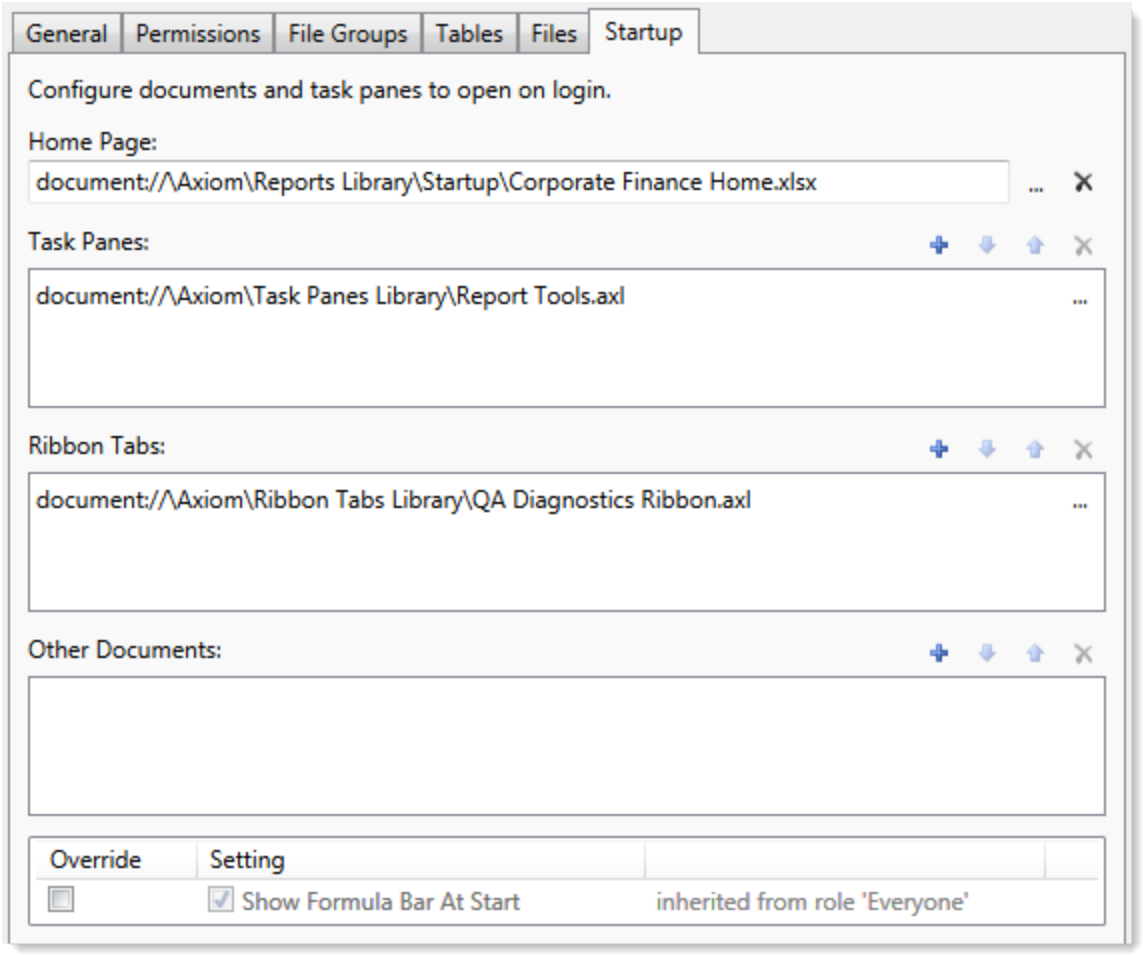
On the **Startup** tab of the **Security Management** dialog, you can specify which files to open automatically when a user logs into the system. You can also configure certain startup options.

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 Rolling Forecasting 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 Rolling Forecasting first cycles through items 1-3 looking for a **Desktop Client Home Page** assignment. If no assignment is found, Axiom Rolling Forecasting cycles through items 1-3 again, this time looking for a **Home Page** assignment. If no security home page is found, Axiom Rolling Forecasting continues to the next item.

4. Default home page in the Axiom System directory
   - In the Windows Client, Axiom Rolling Forecasting checks `\Startup\Home\Windows Client` first, then moves on to `\Startup\Home`.
   - In the Desktop Client, Axiom Rolling Forecasting 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 Rolling Forecasting continues to the next item.

5. Default home page in the Axiom System directory

   In the Web Client, Axiom Rolling Forecasting 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 Rolling Forecasting 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 Rolling Forecasting 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 Rolling Forecasting.

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 Rolling Forecasting 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 Rolling Forecasting 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 Rolling Forecasting 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.

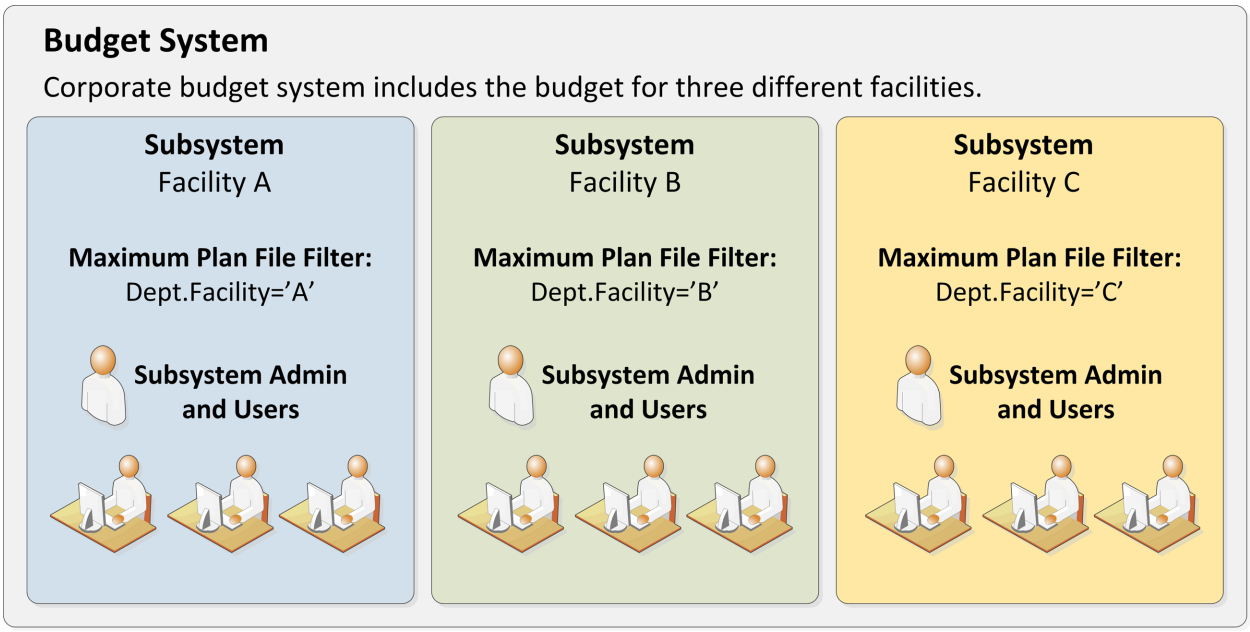
NOTE: Subsystems are optional in systems without installed products. Subsystem features are only available if you have enabled them using the system configuration settings.

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 Rolling Forecasting 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 Rolling Forecasting 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.

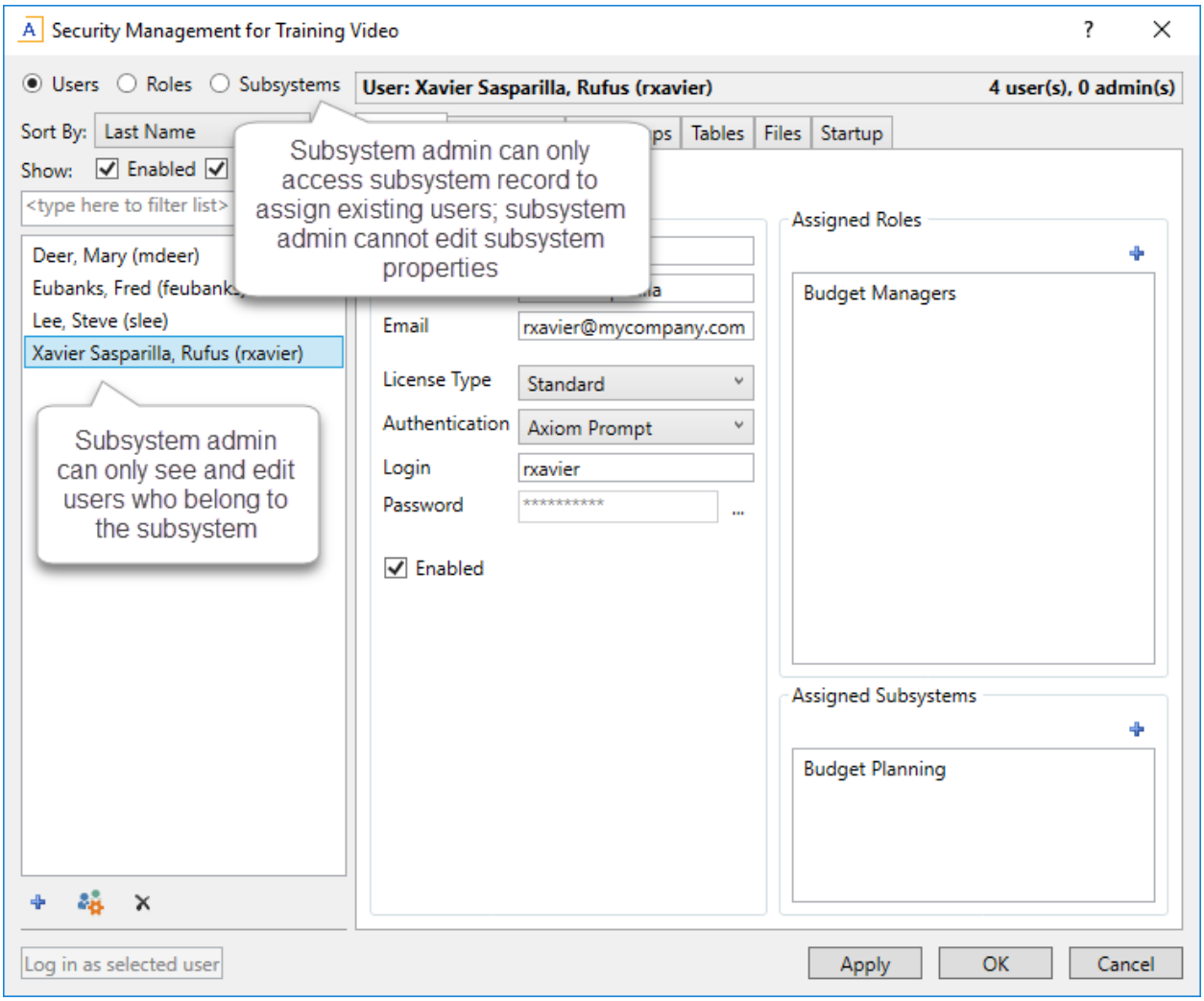
Subsystem administrators are not administrator-level users. The behavior is similar to being granted the **Administer Security** permission, except that the subsystem administrator can only work with users and roles within the subsystem.

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

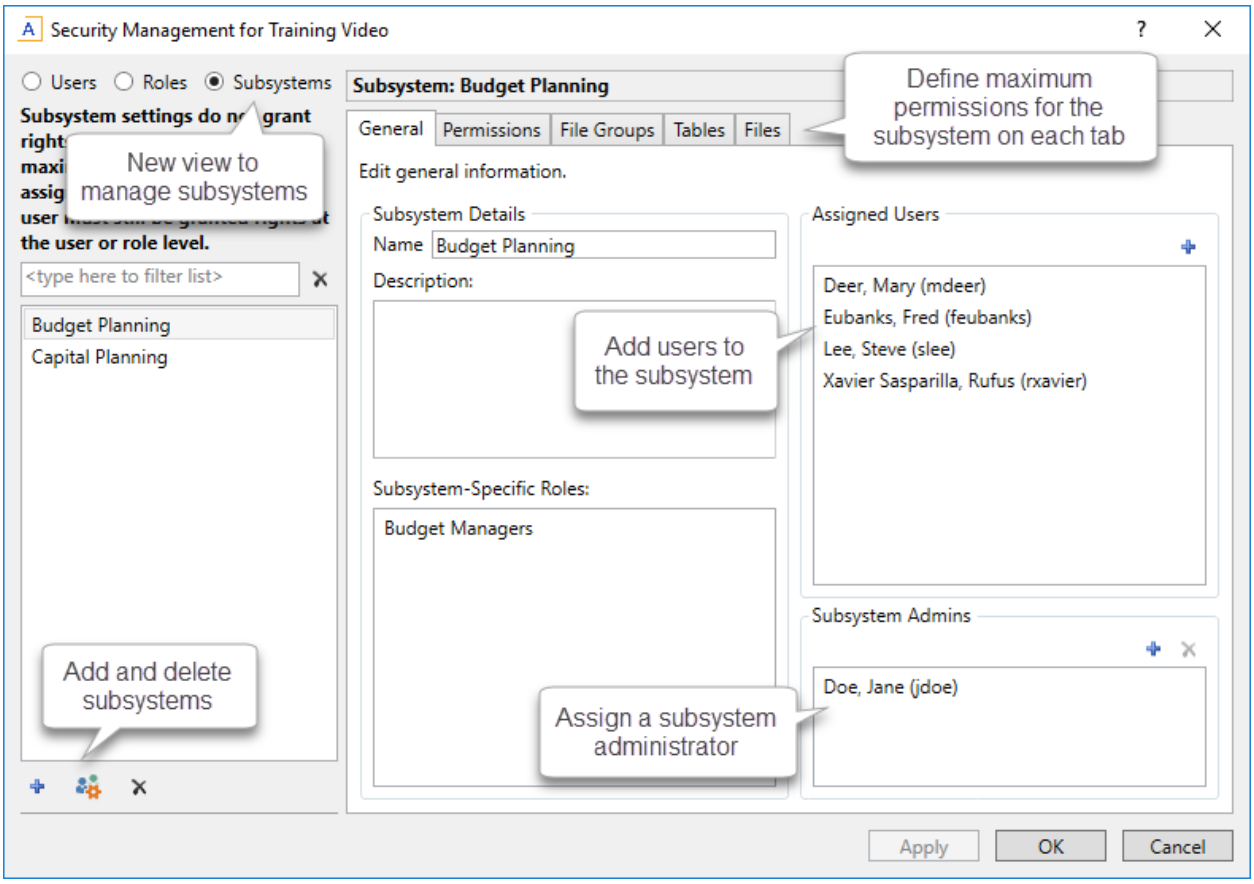
Using the **Security Management** dialog, you can create new subsystems, edit existing subsystems, and delete subsystems. To access this dialog:

- 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.

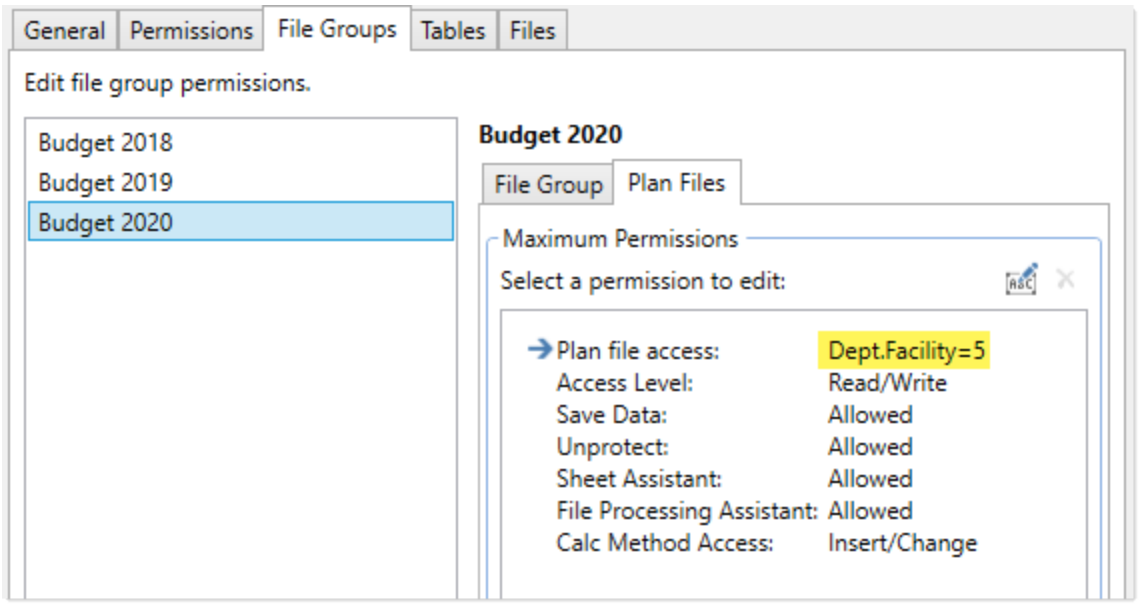
Remember that subfolders and files will inherit any permission set at a "parent" folder level (unless permission is explicitly set for the lower level). For this reason, the effective permissions section displays for the subsystem, so that you can select a folder or file and see any inherited permissions 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

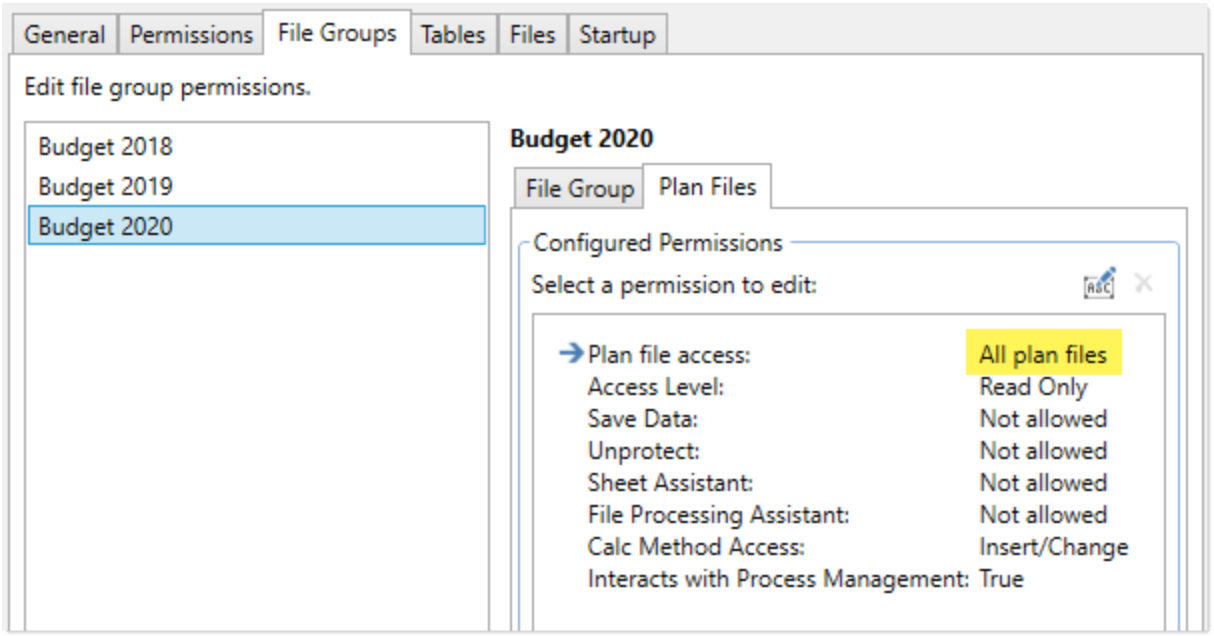
This example illustrates how subsystem maximum permissions limit users who are assigned to the subsystem.

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.



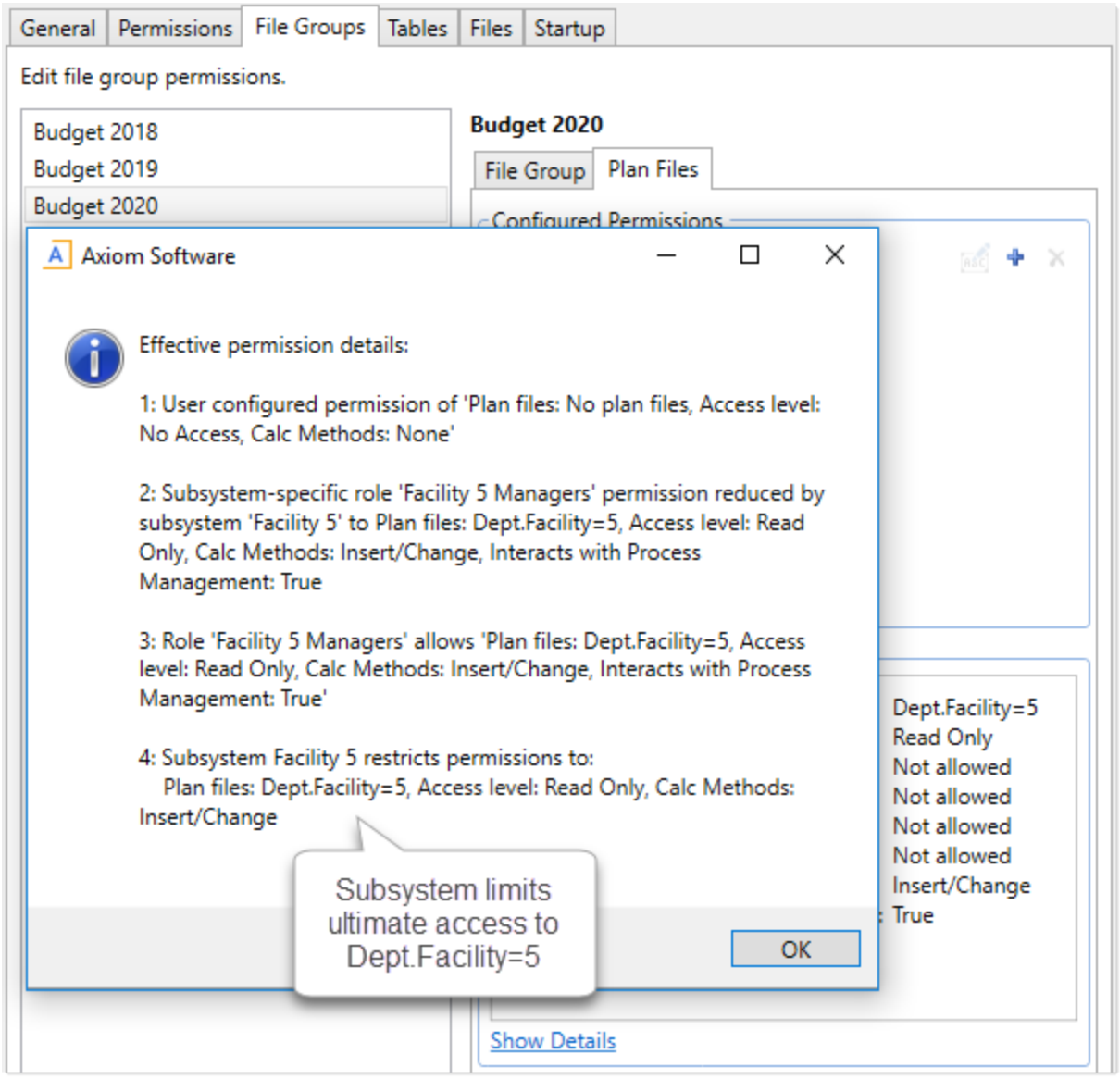
Subsystem maximum permissions

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

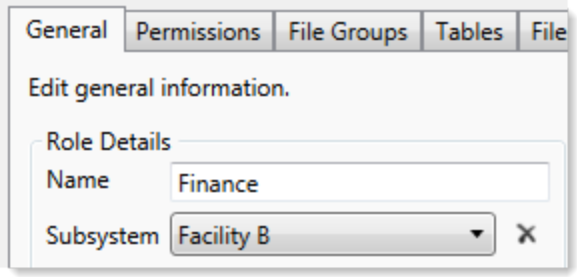
You can create new roles for a subsystem, and you can assign existing roles to a subsystem. When a role belongs to a subsystem, the role permissions are restricted by the subsystem boundaries, and all users in the role must also belong to the subsystem.

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 Rolling Forecasting. 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.

	B	D	E	F
1	**Login or Role (prefix role with 'role:')**	jbird	jdoe	jguppy
2				
3	**Delete**	No	No	No
4				
5	**General:**			
6	First Name or Role Description	jason	Jane	jason
7	Last Name	bird	Doe	guppy
8	Email Address			
9	Password			
10	Enabled	TRUE	TRUE	TRUE
11	Directory Sync Enabled	TRUE	TRUE	TRUE
12	User License Type	Standard	Standard	Standard
13	Authentication Type	Windows Passthrough	Axiom Prompt	Windows Passthrough
14	Roles (semi-colon separated)			
15	Administrator	TRUE	FALSE	TRUE
16				
17	**Permissions:**			
18	Access Custom Menus	Inherit	Inherit	Inherit
19	Administer Auditing Settings	Inherit	Inherit	Inherit
20	Administer Axiom Explorer	Inherit	Inherit	Inherit
21	Administer Calc Methods	Inherit	Inherit	Inherit
22	Administer Exports	Inherit	Inherit	Inherit

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

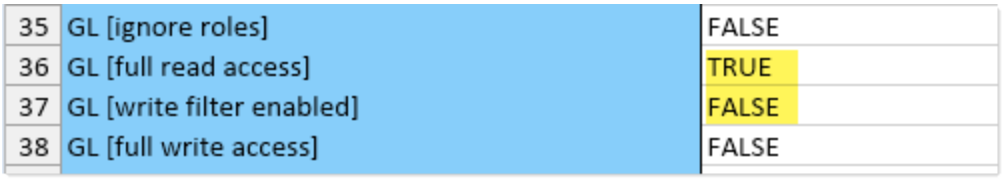
The following is a reference for completing or editing security settings via the spreadsheet interface.

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	All table types are listed first, followed by all individual tables. If **[write filter enabled]** is **False** for a table or table type, this means that the user or role's write access permissions are the same as their read permissions. In this case, the other write access permissions in the spreadsheet can be ignored, because they do not apply. For example, the following user has full read and write access to the GL table type, because **[full read access]** is **True** and **[write filter enabled]** is **False**. Even though **[full write access]** displays **False**, it does not matter because the setting does not apply.  If **[write filter enabled]** is **True**, then the **[full write access]** permission and the **[write filter]** permission determine the user's level of write permissions.

Security tools

Axiom Rolling Forecasting provides security tools to control and monitor user access to Axiom Rolling Forecasting.

Preventing users from accessing the system

You can prevent non-administrator users from accessing Axiom Rolling Forecasting by using the **System Access** feature.

For example, you may want to temporarily lock out users in the following situations:

- Before upgrading Axiom Rolling Forecasting
- While migrating between testing and production environments

- While preparing and testing the system prior to rollout for a planning cycle

The **System Access** feature prevents new logins only; it does not forcibly log off any users who are currently logged in. If a non-admin user is already logged into Axiom Rolling Forecasting when you change the system access settings, that user will remain logged in but they will not be able to save any files to the Axiom database or perform any Axiom processes. Before locking users out, you should make sure that all users have saved changes to their files, and ask all non-admin users to log off. Administrators can continue to log into the system and perform all activities as normal.

Only administrators can change the system access settings. System access can be controlled using either the Desktop Client or the Web Client. Regardless of which client you use, the system access settings affect all Axiom Rolling Forecasting clients.

To modify system access using the Desktop Client:

1. On the **Axiom** tab, in the **Administration** group, click **Manage > Security > System Access**.

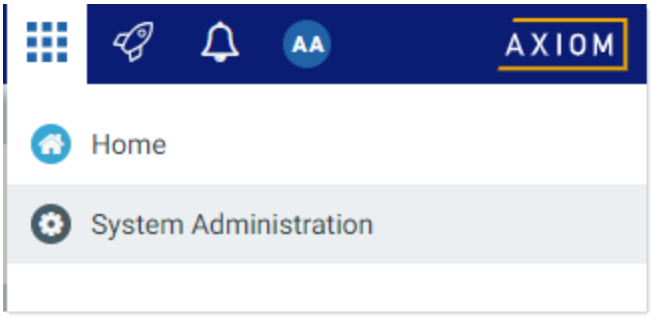
   NOTE: In systems with installed products, this feature may be present on the **Admin** tab. In the **System Management** group, click **Security > System Access**.

2. In the **Control System Access** dialog, select one of the following:
   - **Administrators Only**: When enabled, non-admin users can no longer log into the system using any client. Only users with administrator rights can log in. Non-admin users who attempt to log into the system will be informed that the system is locked.

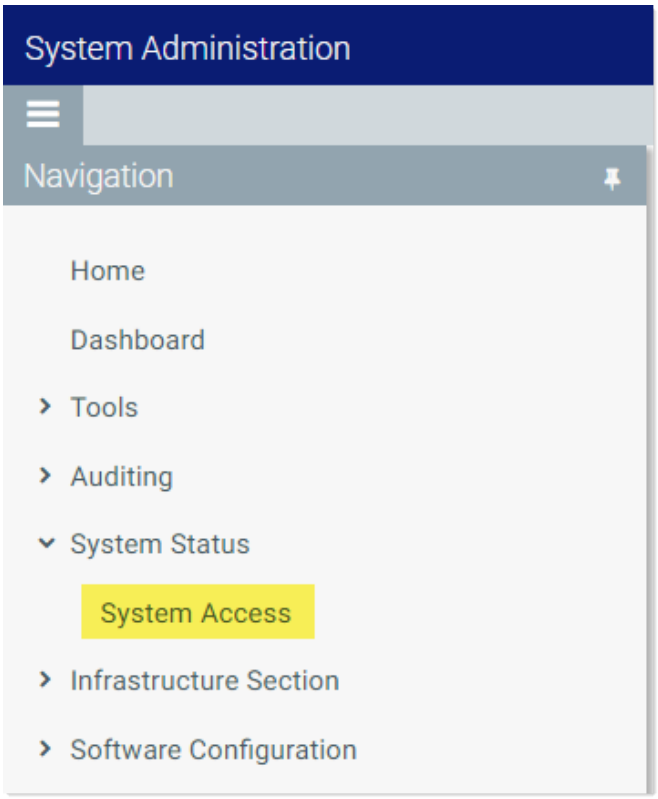
     Once users are locked out of the system, only an administrator can log back in and restore access.
   - **Full Access**: When enabled, all users can access the system as normal.
3. Click **OK**.

To modify system access using the Web Client:

1. In the Web Client, click the menu icon in the Global Navigation Bar. From the Area menu, select **System Administration**.



2. From the Navigation panel, select **System Status > System Access**.



Alternatively, you can go directly to the System Access page as follows:

Example On-Premise URL

`http://ServerName/Axiom/Admin/SystemAccess`

Where *ServerName* is the name of the Axiom Application Server, and Axiom is the default name of the virtual directory.

Example Cloud System URL

`https://ClientName.axiom.cloud/Admin/SystemAccess`

Where *ClientName* is the name of your Axiom Cloud Service system.

3. On the **System Access** page, select one of the following:
   - **Administrators Only**: When enabled, non-admin users can no longer log into the system using any client. Only users with administrator rights can log in. Non-admin users who attempt to log into the system will be informed that the system is locked.

     Once users are locked out of the system, only an administrator can log back in and restore access.
   - **Full Access**: When enabled, all users can access the system as normal.
4. Click **Apply**.

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 Rolling Forecasting 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 Rolling Forecasting 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 Rolling Forecasting 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 Rolling Forecasting 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 Rolling Forecasting 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 Rolling Forecasting support for assistance.

Testing user security

Administrators and other users who manage security may need to log into Axiom Rolling Forecasting 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 Rolling Forecasting 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 Rolling Forecasting 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 Rolling Forecasting 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 Rolling Forecasting, then the credentials are passed to Windows for authentication into Axiom Rolling Forecasting.

If the Windows Authentication configuration for Axiom Rolling Forecasting 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, Axiom Support will enable Windows Authentication for you as part of the system setup, if that is your chosen authentication method.

2. In security, Axiom Rolling Forecasting users must be set up as follows to support Windows Authentication:

   - The user's Axiom Rolling Forecasting 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 Axiom 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 Rolling Forecasting 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 Rolling Forecasting as that user. For more information, see Testing user security.

Adding or removing domains for Windows Authentication

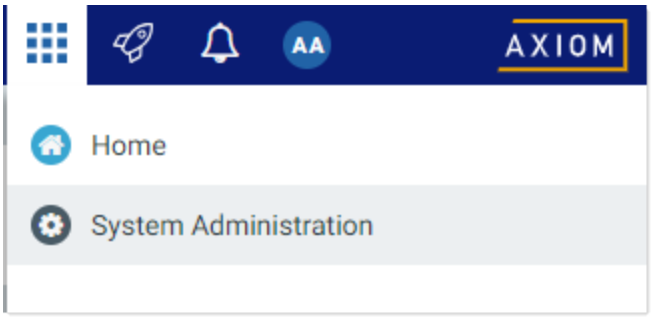
If the Windows domain names used by your organization for authentication have changed, you must update the list of allowed domains in Axiom Rolling Forecasting. Users can only log into Axiom Rolling Forecasting using Windows Authentication if their domain name matches one of the allowed domain names in this list. The list of allowed domains is stored in the system configuration settings (**WindowsAuthAllowedDomains**).

For example, when Windows Authentication was originally configured, you may have been using a domain named CompanyA. After a merger or reorganization, some or all of your users may now be using a domain named CompanyB. If those users need to log in to Axiom Rolling Forecasting, you must add CompanyB to the list of allowed domains. You might leave CompanyA on the domain list if your organization is actively using both domains, or you might remove it if your organization has completely switched to using the CompanyB domain.

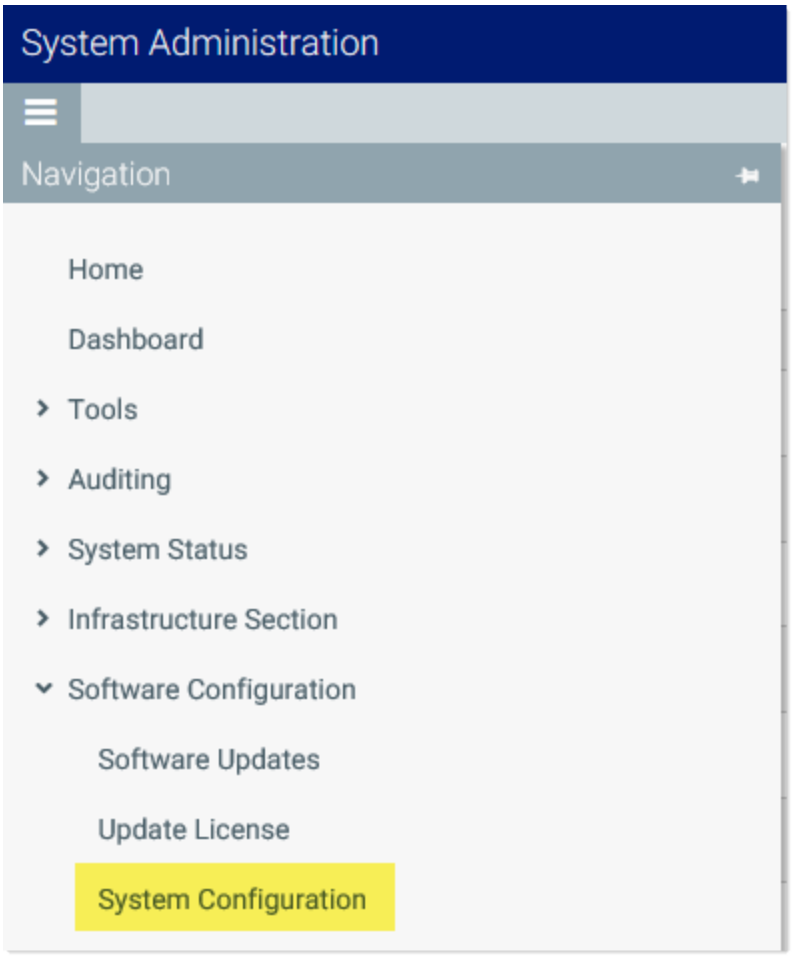
The list of allowed domain names for Windows Authentication can be managed in the Axiom Web Client, on the **System Configuration** page.

To add or remove a domain name for Windows Authentication:

1. In the Web Client, click the menu icon in the Global Navigation Bar. From the Area menu, select **System Administration**.



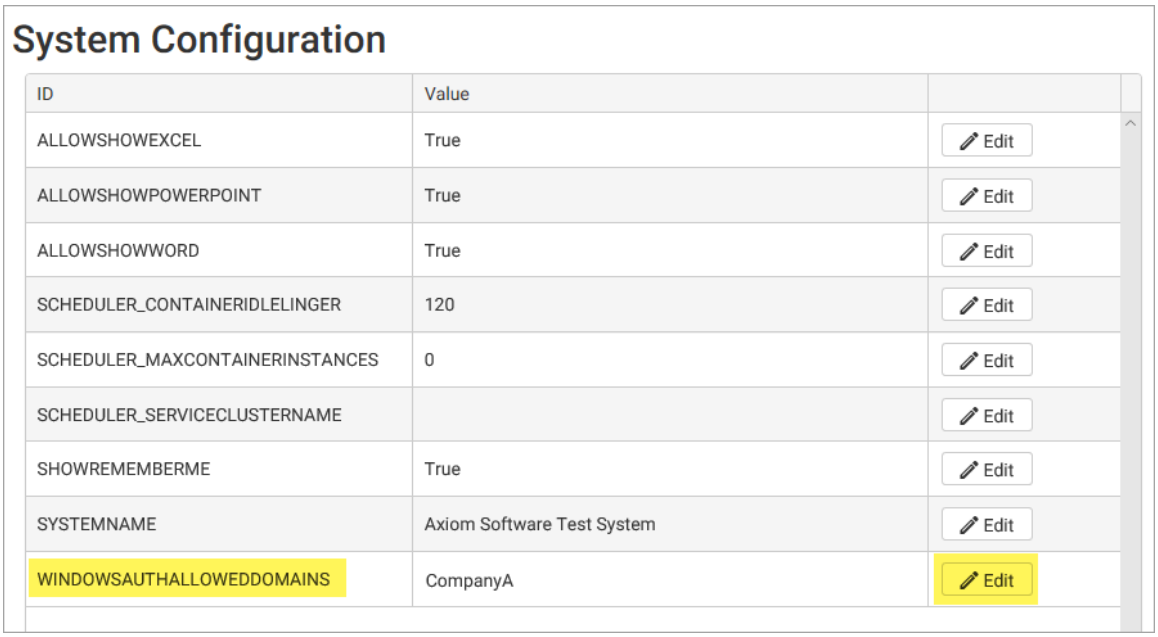
2. From the Navigation panel, select **System Status > System Configuration**.



Alternatively, you can go directly to the System Configuration page as follows:

Example On-Premise URL	`http://`*`ServerName`*`/Axiom/Admin/SystemConfiguration` Where *ServerName* is the name of the Axiom Application Server, and Axiom is the default name of the virtual directory.
Example Cloud System URL	`https://`*`ClientName`*`.axiom.cloud/Admin/SystemConfiguration` Where *ClientName* is the name of your Axiom Cloud Service system.

3. On the **System Configuration** page, locate the row for **WINDOWSAUTHALLOWEDDOMAINS**, and then click **Edit**.



When you click the Edit button, the Value field on the row becomes editable.

4. Modify the list of domains as needed to add or remove domain names. Multiple domain names must be separated with commas.

   For example, if the list is currently CompanyA, and you need to keep CompanyA but add new CompanyB, edit the domain names as follows:

5. Click **Update** to save and apply your changes. The Value field now shows your edited list.

The changed list of domain names takes effect immediately after saving. If you removed a domain name, users in that domain can no longer log in using Windows Authentication. If you added a domain name, users in that domain can now log in using Windows Authentication.

Synchronizing users with Active Directory

You can import users from Active Directory, to automatically create users within Axiom Rolling Forecasting 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, Axiom 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 Rolling Forecasting 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.

   For more information, see Creating a Scheduler job to import users from Active Directory.

When the Scheduler job is run, new users are created as needed and existing users are synchronized with Active Directory. For more information, see How Active Directory user synchronization works.

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 Rolling Forecasting.

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 Rolling Forecasting 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 Rolling Forecasting. If you do not have groups that exactly correspond with the users that you want to create in Axiom Rolling Forecasting, you may need to work with your Information Technology department to create new groups or refine existing groups.
- **The Axiom Rolling Forecasting 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 Rolling Forecasting, and assigned a user license type and an authentication type. Make sure you know which options to use.

Creating the job

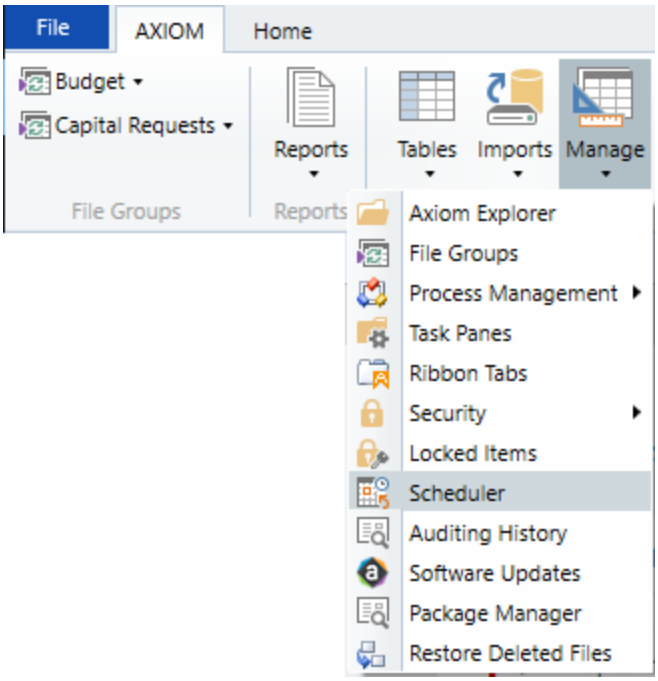
In order to create a Scheduler job, you must be an administrator or have the **Scheduled Jobs User** security permission. Non-admin users must also have read/write access to at least one folder in the Scheduler Jobs Library.

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**.

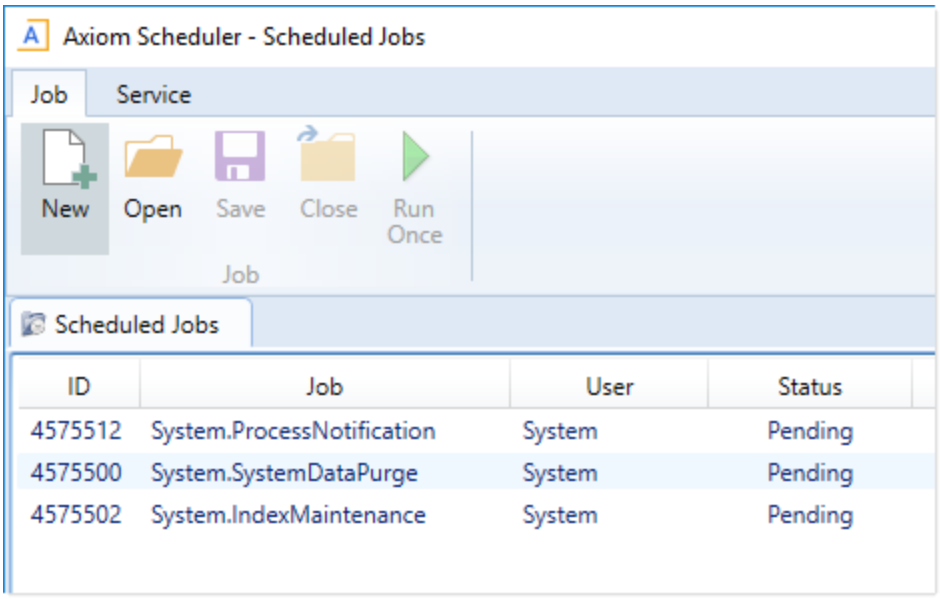


Scheduler on default Axiom ribbon tab

In systems with installed products, this feature may be located on the **Admin** tab. In the **System Management** group, click **Scheduler**.

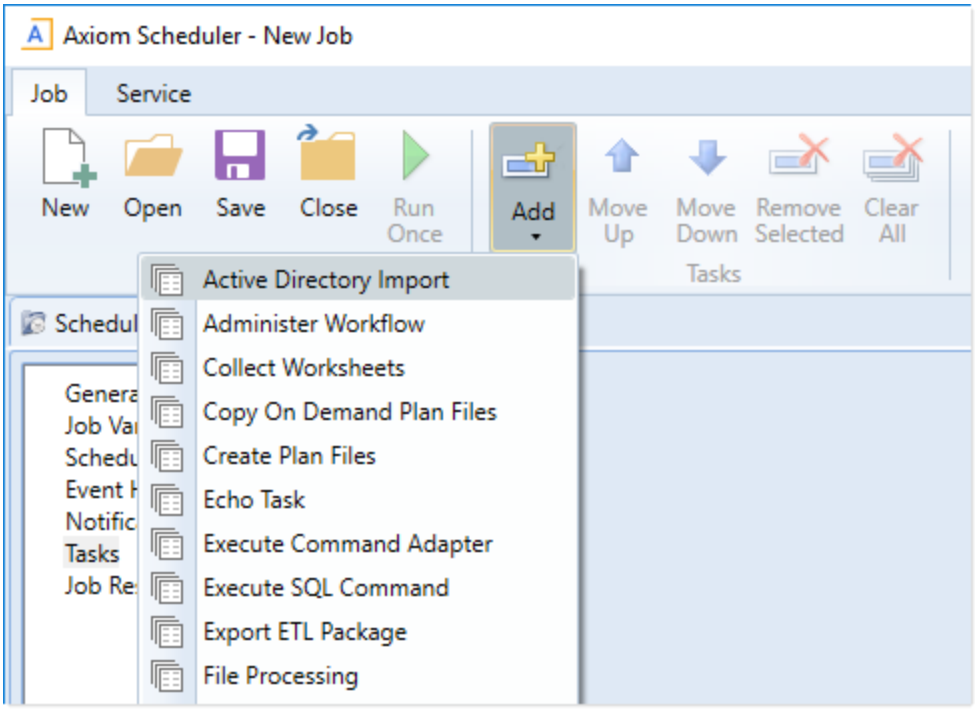
Scheduler on Admin tab (example product ribbon)

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.

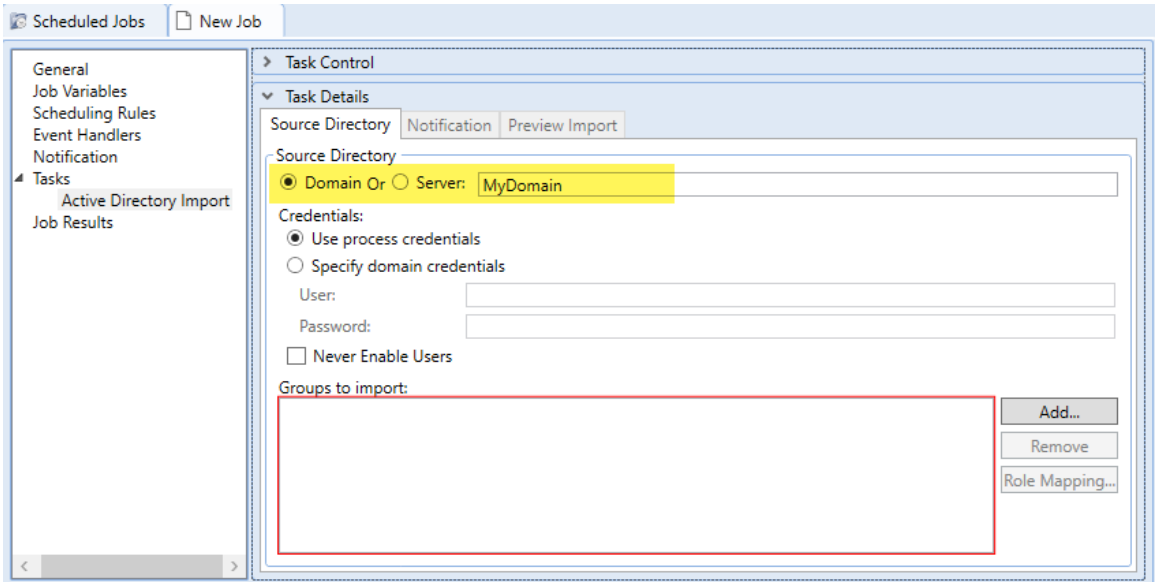


The task is added to the job, and you can now configure the task properties. In the **Task Details** section, the task has three tabs: **Source Directory**, **Notification**, and **Preview Import**.

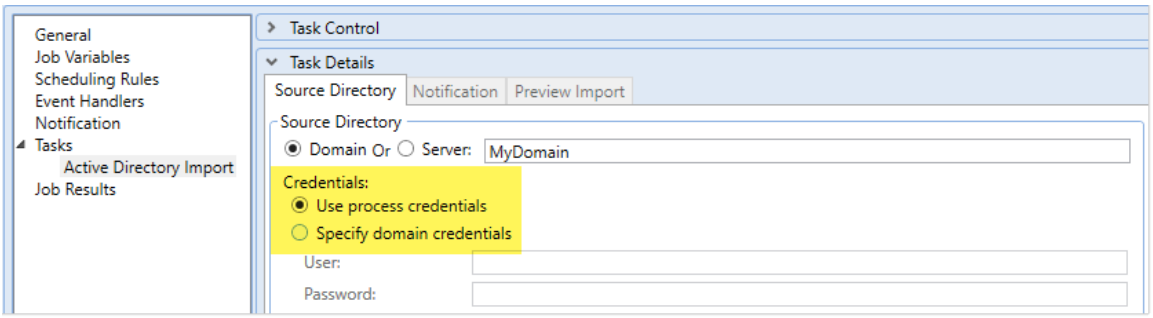
4. On the **Source Directory** tab of the Task Details, select either **Domain** or **Server** to specify the source domain for the import.
    - If you select Domain, enter the name of the domain.
    - If you select Server, enter the name of the domain controller server.

    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 Rolling Forecasting system, then you must create multiple import tasks.



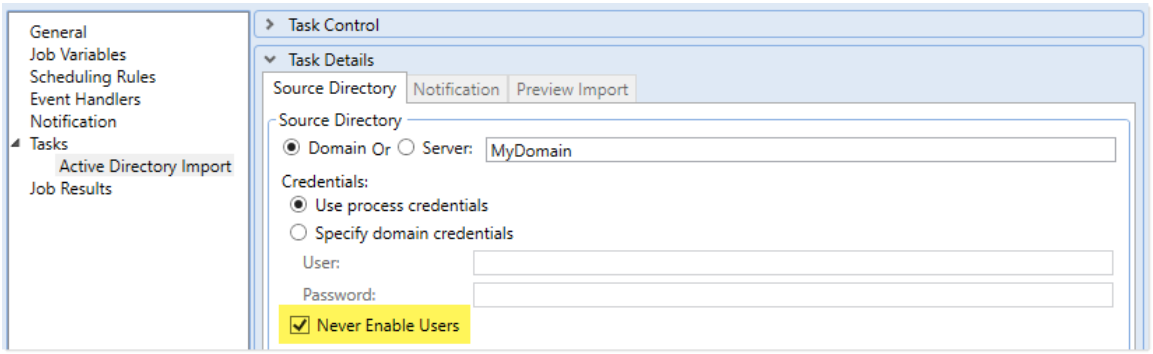
5. For **Credentials**, specify the user credentials to use when accessing Active Directory for the import. Select one of the following:
    - **Use process credentials**: (Default) Use the credentials of the network service account for Axiom Scheduler Server (on-premise installations) or Axiom Cloud 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.



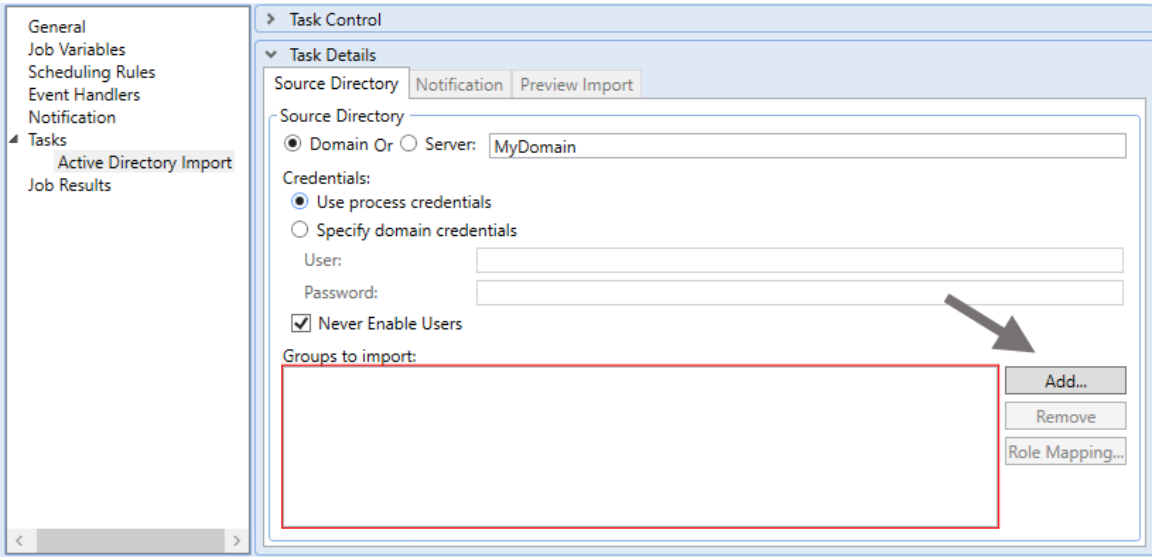
6. If you do not want new and synchronized users to be automatically enabled by the import, select **Never Enable Users**. This option works as follows:

   - 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.

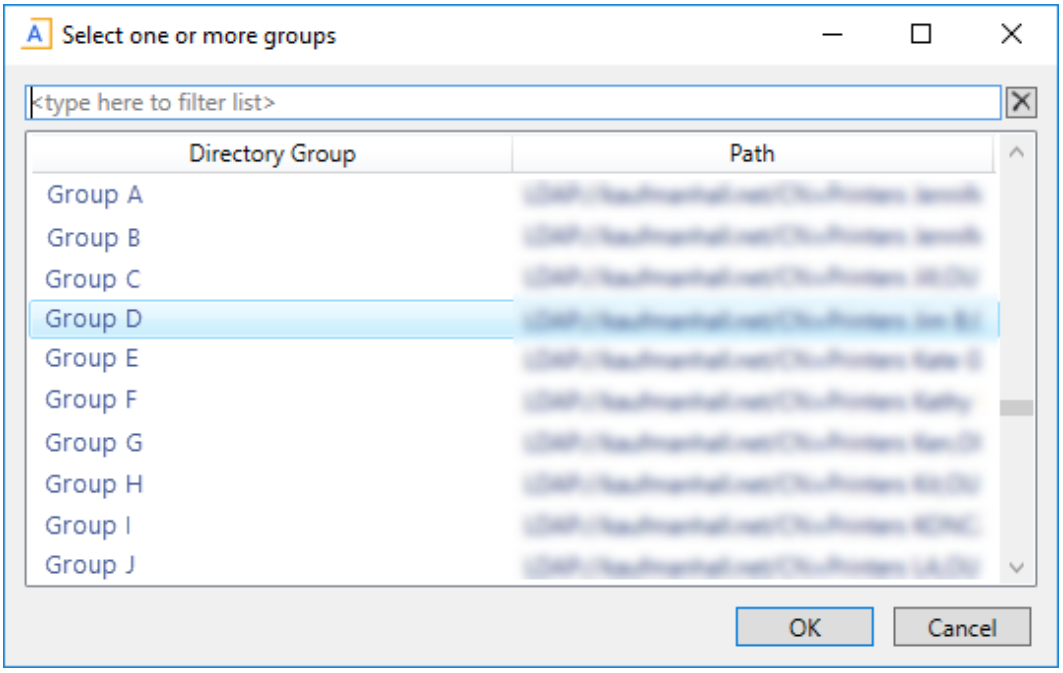


7. In the **Groups to import** section, click **Add** to select one or more groups to import.



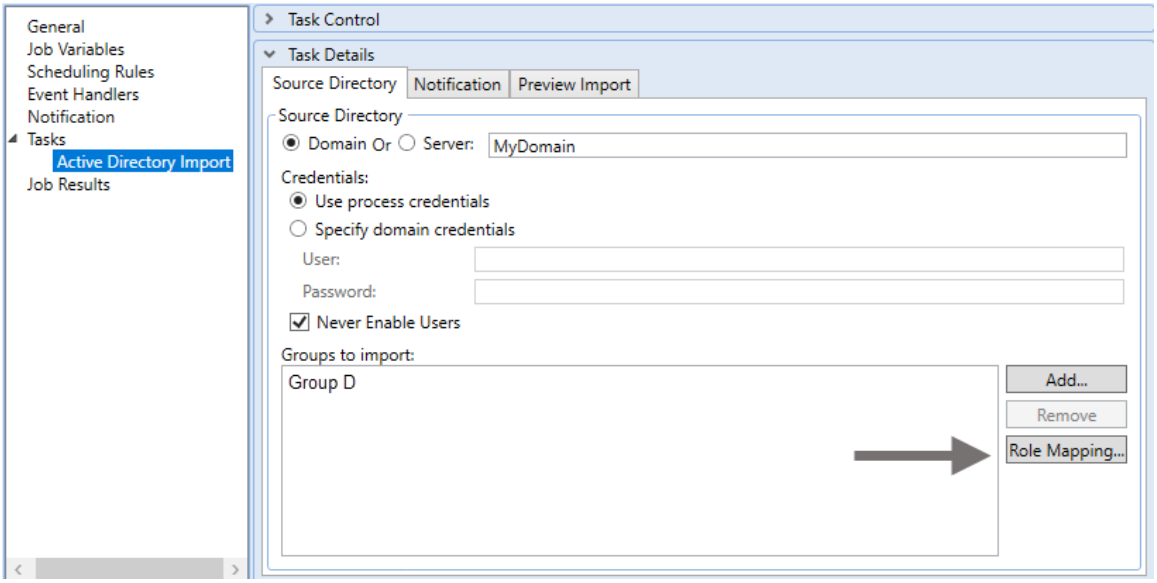
The **Select Groups** dialog opens, displaying a list of groups from the source domain.

- 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.

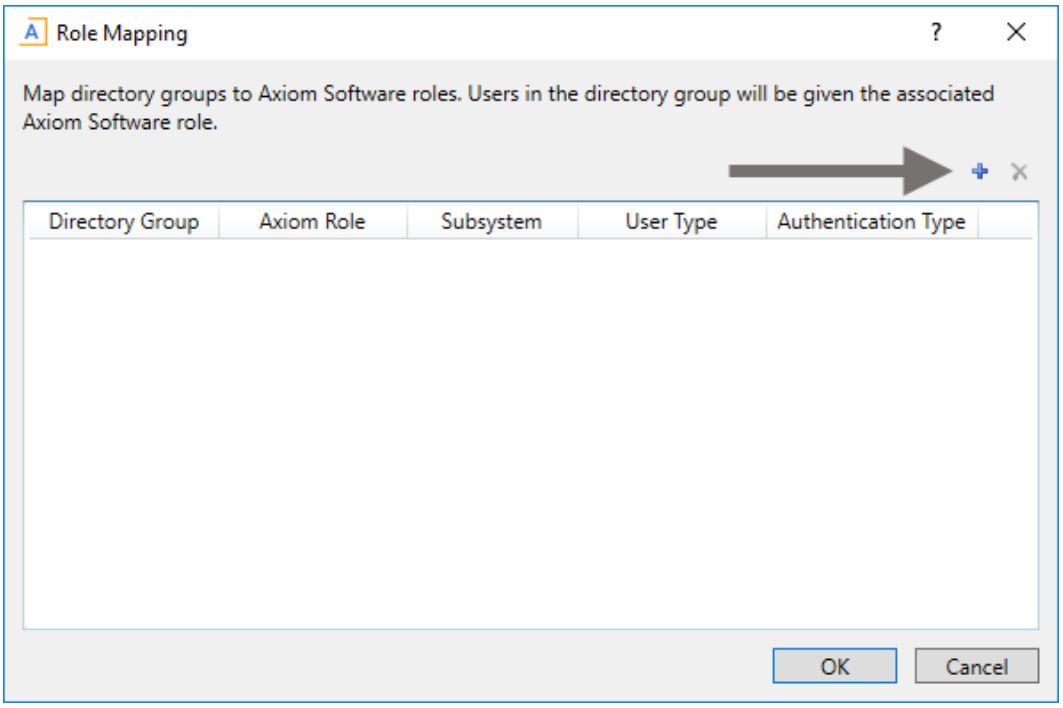


- The selected group(s) display in the **Groups to import** box. If you have added a group by mistake, you can select it and click **Remove**.

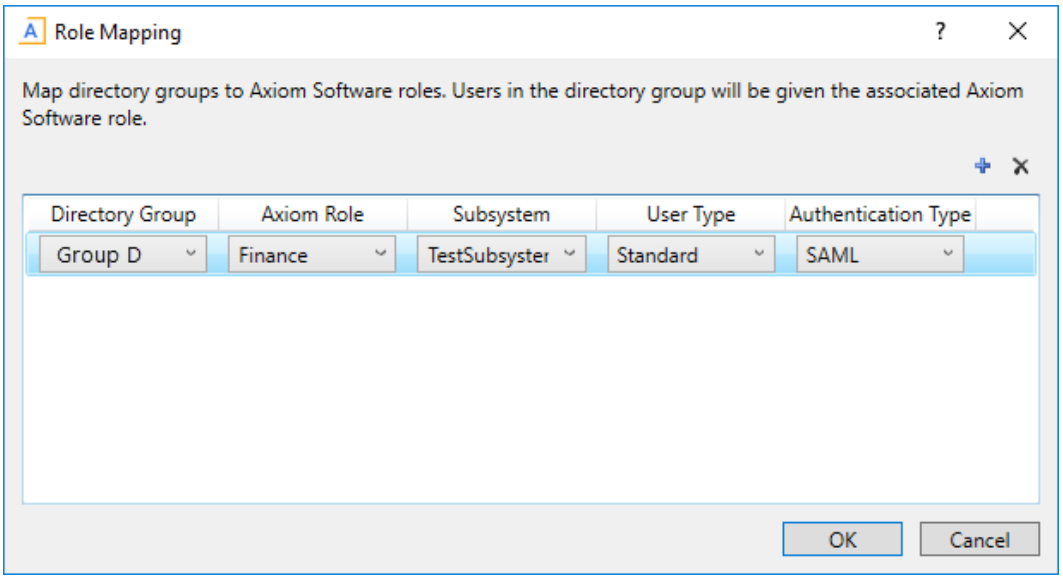
8. In the **Groups to import** section, click **Role Mapping** to define the role mappings for each selected group:



- 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. You can select **None** if you do not want the users to be assigned to a role.
  - 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.



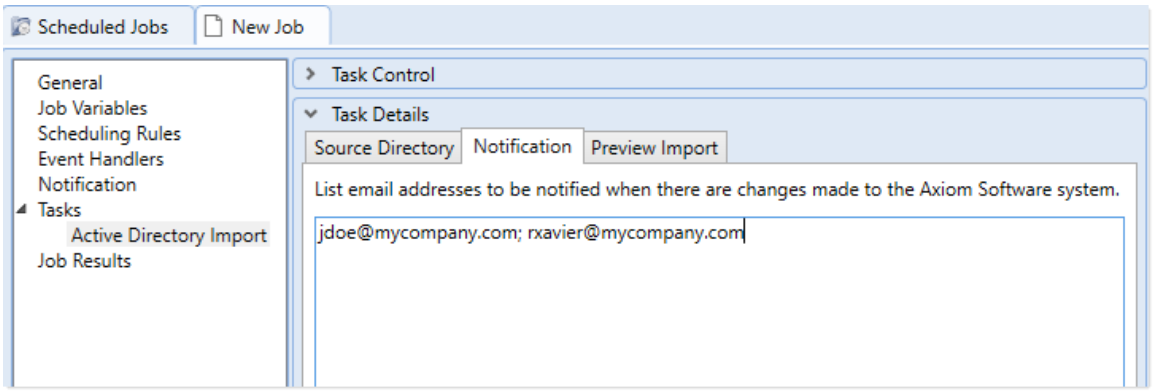
- Repeat these steps for each group to be imported. If you want the users in a group to belong to more than one role and/or subsystem, you can create multiple mapping rows for that group. If you need to remove a mapping row, select it and then click the **Remove mapping** icon ✕ in the top right of the 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.
- 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.

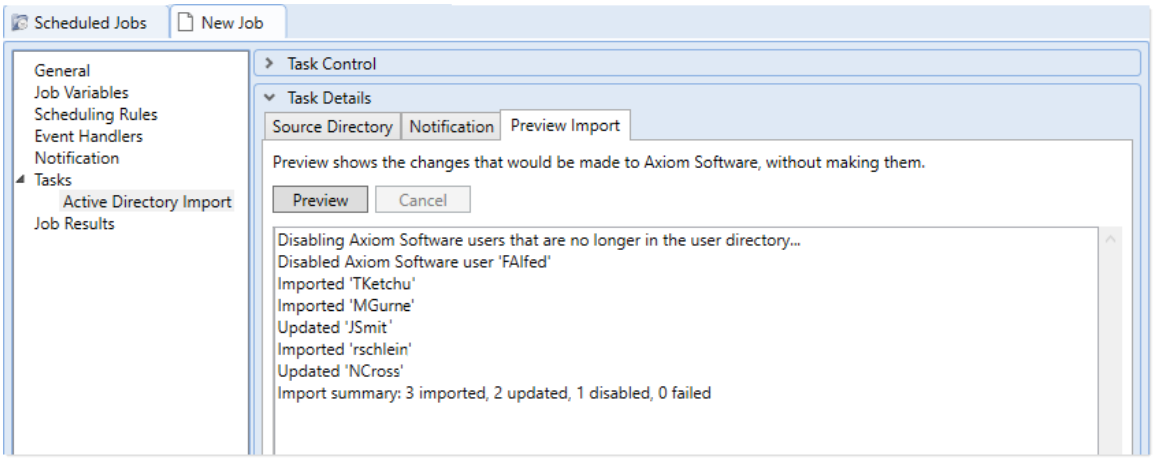


When the import task is run, if any users are created or modified in the Axiom Rolling Forecasting system, an email notification will be sent to the addresses specified here. The email summarizes the changes made. This email notification is independent of any job-level notification settings (which notify 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 Rolling Forecasting, 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 Rolling Forecasting 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.

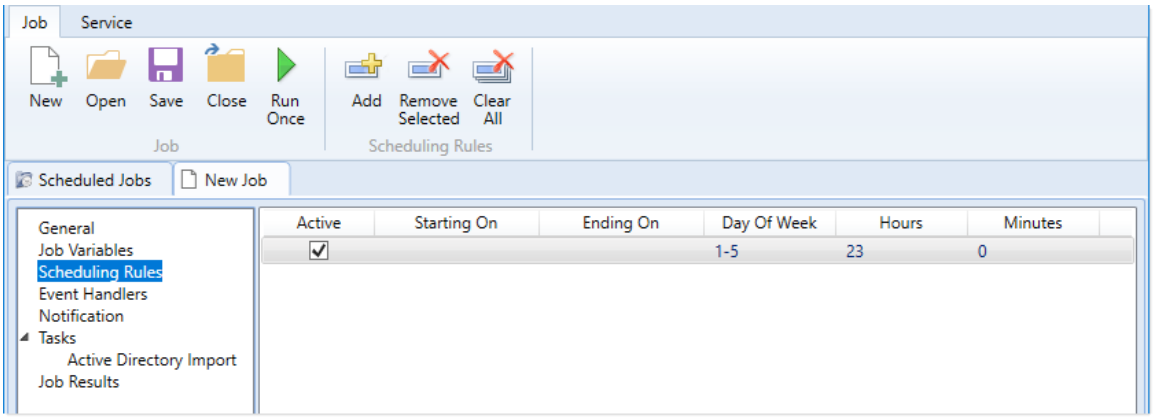


    This completes the settings for the Active Directory Import task. However, there are a few general job properties that should also be reviewed and completed as needed.

11. In the left-hand pane, click **Scheduling Rules**. Using this section, you can define a scheduling rule

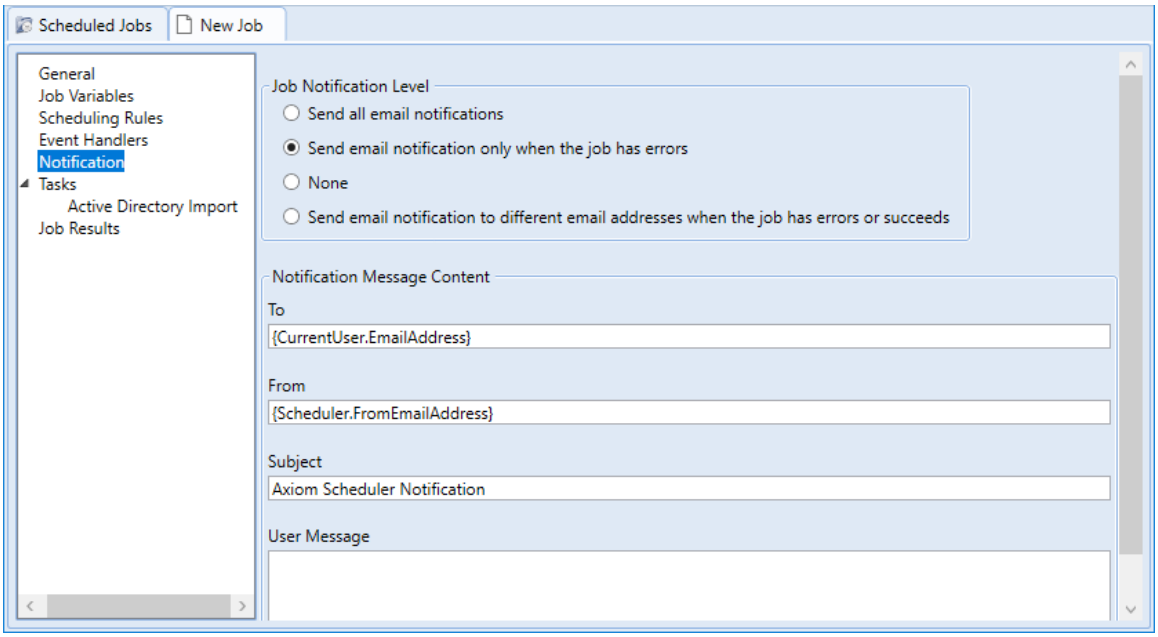
so that the job runs automatically as needed. Typically, organizations want the Active Directory Import task to run regularly so that users are kept in sync.

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 Rolling Forecasting 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 Rolling Forecasting looks for a matching user name in Axiom Rolling Forecasting 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 Rolling Forecasting 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 Rolling Forecasting.
- **User License Type**: If the assigned user license type for the Active Directory group has changed, then the license type is updated in Axiom Rolling Forecasting.
- **Authentication Type**: If the assigned authentication type for the Active Directory group has changed, then the authentication type is updated in Axiom Rolling Forecasting.

- **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 Rolling Forecasting. If the user is disabled in Axiom Rolling Forecasting 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 Rolling Forecasting, 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 Rolling Forecasting, 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 Rolling Forecasting, so that users are authenticated against your LDAP server when launching Axiom Rolling Forecasting.

NOTE: LDAP Authentication is not supported for use with Axiom cloud service systems.

LDAP Authentication behavior

When the Axiom Rolling Forecasting 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 Rolling Forecasting, then the credentials are passed to LDAP for authentication into Axiom Rolling Forecasting.

If the LDAP Authentication configuration for Axiom Rolling Forecasting 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 Rolling Forecasting 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 Rolling Forecasting users must be set up as follows to support LDAP Authentication:
   - The user's Axiom Rolling Forecasting 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 Rolling Forecasting 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 Rolling Forecasting as that user. For more information, see Testing user security.

Using SAML Authentication

You can enable SAML Authentication for Axiom Rolling Forecasting, 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 Rolling Forecasting 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 Rolling Forecasting, 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 Rolling Forecasting 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.

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, Axiom 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 Axiom Support for assistance in completing the SAML Authentication setup.

3. In security, Axiom Rolling Forecasting users must be set up as follows to support SAML Authentication:

   - The user's Axiom Rolling Forecasting 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 Rolling Forecasting 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 Axiom 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 Rolling Forecasting, 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 Rolling Forecasting 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 Rolling Forecasting, 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 Rolling Forecasting 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.

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 Rolling Forecasting, you must specify the Client ID and Client Secret for your OpenID provider.

For cloud systems, Axiom 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 Rolling Forecasting login page (such as `<URLtoAxiom>/openid/login`). Other setup steps may be necessary, depending on your particular configuration. Please contact Axiom Support as needed for assistance in completing the OpenID Authentication setup.

3. In security, Axiom Rolling Forecasting users must be set up as follows to support OpenID Authentication:
   - The user's Axiom Rolling Forecasting 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 Rolling Forecasting 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 Axiom 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 Rolling Forecasting 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.

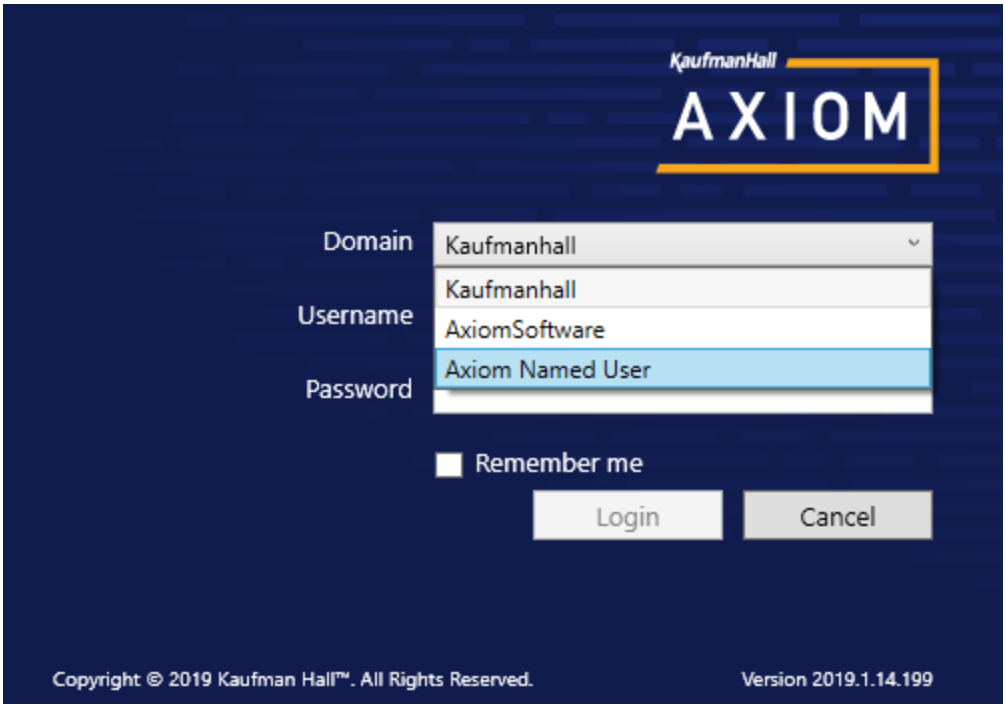
Alternatively, you can configure your system so that all users must specify their authentication type / domain when logging into Axiom Rolling Forecasting, using the **Domain** selection list. The Domain selection list displays the following:

- **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 Rolling Forecasting 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 Rolling Forecasting on the current machine, they will not be prompted to log in.

Although all Axiom Rolling Forecasting 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 Rolling Forecasting 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 Rolling Forecasting 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 Rolling Forecasting 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 Rolling Forecasting 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 Rolling Forecasting 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.

Working with Scheduler

Scheduler Overview

Using Scheduler, you can schedule certain Axiom Rolling Forecasting 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 Rolling Forecasting.

▶ 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 Rolling Forecasting 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 Axiom 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 Axiom 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 Rolling Forecasting 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 Rolling Forecasting 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 Axiom 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**.

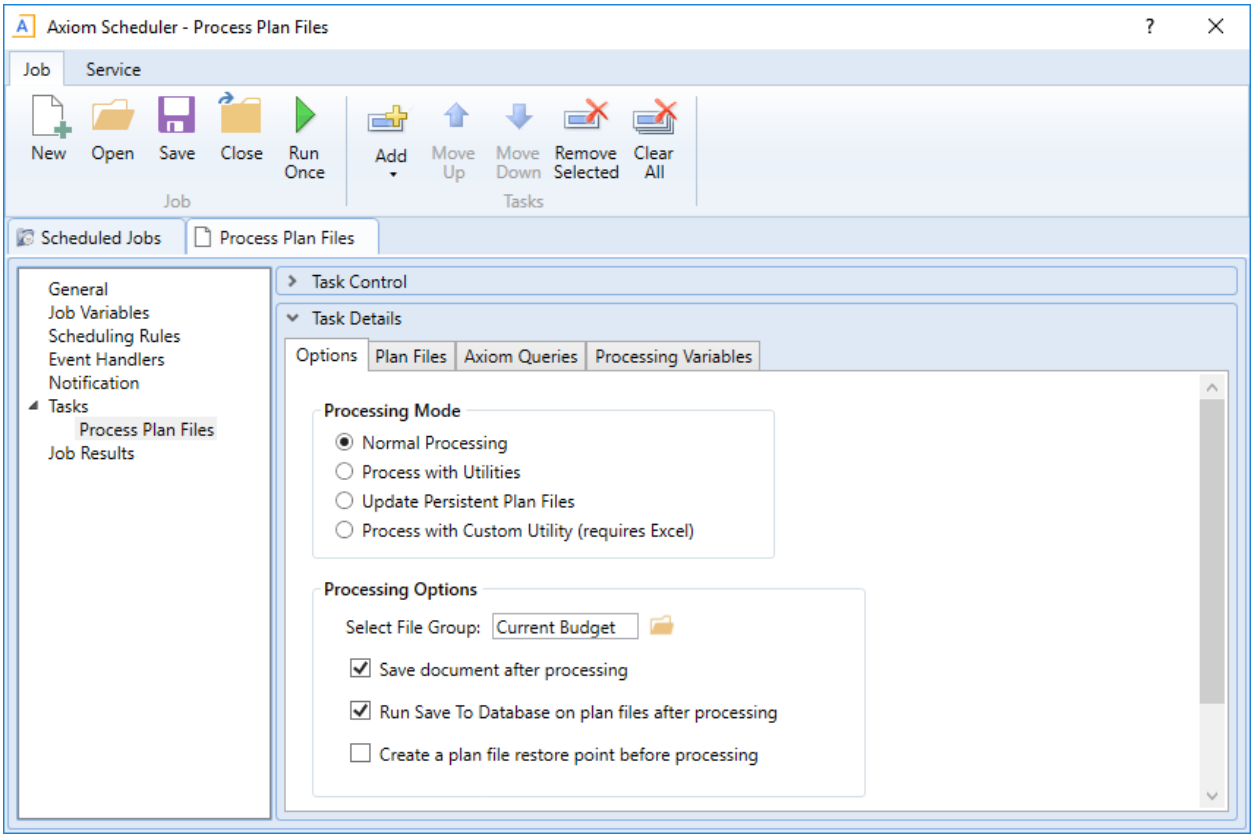
  NOTE: In systems with installed products, this feature may be located on the **Admin** tab. In the **System Management** group, click **Scheduler**.

The top section of the **Scheduler** dialog contains a ribbon-style toolbar with two tabs: **Job** and **Service**.

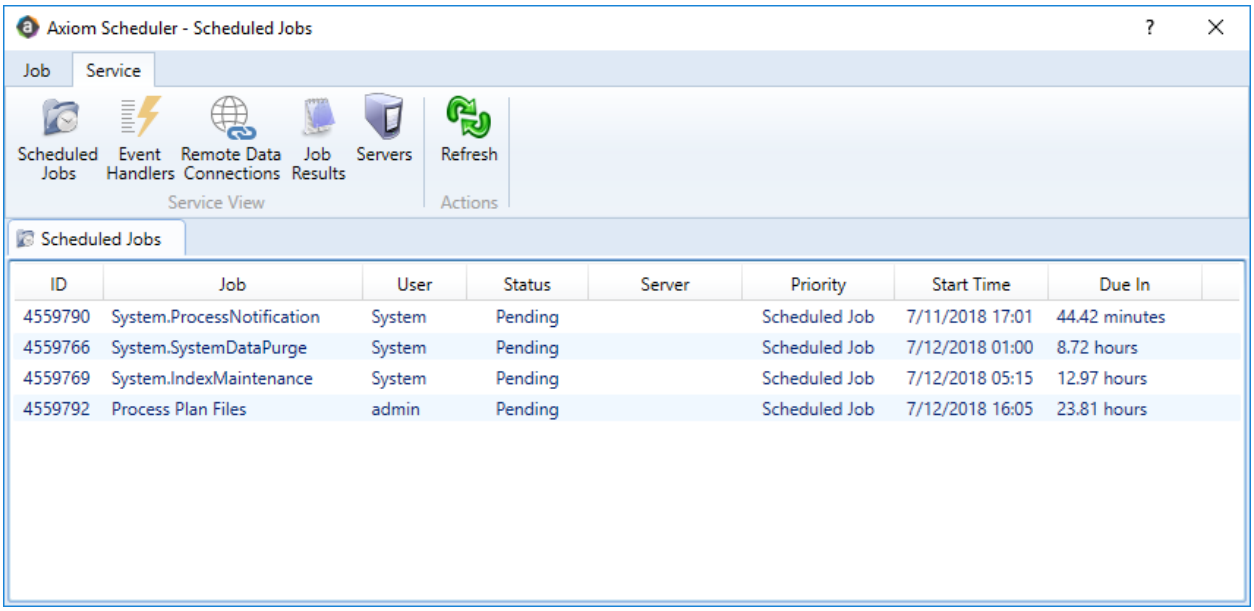
- On the **Job** tab, you can create, run, and edit jobs.

- 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 Rolling Forecasting file system.

The **Scheduler Jobs Library** is also accessible via Axiom Explorer.

Scheduler Job Setup

To perform Axiom Rolling Forecasting 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 Rolling Forecasting 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 Rolling Forecasting 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 Rolling Forecasting 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 Rolling Forecasting 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.

Item	Description
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.
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 Rolling Forecasting 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 (6/30/2020) at 1:30 PM (Option 1)	Start: 06/30/2020 00:00 End: 07/01/2020 00:00	*	13	30
One time (6/30/2020) at 1:30 PM (Option 2)	Start: 06/30/2020 13:30 End: 06/30/2020 13:30	*	*	*
Every Wednesday in July at noon	Start: 07/01/2020 00:00 End: 08/01/2020 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.
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 Rolling Forecasting 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 Rolling Forecasting 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.

Variable	Description
{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.
{EventHandler.EventName}	Returns the name of the event handler that caused the job to be scheduled, if applicable. Otherwise the variable returns blank.

Variable	Description
{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.

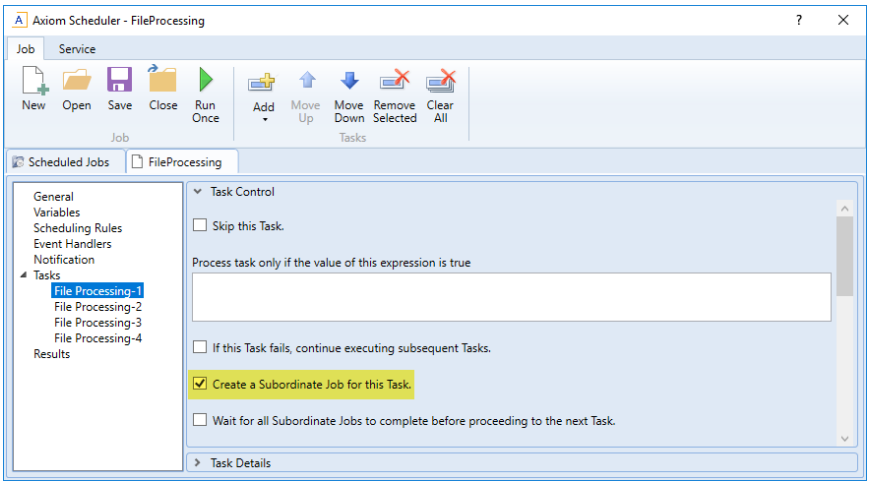
If desired, you can configure tasks so that they are processed concurrently (in parallel) instead of sequentially. If appropriate, this may speed up the processing of the job.

▶ 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

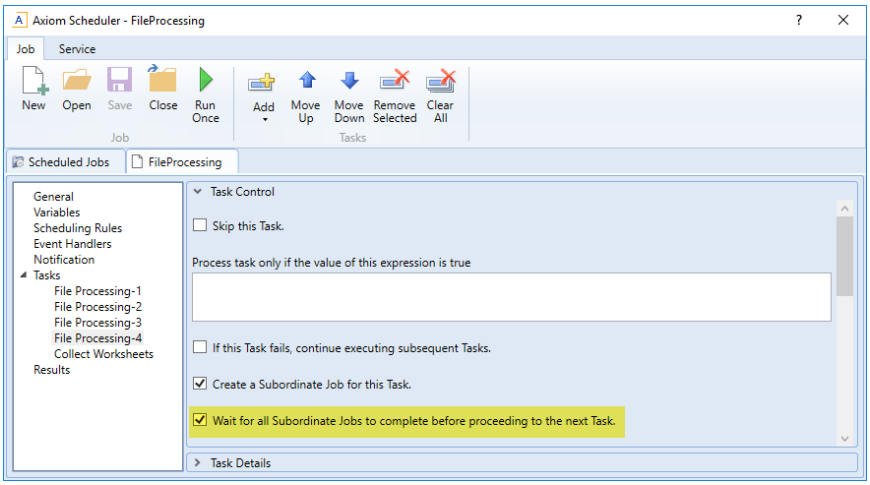
When a task is configured to execute as a subordinate job, then it is not processed within the "parent" job. Instead, a sub-job is created for the task. The sub-job joins the Scheduler queue and is eligible for processing according to the normal Scheduler processing rules. For more information, see Processing 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.

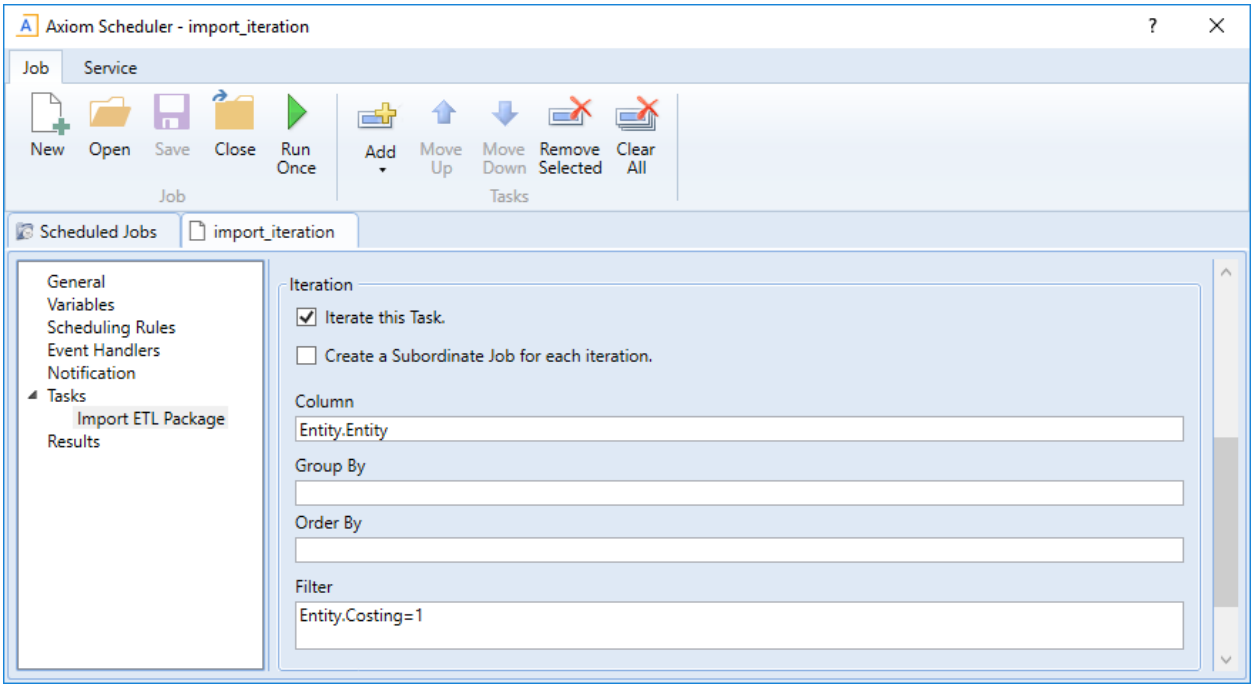
If your job has multiple tasks, and you want the tasks after the iterative task to wait for all iterations to complete before executing, then you must enable the following Task Control option for the iterative task: **Wait for all Subordinate Jobs to complete before proceeding to the next Task**.

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:

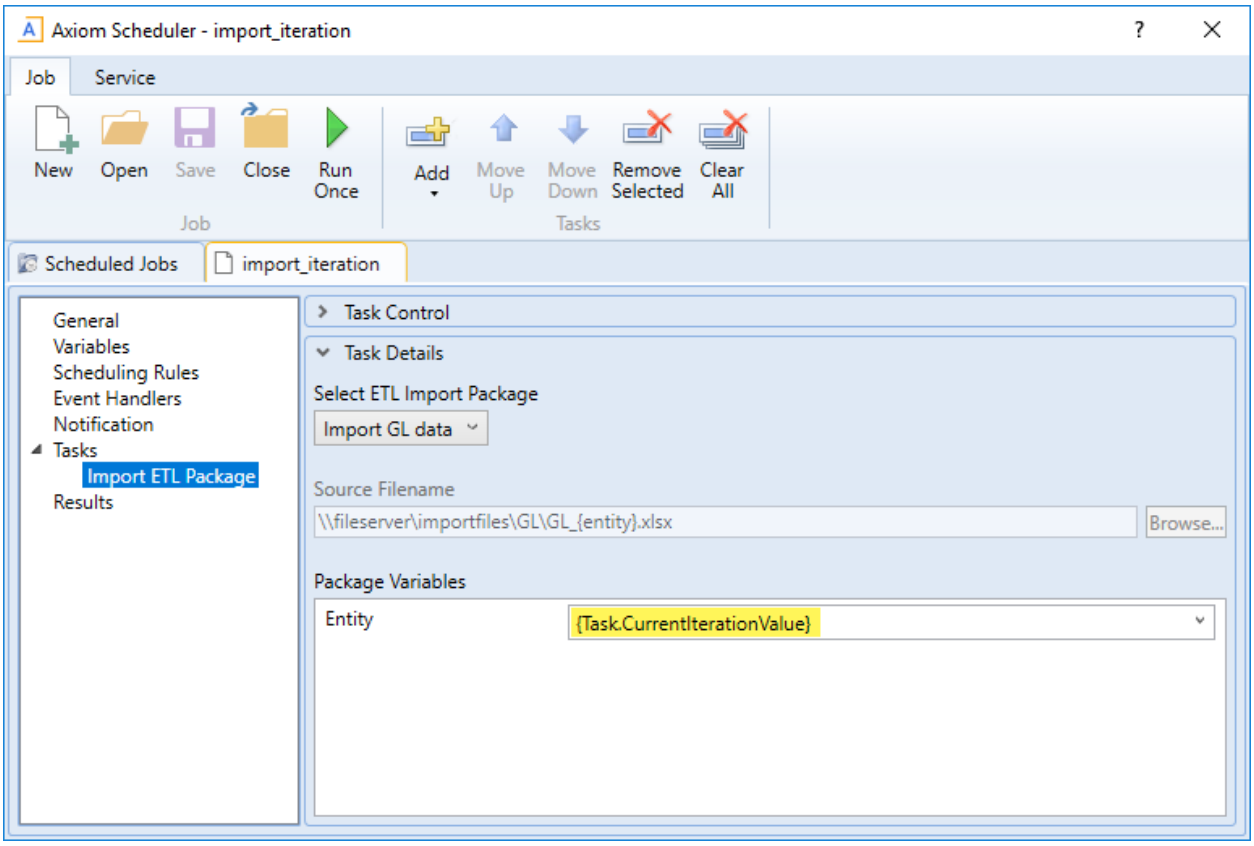
Variable	Description
`{Task.CurrentIterationValue}`	Returns the current value from the iteration list.
`{Task.IterationNumber}`	Returns the number of the current iteration.

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:

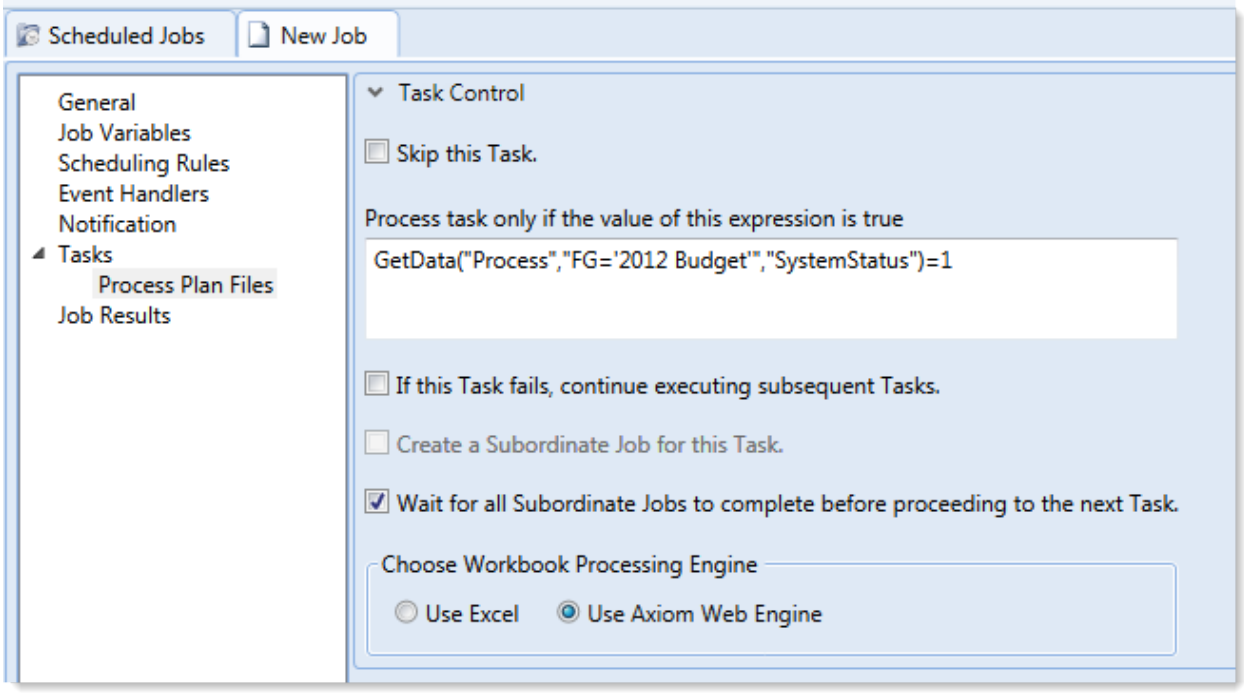


When the first iteration is performed, the `{Task.CurrentIterationValue}` will be resolved as Entity_1, so the import will be processed using Entity_1 as the value for the `{Entity}` import variable. For the second iteration, the value Entity_2 will be used, and so on. Using this approach, the import 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 file permission to the job or any access to Scheduler. The job itself can be configured to execute its tasks 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).

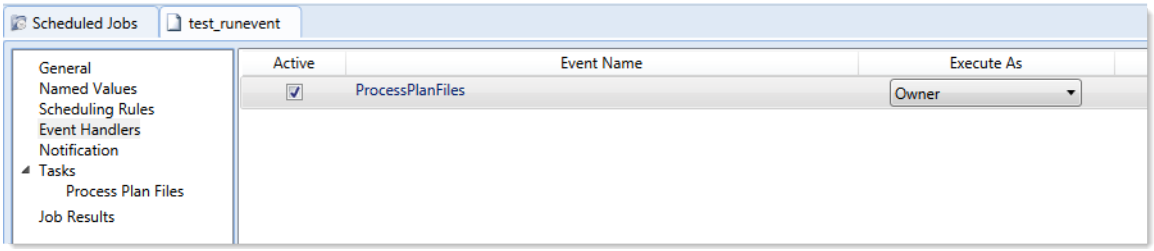
NOTE: You can also use the Raise Event Scheduler task to trigger the execution of a Scheduler job from a different Scheduler job. This works in a similar manner as the RunEvent features.

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

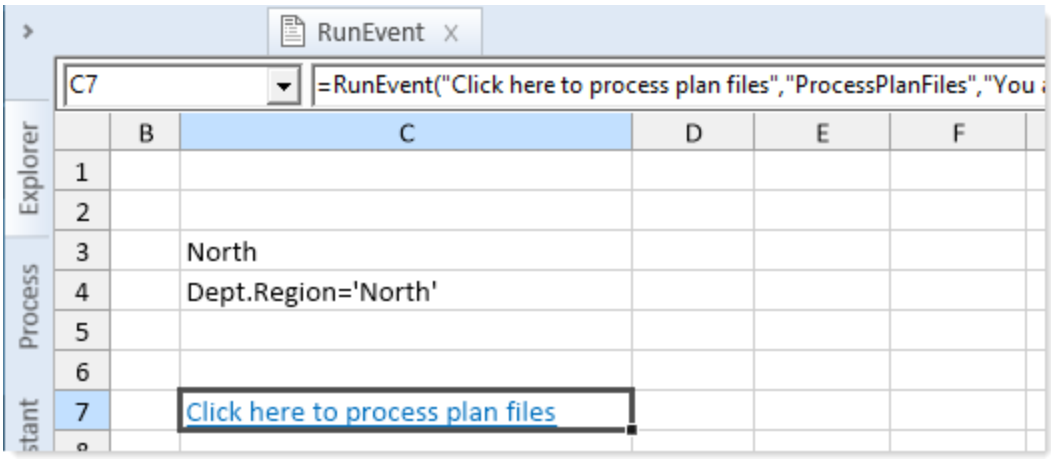
Regardless of the context, RunEvent uses the following properties to trigger Scheduler jobs:

- 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.

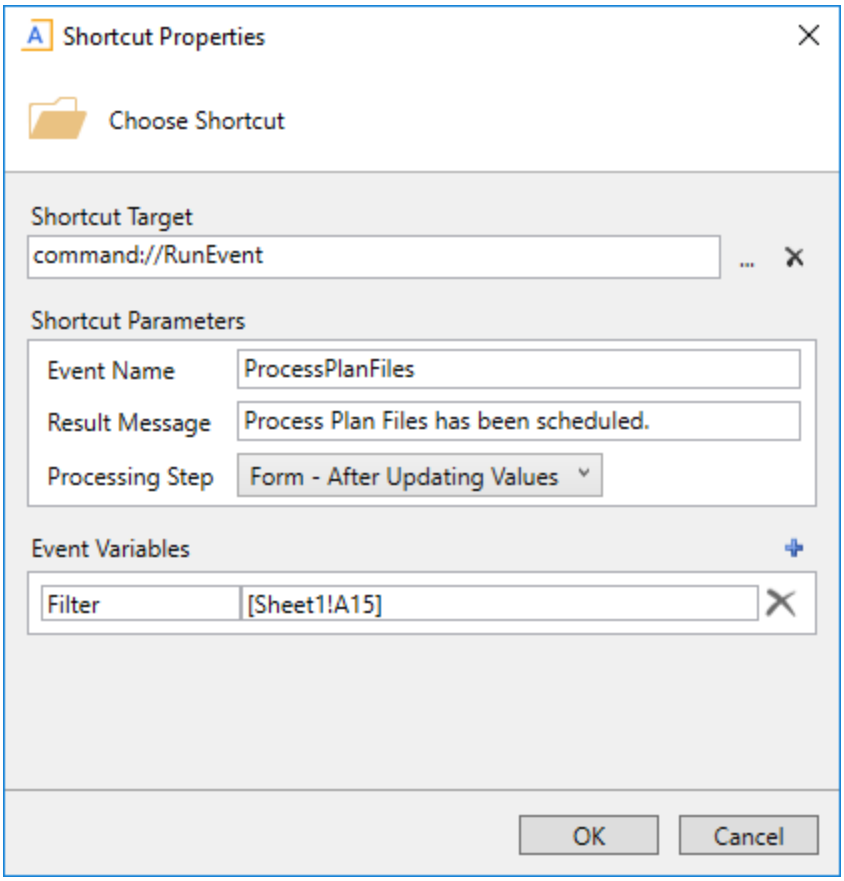
The following shows an example RunEvent function for use in an Axiom file:

```
=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:



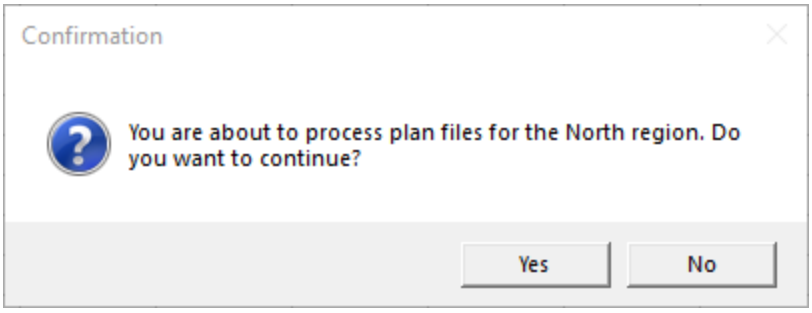
The next screenshot shows a RunEvent command set up on a Button component for an Axiom form. You can see the same event name and the filter variable also being read from a sheet location.



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 Rolling Forecasting 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.

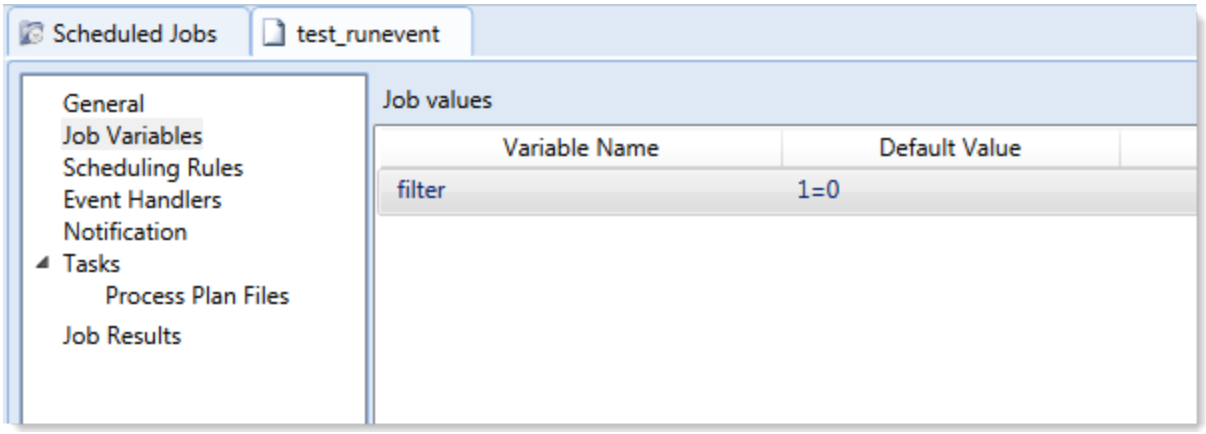
When the job is finished processing, email notifications are sent according to the settings in the job.

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.

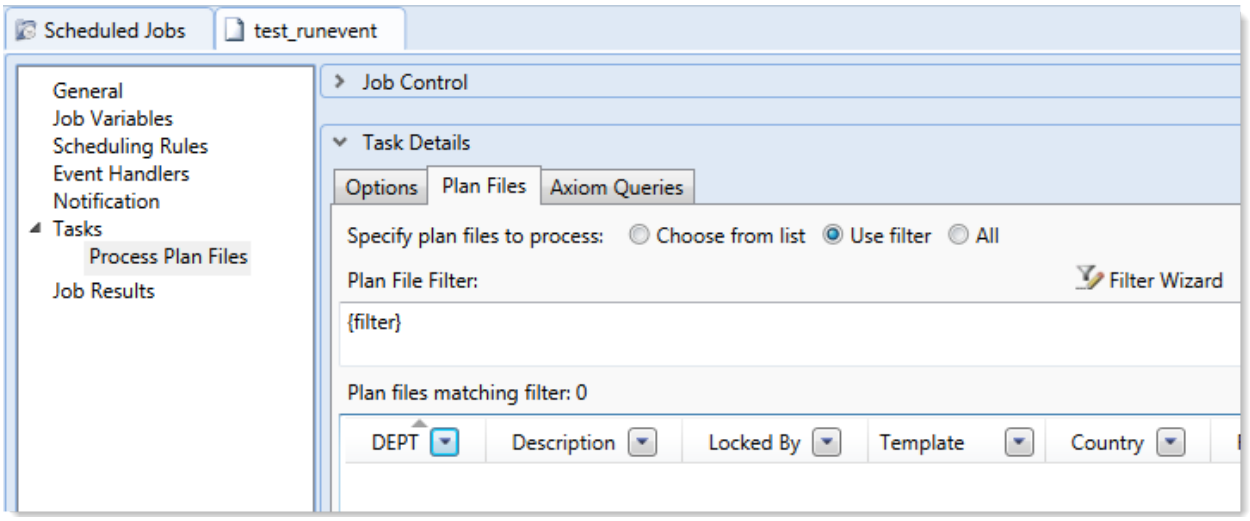
Step 1: Set up the variable in the job

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'")
```

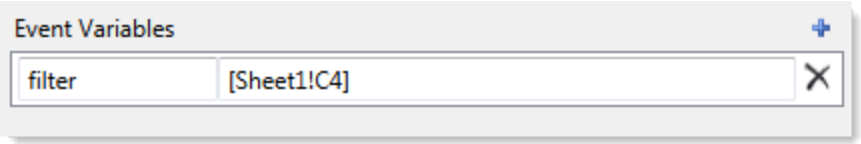
More likely, you would be reading the variable value from another place in the sheet, so the function would look something like:

```
=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 Rolling Forecasting. 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 Rolling Forecasting, 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.
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.

Task	Description
Update Indexes and Constraints	Update the indexes and constraints in your Axiom Rolling Forecasting 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.
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.

NOTE: Older systems may see a setting named **Workbook processing engine to use**. If this option is present, it should always be set to **Axiom Web Engine**. Use of Excel for processing on the Scheduler server is no longer supported. All Scheduler tasks that involve spreadsheet processing are processed using the same spreadsheet emulation engine as the Windows Client.

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 Rolling Forecasting security. For more information on using Active Directory integration with Axiom Rolling Forecasting, 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 Rolling Forecasting 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 Rolling Forecasting 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 Rolling Forecasting 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**. • Click **Role Mapping** to define mappings for the selected groups. If a mapping exists for a group, then when users are imported for that group they are automatically assigned to the mapped role and subsystem. See the discussion following this table for more information.

Role mapping

In the **Role Mapping** dialog, click **Add mapping** (the plus icon) to add a role mapping for a group. 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 you do not want the users in the group to be assigned to any role.
- In the **Subsystem** column, select the subsystem for users in that group. If you want to map the group to more than one subsystem, add another mapping row. This option only displays if subsystems are enabled for your system.
- In the **User Type** column, select the license type for the imported users. The default license type is **Standard**.
- In the **Authentication Type** column, select the authentication type for the imported users, **Windows User** or **SAML**. The default authentication type is Windows User. Note that the selected authentication type will be assigned to users regardless of whether that authentication type is currently enabled for the system.

You can map each group to multiple roles and subsystems. If a group has no defined mappings, then the users will not be assigned to any roles or subsystems. If the import creates new users without mappings, the assigned user type is Standard and the assigned authentication type is Windows User.

To remove a mapping, select the mapping in the grid and then click **Remove mapping** (the X icon). If users have already been imported using this mapping, removing the mapping will not remove the users from the role or subsystem in subsequent imports (unless other group mappings in the import use the same role or subsystem, and the users are not also part of that group).

NOTE: If a user belongs to multiple mappings—either multiple mappings for a single group, or multiple mapped groups—then the user will be assigned to the user type and the authentication type for the last-processed mapping.

Notification tab

On this tab, you specify users to be notified when changes are made in Axiom Rolling Forecasting 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 Rolling Forecasting 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 Rolling Forecasting, 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 Rolling Forecasting 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 Rolling Forecasting 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.

Item	Description
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.

Item	Description
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.
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 Rolling Forecasting 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: `CapReq2019.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 `CapReq2019.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 Rolling Forecasting 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 Rolling Forecasting 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 Rolling Forecasting 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

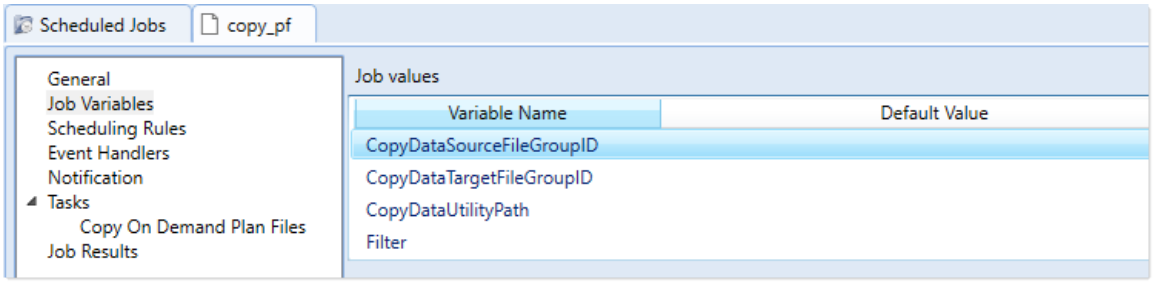
All of the settings for the Copy On Demand Plan Files task can be overridden using system variables. This is intended for use when the task is being triggered by RunEvent (such as from within an Axiom form), and you want to pass in variable values to determine how the task is run.

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 Rolling Forecasting.
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.

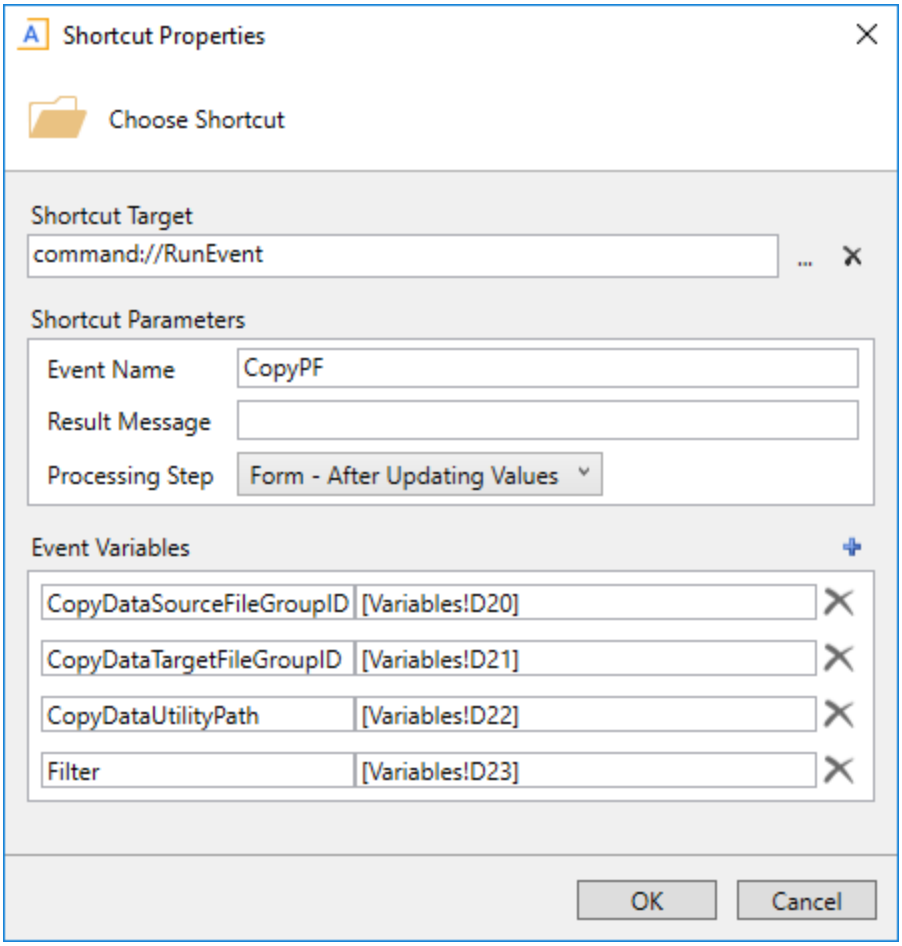


Example Job Variables tab to override certain settings for the copy task

  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 Rolling Forecasting 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 Rolling Forecasting 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 Rolling Forecasting 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 requirements when running file processing using Scheduler:

- 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 Rolling Forecasting (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 Axiom 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 Rolling Forecasting 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 Rolling Forecasting 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 Rolling Forecasting 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 Rolling Forecasting 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.

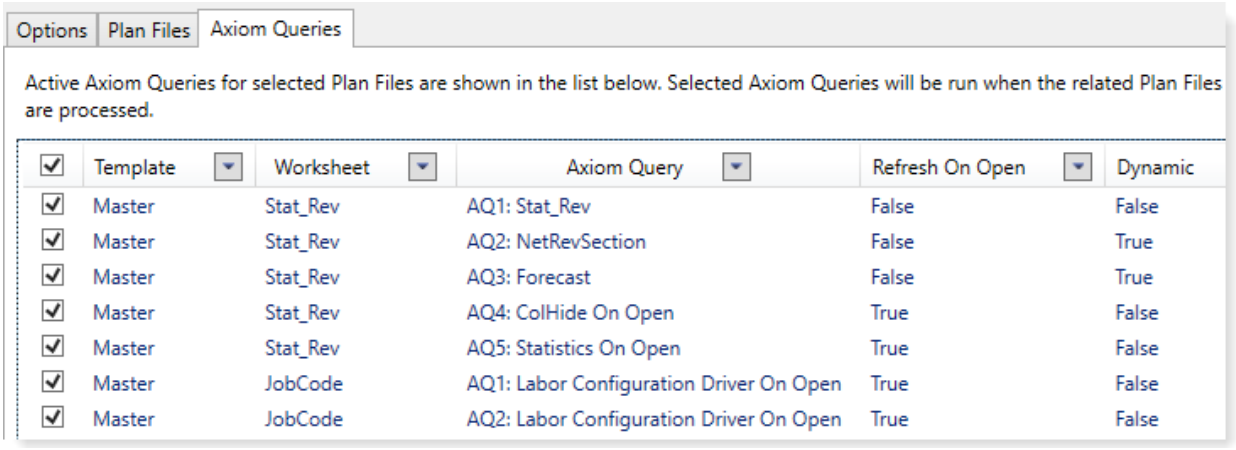
You can also use a job variable for the filter. For example, you can define a job variable named "filter" and then place the text `{filter}` in the filter box. This is intended for use when running Scheduler jobs via RunEvent. If a variable value is specified when the event is triggered, such as the 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.

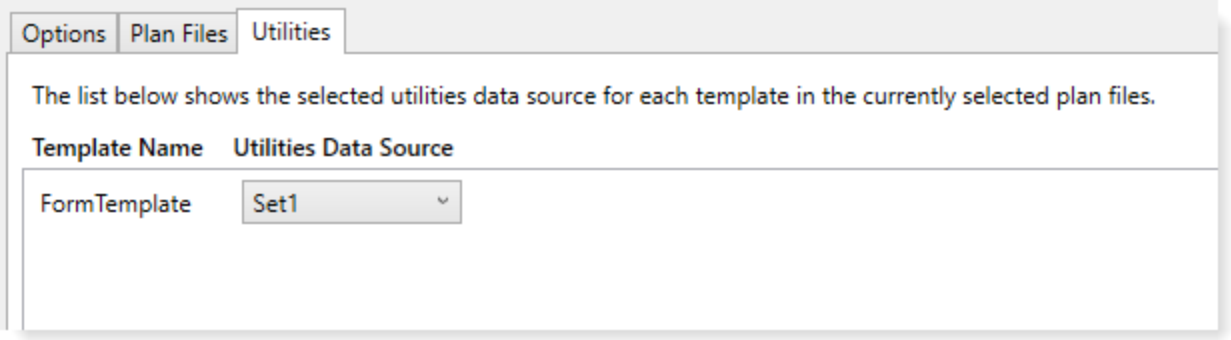
The listed queries are identified by template, worksheet, and query name. The following additional properties are also listed for each query:

- **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 Rolling Forecasting 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.

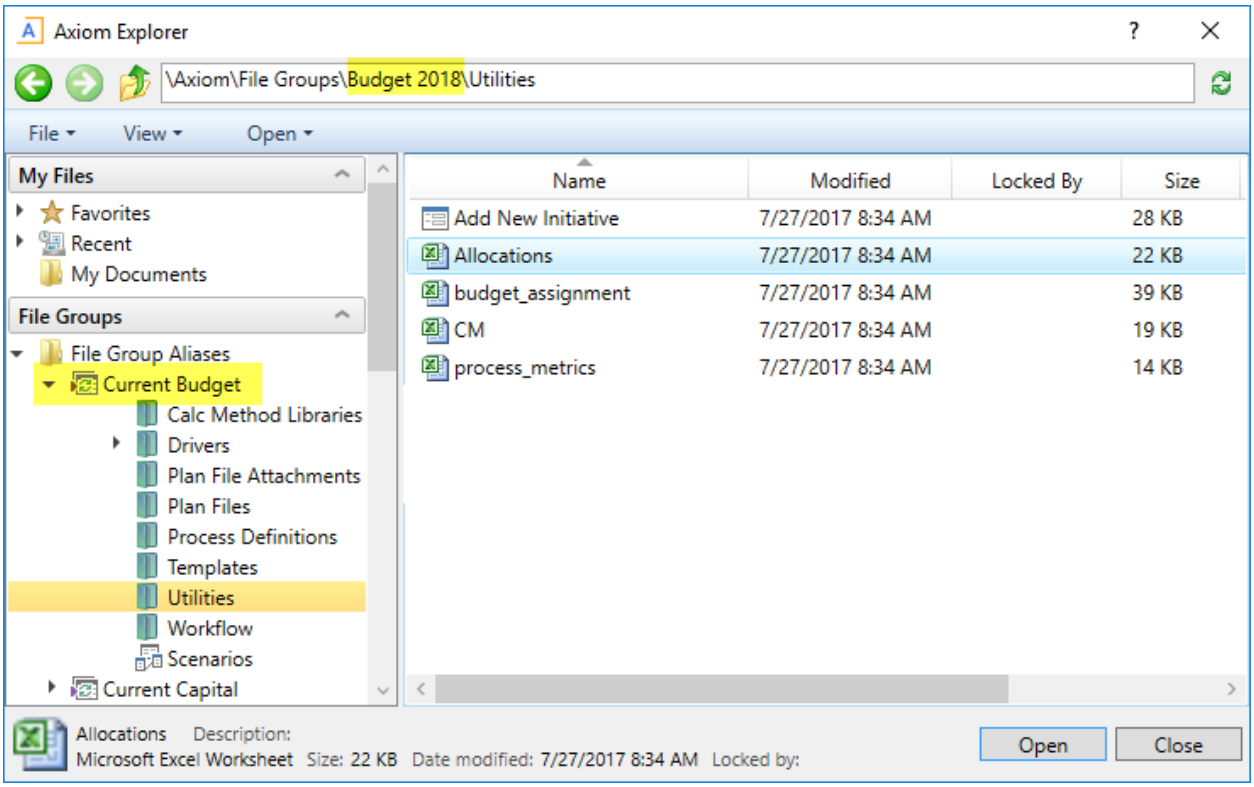
- To add a document, click the Add button. In the **Axiom Explorer** dialog, select the file or files that you want to add, and then click **Open**.
- To remove a document, select the document in the list and then click the Remove button. Only one document can be selected at a time.
- To change the order 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

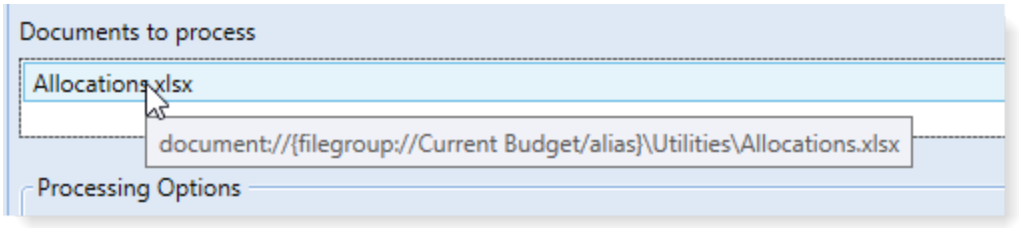
You may want to specify the document to process using a file group alias, so that the task does not have to be manually updated after rolling over to a new file group for a new year of planning. When you are selecting a document in the Axiom Explorer dialog, you can expand the file group alias to see 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. Axiom queries are eligible for processing if they are active and use either of the following refresh behaviors: **Refresh on File Open** and **Refresh During Document Processing**.
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. The user executing the task must have Read/Write access to the files. 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. The user executing the task must have the Allow Save Data permission to the files. 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.

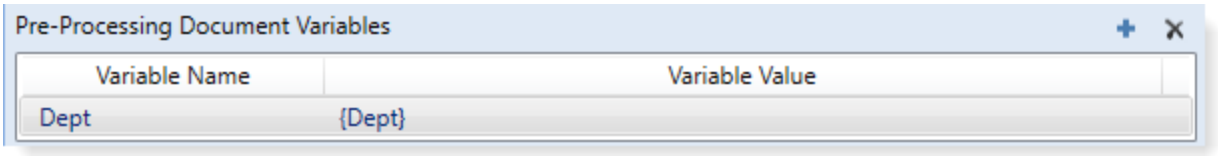
For each pre-processing document variable, you can specify a variable name and a variable value. The target file must be set up with GetDocumentInfo functions that return the values for the specified variables.

- 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.

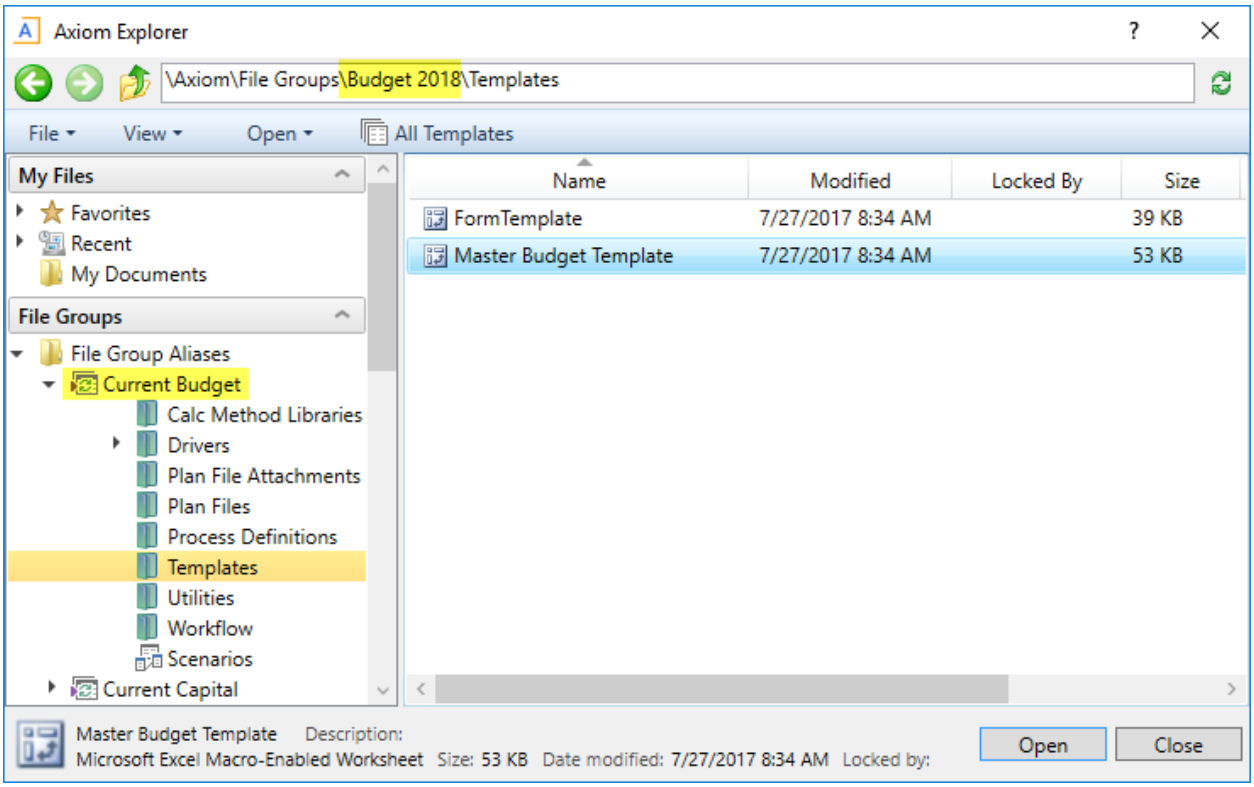
- To add a template, click the Add button. In the **Axiom Explorer** dialog, select the file or files that you want to add, and then click **Open**.
- To remove a template, select the file in the list and then click the Remove button. Only one file can be selected at a time.
- To change the order of 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

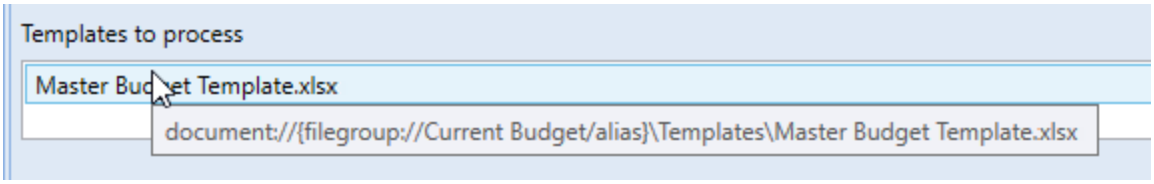
You may want to specify the template to process using a file group alias, so that the task does not have to be manually updated after rolling over to a new file group for a new year of planning. When you are selecting a template in the Axiom Explorer dialog, you can expand the file group alias node to 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 Rolling Forecasting, 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 Rolling Forecasting 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**.
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 Rolling Forecasting when the task is executed. This ensures that the tasks always use the most current SQL code for each task as defined by Axiom Rolling Forecasting.

Setting up home pages for Axiom Rolling Forecasting

When a user logs into Axiom Rolling Forecasting, a home page opens automatically. This home page can be customized for your installation. Additionally, you can designate alternate home pages for different users, as well as use different home pages for each Axiom Rolling Forecasting client.

Home page priority order

When a user logs into an Axiom Rolling Forecasting 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 Rolling Forecasting first cycles through items 1-3 looking for a **Desktop Client Home Page** assignment. If no assignment is found, Axiom Rolling Forecasting cycles through items 1-3 again, this time looking for a **Home Page** assignment. If no security home page is found, Axiom Rolling Forecasting continues to the next item.

4. Default home page in the Axiom System directory
   - In the Windows Client, Axiom Rolling Forecasting checks `\Startup\Home\Windows Client` first, then moves on to `\Startup\Home`.
   - In the Desktop Client, Axiom Rolling Forecasting 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 Rolling Forecasting continues to the next item.

5. Default home page in the Axiom System directory

   In the Web Client, Axiom Rolling Forecasting 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 Rolling Forecasting 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. For more information, see home page (in Web Client help).

Assigning home pages in Security

You can assign alternate home pages on a per user or role basis within Security. If a home page is assigned in Security, it takes precedence over the default home files in the Startup directory.

The **Startup** tab of the Security Management dialog has two settings to assign a home page to users:

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.

For more information on assigning an alternate home file in Security, see the *Security Guide*.

Using default home files in the Startup folders

You can optionally place default home files in the Startup folders. These files will be used as home pages for users who do not have home page assignments in security.

By default, the Startup folders contain a single system file: `\Axiom\Axiom System\StartUp\Home\Home.xlsx`. You can customize this file for your system as desired, or replace it with a different file. You can also optionally use different Home files on a per client basis.

To define different default Home files, you can place files in the following folders within the Axiom System directory. Each folder should only contain a single file. These files can be named whatever you like (it is not necessary to name them Home.xlsx).

Folder	Description
`\Startup\Home`	The file in this folder is used as the home page when the Desktop Client is launched, if: • The user does not have a specified home page in Security. • The applicable client-specific Home folder is empty. The file in this folder is ignored in the Web Client, even if the file is web-enabled.
`\Startup\Home\Web Client`	The file in this folder is used as the home page when the Web Client is launched, if the user does not have a web-enabled home page in Security. This folder does not contain a file by default. If you want to use a Web Client-specific Home file, you must copy or import a file to this location. Any file saved to this location must be an Axiom form or a web report, or else it will be ignored.
`\Startup\Home\Excel Client`	The file in this folder is used as the Home file when the Excel Client is launched, if the user does not have a web-enabled home page in Security. This folder does not contain a file by default. If you want to use an Excel Client-specific Home file, you must copy or import a file to this location.
`\Startup\Home\Windows Client`	The file in this folder is used as the Home file when the Windows Client is launched, if the user does not have a web-enabled home page in Security. This folder does not contain a file by default. If you want to use a Windows Client-specific Home file, you must copy or import a file to this location.

NOTES:

- Only one file can be used as the home file in each of the `\Startup\Home` folders. If any of the Home folders contain multiple files, the file with the smallest document ID is used.
- If you want to use a form-enabled home file in the Desktop Client, you must assign the file via Security. If you place a form-enabled file in the `\Startup\Home` folders, it will be opened as a spreadsheet file instead of as a form. (The exception to this is the Web Client folder, where the file must be form-enabled and only opens as a form.)

Designing Home files for Axiom Software

Home files are designed using Axiom reports. They can be regular spreadsheet reports, form-enabled reports, or web reports. Your organization may use one Home file for all users, or you may use multiple Home files that are designed for different roles.

Using spreadsheet reports as Home files

You can use almost any Axiom Rolling Forecasting feature in a spreadsheet Home file. For example, you can use Axiom queries and other query methods in the Home file to show current data that refreshes when the file is opened.

The primary goal of the Home file should be to communicate information, not to perform tasks. The Home file can be graphical and use text to communicate information about the planning process to your end users. Some features, such as save-to-database, cannot be performed in spreadsheet Home files.

The default Control Sheet is automatically hidden for any file that is used as the home page. You do not need to manually hide this sheet when designing a spreadsheet Axiom report to be used as a Home file.

NOTE: If a spreadsheet Home file has refresh variables, the refresh variables cannot be displayed when the file is opened. If the file is configured with **Refresh Forms Run Behavior** of **OnManualRefreshAndOpen** or **OnOpenOnly**, the variables will not display and the refresh-on-open query will not be run.

Using Axiom forms as Home files

Many clients use Axiom forms as Home files, because the web presentation is well-suited to the purpose of a home page, regardless of which client you are using. Web pages can present summary information in a more attractive and user-friendly way than a spreadsheet.

Additionally, Axiom forms provide pre-built support for certain information that is commonly included in Home files, such as:

- Announcements
- Current process tasks

- Process summary

Although it is possible to present this information in spreadsheet Home files, it requires developing a custom solution. Axiom forms support standardized, configurable components that are specifically designed to present this information.

When using an Axiom form as the Home file in the Web Client, keep in mind that the Home file is displayed instead of the built-in browse page for Axiom forms. Therefore, all necessary form navigation should either be incorporated in the Home file itself, or included in the navigation panel of the Web Client container.

Editing Home files

You can edit Home files just like any other Axiom report. If you are using the default Home file in the Startup folder, only administrators can edit that file. If you are using custom Home files located in the Reports Library and assigned via Security, access to those files is controlled using normal file security.

If the Home file that you want to edit is currently open as your Home file in the Desktop Client, then you must first close the Home file so that you can open it with read/write permissions.

1. Click the **X** button on the **Home** file tab to close the Home file (or right-click the file tab and click **Close**). Note that you must have at least one other file open before you can close the Home file (otherwise Axiom Rolling Forecasting will close if no files are currently open).
2. Open the file using Axiom Explorer, and edit it as desired. Once you have finished your edits, save and close the file.
3. You can now re-open the file as the Home file by clicking **Show Home** in the Axiom ribbon.

Because you have reopened the Home file, you will see your edits immediately. Other users will see the changes the next time that they log in (or if they close and then reopen the Home file within their current session).

NOTE: If the Home file has been configured as non-closeable in Security, then you will not be able to close it. In this case, you must use Save As to save the Home file with a different name, then make your edits in that file. To replace the existing file with your new file, you should export the new file, then rename it locally to have the same name as the original file, then import it over the original file. This process will retain the document ID of the original file.