Administrator's Guide

Axiom Capital Planning
Version 2021.2

10 S. Wacker Dr
Suite 3375
Chicago, IL 60606
(847) 441-0022
www.syntellis.com
info@syntellis.com

Syntellis® is a trademark of Syntellis Performance Solutions, LLC. Microsoft®, Excel®, and Windows® are trademarks of Microsoft Corporation in the United States and/or other countries. All other trademarks are the property of their respective owners.

This document is Syntellis Performance Solutions Confidential Information. This document may not be distributed, copied, photocopied, reproduced, translated, or reduced to any electronic medium or machine-readable format without the express written consent of Syntellis Performance Solutions.

Copyright © 2021 Syntellis Performance Solutions, LLC. All rights reserved.

Version: 2021.2

Updated: 7/6/2021

Contents

Chapter 1: Welcome to Axiom Capital Planning 6
What is covered in this document 7
What's new 7
Implementing best practices for capital planning 11
Understanding Threshold and Non-Threshold projects 12

Chapter 2: Getting Started 13
Implementing best practices for capital planning 13
Understanding Threshold and Non-Threshold projects 14
Home page 14
Launching Axiom Capital Planning applications 16
Navigation panel 18
Viewing system information 20
Getting to know the interface 20
Using the Axiom Assistant 24
Opening the Axiom Capital Planning task panes 27
Opening the Explorer task pane 28
Using the Workflow task pane 29
Managing favorites 29
Opening recent files 30
Commenting on form documents 31
Viewing alert notifications 34
Changing your Axiom Capital Planning password 35
Exiting Axiom Capital Planning 35

Chapter 3: Configuring Assumptions and Drivers 37
Navigating to Capital Planning drivers 40
Configuring capital project assumptions 41
Managing the Configuration driver 53
Managing the Ranking driver 83
Configuring the CP Constraint driver 90
Processing plan files 93

Chapter 4: Configuring the Request Process 95
Viewing the Capital Planning Approval pre-defined process 96

Activating and managing active processes 97
Creating or modifying a process definition 102
Assigning owners to process steps (general processes) 119
Viewing process history 121

Chapter 5: Configuring the Review and Approval Process 123
Managing Capital Committee members 125
Defining project scoring criteria 129

Chapter 6: Managing Capital Projects 133
Working with file groups 133
Viewing project plan files 136
Navigating to capital project requests 138
Creating or modifying a capital project 139
Creating capital projects as funding sources for other projects 185
Cloning a capital project 186
Managing attachments for capital project requests 186
Updating the project creator 188
Viewing the list of current capital projects 189
Submitting or rejecting capital projects 190
Copying or transferring capital projects 191
Deleting a capital project 198
Monitoring capital project requests 199
Ranking capital projects 205
Viewing process routing details 207
Viewing the status of a project 210

Chapter 7: Determining capital projects for next year 212
Sorting and ordering projects for review 212
Scoring projects 218
Modeling capital allocation portfolios 221
Finishing the Voting step 227
Approving or declining projects 229
Viewing review or approval alerts 231

Chapter 8: Working with Reports 234
Working with the Capital Dashboard 234
Reports included in Axiom Capital Planning 238
Browsing the Report Library 249

Running a web report 250
Report Center 250
Web Reports 261

Chapter 9: Rolling Forward to a new capital budget year 357

Step 1: Create new file group 358
Step 2: Configure the new file group for next year's planning cycle 358
Step 3: Confirm configuration of Axiom Capital Tracking for next year's planning cycle 368
Step 4: Configure security for the new file group 369
Step 5: Run the CP Annual Rollforward utility 371

Chapter 10: Managing System Administration 373

Transferring capital project data to Axiom Budgeting 373
Transferring capital project data to Axiom Financial Planning 380
Working with Dimensions 386
Scheduler Overview 419
Managing security 527
Importing Datadata 679
Exporting data from Axiom Capital PlanningData 735
Configuring the home page (Desktop Client only) 744
Viewing capital project or purchase request table diagram 750

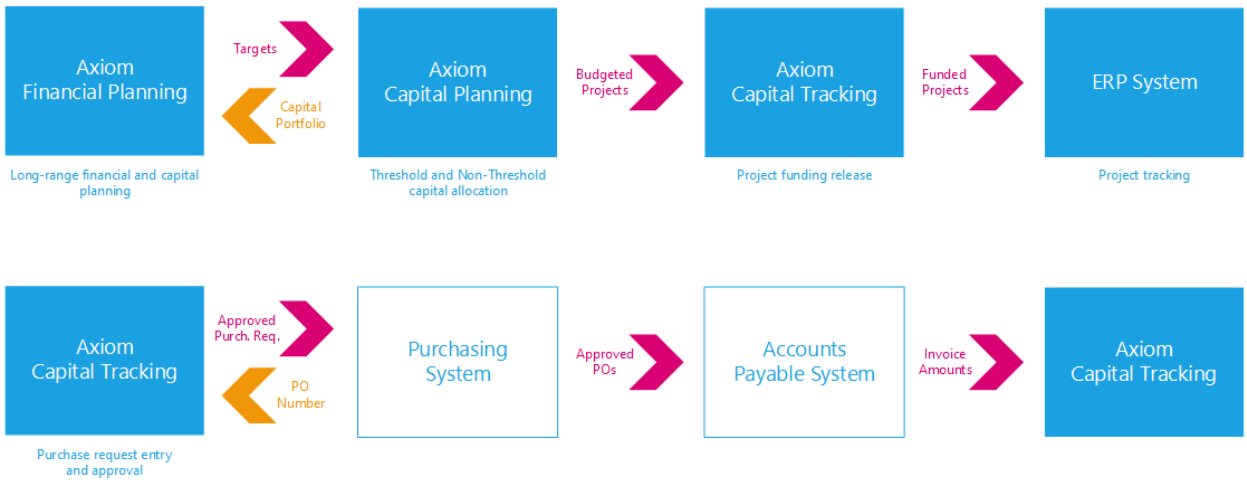
1

Welcome to Axiom Capital Planning

The Kaufman Hall Axiom Healthcare Suite includes two different applications related to capital:

- **Axiom Capital Planning** – Supports Threshold and Non-Threshold capital planning, including comprehensive process workflow and sophisticated capital approval decision making.
- **Axiom Capital Tracking** – Provides complete support for the capital requisition, funding authorization, and tracking processes as well as interfaces directly with AP/MM systems.

These applications integrate with each other as well as the rest of the Axiom Healthcare Suite products per the following diagram.



The individuals who will interact with the Axiom Capital Planning most often include:

- **Owner** – The originator of a capital request, usually a manager or director.
- **VP** – Conducts initial reviews of capital requests submitted by managers and directors.
- **Reviewers** – Representatives of Information Systems, Facilities, and Clinical Engineering assigned to review requests for feasibility.
- **Capital Committee** – A group of individuals assigned to review and prioritize all capital requests across the organization.
- **Approver** – The party with ultimate sign-off authority for capital requests.

What is covered in this document

This manual is written for an Axiom Capital Planning Administrator. These individuals in your organization are tasked with configuring, maintaining, and controlling other users' access to Axiom Capital Planning-related features and data.

As an 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.

What's new

Welcome to Version 2021.2 of Axiom Capital Planning!

Project Ranking report updated to web form

The Project Ranking report has been converted to a web form for ease of viewing and usability.

Updated plan file header information

The capital project header now includes information on the total amount requested and project requestor name.

Delete additional sheets from Threshold (pro forma) projects

Users can delete additional sheets added to a pro forma project but not the original sheet itself.

Extend modeling for 100 years or more

In the Financial > Financial Statements tab, the Total Project Life of NPV has been updated to allow users to add up to 100 years to the total project life to mimic perpetuity.

Warning displays when project total is zero

Axiom now displays a warning when a project has a total value of zero so that users a reminded to enter a value before submitting the project.

Project Ranking report updated to web form

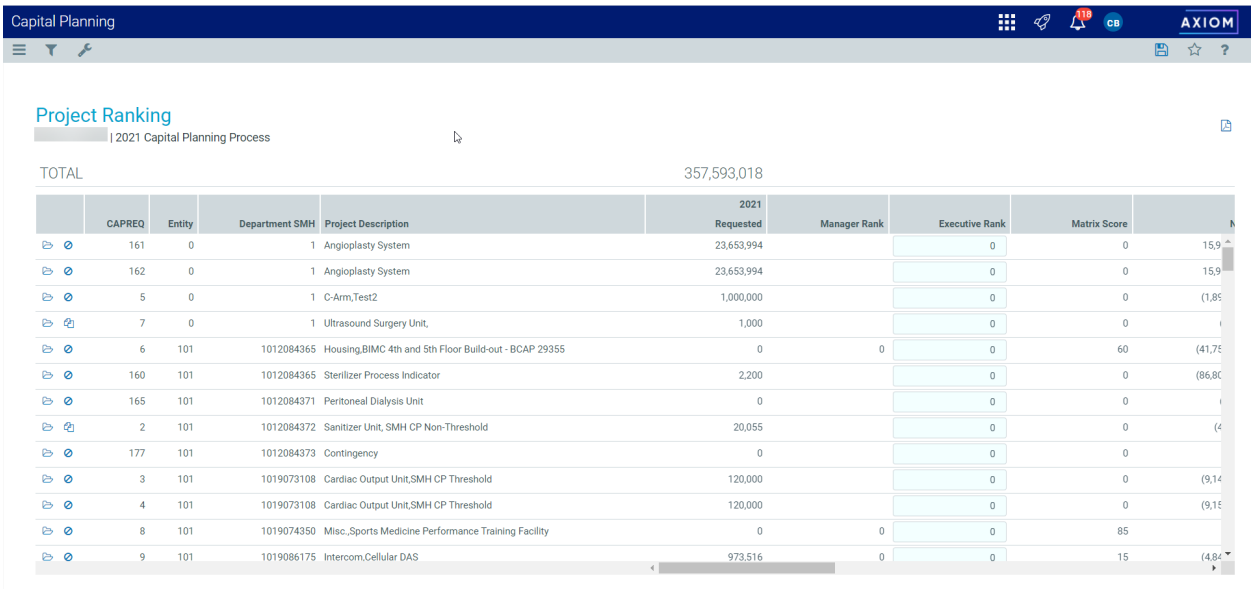
The Project Ranking report has been converted to a web form for ease of viewing and usability.

About this enhancement

Where: From the **Capital Planning** home page, click **Project Ranking Report**.

Who: Users must be assigned the Capital Planning/Capital Tracking Admin role profile in the system.

How: The feature works the same as in prior versions. You now have the option to add more questions. The Executive Rank column is only visible if the user is in the Capital Planning Approver or Capital Tracking Approver role, respectively.



	CAPREQ	Entity	Department SMH	Project Description	2021 Requested	Manager Rank	Executive Rank	Matrix Score	
	161	0	1	Angioplasty System	23,653,994		0	0	15,9
	162	0	1	Angioplasty System	23,653,994		0	0	15,9
	5	0	1	C-Arm,Test2	1,000,000		0	0	(1,85
	7	0	1	Ultrasound Surgery Unit,	1,000		0	0	
	6	101	1012084365	Housing,BIMC 4th and 5th Floor Build-out - BCAP 29355	0	0	0	60	(41,75
	160	101	1012084365	Sterilizer Process Indicator	2,200		0	0	(86,80
	165	101	1012084371	Peritoneal Dialysis Unit	0		0	0	
	2	101	1012084372	Sanitizer Unit, SMH CP Non-Threshold	20,055		0	0	(4
	177	101	1012084373	Contingency	0		0	0	
	3	101	1019073108	Cardiac Output Unit,SMH CP Threshold	120,000		0	0	(9,14
	4	101	1019073108	Cardiac Output Unit,SMH CP Threshold	120,000		0	0	(9,15
	8	101	1019074350	Misc.,Sports Medicine Performance Training Facility	0	0	0	85	
	9	101	1019086175	Intercom,Cellular DAS	973,516	0	0	15	(4,84

Example of the new web version of the Project Ranking report

Where to find more information

For more information and instructions, see the following topic in the Axiom Capital Planning online help:

- "Ranking capital projects"

Updated project header information

The capital project header now includes information on the total amount requested and project requestor name.

About this enhancement

Where: From the **Capital Planning** home page, click **Project Ranking Report**.

Who: Any user with Axiom Planning and/or Axiom Tracking role profiles.

How: When opening a capital project, the header for the project displays the Total Requested and Creator fields. For purchase requests, the header shows the Total Purchase Request.

Example of the updated project header information

Where to find more information

For more information and instructions, see the following topic in the Axiom Capital Planning or Capital Tracking online help:

- "Creating or modifying a capital project"
- "Creating a purchase request"

Delete additional sheets from Threshold (pro forma) projects

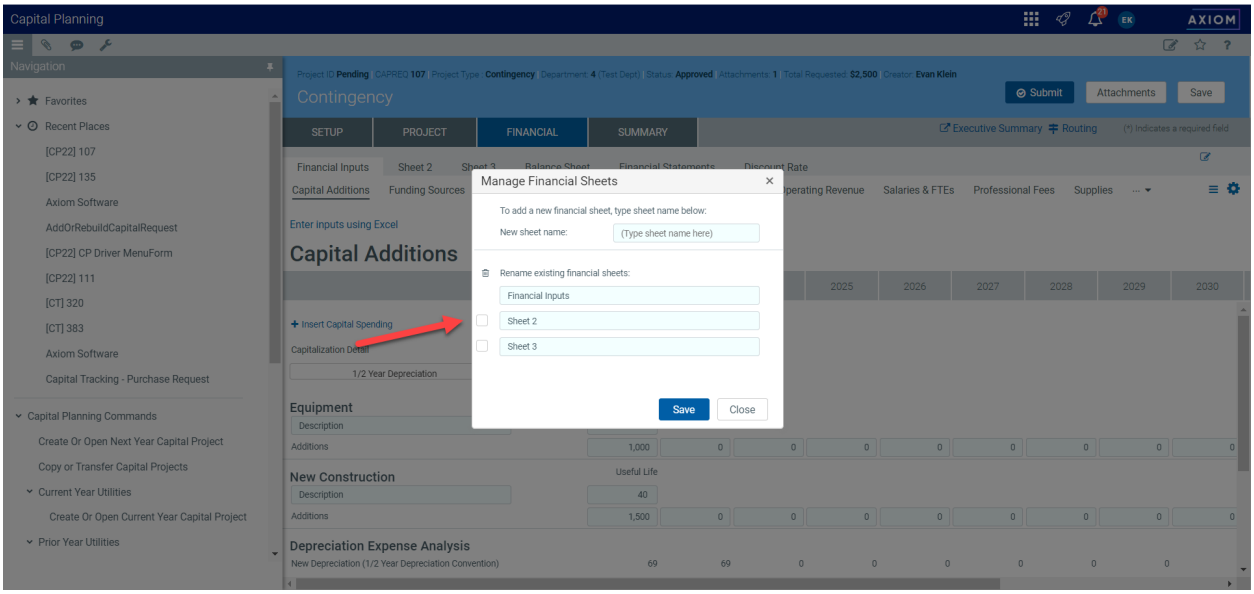
Users can delete additional sheets added to a pro forma project but not the original sheet itself.

About this enhancement

Where: Open any Threshold project that includes sheets that have been added to the project.

Who: Any user with Axiom Planning Admin role profiles.

How: When opening a capital project, click the notepad icon in the upper left corner of the page. In the **Manage Financial Sheets** dialog, select the check box next to the sheets to delete, and click **Save**.



The system displays the list of additional sheets, which a user can select for deletion

Where to find more information

For more information and instructions, see the following topic in the Axiom Capital Planning or Capital Tracking online help:

- "Deleting sheets from a Threshold (pro forma) project"

Extend modeling up to 100 years

In the Financial > Financial Statements tab, the Total Project Life of NPV has been updated to allow users to add up to 100 years to the total project life to mimic perpetuity.

About this enhancement

Where: Open a Threshold project.

Who: Any user with Axiom Planning role profiles.

How: The feature works the same as in prior versions. You now have the option to add up to 100 years for a project, this allows for near perpetuity while retaining the ability to add capital in future years.

NOTE: System displays an error when entering more than 100 years in the **Total Project Life for NPV** field.

Where to find more information

For more information and instructions, see the following topic in the Axiom Capital Planning online help:

- "Creating data for Threshold (pro forma) projects"
- "Entering performance tracking measures in a Threshold project"

Warning displays when project total is zero

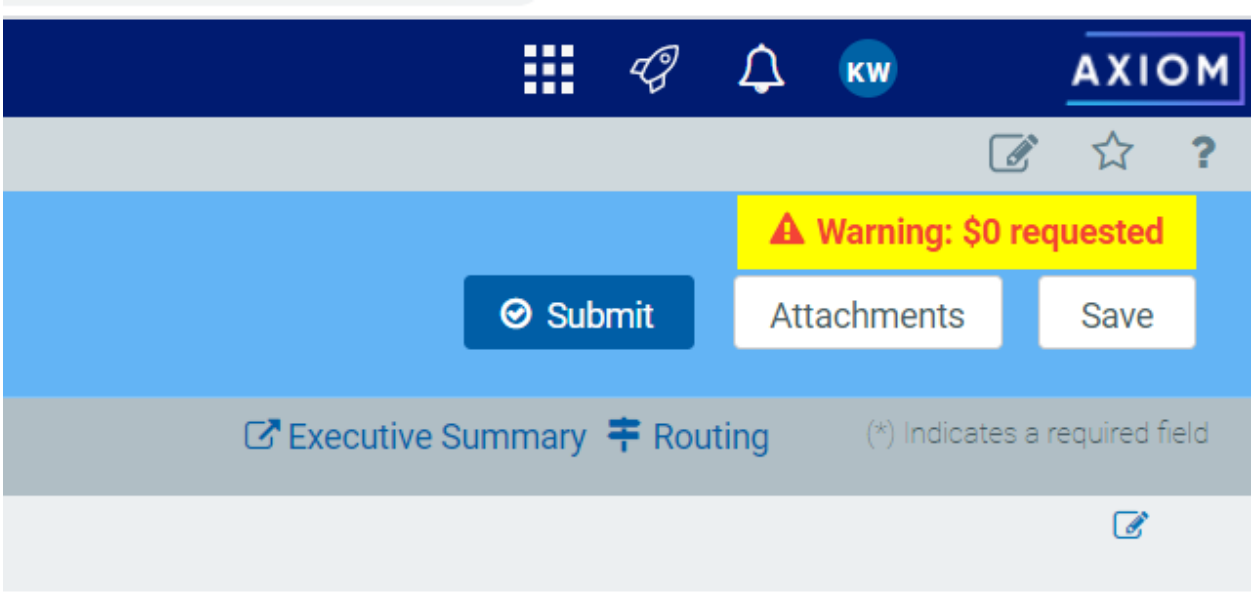
Axiom now displays a warning when a project has a total value of zero so that users a reminded to enter a value before submitting the project.

About this enhancement

Where: Open a project.

Who: Any user with Axiom Planning role profiles.

How: The warning displays in the upper left corner of the page.



Warning displays above Attachments and Save buttons.

Implementing best practices for capital planning

Though Axiom Capital Planning is highly configurable, it does make a few very general assumptions as to how your organization should structure the capital planning process.

While every organization's situation is unique, it has been our experience that organizations typically get the best results when their capital planning process:

- Is rigorous and highly organized.
- Receives the full support of a well-informed management team.
- Links financial planning and capital planning to the organization’s strategic plan.
- Takes a one-batch approach to evaluating capital requests, reviewing all upcoming requests at once instead of making decisions in isolation.
- Encourages rational comparisons between projects and strategic initiatives throughout the entire organization.
- Provides a financial context for allocation decisions.
- Accounts for the strategic, mission, and operational aspects of alternative investment decisions.
- Focuses senior management’s attention on larger Threshold projects while allowing decisions about smaller Non-Threshold items to be decentralized.

Understanding Threshold and Non-Threshold projects

A major principle underlying the design of Axiom Capital Planning is how it handles Threshold and Non-Threshold projects.

The following table explains the differences between these project types:

Project Type	Description
Threshold (Pro Forma)	• 60–80% of capital constraint • Usually about 30 projects system-wide • Requires in-depth, consistent analytics (pro forma) • System-level decision making (not entity level)
Non-Threshold (Summary)	• 20-40% of capital constraint • Consists of all capital items not considered Threshold • Requires standardized information to facilitate efficient evaluation • Decentralized decision making (Entity and/or VP level)

While your organization can build your own forms and processes around each type of capital project request, Axiom Capital Planning provides standard templates for submitting, reviewing, and approving Threshold and Non-Threshold projects.

Getting Started

This section provides information on the basics of using Axiom Capital Planning, 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 Capital Planning. For end users, this section provides an ongoing reference for file-related tasks.

Implementing best practices for capital planning

Though Axiom Capital Planning is highly configurable, it does make a few very general assumptions as to how your organization should structure the capital planning process.

While every organization's situation is unique, it has been our experience that organizations typically get the best results when their capital planning process:

- Is rigorous and highly organized.
- Receives the full support of a well-informed management team.
- Links financial planning and capital planning to the organization’s strategic plan.
- Takes a one-batch approach to evaluating capital requests, reviewing all upcoming requests at once instead of making decisions in isolation.
- Encourages rational comparisons between projects and strategic initiatives throughout the entire organization.
- Provides a financial context for allocation decisions.
- Accounts for the strategic, mission, and operational aspects of alternative investment decisions.
- Focuses senior management’s attention on larger Threshold projects while allowing decisions about smaller Non-Threshold items to be decentralized.

Understanding Threshold and Non-Threshold projects

A major principle underlying the design of Axiom Capital Planning is how it handles Threshold and Non-Threshold projects.

The following table explains the differences between these project types:

Project Type	Description
Threshold (Pro Forma)	• 60–80% of capital constraint • Usually about 30 projects system-wide • Requires in-depth, consistent analytics (pro forma) • System-level decision making (not entity level)
Non-Threshold (Summary)	• 20-40% of capital constraint • Consists of all capital items not considered Threshold • Requires standardized information to facilitate efficient evaluation • Decentralized decision making (Entity and/or VP level)

While your organization can build your own forms and processes around each type of capital project request, Axiom Capital Planning provides standard templates for submitting, reviewing, and approving Threshold and Non-Threshold projects.

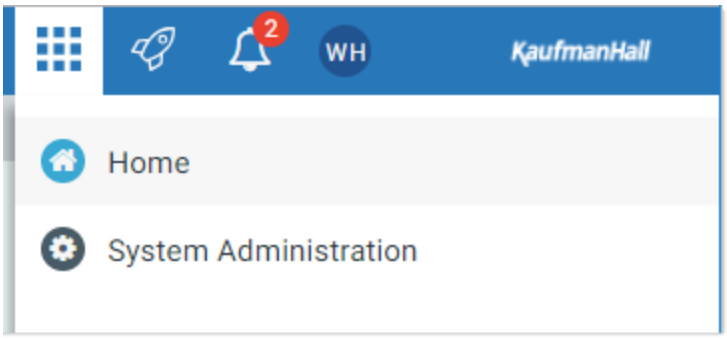
Home page

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

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

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

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

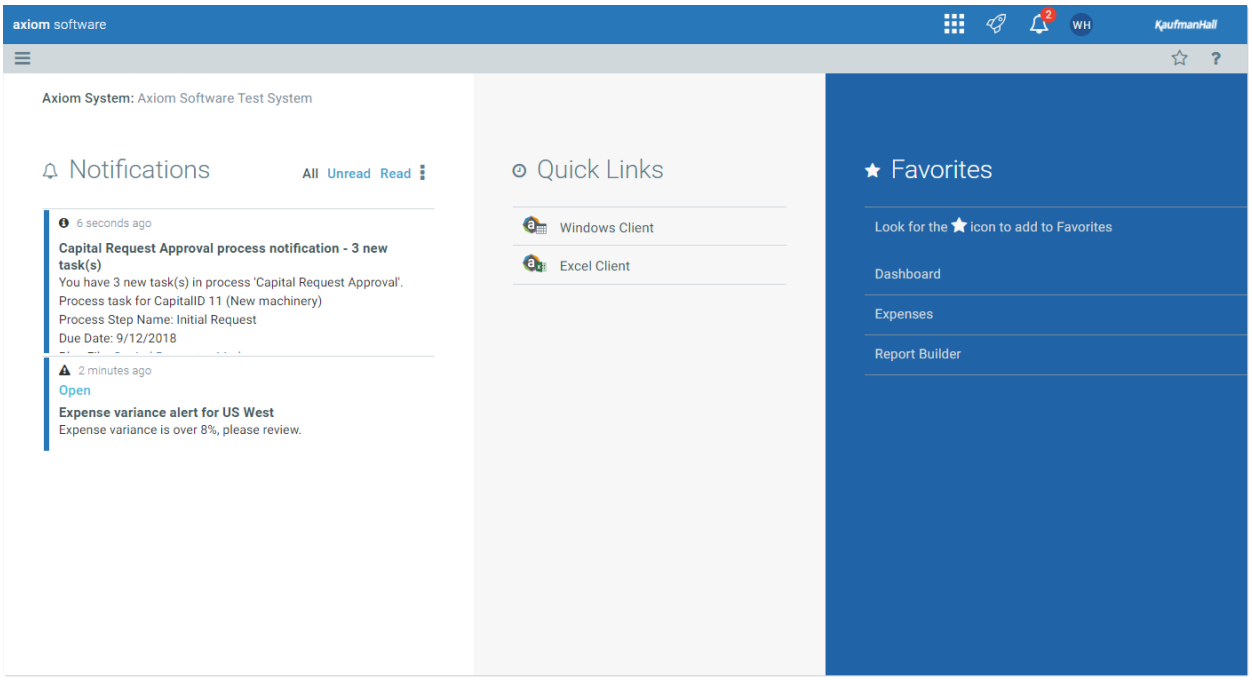


If you are in a system with installed products, this menu may contain product names instead of the **Home** item. In that case, you can select a product name to return to the home page for that product.

NOTE: If you are an administrator looking for more information on how the home page is determined, see Assigning alternate home pages (in Desktop Client Help).

Default home page

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



This page 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://CustomerName.axiom.cloud/Home/Launchpage`

Where *CustomerName* is the name of your 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.

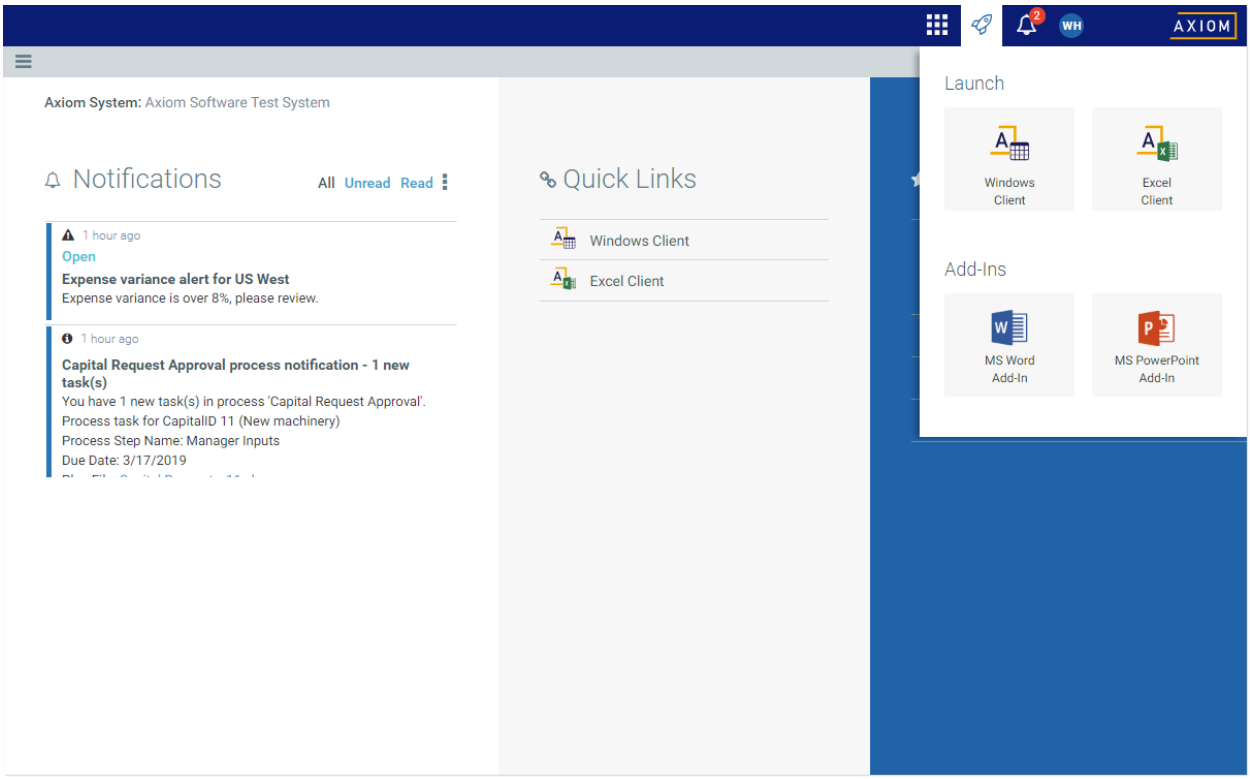
Launching Axiom Capital Planning applications

You can launch various Axiom Capital Planning 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

NOTE: The specific clients and add-ins listed on the Quick Launch menu depend on your particular security permissions (as defined on the **Permissions** tab of security). If you do not have permission to a particular client or add-in, then that item does not display on the Quick Launch menu. If you do not have security permissions to any of the applications on the Quick Launch menu, then the icon and the menu will not be present in the navigation bar.

Launching the Axiom Desktop Client

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

Item	Description
Windows Client	Launches the Axiom Windows Client on your desktop. You must have the **Windows Client Access** security permission in order to see this icon and launch the client. If you do not have this permission, the Windows Client icon is hidden.
Excel Client	Launches the Axiom Excel Client on your desktop. Requires Microsoft Excel. You must have the **Excel Client Access** security permission in order to see this icon and launch the client. If you do not have this permission, the Excel Client icon is hidden.

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. Your browser must support ClickOnce in order to install and launch the client.

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, and grant access to the clients as needed.

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 Axiom Cloud Technical Guide (Axiom Cloud systems). Some software prerequisites can be downloaded and installed from the Web Client. You can access the prerequisites download page from the Axiom Capital Planning 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 Capital Planning add-ins. Click on one of the following icons:

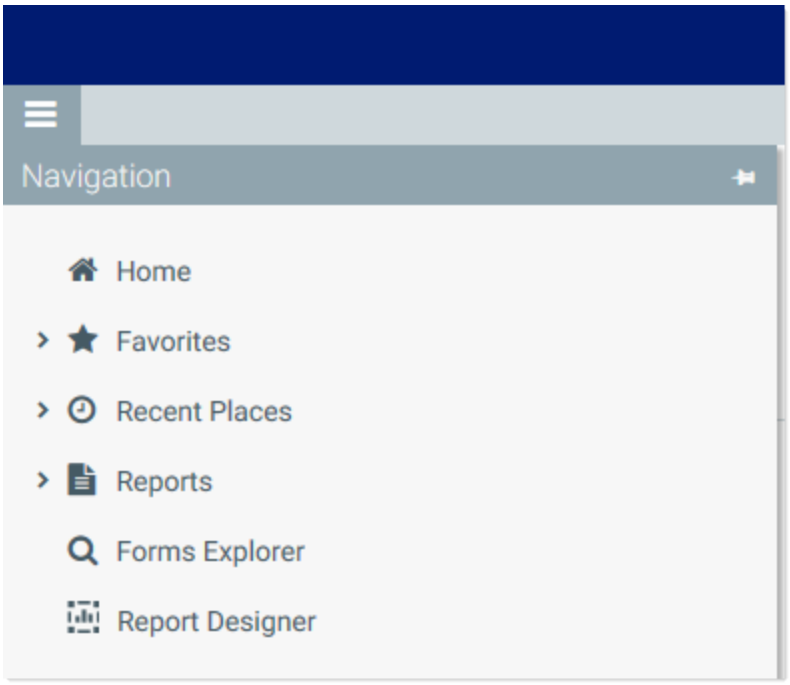
Item	Description
MS Word Add-In	Launches the Axiom Capital Planning Add-In for Microsoft Word. You must have the **Word Add-In Access** security permission in order to see this icon and launch the add-in. If you do not have this permission, the icon is hidden.
MS PowerPoint Add-In	Launches the Axiom Capital Planning Add-In for Microsoft PowerPoint. You must have the **PowerPoint Add-In Access** security permission in order to see this icon and launch the add-in. If you do not have this permission, the icon is hidden.

The Word and PowerPoint Add-ins are optional applications to support document integration between Axiom Capital Planning 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 Capital Planning 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.
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

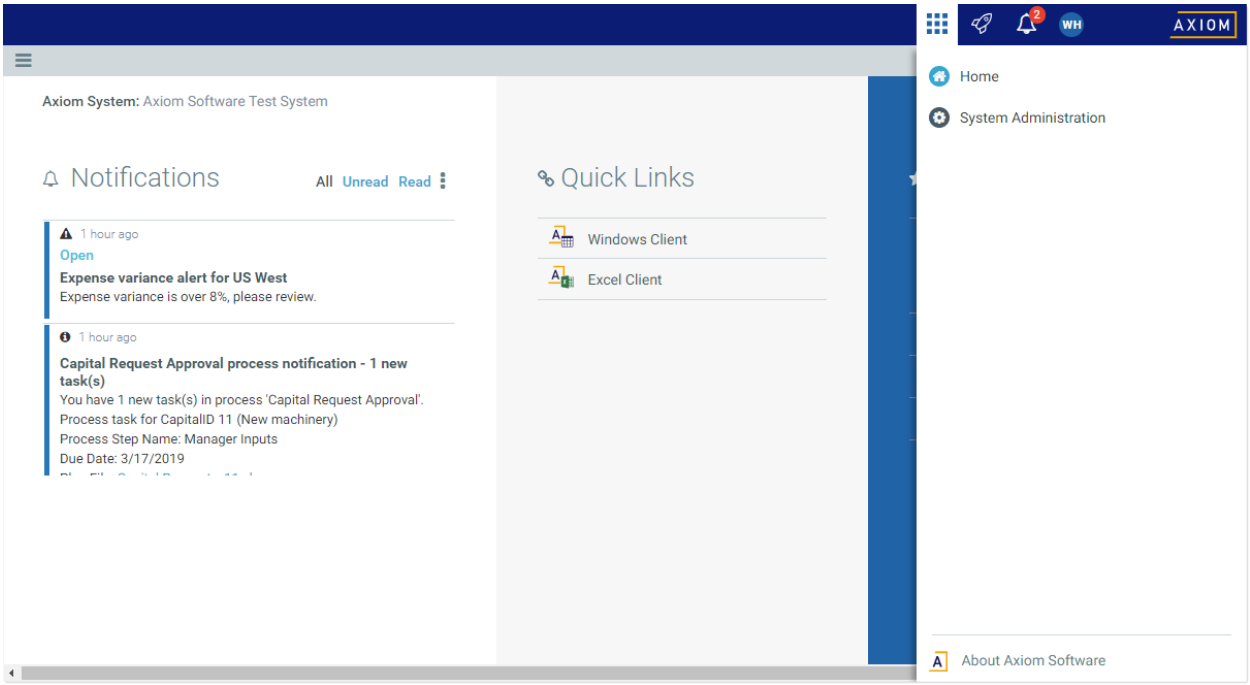
Use the Axiom Capital Planning About box to see information about your current system, such as:

- Axiom Capital Planning 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

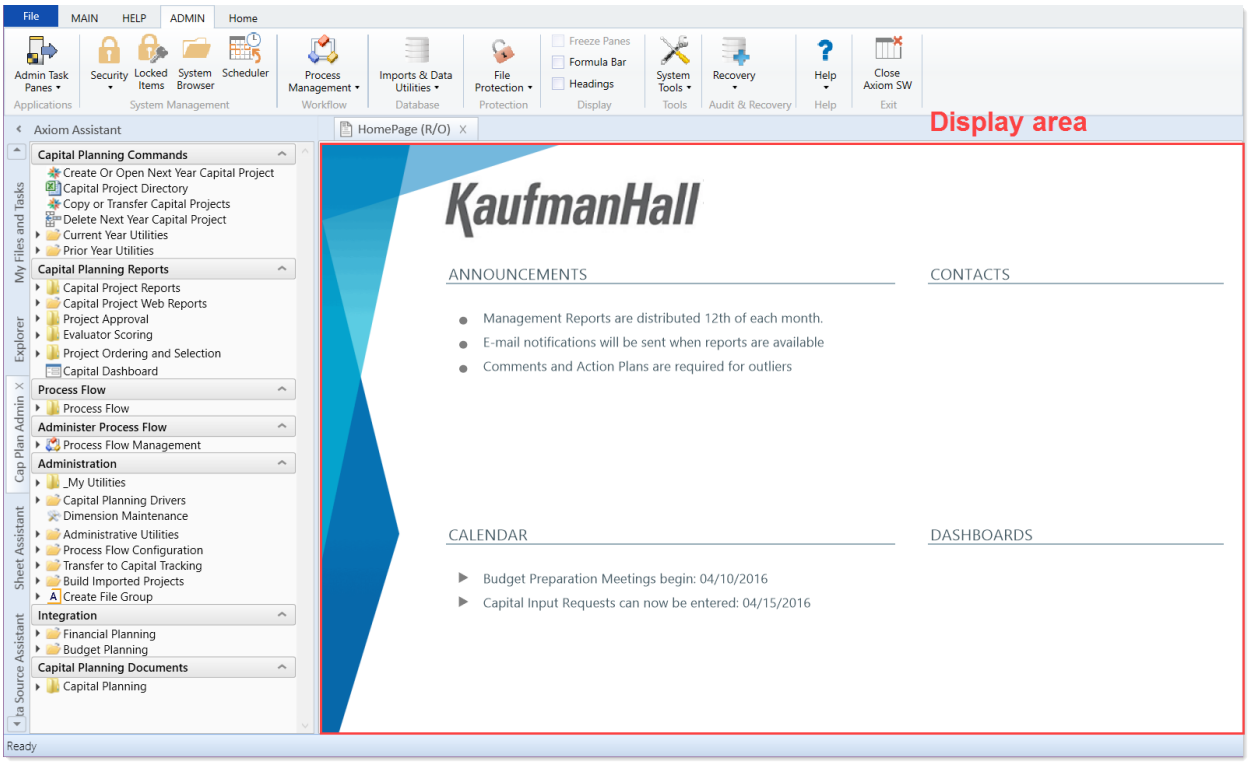
All Axiom Software products share a common interface and make use of many of the same features.

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 helpmanual 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:

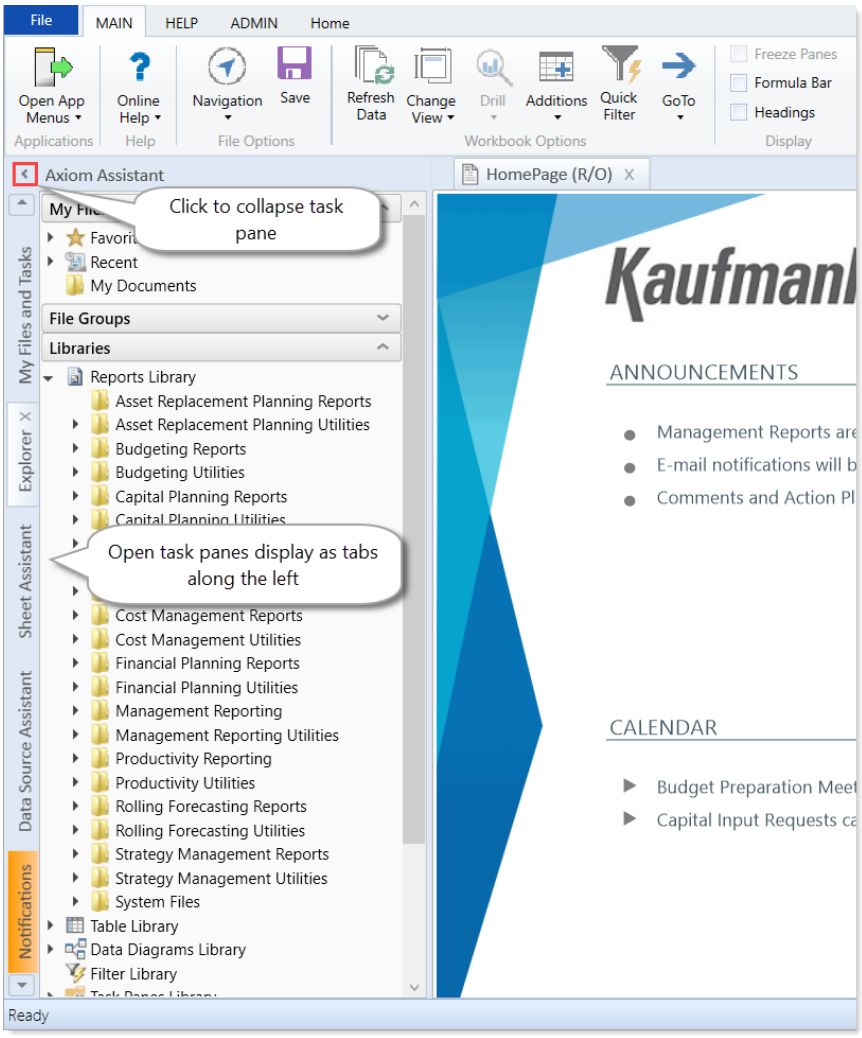
Display area

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



Task panes

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



Ribbon tabs

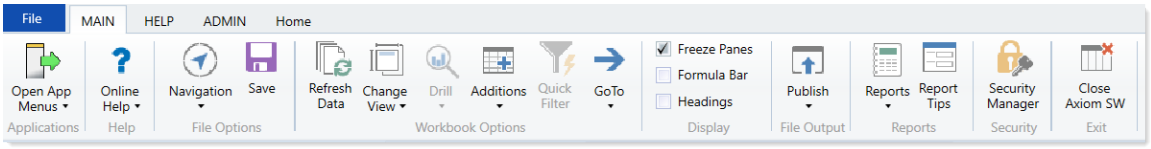
Ribbon tabs provide access to commonly used features and shortcuts to frequently accessed files. They display above the task pane and main display areas. The role assigned to you determines the ribbon tabs that display. For example, the Admin ribbon tab only displays to those users assigned the Administrator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

Main

Includes commands for accomplishing most tasks in Axiom:

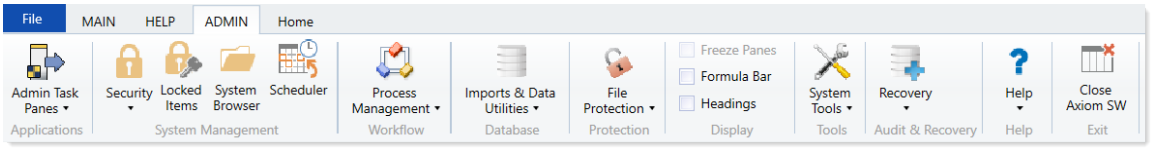
- Opening, closing, and saving files
- Accessing online help for products and advanced help
- Viewing data in spreadsheets
- Printing or emailing files

- Accessing shortcuts to frequently accessed reports



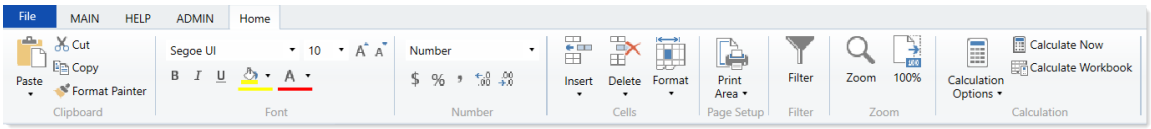
Admin

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.



Home

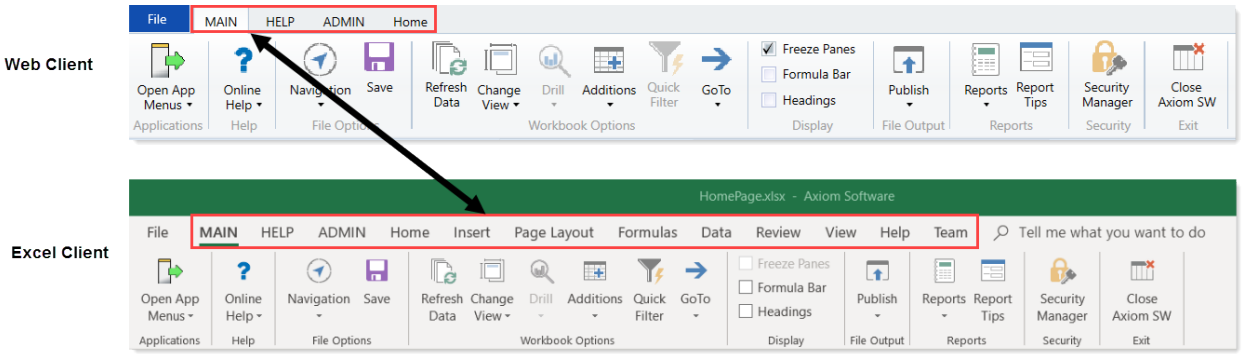
Includes standard spreadsheet commands.



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.

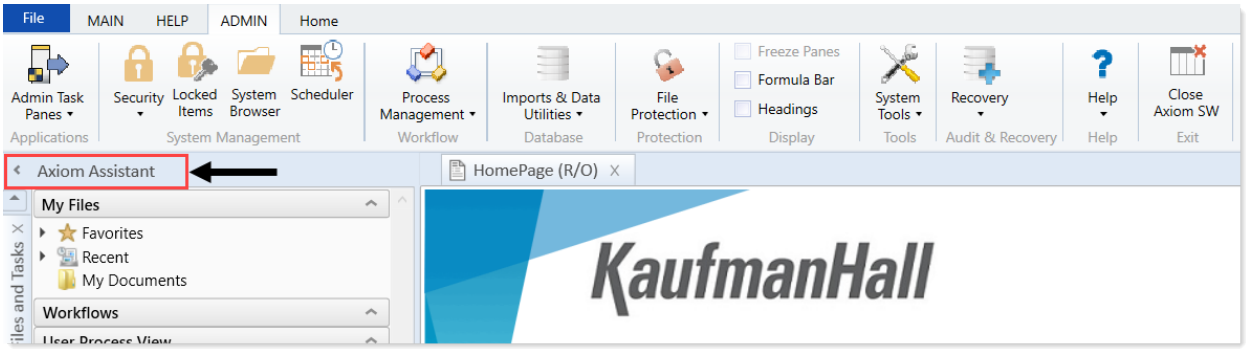
TIP: When creating reports, we recommend that you use the Excel Client.



Using the Axiom Assistant

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

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



Axiom Assistant task panes

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

Task pane	Description	Availability
My Files and Tasks	Bookmark and view favorites and recent files, utilities, and so on.	This task pane displays for all users. Use to bookmark favorite files as well as view recent files, utilities, reports, and so on that you have viewed. You can also view items in your My Documents folders.
Data Source Assistant	Helper tool to build data sources, such as Refresh Variables, DataLookup, and Grid.	This task pane is system-controlled and displays if you have the appropriate security permissions, and the file is an Axiom file.
Explorer	Open files and other items that you have access to, including favorites.	This task pane is included by default, but may be disabled in your system or restricted to only certain users.

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

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

Minimizing the Axiom Assistant

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

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

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

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

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

Opening task panes

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

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

Closing task panes

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

Using task panes in Excel 2013 or Excel 2016

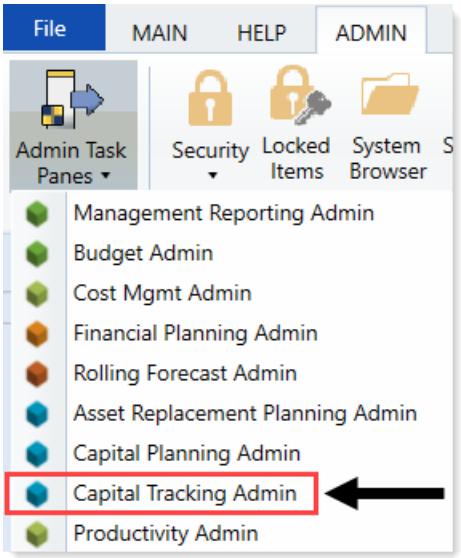
When using Axiom Capital Planning with Excel 2013 or 2016, each file opens within its own window, and each window maintains its own set of ribbon tabs and task panes. This means that, as you switch windows, the set of task panes available in each window may be different. For example:

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

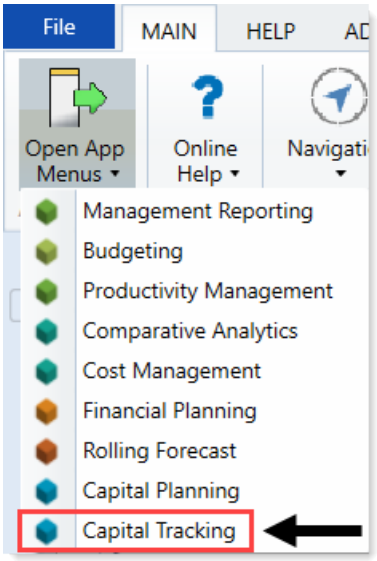
Opening the Axiom Capital Planning task panes

To open the Axiom Capital Tracking task panes:

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



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



Opening the Explorer task pane

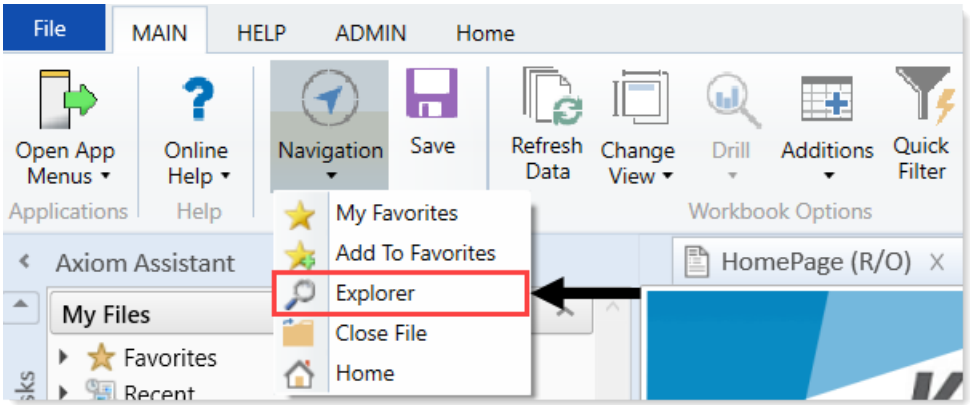
Axiom Capital Planning provides a built-in Explorer task pane so that you can quickly access your favorites, recent items, and all the files that you have rights to access.

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**.



Using the Workflow task pane

Axiom Capital Planning provides a built-in Workflow task pane that allows you to easily see and access your workflow tasks. By default, the task pane is configured to open automatically for any user who has current tasks in an active workflow. If desired, you can change the conditions that make the task pane visible, or disable it entirely.

Managing favorites

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

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

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

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

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

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

Saving favorites

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

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

Organizing favorites

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

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

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

Shortcut properties

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

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

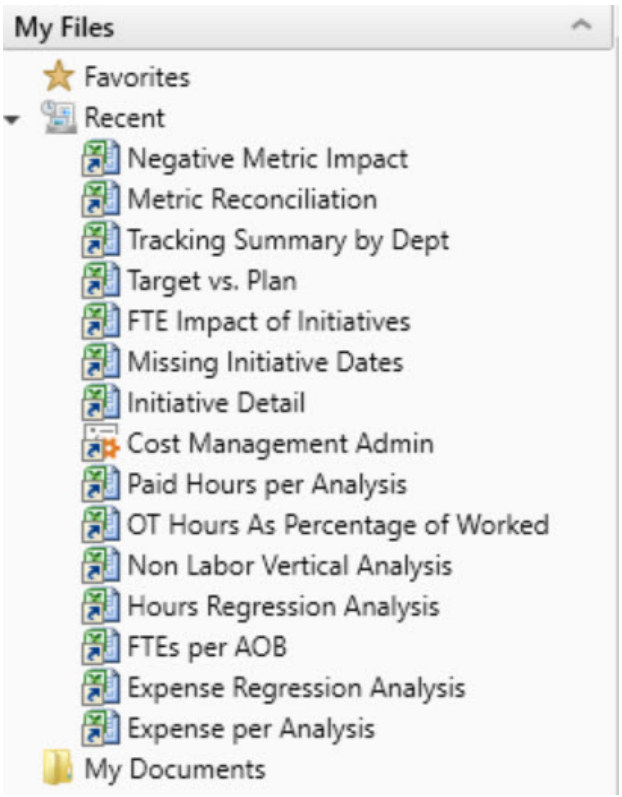
Deleting favorites

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

Opening recent files

Axiom Capital Planning maintains a list of your recently opened files in the **My Files and Tasks** task pane. You can use this list for quick access to recent files.

The recent file list is located in the **My Files** section. Double-click the files to open them, or right-click to access the context menu for the file type.



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

- To clear the list, right-click **Recent**, and select **Clear History**.
- 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 you can no longer open it from the recent file list.

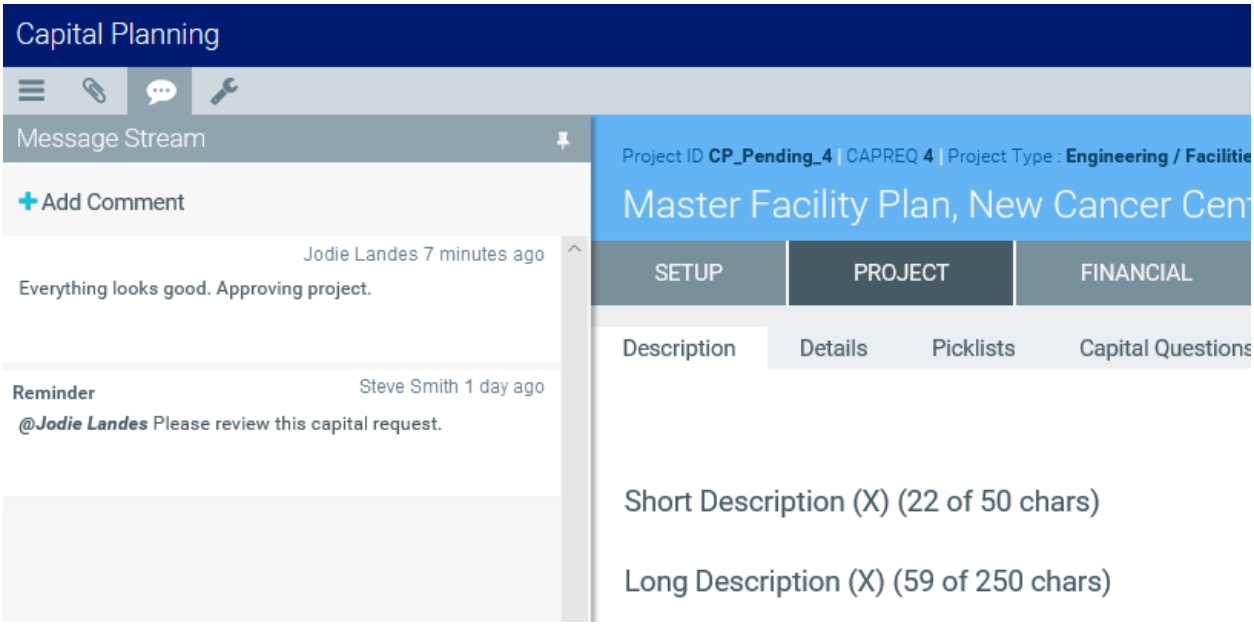
NOTE: In the Windows Client only, you can only access recent files from the **File** menu. In the Excel Client, although your recent files are tracked in **File > Recent**, those links point to the temporary versions of the file stored on your local drive, not the source versions of the files stored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

Commenting on form documents

When viewing an Axiom form, you can view comments that other users have made about the document and also make comments about the document. New comments are stored in the message stream for that document, so that all other users who access the document can see the comment. Additionally, you can "tag" other users in the comment, so that the tagged users are notified about the comment.

Viewing comments

To view the message stream for the current document, click the **Messages** icon (the speech bubble) in the gray task bar across the top of the form. The **Message Stream** panel opens, showing all comments that have been made about the document.



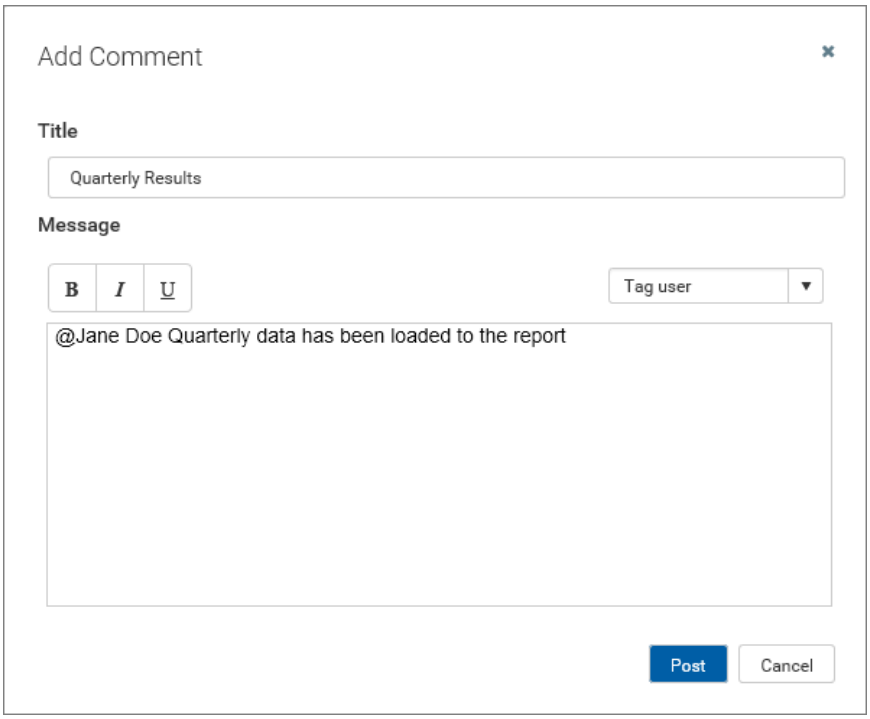
Comments display in the order they were created, with the most recent comment shown at the top of the panel. Each comment includes information on when the comment was made and the user who made it.

If the comment contains more content than can be displayed within the panel view, then click the > symbol to open a dialog with the full comment text.

The system stores comments for the life of the document, and cannot be deleted.

Adding a comment

To add a comment, click **Add Comment** at the top of the Message Stream panel. In the **Add Comment** dialog, you can enter an optional title for the comment, and then enter the comment text. Basic text formatting of bold, italic, and underline is available.



If desired, you can "tag" one or more users in the comment, so that those users are notified about the comment. Any user tagged in the comment will receive an email that contains the content of the comment and a link to the document. To tag a user, use the **Tag user** box to find a user and insert the tag. You can type into the box to find a specific user, or select a user from the drop-down list. When you click on a user name in the list, a tag will be inserted at the current cursor point in the comment text. The tag displays as `@FirstName LastName`.

When you click **Post**, the comment is saved to the message stream, and any tagged users will be notified.

NOTES:

- All users with access to the document can see comments posted to the message stream. Any comments made should be appropriate for the entire document audience. Do not post any sensitive information to the message stream.
- Adding a comment automatically subscribes you to the document's message stream, and tagging a user automatically subscribes that user to the document's message stream.

Ongoing notifications (subscriptions)

If you have made a comment in a document's message stream, or if you have been tagged in a comment, you are now subscribed to that document's message stream. Whenever a new comment is made to that document's message stream, you will receive a notification in the Notifications .

The notification details the user who made the comment and when it was made, the text of the comment, and a link to open the file.

Currently it is not possible to unsubscribe from a document's message stream once you have been subscribed.

Viewing alert notifications

When a new alert is added to the database as a result of an alert processing, a notification is delivered to all designated alert recipients using email and/or the Notifications task pane.

Email notification

If the alert notification is delivered using email, the subject of the email is "Axiom Capital Planning alert: <*Alert Title*>". The alert message displays within the body text. The email also contains a hyperlink to the supporting file if one is specified in the alert definition.

Notification task pane

Alert notifications display in the Notifications task pane in the order they are received, with the most recent alerts at the top.

By default, notifications are collapsed so that only the severity icon and the alert title display. You can expand the notification to read the alert message and to navigate to the supporting document for the alert, if defined.

If you receive a new alert notification during the current session or if unread alerts are present when you log in, the Notifications tab flashes orange and remains orange until the tab is clicked. New notifications display in bold text until they are read.

Using the right-click menu, you can mark notifications as read or unread and can delete notifications from the task pane. If you have rights to access the source file for an alert, you can also navigate to the alert definition in that file.

Notifications do not have an expiration date. A notification continues to display in your Notifications task pane until you delete it or until the notification record is purged from the database using the System Data Purge task in Scheduler.

NOTE: If you delete a notification, this simply removes the notification from the task pane. It does not delete the notification record from the database.

The Notifications task pane is system-controlled. You cannot manually open and close it, and it is not available for customization. The task pane behaves as follows:

- The task pane displays on startup if you have an active notification (read or unread). If the task pane contains unread notifications, the task pane is active, and the tab flashes. The task pane continues to display for the duration of the current session, even if you delete all active notifications from the task pane.
- The task pane does not display on startup if you have no active notifications. If you receive a new notification mid-session, the task pane automatically opens, becomes active, and the tab flashes.

Changing your Axiom Capital Planning password

If your authentication method is Axiom Prompt, you can change your password as needed. This feature does not apply if you use any other authentication method, such as Windows User Authentication, because those passwords are controlled externally from Axiom Capital Planning.

To change your Axiom Capital Planning password:

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

   NOTE: This command is only available to Axiom Prompt users.

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

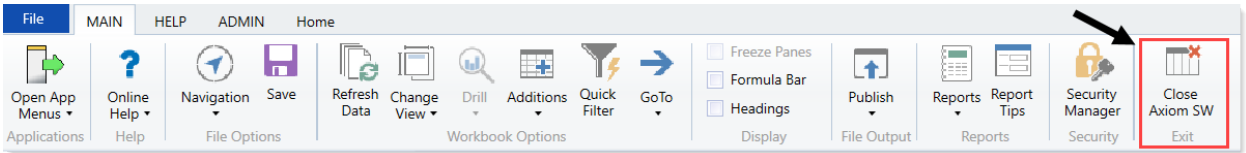
   If password rules are being enforced, your password must meet the rules. A validation message informs you of the rules, if necessary. Alternatively, you can click **Generate Password** to auto-generate a password that meets the rules. If you do this, make sure to note the generated password because you 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 need to use this new password the next time you log in.

Exiting Axiom Capital Planning

To exit Axiom Capital Planning, in the **Main** ribbon tab, click the **Close Axiom Software** button in the **Exit** group.



You can also simply close the application by clicking the **X** button in the top right corner of the window. Axiom Capital Planning prompts you to save any changes to unsaved files.

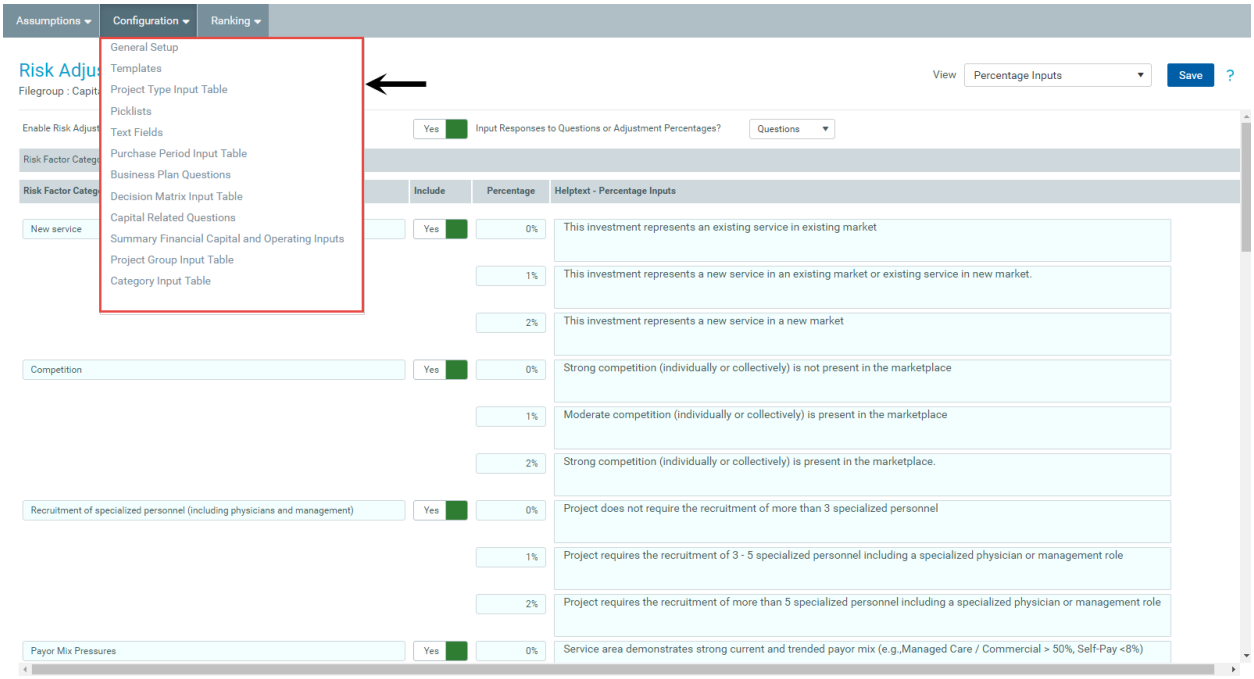
3

Configuring Assumptions and Drivers

In Axiom Capital Planning, each year's capital budget contains a set of associated driver files with configuration settings and assumptions referenced by all of the other files associated with that year's budget. Along with their other functions, driver files allow you, as the administrator, to decide which sections to include or exclude from plan files and enter many of the values that display as pre-populated in plan files and reports.

The configuration settings in the driver files can affect the structure of plan files and reports by allowing you to show/hide sections of sheets, columns, and/or rows. Assumptions are used in calculations throughout the entire capital planning process. Examples of assumptions include useful life, volume growth rates, and inflation rates.

You access and update Axiom Capital Planning drivers using the Capital Planning Drivers utility. The drivers are grouped into three main driver file types: Assumptions, Configuration, and Ranking. These driver file types display at the top of the utility as tabs. To update the driver in a particular file, click the tab drop-down, and select the driver to update.

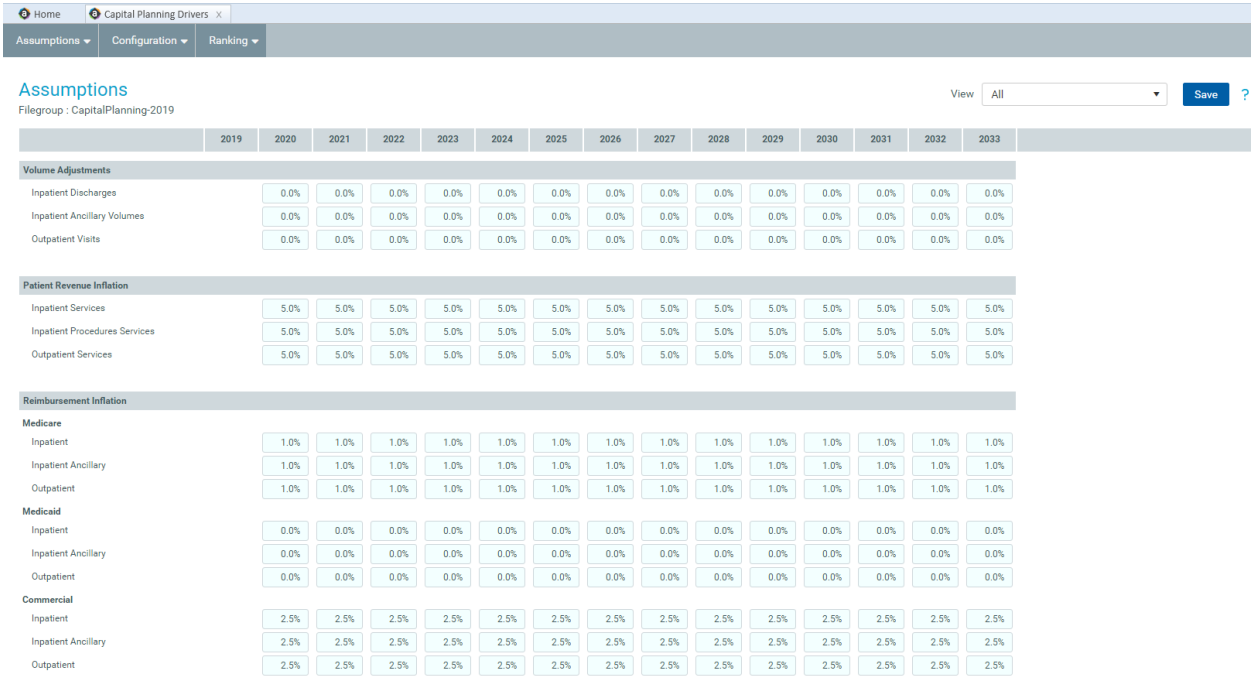


The following table describes each driver file and the drivers associated with it:

Driver File	Description	Drivers
Assumptions	Used primarily for Threshold projects and the calculation of Capital Constraints for your organization, be it Threshold or Non-Threshold.	• Useful Life • Assumptions • Pro Forma defaults • Risk Adjusted Discount Rate
Configuration	Used to configure the look, feel, and design of what Axiom Capital Planning displays to a user as they interact with the input of capital projects.	• General Setup • Templates • Project Type Input Table • Picklists • Text Fields • Purchase Input Period Table • Business Plan Questions • Decision Matrix Input Table • Capital Related Questions • Summary Financial Capital and Operating Inputs • Project Group Input Table • Category Input Table
Ranking	Used to set up the Capital Committee scoring sessions for your organization. Kaufman Hall can help facilitate these sessions, if needed.	• Capital Committee • Voting Criteria Input Table
Constraints	Used to calculate dollars available for capital projects and allocate the capital constraint to different entities, VPs, or other areas of responsibility.	CP Constraints

NOTE: Driver files may reference dimension tables shared with other applications. Check with other application administrators before changing any of these shared dimension tables.

IMPORTANT: Whenever you create a new capital budget, review the assumptions and settings in the driver files to make sure they still apply to the current year. We recommend that you make driver changes between and not during plan cycles.



Cells in driver files are color-coded as follows:

- White – Cells that you cannot modify.
- Blue – Cells where you can input or modify data.

A Yes/No toggle also displays for some options that you can enable or disable.

NOTE: Depending on a user's security profile settings, certain parts of a driver file may be protected.

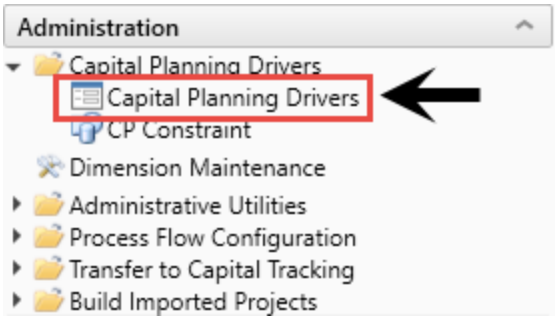
IMPORTANT: Any change to the configuration settings and assumptions in driver files can affect the structure and contents of any number of related plan files.

Navigating to Capital Planning drivers

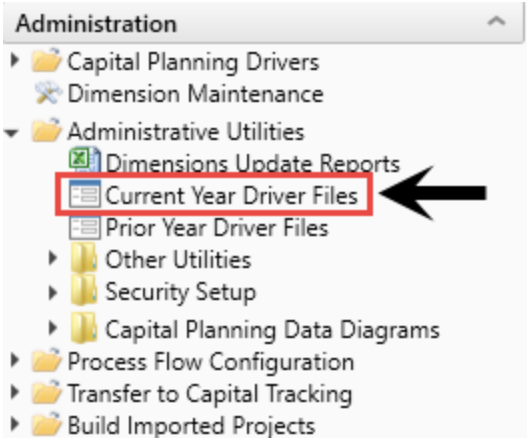
You can configure the previous, current, and next year's drivers, but each are located in different places within the Cap Plan Admin task pane.

In the **Administration** section, do one of the following:

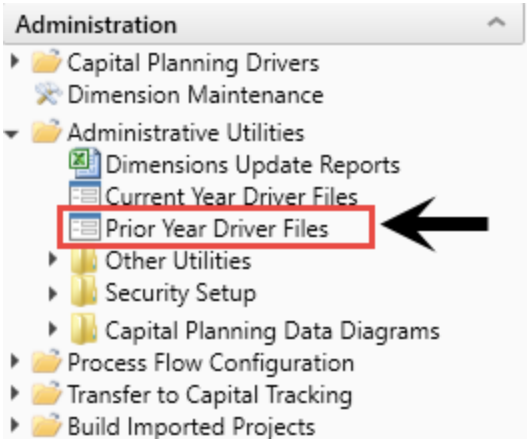
- To configure next year's drivers, click **Capital Planning Drivers**, and double-click **Capital Planning Drivers**.



- To configure this year's drivers, click **Administrative Utilities**, and then double-click **Current Year Driver Files**.



- To configure the prior year's drivers, click **Administrative Utilities**, and then double-click **Prior Year Driver Files**.



TIP: You can also access this utility directly from the Axiom Capital Planning web home screen.

Configuring capital project assumptions

The Assumptions driver file contains general statistics used in calculations, such as projected percent increases in salaries and wages, the average useful life of capital items by category and the allocation of the overall capital constraint for the budget.

The Assumptions driver file includes the following driver types:

- **Useful Life** – Allows you to configure the average useful life for various types of capital items as well as to help calculate depreciation. You can add additional line items by using the Dimensions Update Report to activate the following codes: CAPACCT, CODE, PAYOR, SUITEVARIABLES, VENDOR. For more information, see Configuring Useful Life .
- **Assumptions** - Allows you to set global inflation for pro forma as well as set metrics for balance sheet calculations. For more information, see Configuring assumptions.

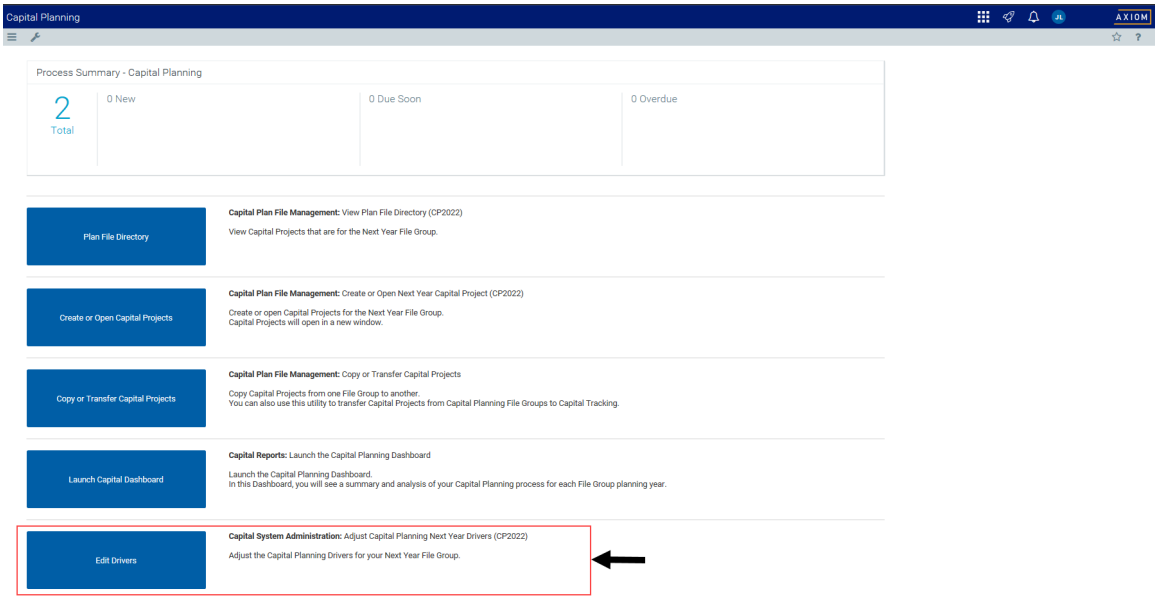
Configuring Useful Life

The Useful Life driver lists the average useful life for various types of capital and are primarily used to calculate depreciation. You can create up to 20 different capital types in the Dimensions Update Report on the CODE tab.

To configure Useful Life:

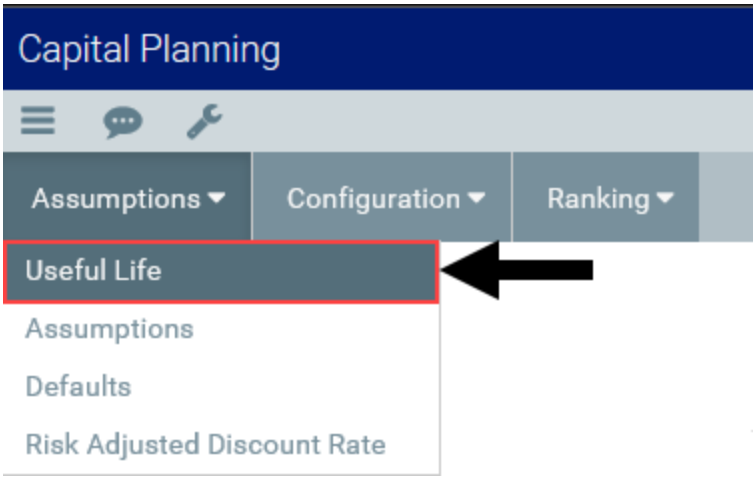
1. From the Axiom Capital Planning home page, click **Edit Drivers**.

NOTE: To access this location from the Cap Planning Admin task pane, in the **Administration** section, click **Capital Planning Drivers**, and double-click **Capital Planning Drivers**.



Click image to view full size

2. From the **Assumptions**tab, click **Useful Life**.

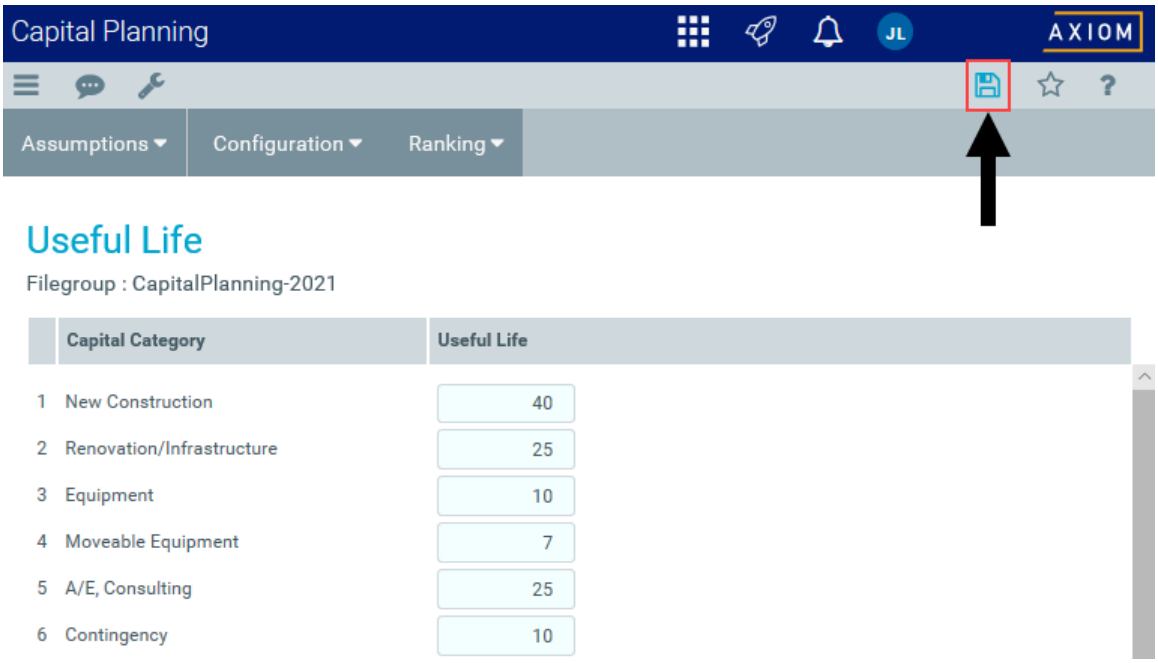


Click image to view full size

3. In the **Useful Life** column, type the useful life for each type of capital item.

Click image to view full size

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



Click image to view full size

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

If you are making changes to this driver, make sure to process the plan files to propagate your changes.

Configuring assumptions

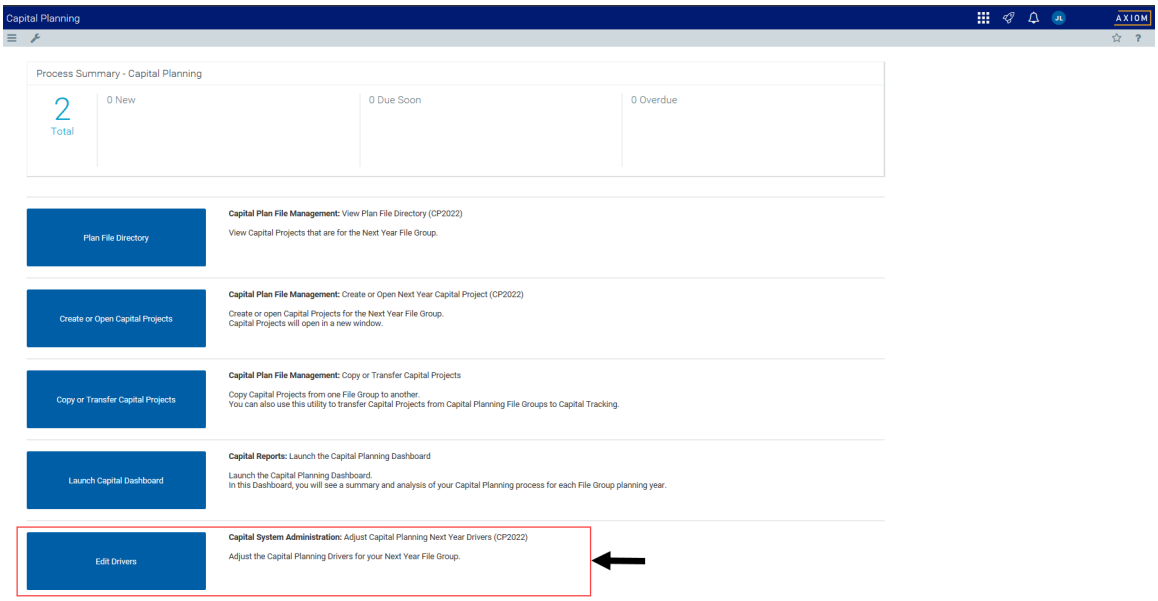
The Assumptions driver lists the projected adjustments for volume, revenues, various types of expense inflation, and interest earnings, as well as the number of days in net accounts receivable, supply inventory, prepaid expense, and so on per the balance sheet.

NOTE: These assumptions are used for Pro Forma templates and sets the growth and inflation factors used during the capital-planning year.

To configure assumptions:

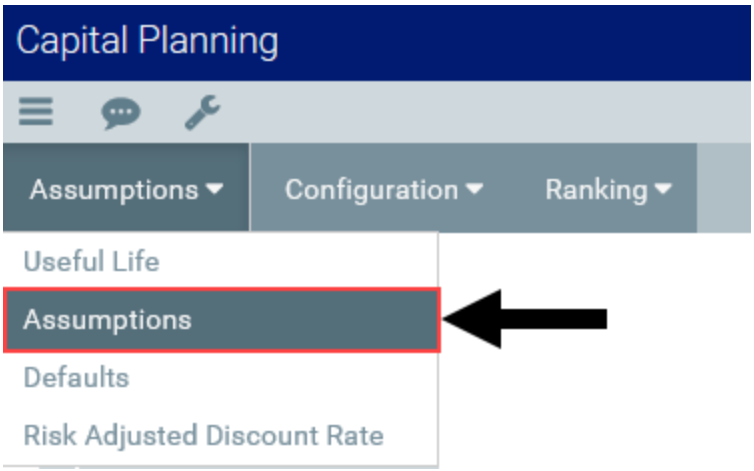
1. From the Axiom Capital Planning home page, click **Edit Drivers**.

   NOTE: To access this location from the Cap Planning Admin task pane, in the **Administration** section, click **Capital Planning Drivers**, and double-click **Capital Planning Drivers**.



Click image to view full size

2. From the **Assumptions**tab, click **Assumptions**.



Click image to view full size

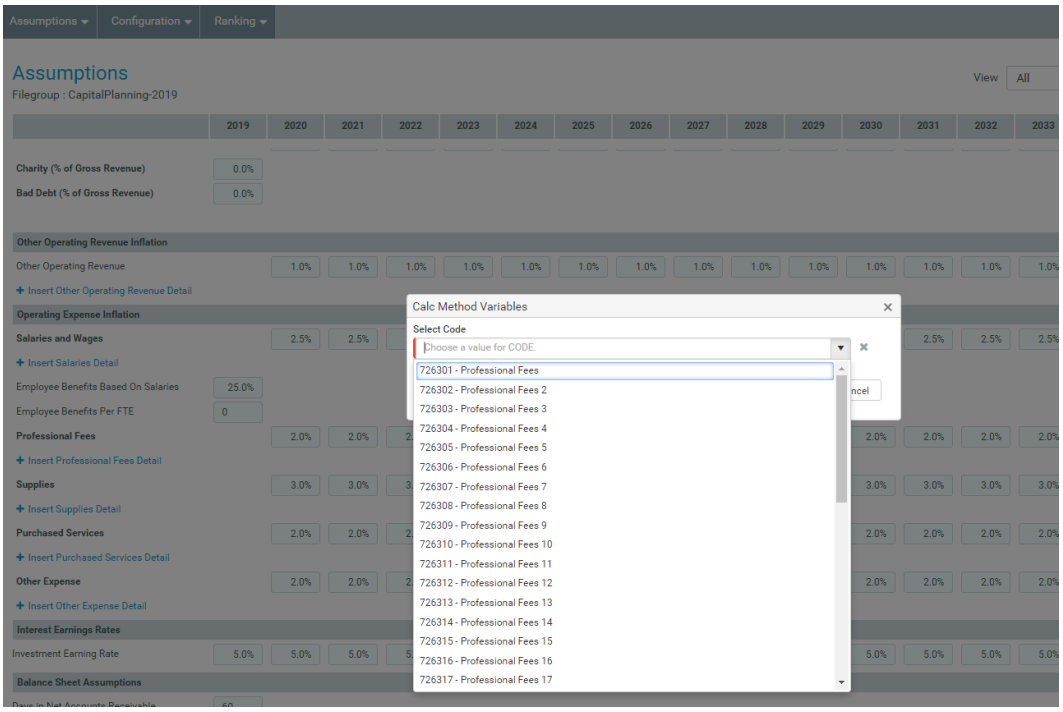
3. Complete the following sections, as needed:

Section	Description
Volume Adjustments	The projected percentage of volume adjustments for each year
Patient Revenue Inflation	The projected percentage adjustments for inpatient and outpatient services for each year

Section	Description
Reimbursement Inflation	The projected percentage adjustments for Medicare, Medicaid, and other reimbursement types as well as the percentage of reimbursement counted towards charity and bad debt for each year
Other Operating Revenue Inflation	The projected percentage adjustment of inflation for other operating revenue for each year
Operating Expense Inflation	The projected percentage for operating expenses for each year, such as: • Labor (salaries, wages, benefits, and professional fees) ◦ Benefits may be calculated as a percentage of salaries or a flat rate per FTE • Professional fees • Supplies • Purchased services • A catch-all Other Expenses category
Interest Earnings Rates	The projected percentage for the investment-earning rate for each year
Balance Sheet Assumptions	The number of days for the following: • Net accounts receivable • Supply inventory • Prepaid expense • Accounts payable • Accrued payroll

4. To add a line, do the following:
   a. Navigate to the section to add the line to.
   b. Click **+ add *[section name]* detail lines here**.

c. In the **Calc Method Variables** dialog, from the **Select Code** drop-down, select the variable to add, and click **Apply**.



5. After making your changes, in the upper right corner of the page, click the disk icon to save your changes.
6. At the confirmation prompt, click **OK**.

If you are making changes to this driver, make sure to process the plan files to propagate your changes.

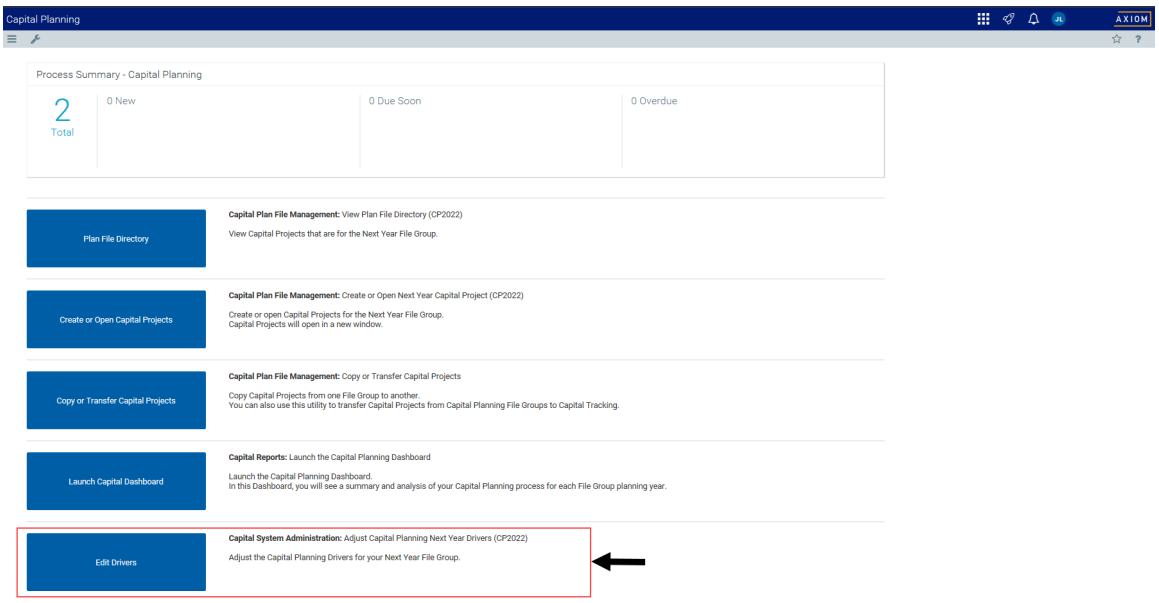
Configuring Pro Forma template default inputs

The Defaults driver page allows you to select which default sections and inputs to include in your organization's Pro Forma templates.

To configure Pro Forma template default inputs:

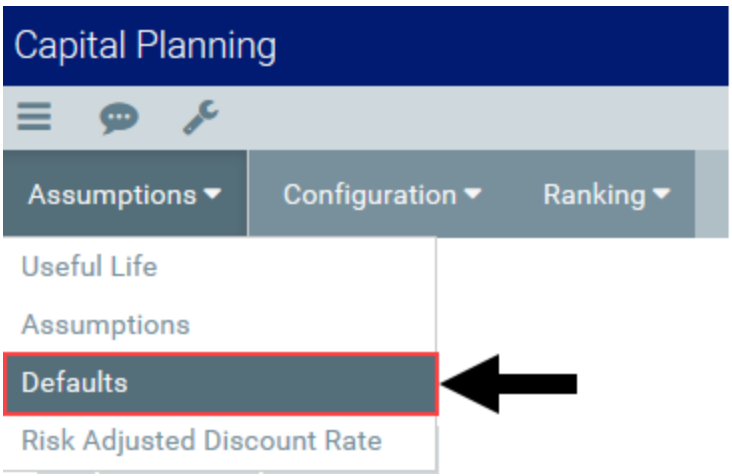
1. From the Axiom Capital Planning home page, click **Edit Drivers**.

   NOTE: To access this location from the Cap Planning Admin task pane, in the **Administration** section, click **Capital Planning Drivers**, and double-click **Capital Planning Drivers**.



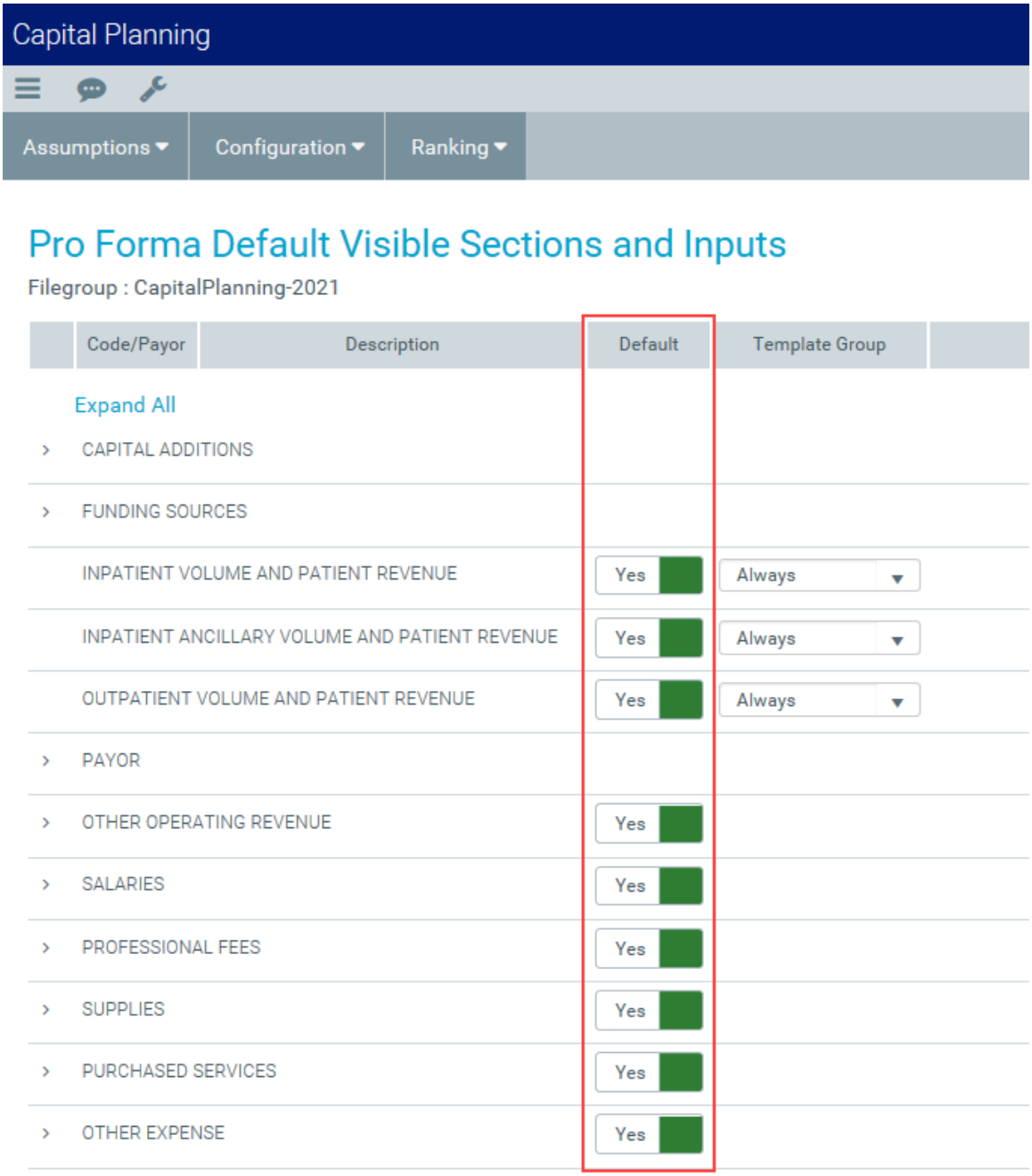
Click image to view full size

2. From the **Assumptions** tab, click **Defaults**.



Click image to view full size

3. In the **Default** column, do the following:
    - To include the input/section in the Pro Forma template, click the toggle to **Yes**.
    - To exclude the input/section, click the toggle to **No**.



Click image to view full size

4. In the **Template Group** column, select the template group in which to assign the input, which you can then add to a custom template.

   NOTE: The list of template groups is created from the Templates driver. For more information on how template groups work, see Creating or modifying a template group.

5. After making your changes, in the upper right corner of the page, click the disk icon to save your changes.

Configuring the Risk Adjusted Discount Rate

The Risk Adjusted Discount Rate driver allows your organization to risk adjust your templates one of two ways:

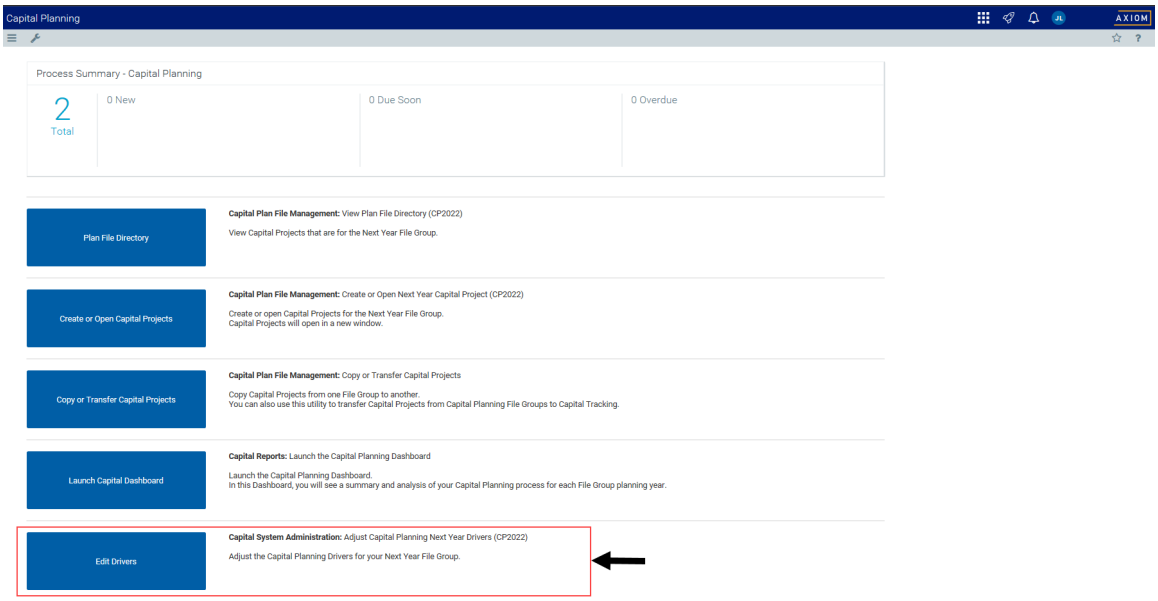
- **Percentage inputs** – Additional percentages are input into the template.
- **Response questions** – Calculate Risk Adjustment based on the number of risk factors present.

The Risk Adjustment adds to the base values in the General Setup page.

To configure Risk Adjusted Discount Rate:

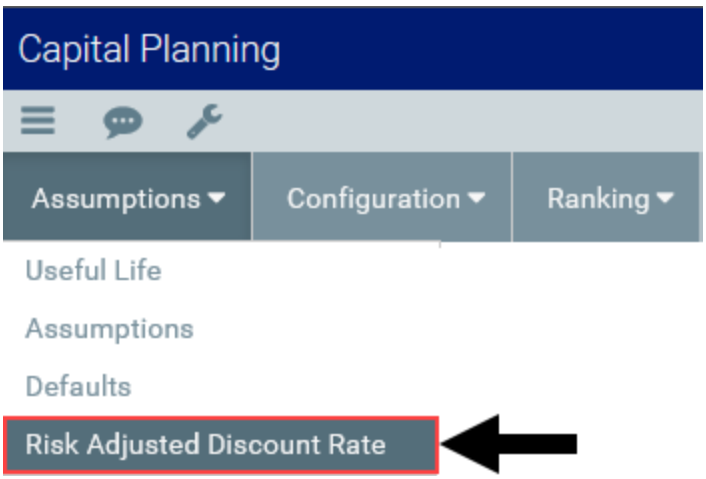
1. From the Axiom Capital Planning home page, click **Edit Drivers**.

   NOTE: To access this location from the Cap Planning Admin task pane, in the **Administration** section, click **Capital Planning Drivers**, and double-click **Capital Planning Drivers**.



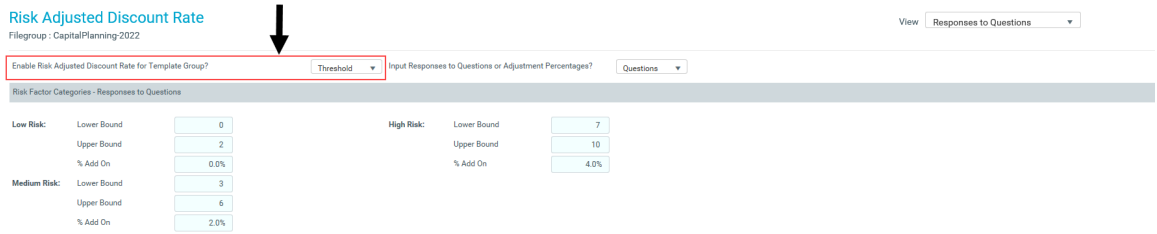
Click image to view full size

2. From the **Assumptions** tab, click **Risk Adjusted Discount Rate**.



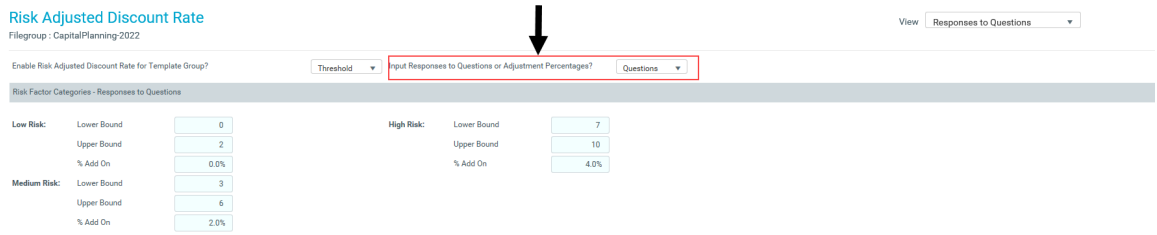
Click image to view full size

3. From the **Enable Risk Adjusted Discount Rate for Template Group?** drop-down, select the template group in which to enable the Risk Adjusted Discount Rate questions.



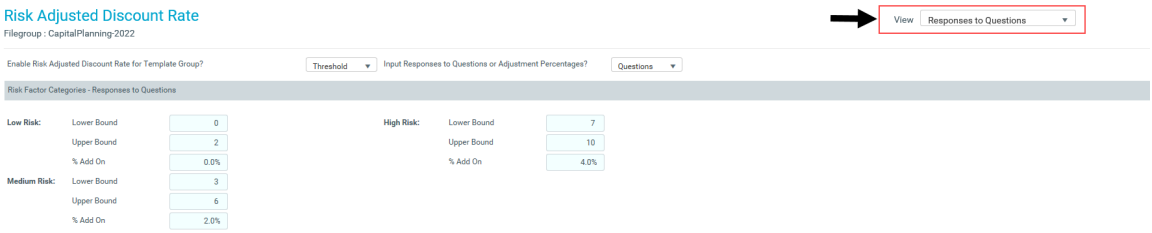
Click image to view full size

4. To select how to risk adjust your templates, in the **Input Responses to Questions or Adjustment Percentages drop-down**, select **Questions** or **Percentages**.



Click image to view full size

5. In the **View** drop-down, select the corresponding view that matches the selection in you made in Step 4.



Click image to view full size

6. Complete the fields for the view you selected in Step 5:

Percentage Inputs

Each risk factor allows you to configure three scenarios: best case, worst case, and most likely case. The more risk involved, the higher the risk score. For example, if the project is a new service, you may configure the following:

- Best case – 0% meaning the new service is likely not impact profit.
- Most likely case – 1% meaning it will impact profit but not at a devastating level.
- Worst case – 2% meaning the organization struggles with the learning curve, thus affecting profit.

In this example, the project will need to show profit that is 4% better than other projects with 0% risk.

Column	Description
Risk Factor Categories - Percentage Inputs	Type the name for the desired risk factor category for the percentage input.
Include	Click the button to include (**Yes**) or exclude (**No**) the risk factor category input.
Percentage	Enter the default increment of risk to apply to each level of impact for this factor.
Helptext - Percentage Inputs	Type verbiage to help provide guidance on how to assign the percentage and to define this level of impact for this factor.

Responses to Questions

This option uses the same risk factor and help text as the Percentage option, but instead of suggesting a percentage to assign to the best case, most likely case, and worst case, the user only needs to indicate that the factor is or is not present. Based on the number of Yes answers, the system automatically assigns a category of risk (low, medium, high), and therefore a percentage.

Column	Description
Lower Bound	Type the minimum number of questions the user must answer Yes to in order to meet this level of risk.
Upper Bound	Type the maximum number of questions the user must answer Yes to in order to meet this level of risk.
% Add On	Type the cumulative percentage of incremental risk to be added for this level of risk.
Risk Factor Categories - Responses to Questions	Type the risk factor category for the question.
Include	Click the toggle button to **Yes** to include or click to **No** to exclude the risk factor category question.
Required for Save	Click the toggle button to **Yes** to require users to answer the questions before saving the project or click to **No** to allow users to save without answering the questions.
Helptext - Responses to Questions	Type the question for the user to answer.

7. After making your changes, in the upper right corner of the page, click the disk icon.
8. At the confirmation prompt, click **OK**.

If you are making changes to this driver, make sure to process the plan files to propagate your changes.

Managing the Configuration driver

Configuring general setup options

The General Setup driver controls various system-wide settings that apply to Threshold and Non-Threshold templates.

To configure general setup options:

1. From the **Configuration** tab, click **General Setup**.
2. Complete the fields in the following areas, as needed:

System-Wide Parameters

Option	Description
Discount Rate for NPV	Type the hurdle rate used to calculate Net Present Value.
Sales Tax Rate	Type the sales tax rate to use when purchasing capital items.
Capital Expenditure Cash Flows	If your organization pays sales tax, select an option to control the discounting methodology for the capital expenditure cash flows in the NPV calculation.
Use Leap Year Calculations?	Click the toggle to use (**Yes**) or not use (**No**) leap year calculations.
Default GL Account	Select the default General Ledger account.
Change Useful Life?	Click the toggle to allow (**Yes**) or not allow (**No**) users to change the Useful Life field.

Summary and Pro Forma Financial Setup

Option	Description
Depreciation Default - Pro Forma Fin Inputs	Select the default depreciation to use in the pro forma template.
Depreciation Default - Summary Fin Inputs	Select the default depreciation to use in the Summary template.
Enable Funding Sources - Pro Forma Fin Inputs	Click the toggle to allow (**Yes**) or not allow (**No**) users to add additional funding sources beyond the default source of Routine Capital on the NonThreshold template.
Enable Funding Sources - Summary Fin Inputs	Click the toggle to allow (**Yes**) or not allow (**No**) users to add additional funding sources beyond the default sources of Routine Capital and Unrestricted Donations on the Threshold template.
Use BalSheet worksheet for Pro Forma?	Click the toggle to include (**Yes**) or not include (**No**) the BalSheet worksheet in the pro forma plan files.

Option	Description
Proforma Change Number of Years	Click the toggle to enable (**Yes**) or disable (**No**) users from changing the number of years in the pro forma plan files.
Proforma Default Number of Years	Select the default number of years to display in the pro forma plan files.

Project Analysis Thresholds

IMPORTANT: Make sure to reference the correct template in the following options.

Option	Description
Threshold Analysis-Capital	a. Type a capital dollar amount for determining which projects require pro forma templates. b. Type the error message to display if the user attempts to use a Summary template.
Threshold Analysis-Revenue	a. Type a revenue dollar amount for determining which projects require pro forma templates. b. Type the message to display if the user attempts to use a Summary template.
NonThreshold Analysis	a. Type a minimum capital dollar amount for projects to include in the capital budget. b. Type the error message to display if the user enters a project below the minimum.

Template Input Field Names

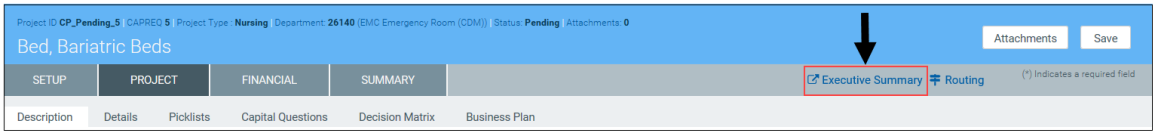
a. Type a name for the field type.

b. In the **Required for Save?** column, click the button to require (**Yes**) or not require (**No**) the user to save the information.

IMPORTANT: If the user does not enter this data, the workbook will save with errors. As a result, the project workbook cannot be activated in the process flow.

Summary Links

By default, users can access the Executive Summary report directly from the plan file. However, you can modify this link by designating another report - including any custom reports used by your organization - and changing the link name, if desired.



Click image to view full size

Option	Description
Enter Link Document Path	Enter the path and file name where the report resides in the system. For example, \Axiom\Reports Library\Capital Planning Reports\Project Reporting - Web\Executive Summary.xlsx
Enter Display for Link	Enter a friendly name for the link. The name used by default is Executive Summary. **TIP:** The name should be short so that it does not take up too much space in the user interface.
Form Enabled?	• To launch the report as web-enabled, click the toggle to **Yes**. • To launch the report as an Excel report, click the toggle to **No**.

Code to Account Conversion for Capital Tracking Transfer

To configure the codes, see Updating the CODE dimension.

a. In the **Account** column, select the general ledger account in Axiom Capital Tracking in which to map to the Axiom Capital Planning code.

b. In the **Exclude from NPV Selection** column, click the button to include (**Yes**) or exclude (**No**) the code from the Net Present Value (NPV) financial metric.

3. After making your changes, in the upper right corner of the page, click the disk icon to save your changes.

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

If you are making changes to this driver, make sure to process the plan files to propagate your changes.

Managing templates

From the Templates driver page, you can do the following:

- Add, edit, or delete Pro Forma or Summary templates.
- Assign template groups to designate the inputs to include in the template.

TIP: If you are unfamiliar with how capital projects templates work, we recommend that you first review Configuring capital project templates.

Adding or editing a template

There are two types of templates available:

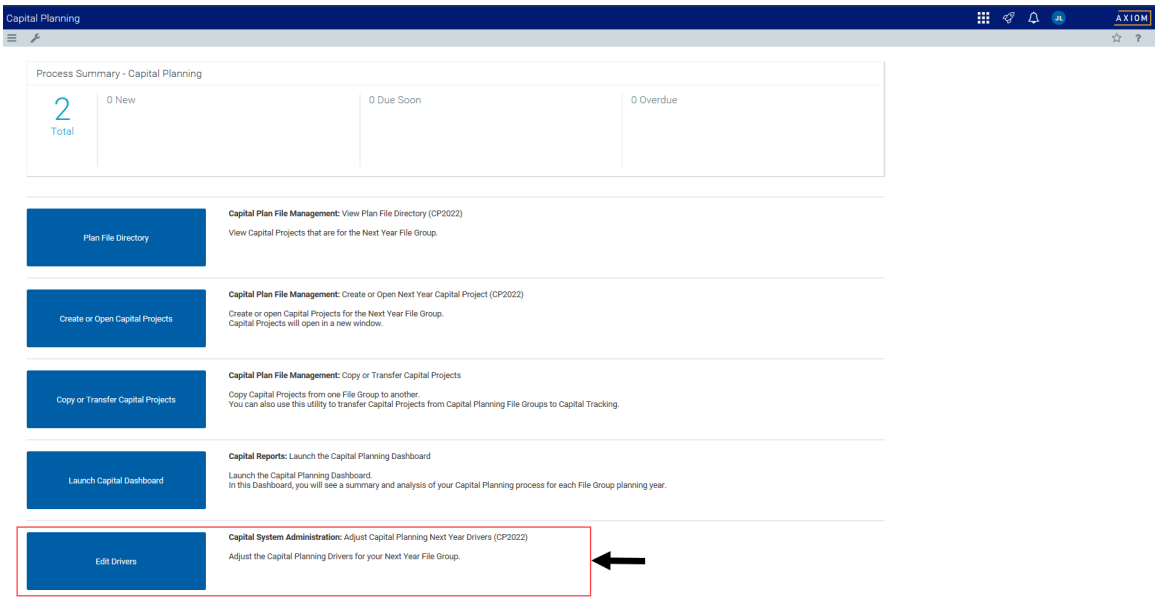
- **Summary (Non-Threshold)** – Use this for smaller, routine, or replacement capital items.
- **Pro Forma (Threshold)** – Use this for larger, strategic capital items.

NOTE: For more information on these template types, see Understanding Threshold and Non-Threshold projects

To create or modify a template:

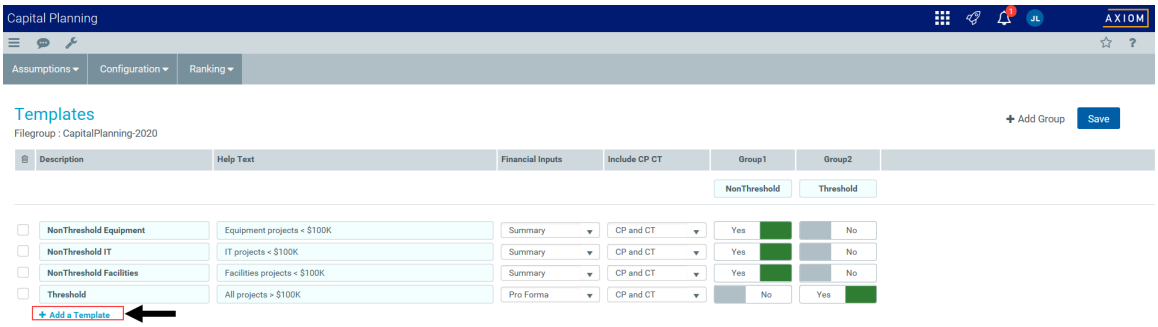
1. From the Axiom Capital Planning home page, click **Edit Drivers**.

   NOTE: To access this location from the Cap Planning Admin task pane, in the **Administration** section, click **Capital Planning Drivers**, and double-click **Capital Planning Drivers**.



Click image to view full size

2. From the **Configuration** tab, click **Templates**.
3. To create a new template, click **+Add a Template**.



Click image to view full size

4. Complete the following fields:

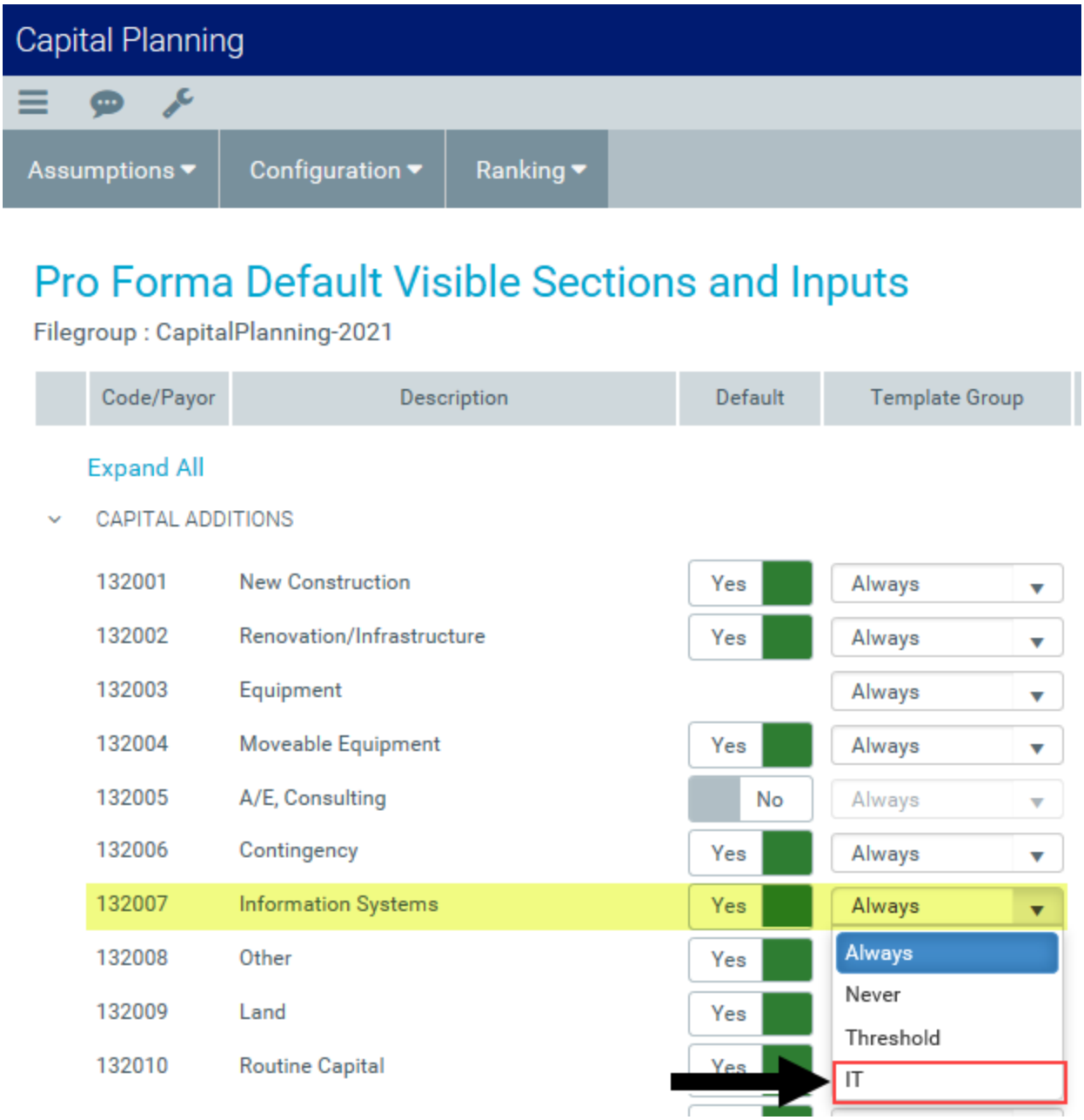
Option	Description
Description	Type a name for the template.
Help Text	Type a description of the template.
Financial Inputs	Select the template to use: Threshold (Pro Forma) or Non-Threshold (Summary)
Include CP CT	Select where to make the template available: • CP and CT • CP Only • CT Only • Never **TIP:** The Never option allows you to hide the template from end users so it will not display in the list of available templates. This is a useful feature that allows you to work on a template without making it available to your organization until you are ready to start using it.
Group1 - Group20	See Create or modify a template group.

5. After making your changes, in the upper right corner of the page, click the disk icon to save your changes.
6. To configure the inputs and sections to display in the templates, do the following:
   - **Pro Forma** - See Configuring Pro Forma template default inputs.
   - **Summary** - See Configuring summary financial capital and operating default inputs

Create or modify a template group

Template groups allow you to select different sections and inputs, and group them together so that you can easily include them into any of your custom Pro Forma or Summary templates. You can add up to 20 predefined template groups in the Group Name row, and then select to include (**Yes**) or exclude (**No**) each template group from the templates.

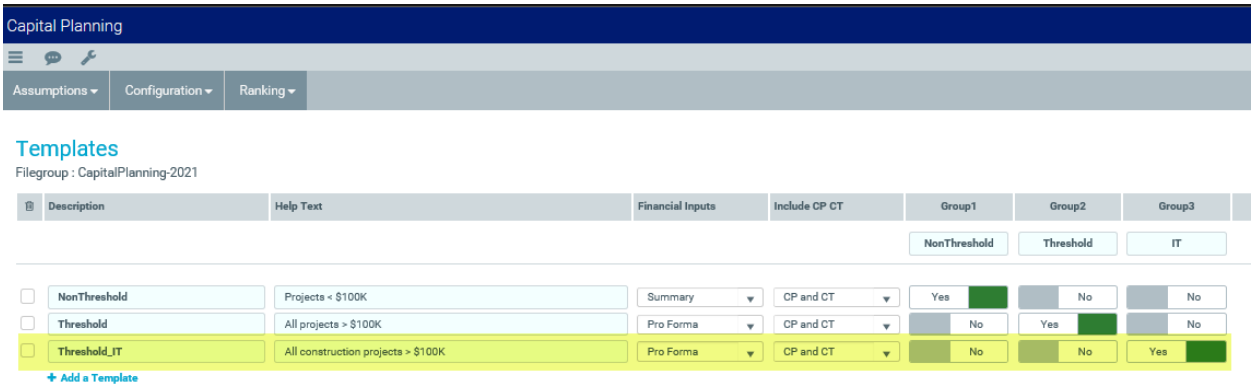
For example, let's say you want to create a Pro Forma template specific to IT, and you only want to include capital additions items related to those types of projects. You can create a template group named IT, and then from the Pro Forma defaults driver page, select the sections or inputs to include.



Click image to view full size

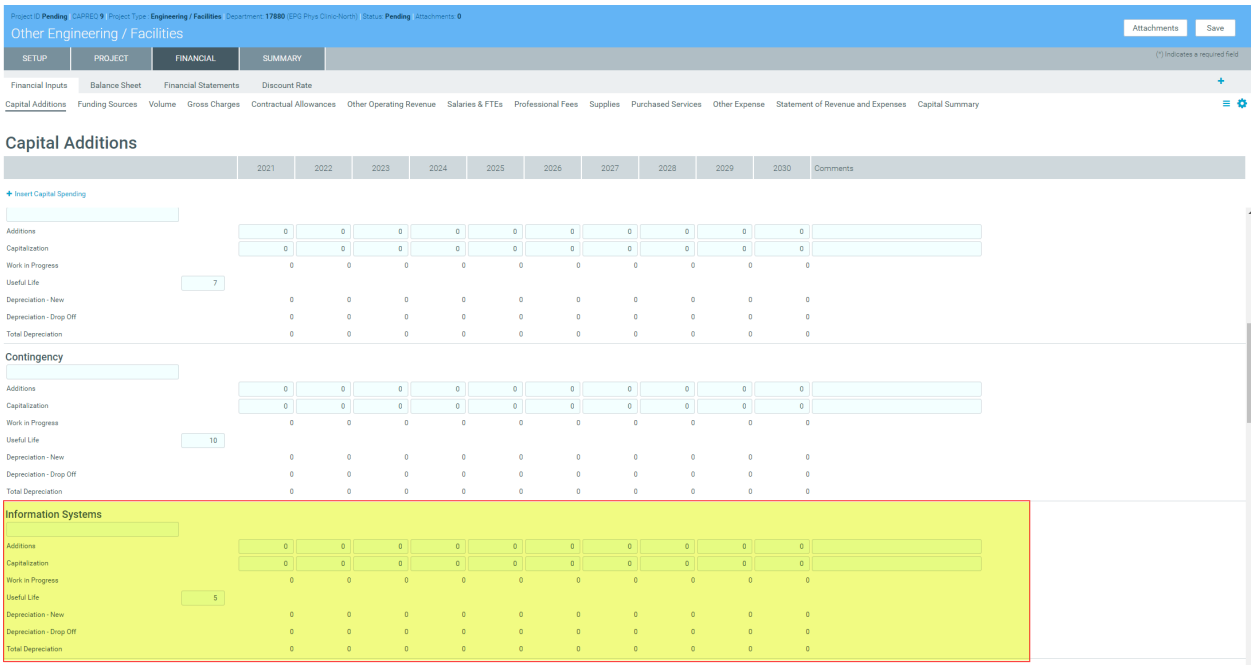
For Summary templates, after you create a templates group, you select the inputs from the Summary Financial Capital and Operating Inputs driver page.

You can then apply that template group to specific templates. In the following example, the IT template group is applied to the Threshold_IT project template.



Click image to view full size

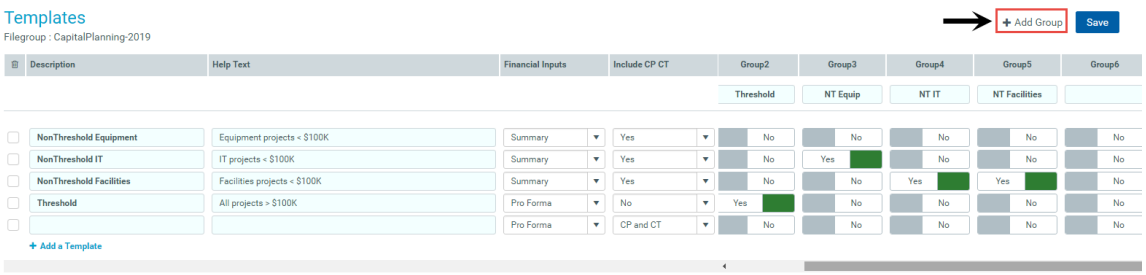
Now, when a user opens the Threshold_IT project template, the Information System inputs will be included. These inputs will not be included in the Threshold project template.



Click image to view full size

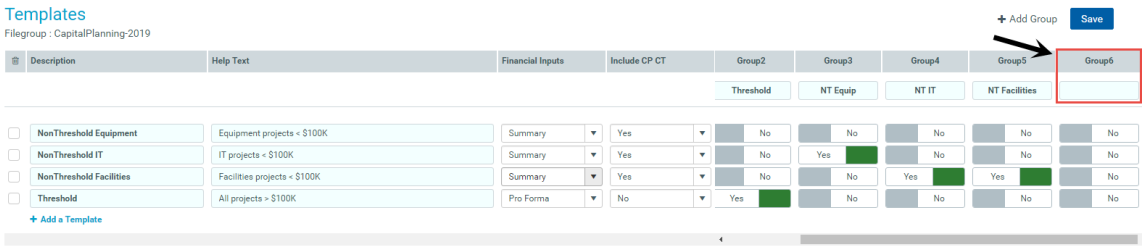
To create or modify a template group:

1. In the upper right corner of the Templates page, click **+Add Group**.



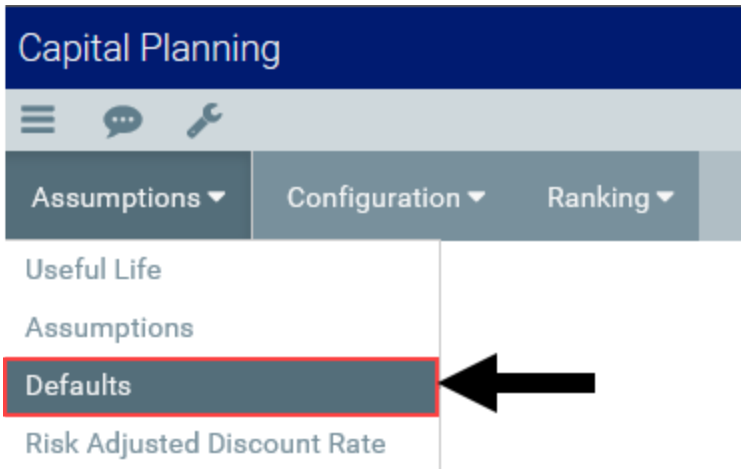
Click image to view full size

2. In the field under the group number, type a name for the template group.



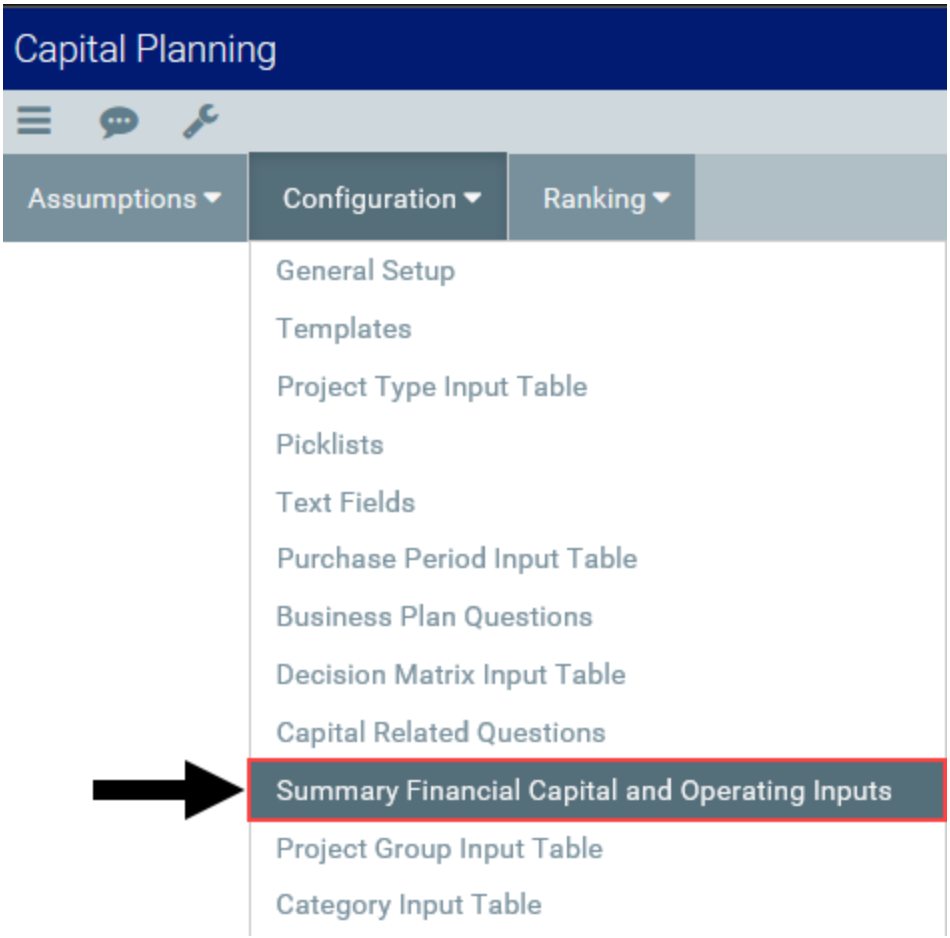
Click image to view full size

3. For each template, select whether to include (**Yes**) or exclude (**No**) the template group.
4. After making your changes, in the upper right corner of the page, click the disk icon to save your changes.
5. At the confirmation prompt, click **OK**.
6. Assign the sections and/or inputs to include in the template group by doing the following:
    - **Pro Forma** - Navigate to **Assumptions > Defaults**.



Click image to view full size

- **Summary** - Navigate to **Configuration > Summary Financial Capital and Operating Inputs**.



Click image to view full size

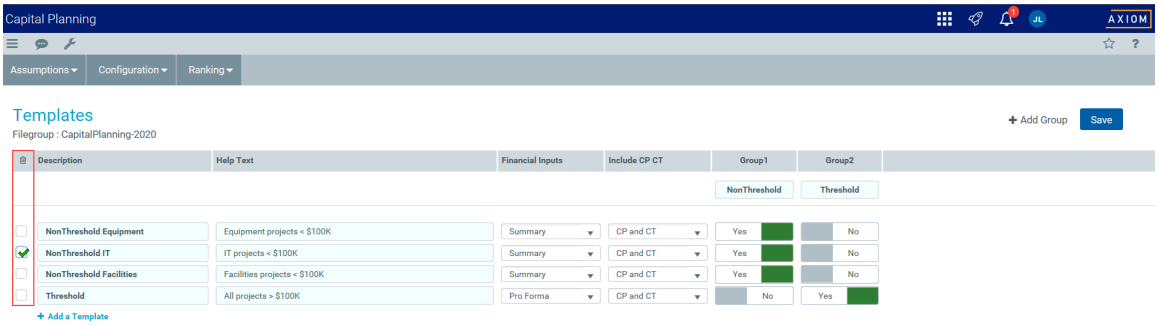
7. Do one of the following:
   - **Pro Forma** - Select the template group from the **Template Group** column.
   - **Summary** - Select the template group from the **Enable for Template Group** column.
8. After making your changes, in the upper right corner of the page, click the disk icon to save your changes.
9. Process the plan files to propagate your changes

Deleting a template

IMPORTANT: Do not delete templates that are being used by plan files. You need to update the plan files in the CPREQ table prior to deleting the template.

To delete a template:

1. In the first column of the table, click the check box in the trash bin column to delete.



Click image to view full size

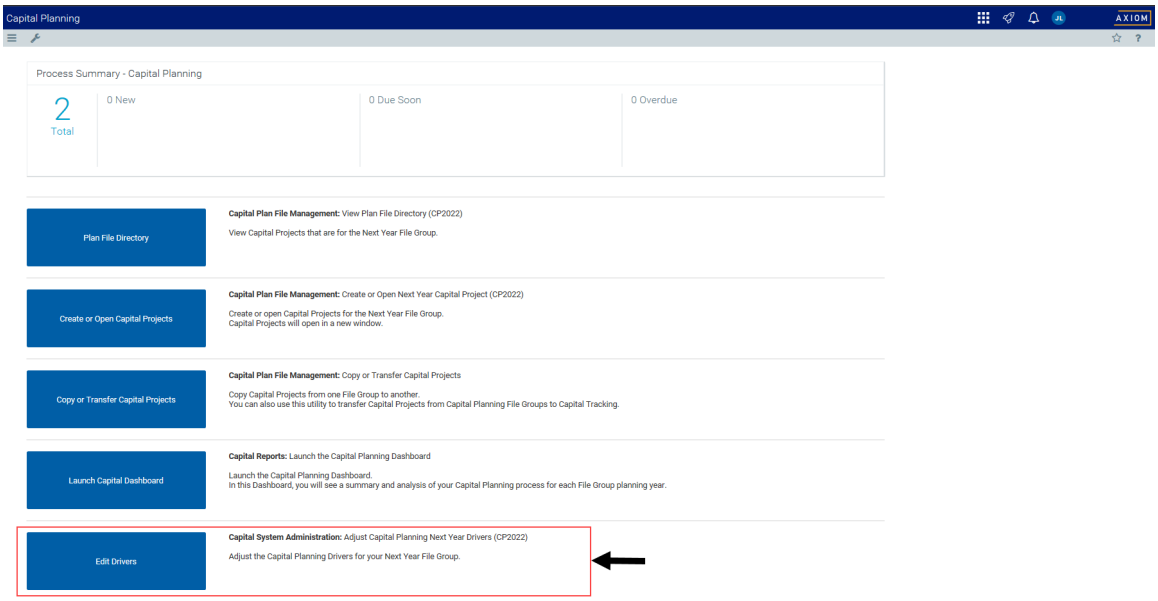
2. After making your changes, in the upper right corner of the page, click the disk icon to save your changes.
3. Process the plan files to propagate your changes

Adding or editing project types

To add or edit a project type:

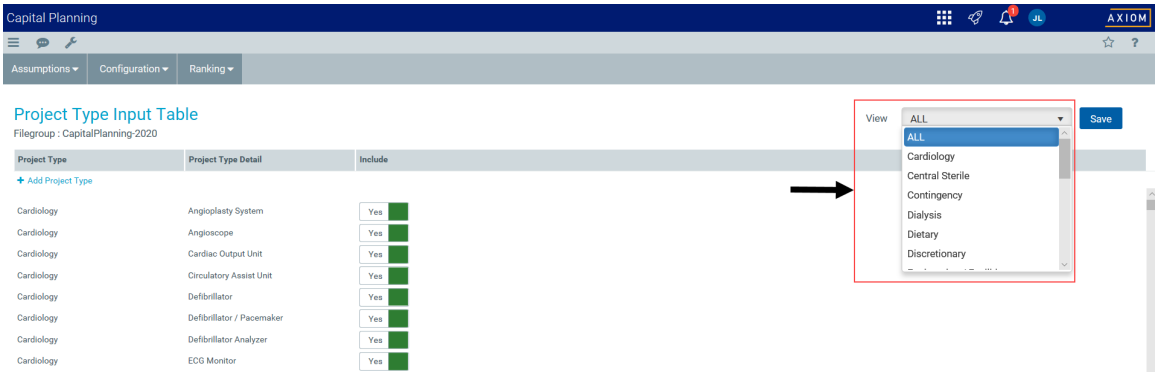
1. From the Axiom Capital Planning home page, click **Edit Drivers**.

   NOTE: To access this location from the Cap Planning Admin task pane, in the **Administration** section, click **Capital Planning Drivers**, and double-click **Capital Planning Drivers**.



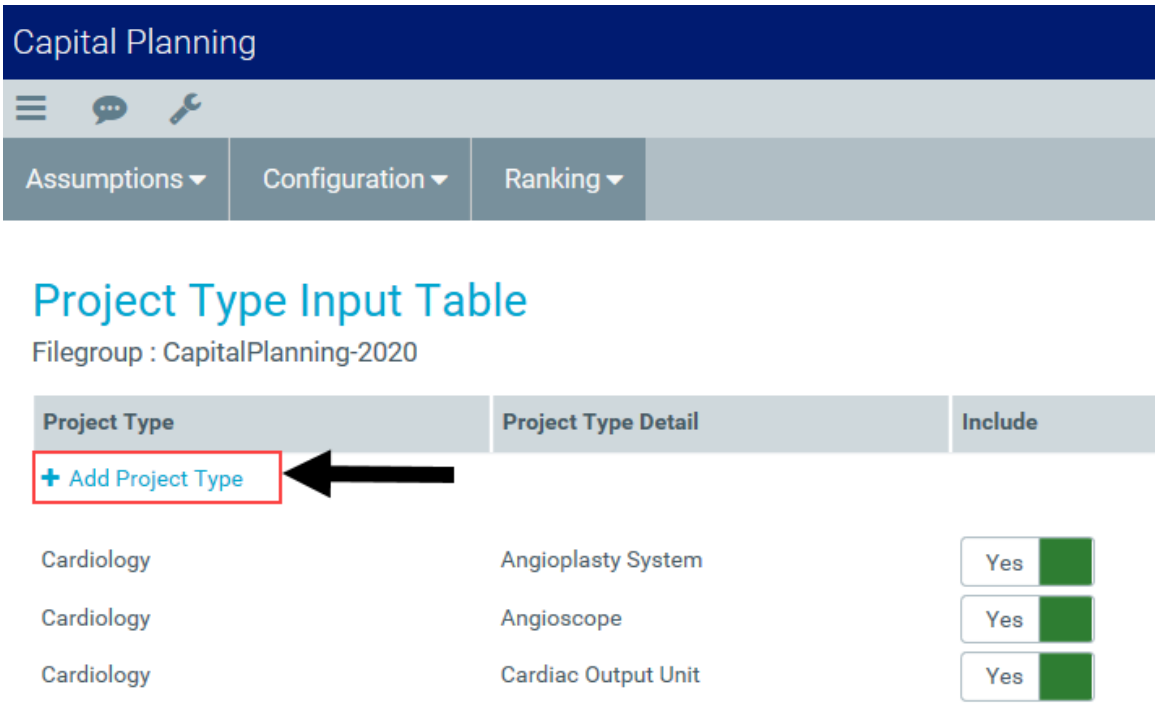
Click image to view full size

2. From the **Configuration** tab, click **Project Type Input Table**.
3. To display a specific project type input table, from the **View** drop-down, select the type.



Click image to view full size

4. To add a new project type, click **+ Add Project Type**.



Click image to view full size

5. In the **Include** column, select whether to include (**Yes**) or exclude (**No**) it as a default project type.
6. After making your changes, in the upper right corner of the page, click **Save**.
7. At the confirmation prompt, click **OK**.
8. Process the plan files to propagate your changes

Modifying a picklist

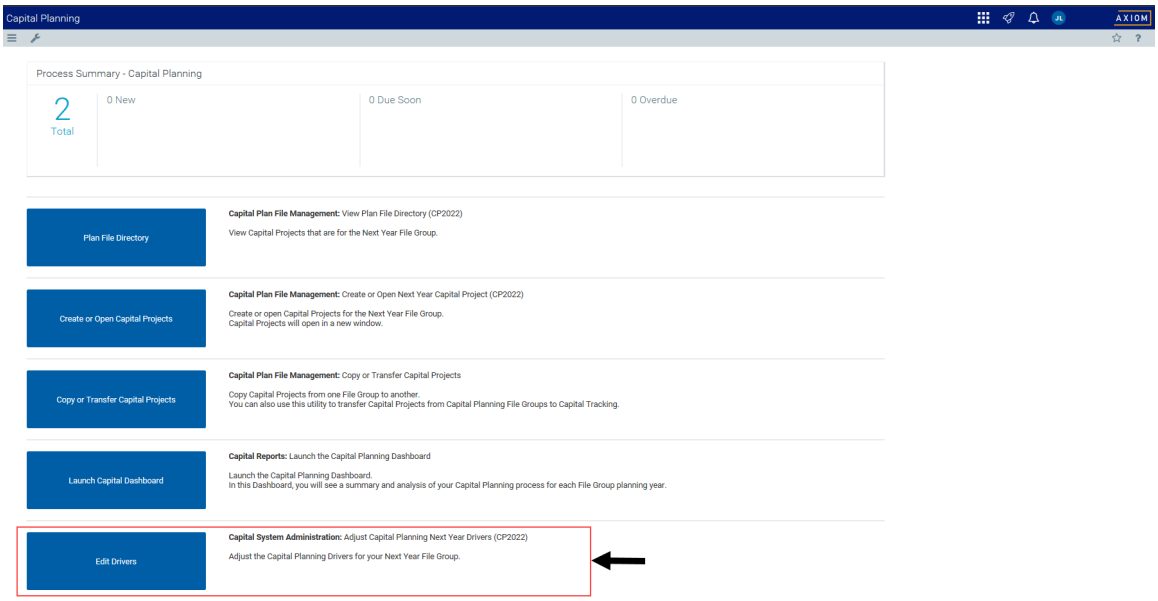
You may define up to 19 custom drop-down fields for inclusion in capital project plan files.

There are three standard Picklists: Class, Reason, and Priority. There are an additional sixteen Picklists that your organization can add. If a picklist is to be managed by Finance for reporting purposes only, consider using a utility to update a user-defined column. A Kaufman Hall consultant can help set up this tool.

To modify a picklist:

1. From the Axiom Capital Planning home page, click **Edit Drivers**.

   NOTE: To access this location from the Cap Planning Admin task pane, in the **Administration** section, click **Capital Planning Drivers**, and double-click **Capital Planning Drivers**.



Click image to view full size

2. From the **Configuration** tab, click **Picklists**.
3. To view a specific picklist, in the **View** drop-down, select the picklist field to display.

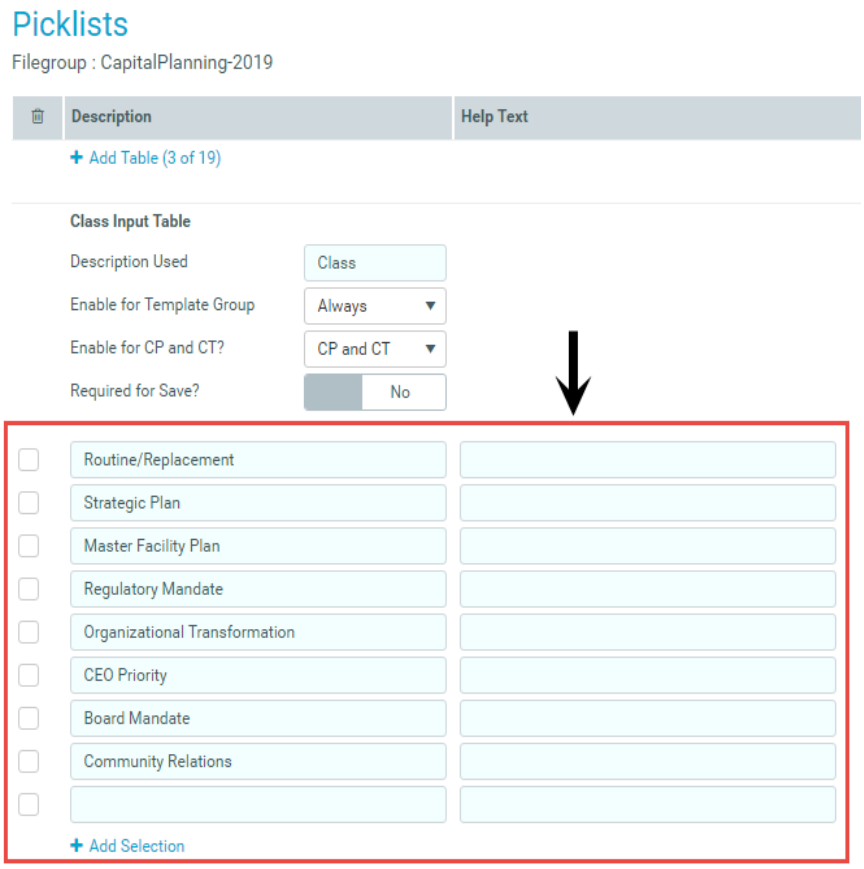
4. For each picklist, complete the following:

Option	Description
Description Used	Type a label for the picklist field to display within the plan files.
Enable for Template Group	Select in which template groups to enable the picklist.
Enable for CP and CT?	Select to enable the picklist for Axiom Capital Planning only, Axiom Capital Tracking only, or for both.
Required for Save?	Do one of the following: • To require users to make a selection before they can save the plan file, click the toggle to **Yes**. • To allow users to save the plan file without a picklist selection, click the toggle to **No**.

5. In the list of picklist of options, do the following:
   - For existing picklist field options, modify the verbiage in the **Description** and/or **Help Text**

columns.

- To add a picklist option, click **+ Add Selection**.
  a. In the **Description** column, type a label for the picklist option.
  b. In the **Help Text** column, type additional information for the user.
- To delete a picklist option, click the check box to the left of the **Description** column. The option will be deleted after you click **Save**.



6. After making your changes, in the upper right corner of the page, click the disk icon to save your changes.
7. At the confirmation prompt, click **OK**.

If you are making changes to this driver, make sure to process the plan files to propagate your changes.

Adding a picklist

By default, Axiom Capital Planningcomes with three picklists. You can add an additional 16 picklists to use for your plan files.

To add a picklist:

1. In the **Cap Plan Admin** task pane, in the **Administration** section, navigate to the drivers for the previous year, current year, or next year.
2. In the Capital Planning Drivers utility, click **Configuration > Picklists**.
3. To add a picklist, click **+ Add Table**.
4. In the **Add Picklist** dialog, for each picklist field, complete the following:

Option	Description
Description Used	Type a label for the picklist field to display within the plan files.
Enable for Template Group	Select in which template groups to enable the picklist.
Enable for CP and CT?	Select to enable the picklist for Axiom Capital Planning only, Axiom Capital Tracking only, or for both.
Required for Save?	Do one of the following: • To require users to make a selection before they can save the plan file, set this option to **Yes**. • To allow users to save the plan file without a picklist selection, click the toggle to **No**.

5. For each picklist field option to add, click **+ Add a Selection**.
6. In the **Description** column, type a label for the picklist option.
7. In the **Help Text** column, type additional information for the user.
8. After making your changes, click **Save**.

If you are making changes to this driver, make sure to process the plan files to propagate your changes.

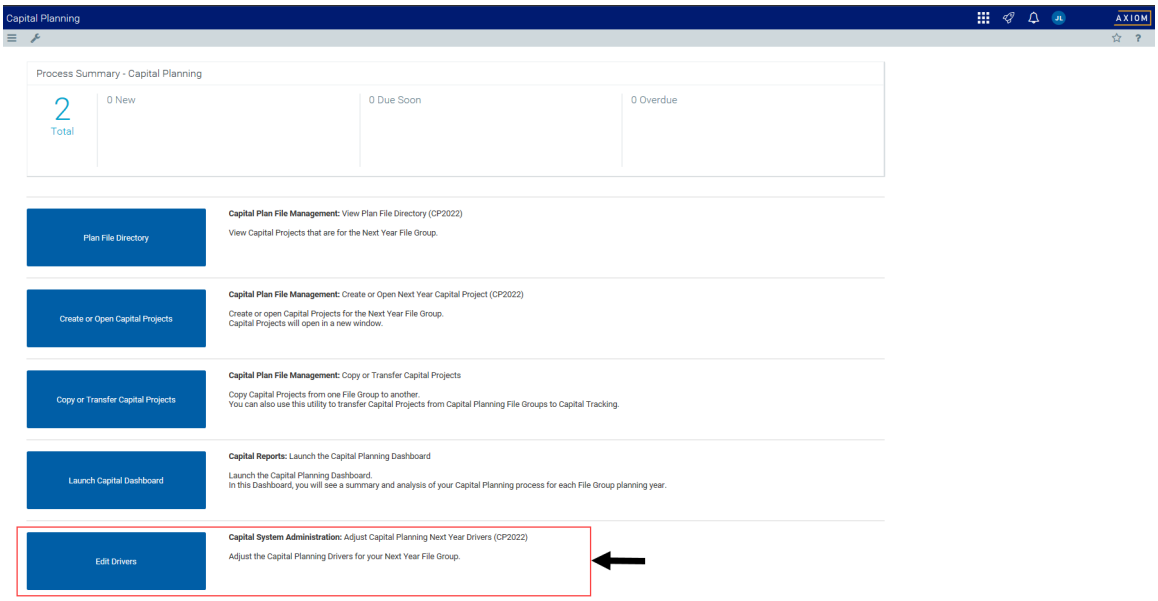
Creating or modifying text fields

You may define up to ten custom text fields for inclusion in capital project plan files.

To create or modify text fields:

1. From the Axiom Capital Planning home page, click **Edit Drivers**.

> **NOTE:** To access this location from the Cap Planning Admin task pane, in the **Administration** section, click **Capital Planning Drivers**, and double-click **Capital Planning Drivers**.



Click image to view full size

2. From the **Configuration** tab, click **Text Fields**.
3. For each custom text field, complete the follow:

Option	Description
Description	Type a label for the text field to display within the plan files.
Enable for Template Group?	Select in which template groups to enable the text field.
Enable for CP and CT?	Select to enable the text field for Axiom Capital Planning only, Axiom Capital Tracking only, or for both.
Required for Save?	Do one of the following: • To require users to enter information in the field before they can save the plan file, click the toggle to **Yes**. • To allow users to save the plan file without entering information in the field before saving the plan file, click the toggle to **No**.
Input Format	Select a data type for the field. Available formats include the following: • Text • Number • Currency • Date • Percentage.

4. After making your changes, in the upper right corner of the page, click **Save**.
5. At the confirmation prompt, click **OK**.

If you are making changes to this driver, make sure to process the plan files to propagate your changes.

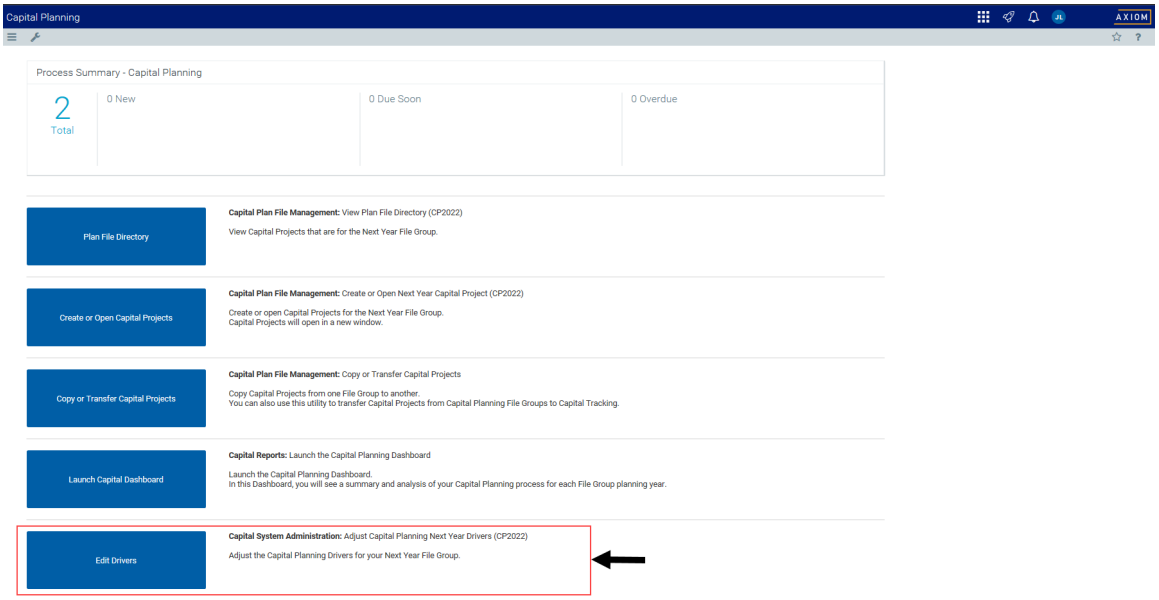
Adding or modifying Purchase Period picklist inputs

To include a Purchase Period picklist in capital project plan files, you define the periods on the Purchase Period driver. Typically, the periods are defined as months for a single year, but they may also be defined as quarters or defined across multiple years. Purchase Period is normally used for Non-Threshold templates, but there is also a Purchase Period report that uses this information.

To modify Purchase Period picklist inputs:

1. From the Axiom Capital Planning home page, click **Edit Drivers**.

   NOTE: To access this location from the Cap Planning Admin task pane, in the **Administration** section, click **Capital Planning Drivers**, and double-click **Capital Planning Drivers**.

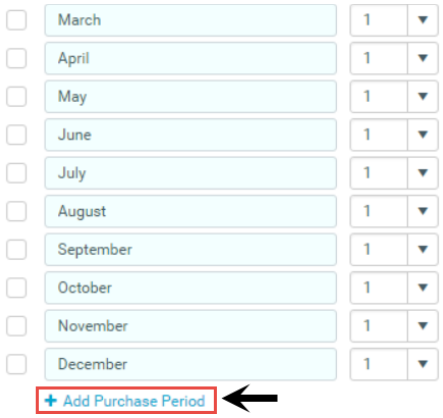


Click image to view full size

2. From the **Configuration** tab, click **Purchase Period Input Table**.
3. Complete the following:

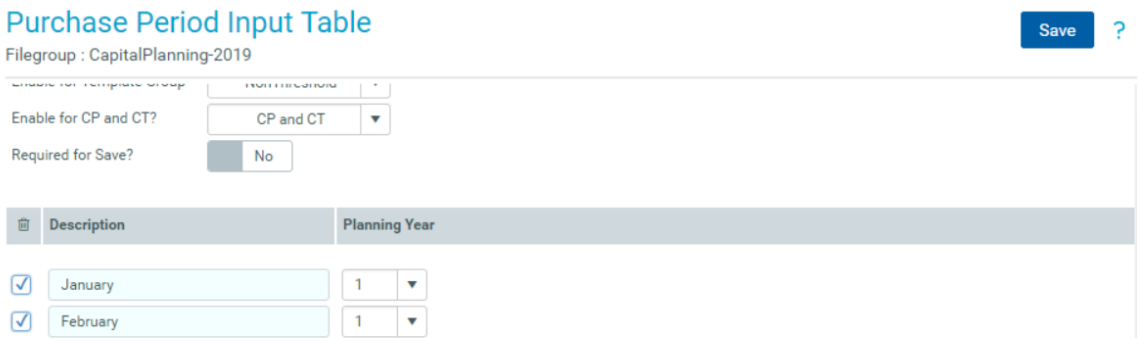
Option	Description
Enable for Template Group	Select in which template groups to enable the picklist.
Enable for CP or CT?	Select to enable the Purchase Period picklist inputs for Axiom Capital Planning only, Axiom Capital Tracking only, or for both.
Required for Save?	Do one of the following: • To require users to select an input before they can save the plan file, click the toggle to **Yes**. • To allow users to save the plan file without a picklist selection, click the toggle to **No**.

4. In the **Description** column, type a label for the period.
5. In the **Planning Year** column, select the number of years from the current date (1 = next year). For example, if the year is 2018, you may label a period Q2 2020, and set it to planning year 2.
6. To add a purchase period, click **+ Add Purchase Period**, and complete Step 4 and Step 5.



Click image to view full size

7. To delete a purchase period input, select the check box to the left of the **Description** field. The purchase period input is deleted after you save your changes.



Click image to view full size

8. After making your changes, in the upper right corner of the page, click **Save**.
9. At the confirmation prompt, click **OK**.

If you are making changes to this driver, make sure to process the plan files to propagate your changes.

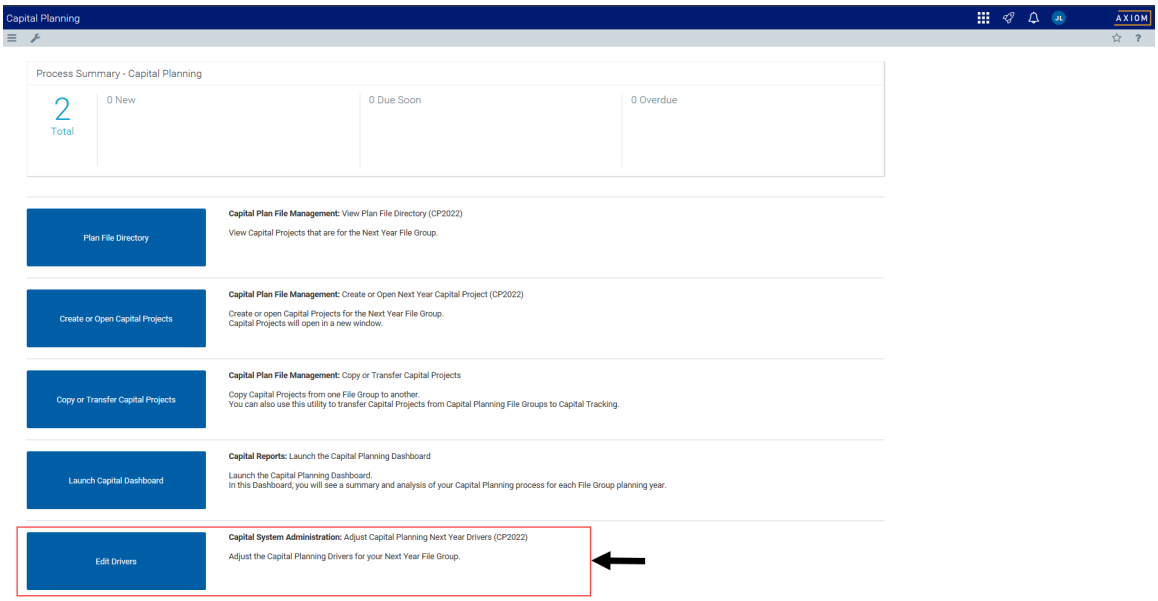
Creating or modifying business plan questions

The Business Plan Questions driver lists a set of optional questions to include in capital project planning files to capture detailed narrative inputs justifying the request. This is often used for Threshold projects. Many organizations have a Strategic Planning document that project owners must complete for large projects. The answer to these questions can replace that document or supplement a Strategic Planning attachment needed by your organization.

To create or modify business plan questions:

1. From the Axiom Capital Planning home page, click **Edit Drivers**.

   NOTE: To access this location from the Cap Planning Admin task pane, in the **Administration** section, click **Capital Planning Drivers**, and double-click **Capital Planning Drivers**.



Click image to view full size

2. From the **Configuration** tab, click **Business Plan Questions**.
3. In the **Title** field, modify the title if you want to use a title other than Business Plan Questions in your template. Modifying the title does not change the tab name in the template but only the description used.
4. In the **Enable Business Plan Questions for Template Group** drop-down, select the template group that will include the questions.
5. In the **Description** column, type the topic title to include in the planning workbook.
6. In the **Include** column, if you selected **Always** from the **Enable Business Plan Questions for Template Group** drop-down, you may enable individual questions for specific template groups
7. In the **CP or CT?** column, select to enable the questions for Axiom Capital Planning only, Axiom Capital Tracking only, or for both.
8. In the **Required for Save?** column, do one of the following:
   - To require users to answer the question before they can save data in the plan file, sclick the toggle to **Yes**.
   - To allow users to save data in the plan file without answering the question, click the toggle to **No**.
9. In the **Help Text** column, type the question or related information to help users answer the question.
10. To add another question topic, click **+ Add Business Plan Question**, and complete Steps 5-9.
11. After making your changes, in the upper right corner of the page, click **Save**.

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

If you are making changes to this driver, make sure to process the plan files to propagate your changes.

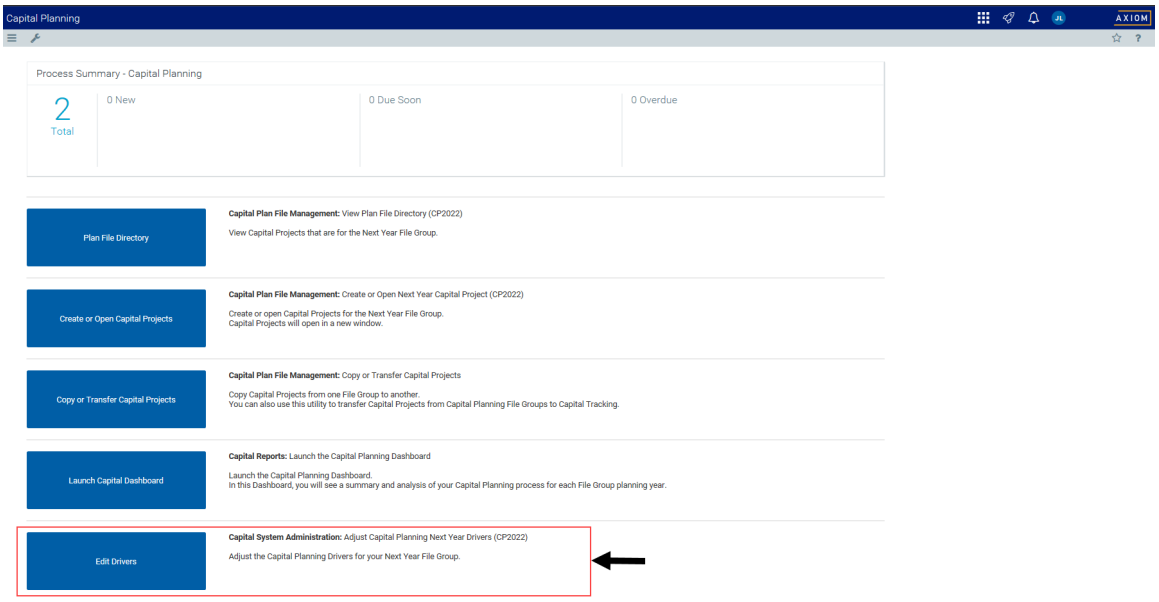
Creating or modifying decision matrix questions

If enabled for capital project plan files, the Decision Matrix Input Table driver presents users with up to 20 drop-down multiple-choice questions. You assign weighted scores to various responses to help with prioritization of requests. Think of this table as the pillars of your organization.

To create or modify decision matrix questions:

1. From the Axiom Capital Planning home page, click **Edit Drivers**.

   NOTE: To access this location from the Cap Planning Admin task pane, in the **Administration** section, click **Capital Planning Drivers**, and double-click **Capital Planning Drivers**.



Click image to view full size

2. From the **Configuration** tab, click **Decision Matrix Input Table**.
3. To view a specific question, in the **View** drop-down, select the question to display.
4. Complete the following:

Option	Description
Enable for Template Group	Select in which template groups to enable the questions.

Option	Description
Enable for CP or CT?	Select to enable the question for Axiom Capital Planning only, Axiom Capital Tracking only, or for both.
Required for Save?	Do one of the following: • To require users to complete the questions before they can save the plan file, click the toggle to **Yes**. • To allow users to save the plan file without answering the question, click the toggle to **No**.

5. In the **Include** column, select the check box to display the line item in the matrix drop-down.
6. In the **Description** column, type the question or response text to include in the plan file.
7. In the **Score** column, type the numeric value to assign to the response.
8. To add mores responses, click the **+ Add Response**, and complete Steps 5-7.
9. After making your changes, in the upper right corner of the page, click **Save**.
10. At the confirmation prompt, click **OK**.

If you are making changes to this driver, make sure to process the plan files to propagate your changes.

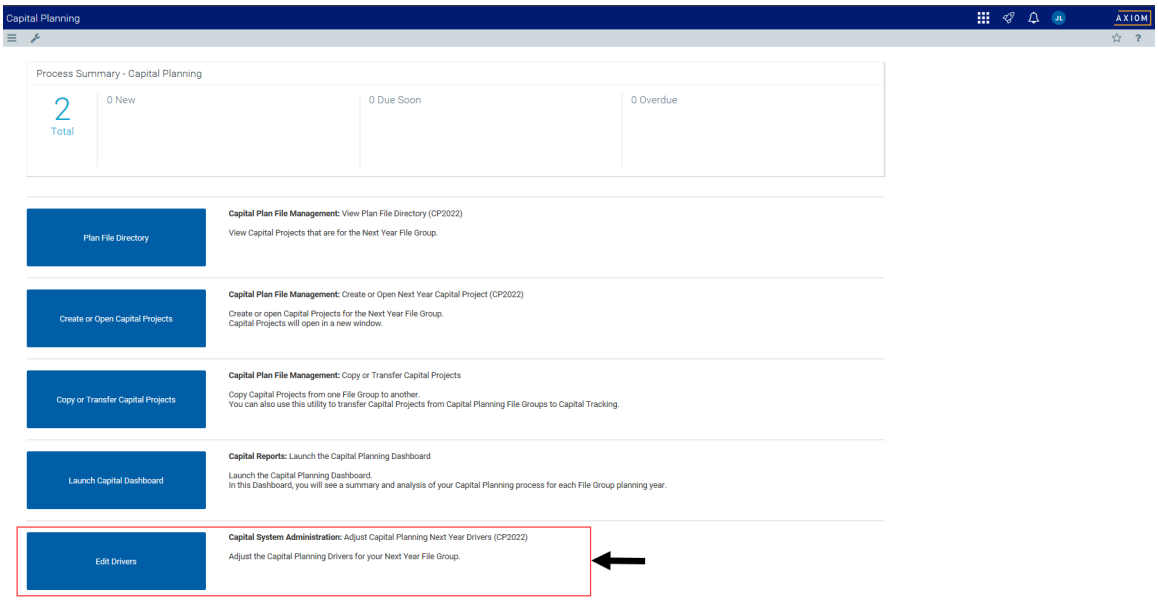
Adding or modifying capital-related questions

The Capital Related Questions driver allows you to define up to 20 yes/no questions to include in capital project plan files. You can use these questions to trigger steps in workflow.

To add or modify capital-related questions:

1. From the Axiom Capital Planning home page, click **Edit Drivers**.

> **NOTE:** To access this location from the Cap Planning Admin task pane, in the **Administration** section, click **Capital Planning Drivers**, and double-click **Capital Planning Drivers**.



Click image to view full size

2. From the **Configuration** tab, click **Capital Related Questions**.
3. In the **Description** column, type the question text to include in the planning workbook.

   The **Selection** column displays the type of questions.
4. In the **Include** column, select when to include the questions in the plan file.
5. In the **CP or CT?** column, select to enable the questions for Axiom Capital Planning only, Axiom Capital Tracking only, or for both.
6. In the **Required to Save?** column, do one of the following:
   - To require users to answer the question before they can save the plan file, click the toggle to **Yes**.
   - To allow users to save the plan file without answering the question before saving the plan file, click the toggle to **No**.
7. To add a question, click **+ Add Capital Related Question**, and complete Steps 3-7.
8. After making your changes, in the upper right corner of the page, click **Save**.
9. At the confirmation prompt, click **OK**.

If you are making changes to this driver, make sure to process the plan files to propagate your changes.

Configuring summary financial capital and operating default inputs

The Summary Financial Capital and Operating Inputs driver determines which pricing details to include in the Capital sheet of Summary plan files and which operating impact inputs to include on the OpImpacts sheet of Summary plan files.

Organizations typically set up three separate areas to capture capital costs in addition to the Clinical Equipment entered on the equipment line:

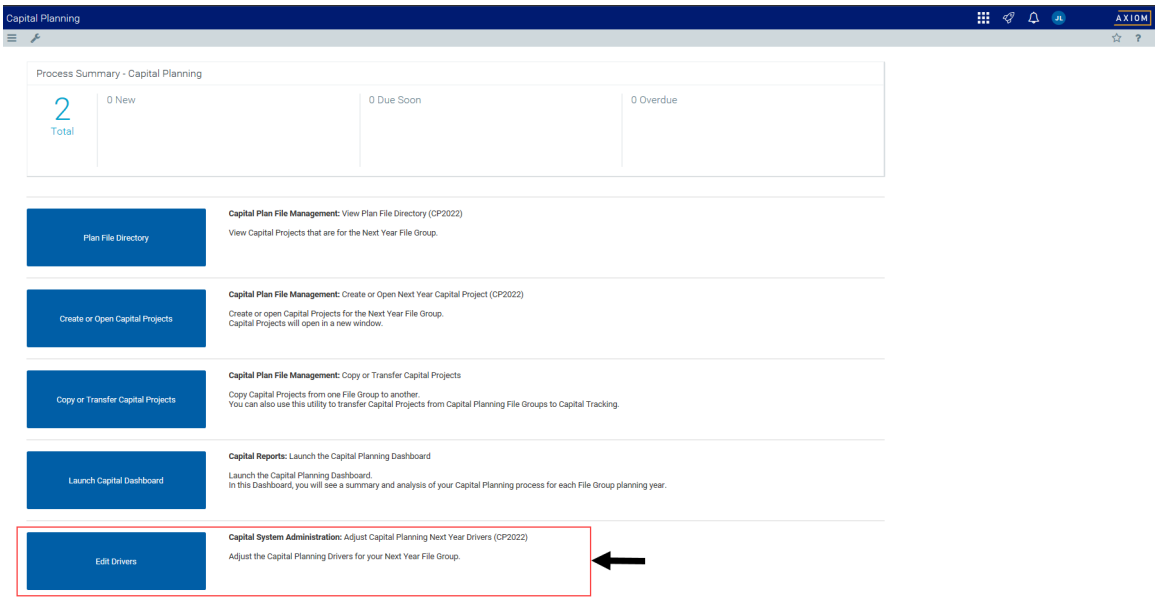
- Information Systems
- Facilities
- Other Costs

Also available are sections for a Shipping and Handling fee and Less Trade in Value amount.

To configure summary financial capital and operating default inputs:

1. From the Axiom Capital Planning home page, click **Edit Drivers**.

   NOTE: To access this location from the Cap Planning Admin task pane, in the **Administration** section, click **Capital Planning Drivers**, and double-click **Capital Planning Drivers**.

   Click image to view full size

2. From the **Configuration** tab, click **Summary Financial Capital and Operating Inputs**.
3. To view only capital cost details or financials, in the **View** drop-down, select the section to display.
4. Complete the following options, as needed:

Option	Description
Default Number of Input Years	Select the number of years to display on the Capital sheet in Summary plan files.
Allow Users to Change Number of Input Years	Select to allow (**Yes**) or not allow (**No**) users to change the number of input years.
Allow Users to Change Start Year	Select to allow (**Yes**) or not allow (**No**) users to change the start year.
Allow Users to Changes Sales Tax Rate	Select to allow (**Yes**) or not allow (**No**) users to changes the sales tax rate.
Display OpImpacts Worksheet for Template Group?	Select when to display the OpImpacts worksheet. **NOTE:** This sheet is only available for Non-Threshold or Summary templates.
Display OpImpacts Worksheet for CP or CT?	Select to enable the OpImpacts worksheet for Axiom Capital Planning only, Axiom Capital Tracking only, or for both.
Default Total Years for Financial Analysis	Type the number of years for which to calculate projections on the OpImpacts sheet for Summary plan files.

5. In the **Capital Cost Detail** section, complete the following options, as needed:

Option	Description
Line Item	Type a new description or name for the item.
Enable for Template Group?	Select in which template groups to include the unit cost.
Useful Life/Inflation	Type the default inflation rates to use for operating impact details. Useful life automatically calculates from the account selected in the Capital Account drop-down.
Capital Account	Select the associated capital account for capital items of this type.
Sales Tax	Type the sales tax percentage for unit cost.

6. After making your changes, in the upper right corner of the page, click the disk icon to save your changes.
7. At the confirmation prompt, click **OK**.

If you are making changes to this driver, make sure to process the plan files to propagate your changes.

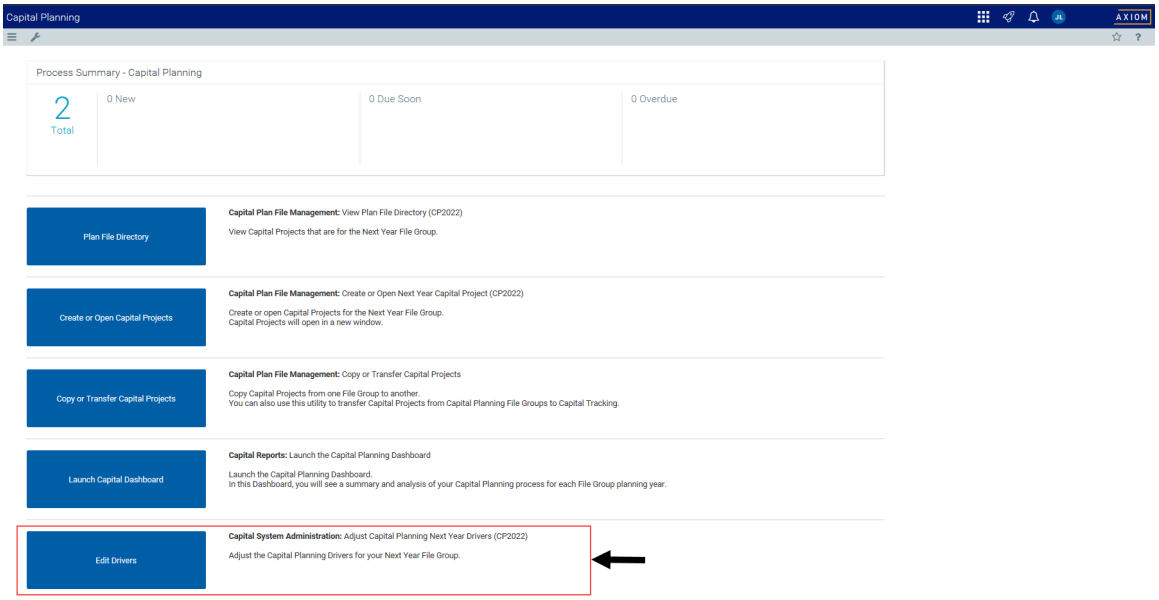
Adding or modifying project groups

The Project Group Input Table driver allows you to define groups for aggregating multiple projects together for reporting, sorting, and tracking purposes.

To add or modify project groups:

1. From the Axiom Capital Planning home page, click **Edit Drivers**.

   NOTE: To access this location from the Cap Planning Admin task pane, in the **Administration** section, click **Capital Planning Drivers**, and double-click **Capital Planning Drivers**.



   Click image to view full size

2. From the **Configuration** tab, click **Project Group Input Table**.
3. From the **Enable for Template Group** drop-down, select when to include the project groups.
4. From the **Enable for CP and CT** drop-down, select to enable the project groups for Axiom Capital Planning only, Axiom Capital Tracking only, or for both.
5. For the **Required to Save?** option, do one of the following:
   - To require users to select a project group before they can save the plan file, set this option to **Yes**.
   - To not require users select a project group before saving the plan file, set this option to **No**.
6. In the **Description** column, type a name for the project group.
7. To add a project group, click **+ Add Project Group**, and complete Steps 3-5.
8. After making your changes, in the upper right corner of the page, click **Save**.
9. At the confirmation prompt, click **OK**.

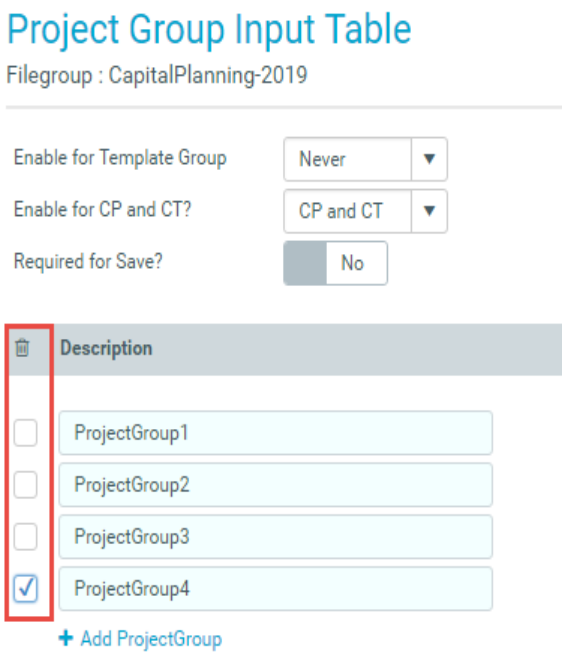
If you are making changes to this driver, make sure to process the plan files to propagate your changes.

Deleting project groups

IMPORTANT: If you delete a project group, it will be deleted in historical projects.

To delete a project group:

1. In the **Cap Plan Admin** task pane, in the **Capital Planning Commands** section, navigate to the drivers for the previous year, current year, or next year.
2. In the **Cap Track Admin** task pane, in the **Administration** section, double-click **Capital Tracking Drivers**.
3. In the Capital Planning Drivers utility, click **Configuration > Project Group Input Table**.
4. Select the check box to the left of the project group.



5. After making your changes, in the upper right corner of the page, click **Save**.
6. At the confirmation prompt, click **OK**.

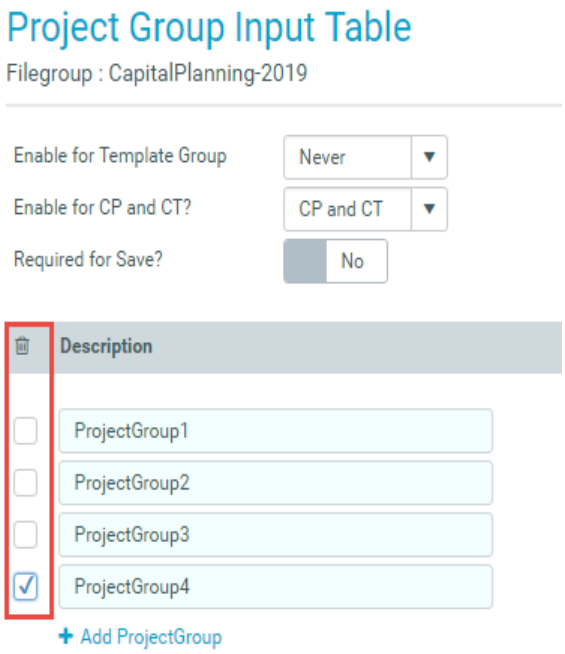
If you are making changes to this driver, make sure to process the plan files to propagate your changes.

Deleting project groups

IMPORTANT: If you delete a project group, it will be deleted in historical projects.

To delete a project group:

1. In the **Cap Plan Admin** task pane, in the **Capital Planning Commands** section, navigate to the drivers for the previous year, current year, or next year.
2. In the Capital Planning Drivers utility, click **Configuration > Project Group Input Table**.
3. Select the check box to the left of the project group.



4. After making your changes, in the upper right corner of the page, click **Save**.
5. At the confirmation prompt, click **OK**.

If you are making changes to this driver, make sure to process the plan files to propagate your changes.

Managing categories

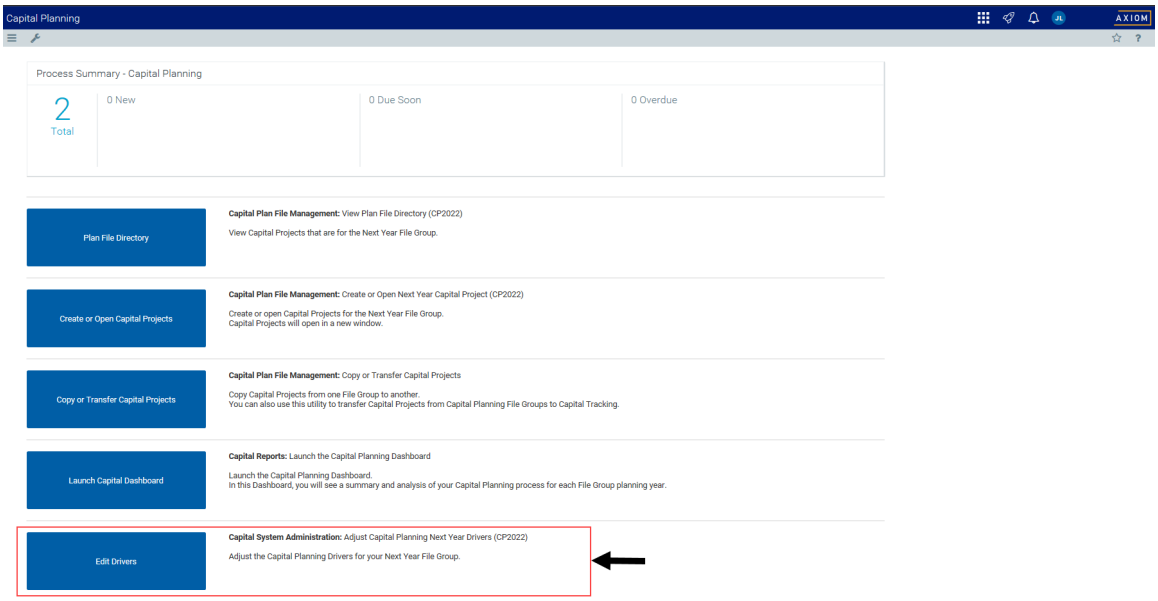
Creating or modifying categories

The Category Input driver allows you to define up to ten categories of capital items.

To add or modify categories:

1. From the Axiom Capital Planning home page, click **Edit Drivers**.

> **NOTE:** To access this location from the Cap Planning Admin task pane, in the **Administration** section, click **Capital Planning Drivers**, and double-click **Capital Planning Drivers**.



Click image to view full size

2. From **Configuration** tab, click **Category Input Table**.
3. In the **Description to be used for Category** field, type a term used to refer to categories throughout the system.

   NOTE: The default term is Category, but your organization may choose to use a different term.

4. From the **Use Category** drop-down, select when to enable the categories.
5. From the **Enable Category for CP or CT** drop-down, select to enable the category for Axiom Capital Planning only, Axiom Capital Tracking only, or for both.
6. For the **Category Required for Save** option, do one of the following:
   - To require users to select a category before submitting a capital request, set this option to **Yes**.
   - To not require users to select a category before submitting a capital request, set this option to **No**.
7. For each category, complete the following:
   a. In the **Description** column, type a name for the category.
   b. In the **Help Text** column, type additional information that describes the category
   c. In the **Capital Account** column, select the capital account the category belongs to.
8. To add a category, click **+ Add Category**, and complete Step 7.
9. After making your changes, in the upper right corner of the page, click **Save**.

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

If you are making changes to this driver, make sure to process the plan files to propagate your changes.

Deleting categories

To delete categories:

1. In the **Cap Plan Admin** task pane, in the **Capital Planning Commands** section, navigate to the drivers for the previous year, current year, or next year.
2. In the **Cap Track Admin** task pane, in the **Administration** section, double-click **Capital Tracking Drivers**.
3. In the Capital Planning Drivers utility, click **Configuration > Category Input Table**.
4. Select the check box next to the **Description** field.
5. After making your changes, in the upper right corner of the page, click **Save**.
6. At the confirmation prompt, click **OK**.

If you are making changes to this driver, make sure to process the plan files to propagate your changes.

Deleting categories

To delete categories:

1. In the **Cap Plan Admin** task pane, in the **Capital Planning Commands** section, navigate to the drivers for the previous year, current year, or next year.
2. In the Capital Planning Drivers utility, click **Configuration > Category Input Table**.
3. Select the check box next to the **Description** field.
4. After making your changes, in the upper right corner of the page, click **Save**.
5. At the confirmation prompt, click **OK**.

If you are making changes to this driver, make sure to process the plan files to propagate your changes.

Managing the Ranking driver

The Capital Ranking driver file identifies the voting members of the capital committee and weighting scale for voting on capital projects.

The Ranking driver file includes the following driver types:

- **Capital Committee** – Lists the members of the capital voting committee.
- **Voting Criteria Input Table** – Allows you to configure the criteria on which to evaluate projects and define the relative weight for each.

Managing Capital Committee members

The Capital Committee driver lists individuals who will vote on capital projects.

The Voting Code column displays a unique ID that is assigned to each committee member. The user ID must already be set up in Security Manager. The voting code writes back to the database individual scores but allows for the blinding of those scores.

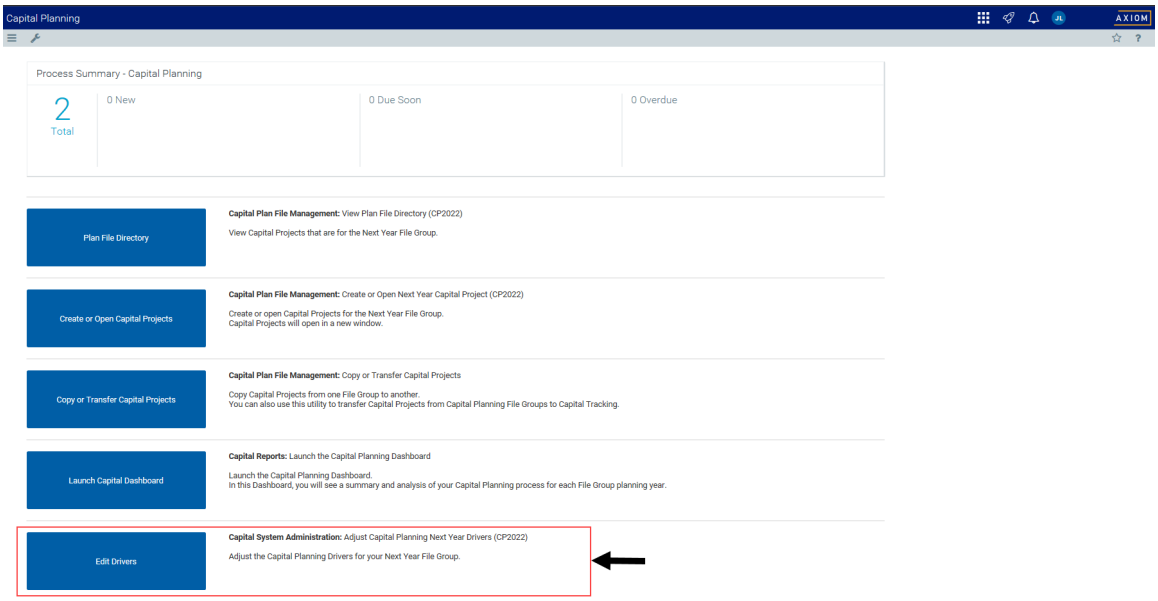
Adding a member

Only users assigned the Capital Planning Evaluator role can be added to the committee.

To add a Capital Committee members:

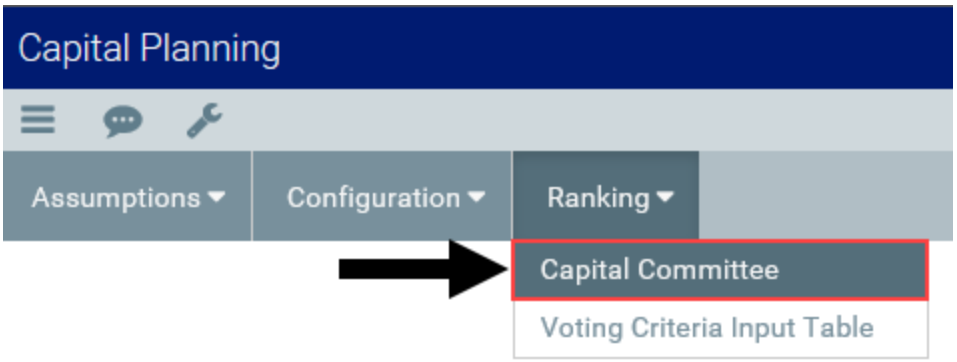
1. From the Axiom Capital Planning home page, click **Edit Drivers**.

   NOTE: To access this location from the Cap Planning Admin task pane, in the **Administration** section, click **Capital Planning Drivers**, and double-click **Capital Planning Drivers**.



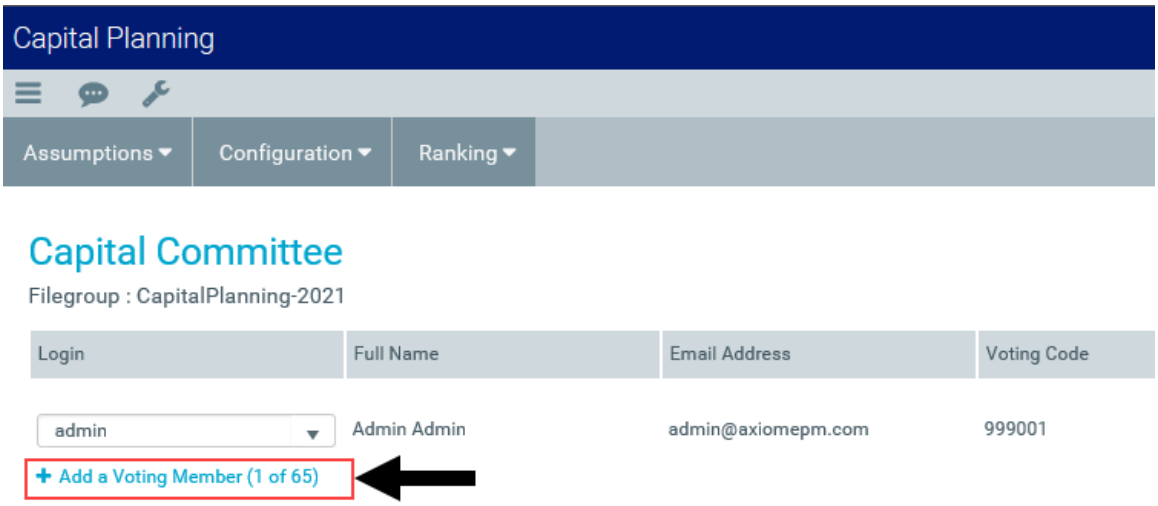
   Click image to view full size

2. From the **Ranking** tab, click **Ranking > Capital Committee**.



Click image to view full size

3. Click **+ Add a Voting Member**.



Click image to view full size

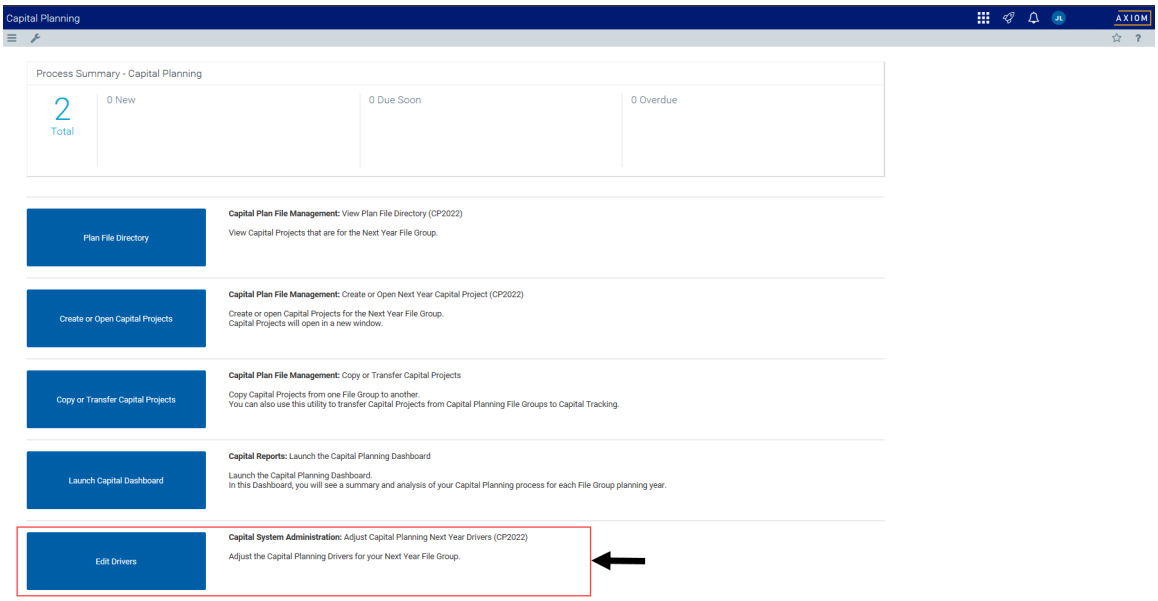
4. In the **Login** column, select the user's login ID.
5. After making your changes, in the upper right corner of the page, click the disk icon.
6. At the confirmation prompt, click **OK**.

Deleting a member

To delete a Capital Committee members:

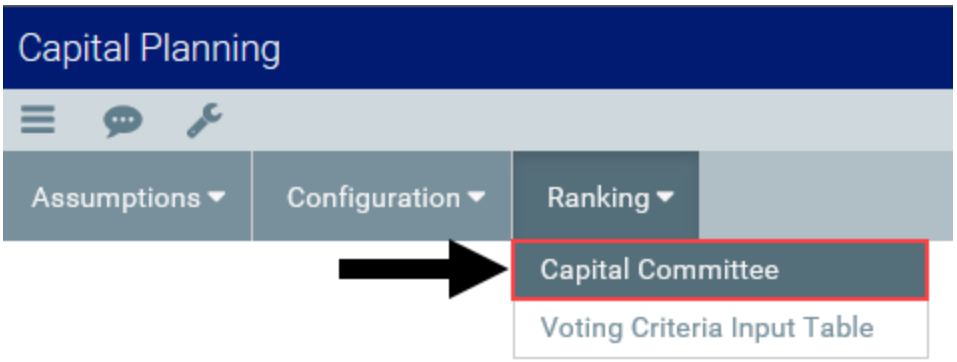
1. From the Axiom Capital Planning home page, click **Edit Drivers**.

> **NOTE:** To access this location from the Cap Planning Admin task pane, in the **Administration** section, click **Capital Planning Drivers**, and double-click **Capital Planning Drivers**.



Click image to view full size

2. From the **Ranking** tab, click **Ranking > Capital Committee**.



Click image to view full size

3. Click the check box next to the member login name. When you save, the member will be removed from the list.
4. In the **Login** column, select the user's login ID.
5. After making your changes, in the upper right corner of the page, click the disk icon.
6. At the confirmation prompt, click **OK**.

Defining project scoring criteria

Project scoring criteria are used by your Capital Committee members to score projects to determine their prioritization when it comes to planning next year's projects. Normally these criteria are the pillars of your organization. Your organization can weight these however necessary.

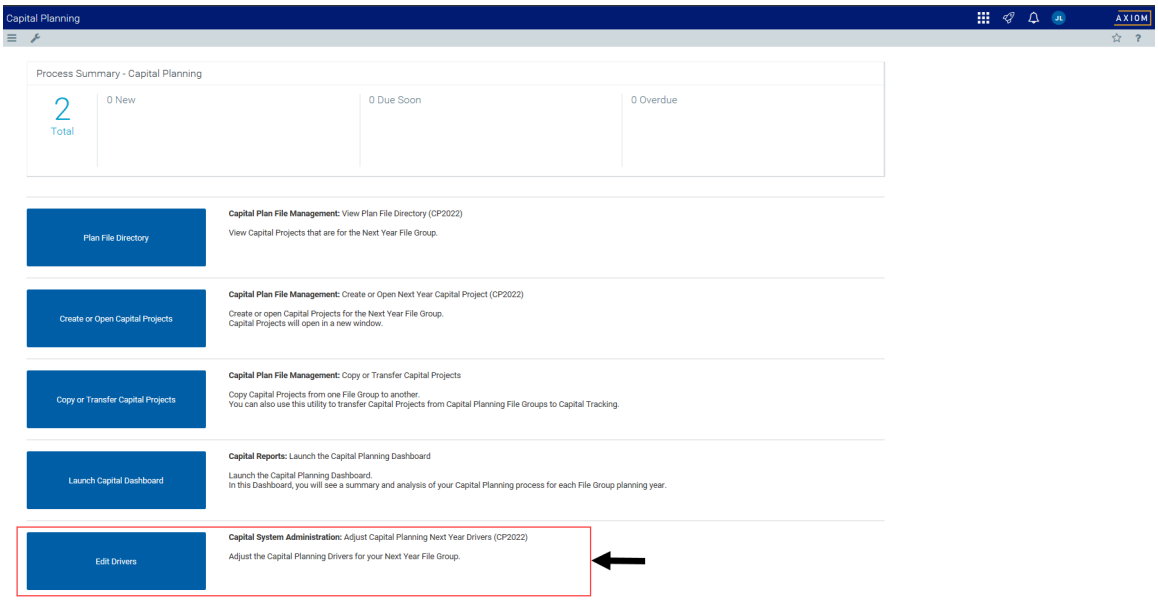
The Voting Criteria Input Table driver lists the criteria on which committee members will be asked to rate projects. Your organization enters the relative weight of each criterion, which adds up to the overall rating for the project.

You can add up to ten different criteria, which must add up to a weighting of 100%. Most organizations tie these criteria around the pillars of their organizations.

To define project scoring criteria:

1. From the Axiom Capital Planning home page, click **Edit Drivers**.

   NOTE: To access this location from the Cap Planning Admin task pane, in the **Administration** section, click **Capital Planning Drivers**, and double-click **Capital Planning Drivers**.

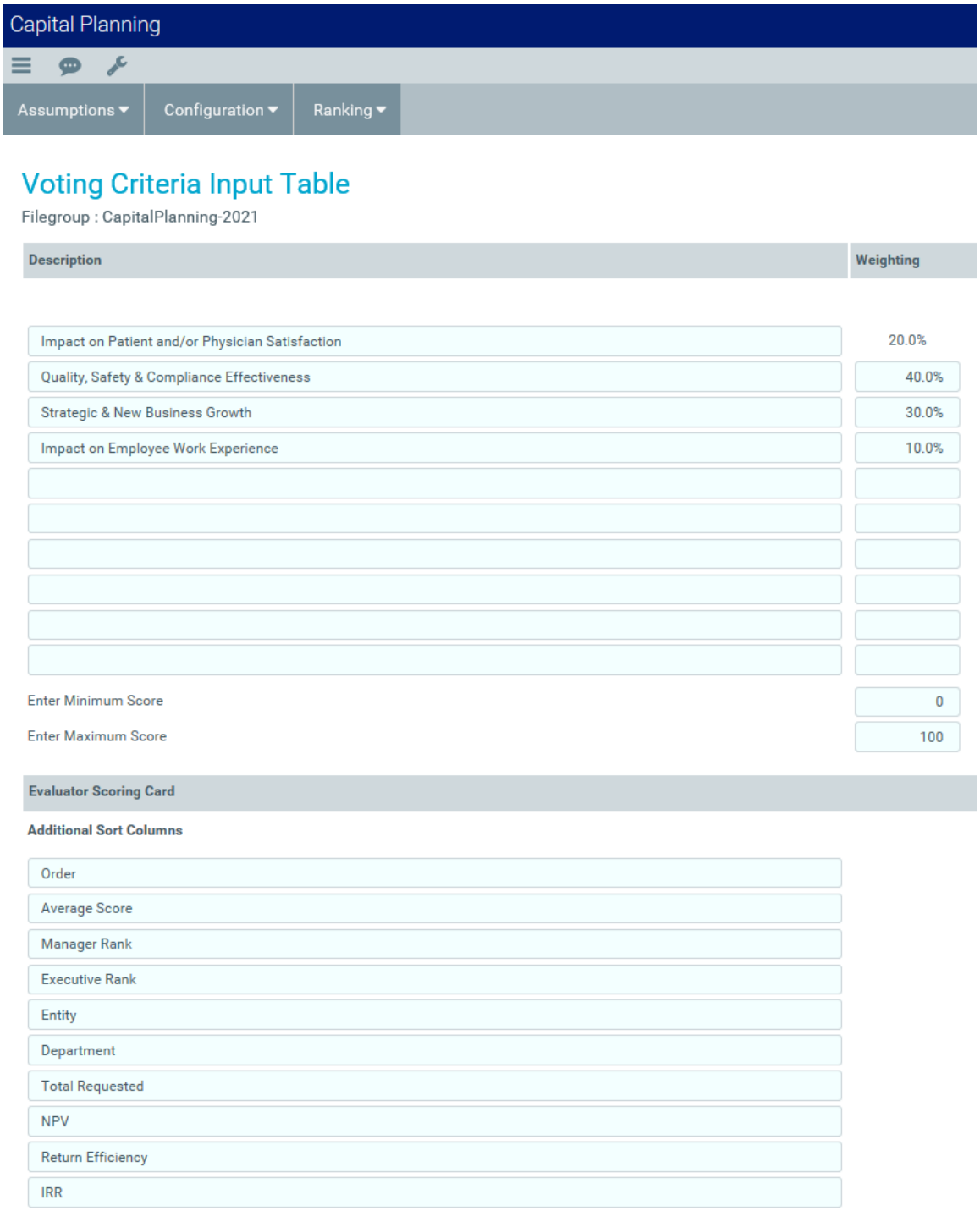
   

   Click image to view full size

2. From the **Ranking** tab, click **Voting Criteria Input Table**.

Click image to view full size

3. In the **Description** field, type a description for the criterion.



Click image to view full size

NOTE: This description is displayed throughout the various ranking reports and utilities.

4. In the **Weighting** column, type the percentage that the rating for this criteria contributes towards the overall rating for the project.
5. In the **Enter Minimum Score** field, type the minimum score a committee member may give for any single criterion.
6. In the **Enter Maximum Score** field, type the maximum score a committee member may give for any single criterion.
7. In the **Additional Sort Columns** section, enter any additional columns to use for sorting in the Evaluator Scoring Report.
8. After making your changes, in the upper right corner of the page, click the disk icon.
9. At the confirmation prompt, click **OK**.

For more information on the project ordering and selection process, see Determining capital projects for next year.

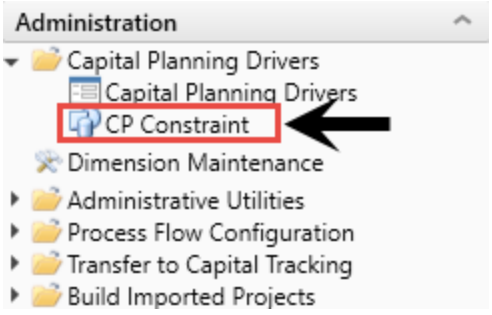
Configuring the CP Constraint driver

The CP Constraint driver includes the following tabs:

- **ConstraintCalc** – The Capital Constraint Calculation sheet helps you calculate dollars available for Non-Threshold capital projects based on sources, uses of cash, and the percentage allocated to Threshold vs. Non-Threshold projects.
- **ConstraintAlloc** – The Capital Constraint Allocation sheet is used to allocate the capital constraint to different entities, VPs, or other areas of responsibility, as required. The Capital Constraint Allocation sheet is set up during the implementation by your Kaufman Hall Implementation Consultant. Please contact Kaufman Hall if you require any assistance with this sheet.

To configure the CP Constraint driver:

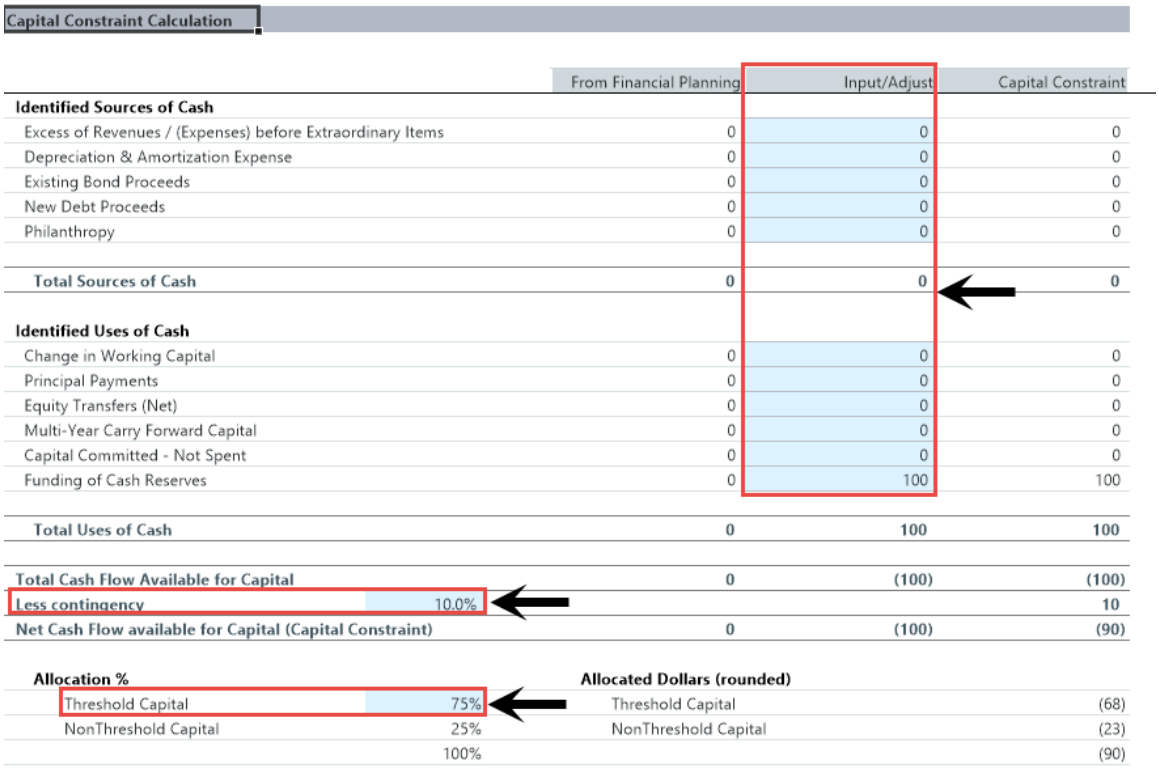
1. In the **Cap Plan Admin** task pane, in the **Administration** section, in the **Capital Planning Drivers** folder, double-click **Capital Planning Drivers**.



2. In the **ConstraintCalc** tab, do the following:
    - In the **Input/Adjust** column, enter amounts.

- In the **Less contingency** field, enter a percentage.
- In the **Threshold Capital** field, enter a percentage.

NOTE: The allocated dollars column flows to the **ConstraintAlloc** tab.



Capital Constraint Calculation

		From Financial Planning	Input/Adjust	Capital Constraint
Identified Sources of Cash				
Excess of Revenues / (Expenses) before Extraordinary Items		0	0	0
Depreciation & Amortization Expense		0	0	0
Existing Bond Proceeds		0	0	0
New Debt Proceeds		0	0	0
Philanthropy		0	0	0
Total Sources of Cash		**0**	**0**	**0**
Identified Uses of Cash				
Change in Working Capital		0	0	0
Principal Payments		0	0	0
Equity Transfers (Net)		0	0	0
Multi-Year Carry Forward Capital		0	0	0
Capital Committed - Not Spent		0	0	0
Funding of Cash Reserves		0	100	100
Total Uses of Cash		**0**	**100**	**100**
Total Cash Flow Available for Capital		**0**	**(100)**	**(100)**
Less contingency	10.0%			**10**
Net Cash Flow available for Capital (Capital Constraint)		**0**	**(100)**	**(90)**

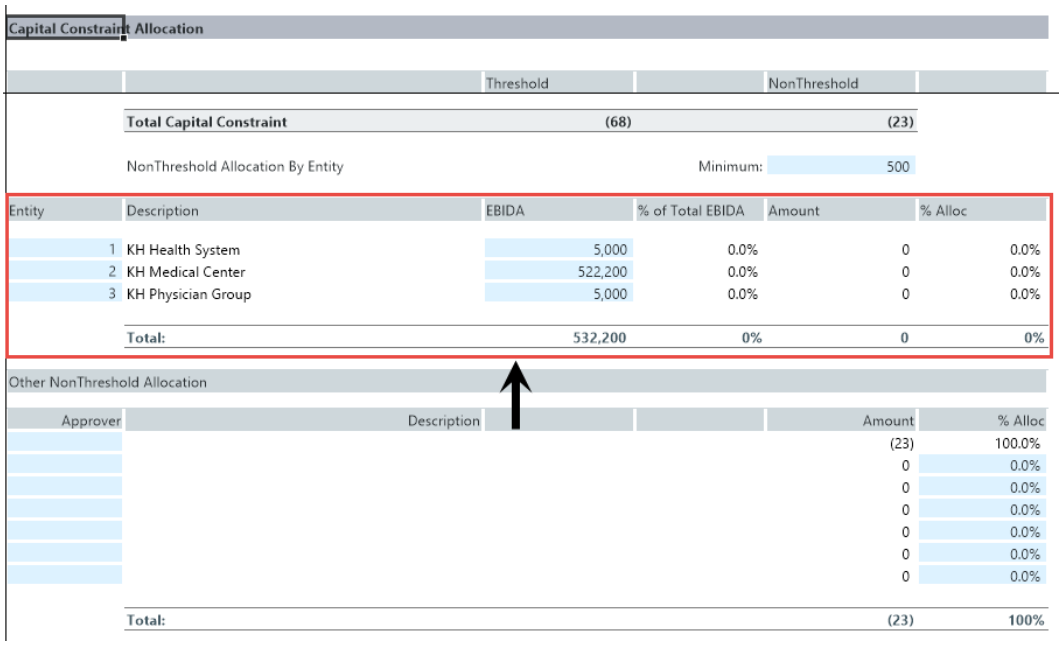
Allocation %		**Allocated Dollars (rounded)**	
Threshold Capital	75%	Threshold Capital	(68)
NonThreshold Capital	25%	NonThreshold Capital	(23)
	100%		(90)

3. In the **ConstraintAlloc** tab, in the **Minimum** field, complete one of the following two options to allocate this Non-Threshold pool:

By Entity

a. If your company porvides a minimum amount of capital per entity, regardless of financial performance, enter the amount in the **Minimum** field.

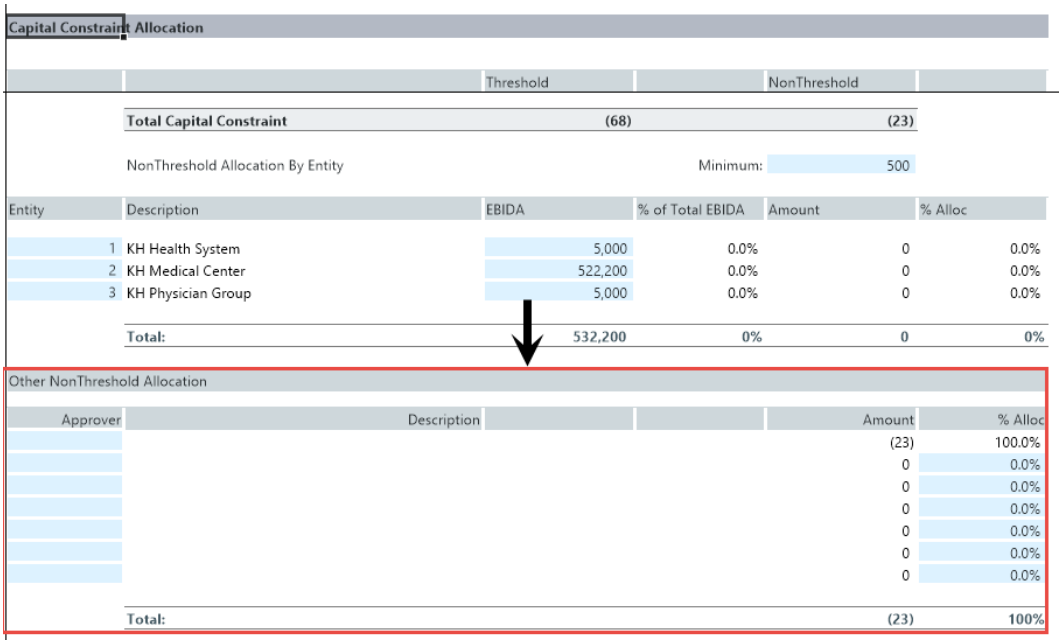
b. In the **EBIDA** column, enter the Earnings Before Interest, Depreciation, and Amortization for each entity.



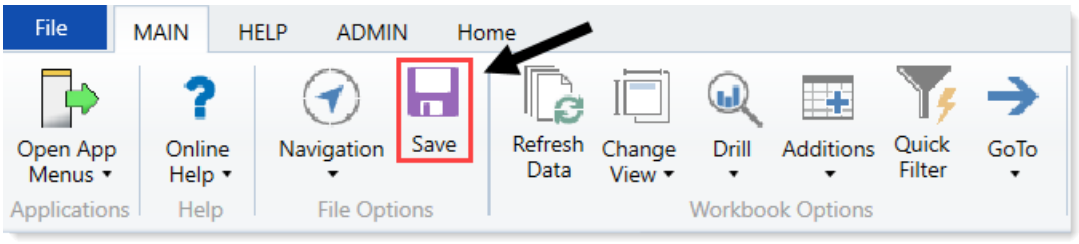
- By Approver

a. In the **Approver** column, enter the user IDs for the personnel responsible for allocating the Non-Threshold pool of dollars.

b. In the **% Alloc** column, enter the percentage allocation for each approver.



4. After you are done making changes, in the **Main** ribbon tab, click **Save**.



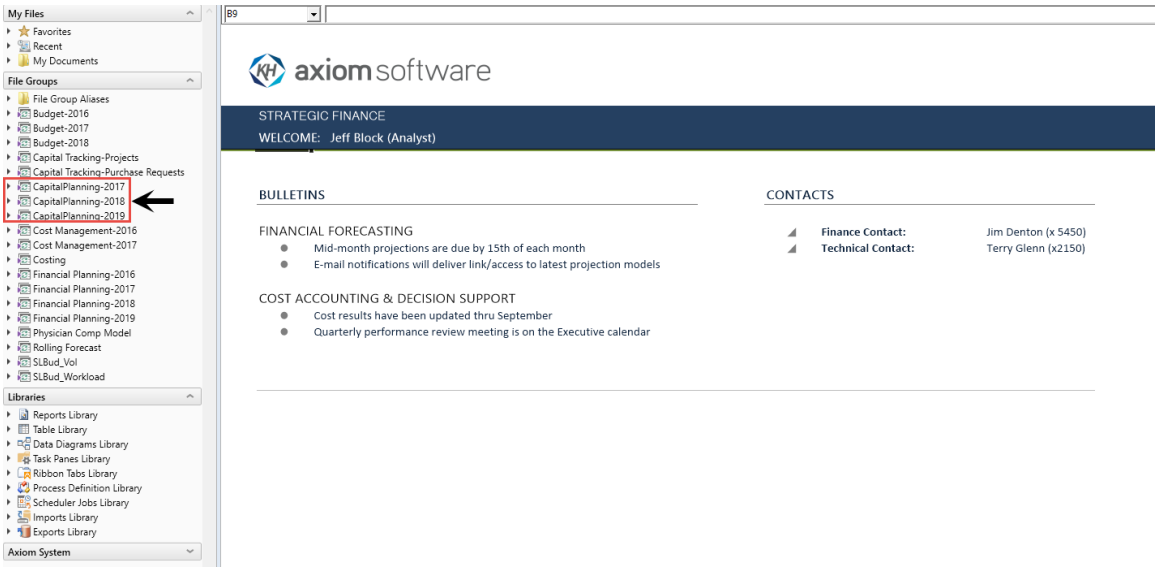
After you have completed the Constraint tabs, the capital dollars are allocated and locked down to the individual users. Your organization then uses the Capital Approval Report to approve projects.

Processing plan files

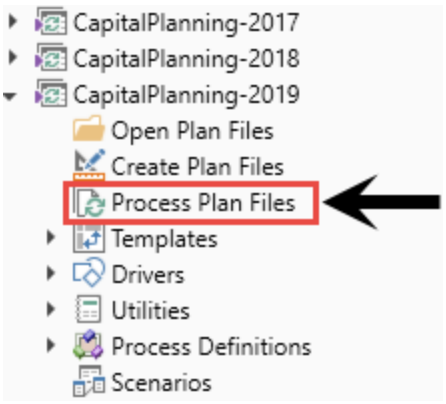
When you make changes to drivers or assumptions, you need to apply those changes by processing existing plan files. In most cases, this applies primarily to purchase requests and rarely to capital plans.

To process plan files:

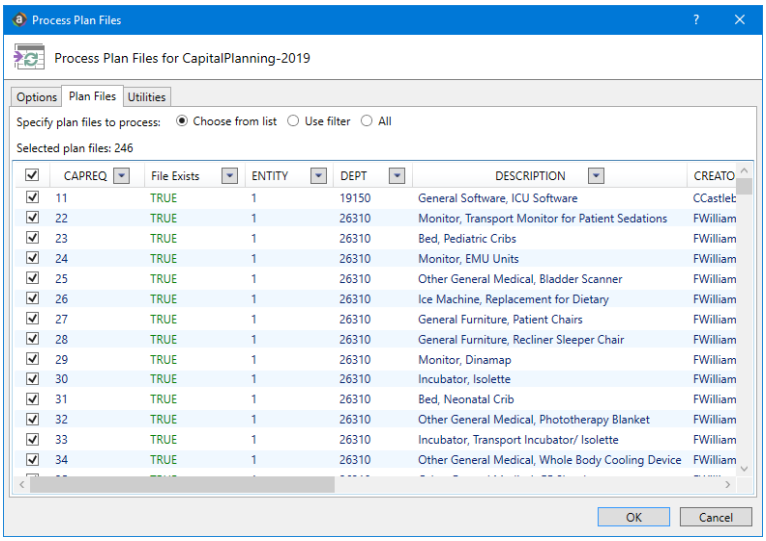
1. In the Explorer task pane, in the **File Groups** section, click the planning year to process the plan files.



2. Click the plan file year, and double-click **Process Plan Files**.



3. In the **Plan Files** tab, select the plan files to process, and click **OK**.



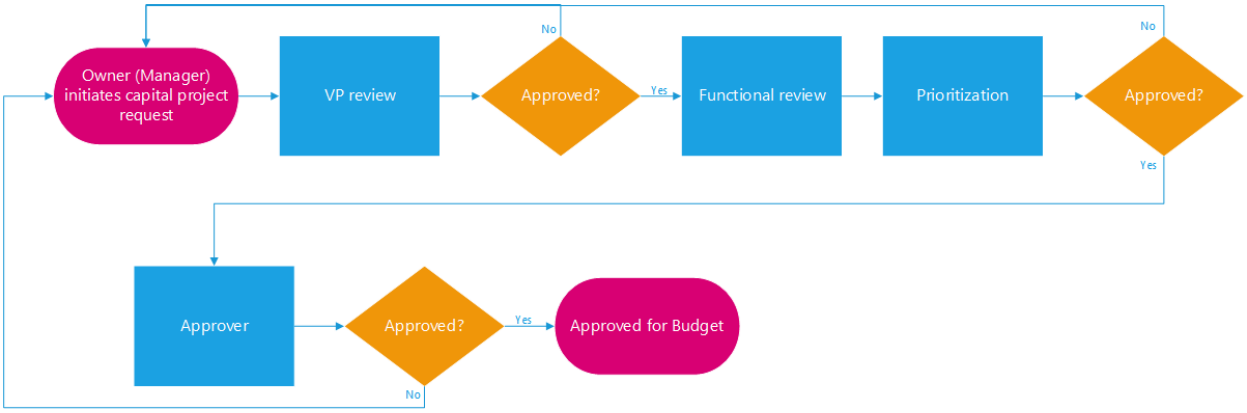
A confirmation prompt displays the number of plan files the system will process. When the plan files are done processing, a message displays in the Notifications task pane.

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

4

Configuring the Request Process

Most of the functionality in Axiom Capital Planning revolves around the process of submitting, reviewing, and approving capital project requests. While the exact steps in the process may be customized to suit your organization's preferences, the general workflow is as follows:



1. The capital project requestor (typically a department manager or director) enters a capital project request. Anyone with access to Axiom Capital Planning can create a capital request.
2. The VP reviews the request, and approves or declines it. If declined, the Owner can make changes and resubmit to the VP for approval.
3. After approved by the VP, the request is reviewed by various stakeholders (IT, Facilities, Clinical Engineering) for comments and feedback.
4. After reviews are complete, the capital committee and/or designated approver(s), prioritize and approve the capital requests.

The Process Management feature in Axiom Capital Planning automates much of these processes by running certain back-end tasks automatically and notifying users involved in the process when their intervention is required.

For instance, when a new capital budgeting year begins, Process Management can notify all managers/budget owners to submit capital project requests, and then compile all the submitted requests into reports, and notify executives to review them.

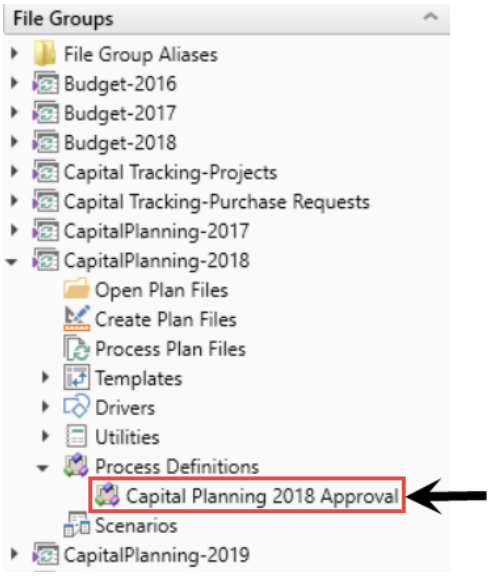
Axiom Capital Planning comes with a pre-defined process, but you may also design your own.

Viewing the Capital Planning Approval pre-defined process

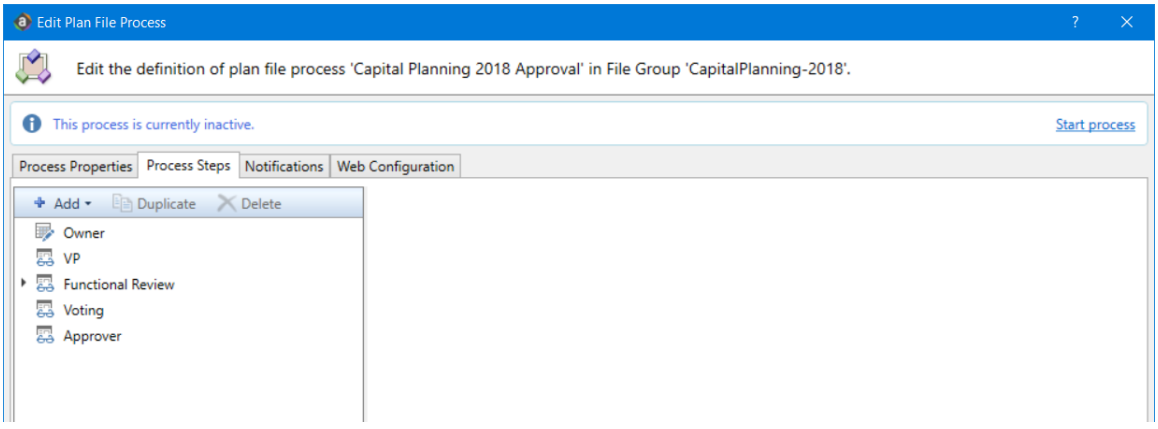
File groups in Kaufman Hall Capital Planning comes with the Capital Planning Approval pre-defined process. You can use this process as-is, or make the appropriate changes to meet your organization's needs.

To view the Capital Planning Approval pre-defined process:

1. In the Explorer task pane, in the **File Groups** section, click **Capital Planning-20XX > Process Definitions > Capital Planning 20XX Approval**.



2. To view the process steps, click the **Process Steps** tab.



As initially configured, the steps for the Capital Planning Approval pre-defined process include the following:

Step	Description
Owner	This is the first step in the process. Stamps all capital requests with a creator for the request, also referred to as the project initiator.
VP	Notifies VPs to review and comment on all capital requests submitted by their team members, as defined by their organizational chart in the Department table.
Functional Review	This is a sub process that includes the following steps: • IT – Designated IT reviewers review, comment, and update costs associated with any IT related requests, as needed. • Clinical – Designated clinical reviewers review, comment, and update costs associated with any clinical-related requests, as needed. • Facilities – Designated facilities reviewers review, comment, and update costs associated with any facilities-related requests, as needed.
Voting	Requests are ready for review and prioritization. **NOTE:** If your organization uses the Ranking utility for managers and executives, we recommend that the appropriate users begin this process after all projects have reached this phase. After this task is completed, your Capital Committee Members should perform their evaluator scoring and approvals.
Approver	Requests are ready for approval. The administrator moves approved projects from Voting to Approver. **NOTE:** Only approved projects can move to Axiom Capital Tracking.

Activating and managing active processes

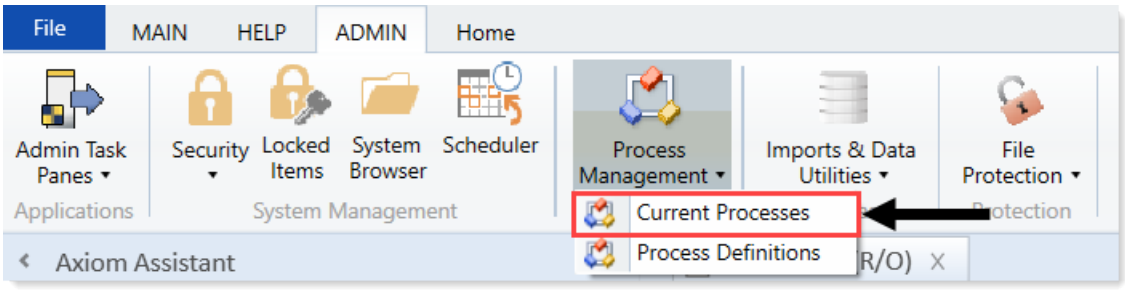
When a process is activated, the steps run in sequence. If email notifications are generated (per the Process Properties settings), users receive an email whenever an action is required on their part, including links to any files they need to perform an action upon.

After creating process definitions, 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.

IMPORTANT: If you stop the process, all projects currently in the process flow will return to the first step when the process is reactivated.

You can perform management tasks from the following locations:

- On the **Admin** ribbon tab, in the **Workflow** group, click **Process Management > Current Processes**.



- From the **My Files and Tasks** task pane, click **View status** (only available for active processes).

You can also start processes and access process details from within the process definition itself.

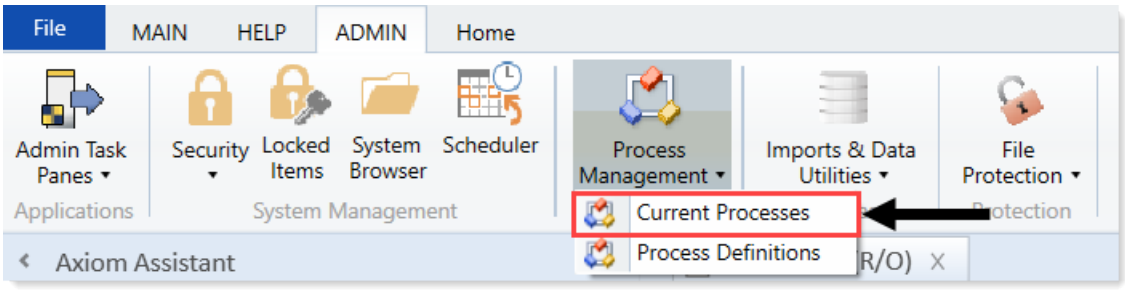
Viewing process status and comments

Administrators can view the status of all processes at any time. They can view a summary of process status and details for each individual process. Any comments added by users when completing steps also display in these details. Designated process owners can also view the status of processes that they own. Process flow comments can be seen using the Process Flow Routing slip.

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 **Admin** ribbon tab, in the **Workflow** group, click **Process Management > Current Processes**.



By default, this dialog shows active processes only. To see all of the processes, click **Show inactive processes**. The details displayed are for the most recent instance of the process (the current process).

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.

NOTE: 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 My Files and Tasks task pane (or in the process definition).

In the **Process Status** dialog, you can view all of the information about the process, including the:

- 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.

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 regenerating stalled steps.

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.

You can perform all of these actions in the **Process Status** dialog, which you can access by clicking **View status** for the process in the My Files and Tasks task pane. The process definition also contains a link to open this dialog.

Regenerating tasks for a stalled step

If an issue occurs that prevents a step from becoming active, the step stalls in the process, and the process cannot continue.

Axiom Capital Planning attempts to reactivate the step, which causes any associated tasks to regenerate. If the task generation is successful, the step is 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 automatically regenerates for the new owner, and the error state is removed.

For plan file processes, the process can stall on a per-item basis. For example, if one plan file has an invalid owner for step 2, then the entire process does not stall—only the plan file with the invalid owner stalls.

Regenerating tasks to reflect process or security changes

In certain cases, you may need to regenerate tasks for an active step 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 has changed since the step became active.
- If the owner assignment is a role, and the members of the role has changed since the step became active.
- If security permission changes have been made that affects 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 click **Regenerate tasks**.

Scheduler prompts you that all current tasks for the step will be deleted and new tasks will be created. Click **OK** to continue.

NOTE: For plan file processes, you can regenerate tasks on a per-item basis. You must select the items for which you want to regenerate tasks before clicking the **Regenerate tasks** button.

Starting or stopping a process

A process is only managed by the system if it has been started. After a process starts, it remains active until it is completed or stopped.

NOTE: Only administrators or process owners can start or stop a process.

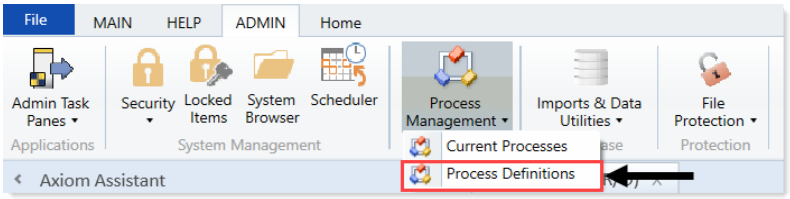
Starting a process

After you complete a process definition and you are ready to work on the process, you can start it. When you start a process, Axiom Capital Planning does the following:

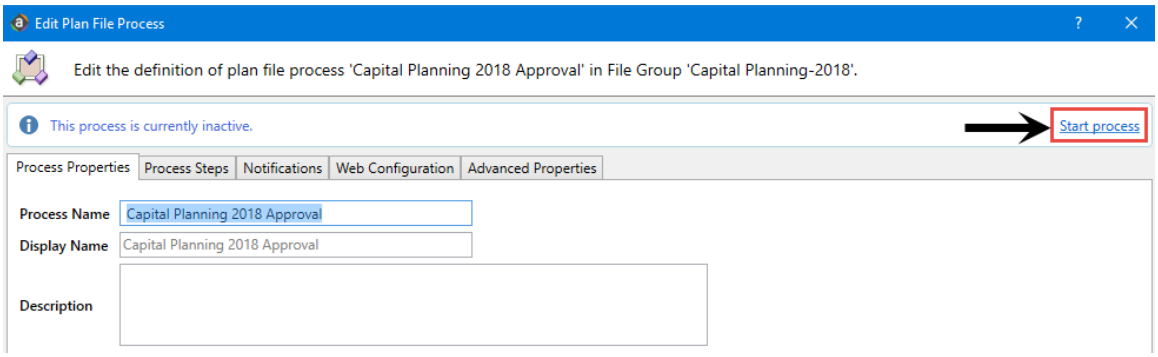
- Creates a unique process instance to track the process steps and store the process details. Each activation of a particular process definition is stored separately so that you can always see the historical details.
- Activates the first step in the process, and creates one or more tasks as appropriate.
- Displays the activated process in the Process task pane. Administrators can see every activated process; other users 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 **Admin** ribbon tab, in the **Workflow** group, click **Process Management > Process Definitions**.



2. In the **Axiom Explorer**, double-click the process definition to start, and click **Start Process** in the top right corner of the dialog.



> **NOTE:** You cannot start the process definition if it contains any missing or invalid settings. These validation errors display at the bottom of the dialog, if present. Click the link to go to the tab or step that contains the error. After you resolve all of the errors, you can start the process.

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

The process is now active. After activating a process, you can track its progress using the Process Manager (**Process Management > Current Processes**) or by clicking the **View status** link in the task pane.

You can start processes from the Process Manager dialog, and when viewing the historical details of a process.

Stopping a process

When you stop a process, all current tasks are deleted, and the process status changes from **Active** to **Aborted**.

IMPORTANT: If you restart the process definition later, a new process instance is created, and the process starts over from the first step. There is no way to restart a particular process instance at the step it was on when it stopped.

To stop a process:

1. From the **Process** task pane, click **View status** for the applicable process.
2. In the **Process Status** dialog, click **Stop Process** in the top right corner of the dialog.
3. At the confirmation prompt, click **OK**.

You can also stop processes using the Process Manager in the **Admin** ribbon tab (**Process Management > Current Processes**).

Completing a process

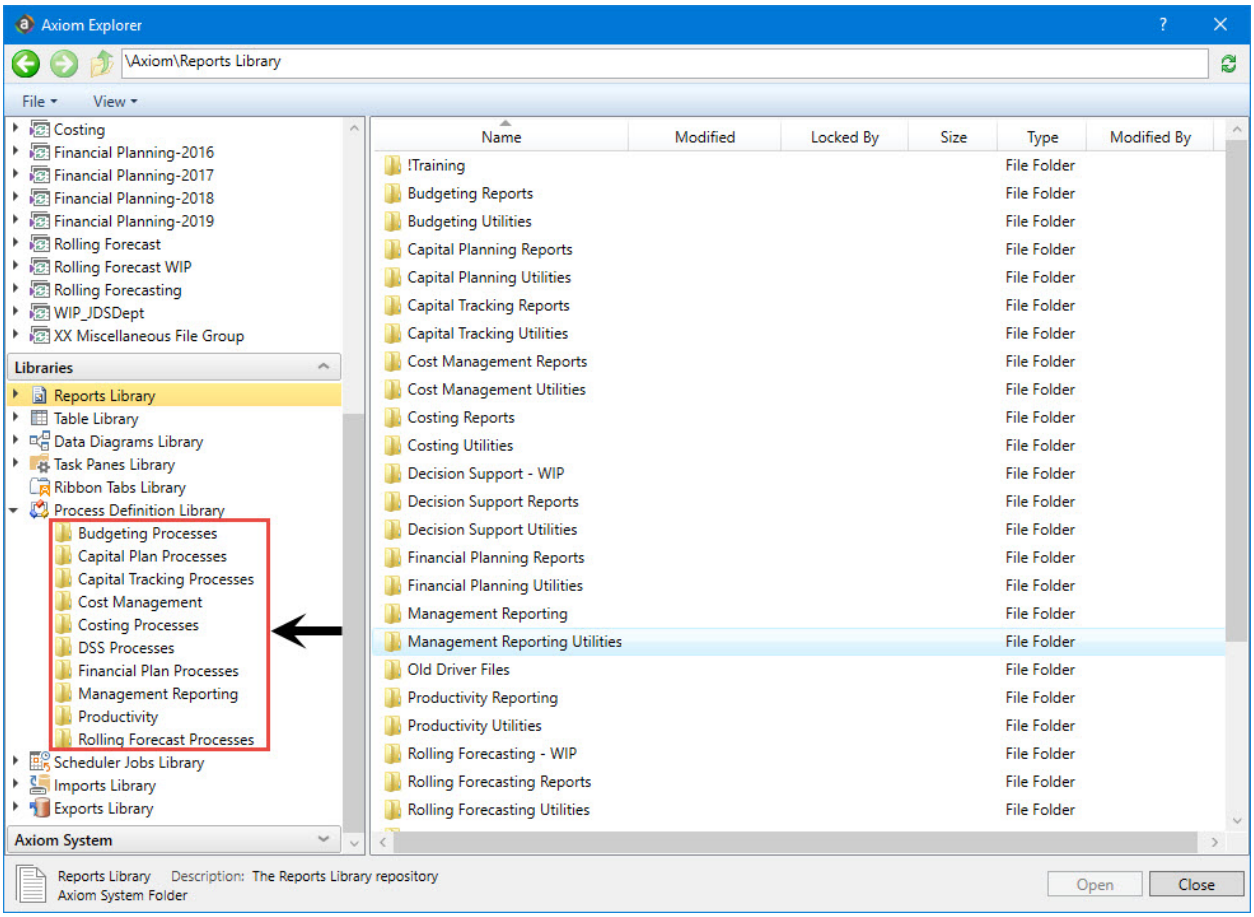
A process is automatically completed if all the steps in the process are complete. After a particular process instance is completed, that same instance cannot be restarted—if the process definition is later restarted, a new process instance is created, and the process starts over from the first step.

Axiom Capital Planning 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.

Creating or modifying a process definition

Use process definitions to 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 one of two locations: the Process Definition Library or within a file group. 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 to perform the task or to view the process status.

NOTE: This topic discusses how to create a standard process definition. Standard process definitions and plan file process definitions share the same 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. For more details on process vs. plan file processes, see the *Axiom Software Process Management Guide*.

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 of the 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 or modify a process definition:

1. In the **Axiom Explorer** dialog, right-click the **Process Definition Library** (or a file group Process Definition folder), and click **New > Process Definition**.

   NOTE: If you have permission to one or more Process Definition folders for file groups, you can also create process definitions within those folders.

   The **Edit Process** dialog opens. As you are working in this dialog, any validation errors for missing or invalid settings display at the bottom of the dialog. You can save the process definition with configuration errors, however, you cannot start the process until all configuration errors are resolved.

2. In the **Process Properties** tab, complete the general process settings, as desired.

Option	Description
Process Name	The name of the process. This name displays in the **Process Status** dialog as well as in the **My Files and Tasks**task pane. This name also defines the name of the file in the Process Definitions Library (and vice versa; if the file name is changed, the process name is updated to match).
Display Name	The name of the process that displays to users.
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).
Allow step owners to see all steps in the process task pane	Specifies whether the assigned step owners can see all of the 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 **Task View** in the **My Files and Tasks** task pane, which shows the currently active task. If this option is enabled, then step owners gain access to **Process View**, which shows all of the steps in the process. Users can toggle between each view. This setting is only applicable to non-administrator step owners. Administrators and process owners can always see all of the steps of any process.
Default Process Assignment	The user assigned 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**.

3. In the **Process Steps** tab, define the steps for the process.
    - To add a step, click **Add**, and select the type of step to add. New steps are added after the step that you currently have selected in the list. For details regarding the available options, see Process Step types.
    - To add a new step by copying an existing step, select the step, and click **Duplicate**.
    - To remove a step, select that step, and 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 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 that each step in the list must be completed before the next step can be done.

    After you add a step to the process, you can configure the settings for that step in the right 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.

    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 can access the inherited process-level settings.

4. 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.
5. 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, then select **Copy**.
- To paste a copy of the file, click **Paste**. The new file is named ***OriginalFileName* - Copy**.
- Rename the file, then open the file and change the process definition settings, as desired.

NOTE: This step is required for the annual rollforward process.

Process Step types

Process Management supports various step types to be used for different purposes. This section details the available step types for general processes and the type-specific settings.

Approval Process step

Use the Approval Process step for steps that need the explicit approval of a user to move forward with the process.

Step-specific settings

Approval Process steps in standard processes do not have any unique step settings. Only the general step settings apply.

Process behavior

When the Approval Process step is the active step, the step owner has the following options:

- **Approve** the process to move to the next step.
- **Reject** the process to return to the prior step.

The Approval Process step is the only step type where an administrator can move the step to any part of the process. Users can only move steps one forward or back.

File Group Process step

Use the File Group Process step 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*.

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**: 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. 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, use Selected File Group to specify the existing file group to clone. In step 2, 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.

Item	Description
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.
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 opens. 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 needs 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 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 needs to configure it as needed to complete the step. • **Edit File Group**—Opens the Edit File Group dialog with no special setup; the user needs to configure it as needed to complete the step. • **Process Plan Files**—Opens the Process Plan Files dialog with no special setup; the user needs 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 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.

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 it opens the Process Plan Files dialog for the file group.
- **Mark step as complete**: The user can click this link to complete the active task.

Generic Process step

Use the Generic Process step 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 Capital Planning.

You might use this step for:

- A task that a user needs to compete outside of Axiom Capital Planning.
- A task that uses an Axiom Capital Planning feature for which there is no specific step type.

Step-specific settings

Generic Process steps do not have any unique settings. Only the general step settings apply.

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.

You cannot associate this step with an action; the assigned user needs 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 to consider the step complete.

Import Process step

Use the Import Process step for steps where you need a user to access an import utility in Axiom Capital Planning, whether to edit the import settings and/or execute the import.

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.

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.

Multiple Approvals Process step

Use the Multiple Approvals Process step 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.

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.

Sub-steps of a Multiple Approvals Process step

A Multiple Approvals Process step must have two or more sub-steps. The sub-steps can only be Approval Process steps.

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. If *any* of the sub-steps are rejected, however, then the entire step is rejected, and the process is moved back to the step immediately before the Multiple Approvals Process step.

Restrictions and limitations

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.

Report Process step

Use the Report Process step for steps where you need a user to run a report in Axiom Capital Planning. 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.

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 with Excel 2013 or 2016, Axiom forms always opens 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.

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 clicks this link to complete the active task.

Scheduler Process step

Use the Scheduler Process step 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).

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 runs 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 has this level of permissions to troubleshoot the job results if any errors occur.

Process behavior

When the Scheduler Process step is made active, Axiom Capital Planning automatically places the job in the Scheduler queue for immediate processing (pending Scheduler thread availability). If the processing completes successfully, 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 Capital Planning is unable to schedule the job for some reason, then the step is effectively stalled. Unlike other stalled steps, however, 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. Note that the user, however, must have the **Scheduled Jobs User** permission and at least read-only access to the job to view the job results.

- **Restart scheduled job**: This option places the job in the Scheduler queue to run again. This assumes that the error was the result of some temporary issue that 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**: Use this option to ignore the job error and manually complete the step. This may be appropriate for situations where the job completed with partial success that 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 run again as part of processing this step.

Table Process step

Use the Table Process step for steps where you need a user to perform some kind of administrative action on a table.

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 can 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 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. Type 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.

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 it opens the Create Table dialog for table cloning.
- **Mark step as complete**: The user can click this link to complete the active task.

Assigning owners to process steps (general processes)

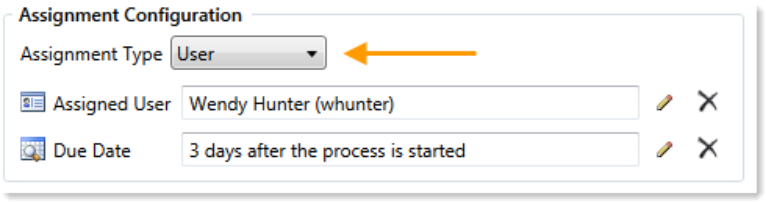
Each step in a general process definition must have a defined owner to perform that step and mark it as complete. The assigned step owner can be a user or a role.

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 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. For more information, see Assigning owners to plan files for process steps.

Assigning owners to individual steps

Step owners are assigned on the **Process Steps** 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. If this option is selected, then click the Edit button to the right of the **Assigned User** field to select a user. You can select any user in Axiom Capital Planning. 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 is automatically 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. If this option is selected, then click the Edit button to the right of the **Assigned Role** field to select a role. You can select any role in Axiom Capital Planning.

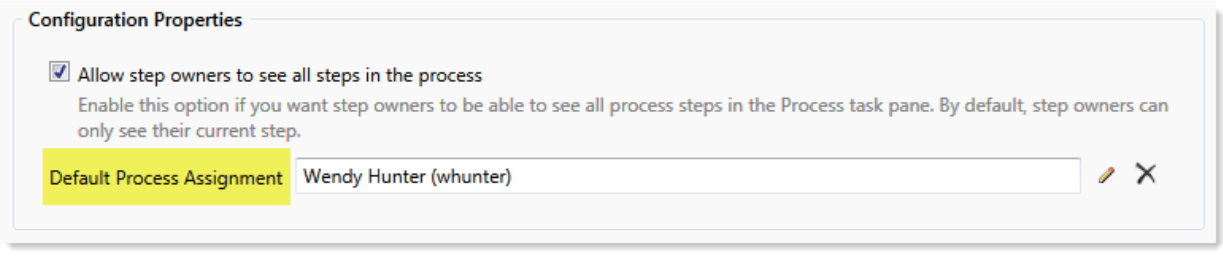
Steps with sub-steps do not have assigned owners on the parent step itself. Instead, owners are assigned for each individual sub-step.

Until a process is active, you can edit step ownership settings as desired. After 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 are regenerated as needed to reflect the new settings, including sending new Step Activated notifications (if enabled for the process).

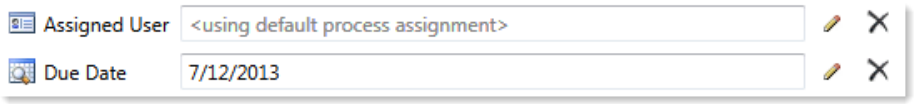
Defining a default user assignment for the process

If desired, you can specify a default user assignment at the process level. This user will apply to any step that uses the assignment type of User but does not have an explicitly assigned user. 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 uses the default assignment. This is indicated in the step properties as follows:



After a process has started, the default process assignment cannot be changed. You can, however, 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, 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 is 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. If the user does not have permission to execute the import, however, 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.

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 supports 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 Capital Planning. 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:

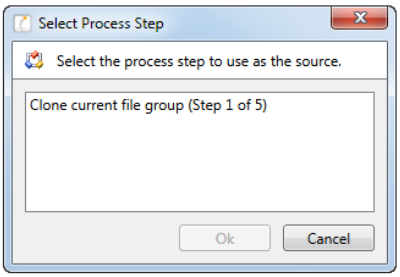
- Step 1 uses the Clone File Group action to create a new file group for the new cycle of planning.
- Step 2 creates the plan files for the new file group that was created in Step 1.
- Step 3 processes the plan files for the new file group that was created in Step 1.

For Step 1, you would point the step to an existing file group such as Budget 2021. When the process is activated, the step owner performs the cloning process, and creates a new file group such as Budget 2022. However when setting up the process definition, you cannot point Step 2 to the Budget 2022 file group because it is not created yet. Instead, you 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:

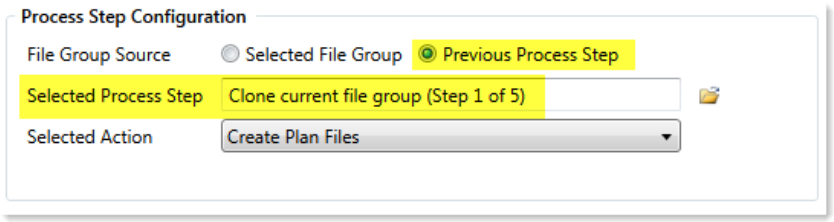
1. For **File Group Source**, select **Previous Process Step**.
2. For **Selected Process Step**, click the **Browse** button to select the step where the file group is created.



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 previous example, the configuration for Step 2 looks like the following:



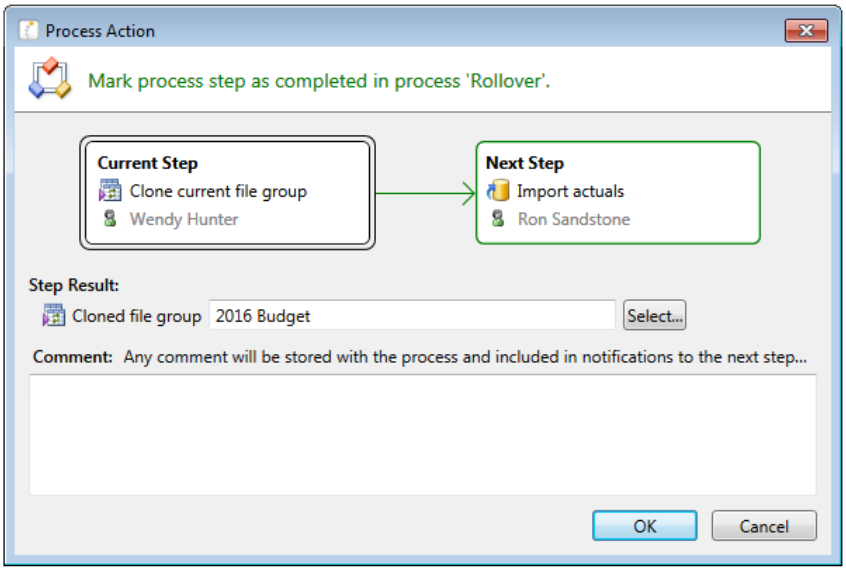
This means that Step 2 creates plan files for the file group created in Step 1.

Tracking the step result in active processes

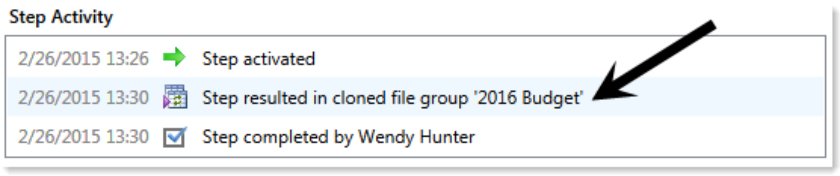
If a process is configured to use the result of a previous step, then the result of that step must be tracked within the process. To continue the previous example, when Step 1 is completed, the process needs to know the name of the file group that was created so that it can pass the name of that file 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 is created. If only one clone is created for the source file group since the process was activated, that file group is selected by default as the step result. Otherwise, the step owner is prompted to select a file group before the step completion dialog displays.

If the displayed step result is incorrect, the step owner can use the **Select** button to change the file group before completing the step. The list of available file groups is limited to those that were created by cloning the source file group.



The file group specified as the step result is passed to the subsequent steps that use that result. The step result is also documented in the process details for future reference.

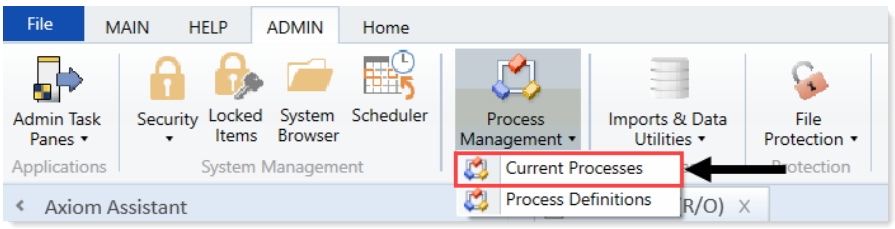


Viewing process history

Each time a process starts, 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.

Product administrators and process owners can view the history for a process. There are several ways to access this history.

- On the **Admin** tab, in the **Workflow** group, click **Process Management > Current Processes**.



- In the **My Files and Tasks**task pane, click **View status**. In the **Process Status** dialog, click **Process history**.
- In the **Explorer** task pane or **Axiom Explorer** system browser, right-click the process definition, and click **Process Status**. In the **Process Status** dialog, click **Process history**.

All of these options open the Process Manager dialog. Product administrators can see all processes in this dialog; process owners can only see the processes they own. To view the history for a process:

1. Select the process in the **Current Processes** section.
2. 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.
- **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).

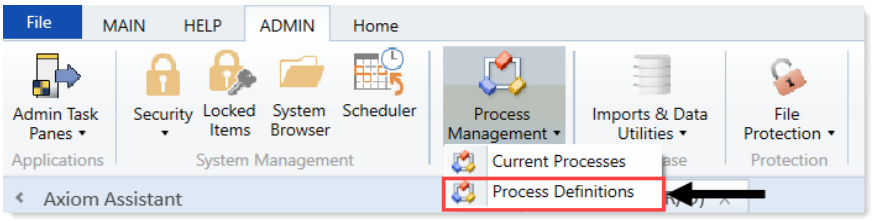
If the process definition is deleted, all history for that process is also automatically deleted.

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 also deletes all of the 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 **Admin** ribbon tab, in the **Workflow** group, click **Process Management > Process Definitions**.



2. In the Axiom Explorer dialog, right-click the definition to delete, and click **Delete**.
3. At the confirmation prompt, click **OK**.

The process definition is deleted.

Assigning owners to process steps (general processes)

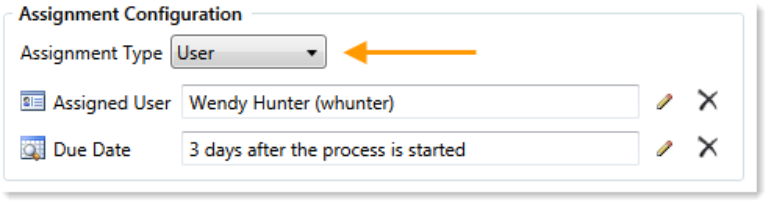
Each step in a general process definition must have a defined owner to perform that step and mark it as complete. The assigned step owner can be a user or a role.

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 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. For more information, see Assigning owners to plan files for process steps.

Assigning owners to individual steps

Step owners are assigned on the **Process Steps** 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. If this option is selected, then click the Edit button to the right of the **Assigned User** field to select a user. You can select any user in Axiom Capital Planning. 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 is automatically 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. If this option is selected, then click the Edit button to the right of the **Assigned Role** field to select a role. You can select any role in Axiom Capital Planning.

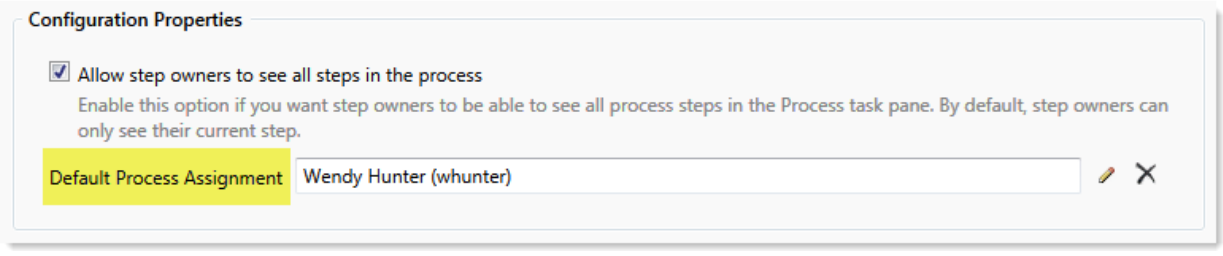
Steps with sub-steps do not have assigned owners on the parent step itself. Instead, owners are assigned for each individual sub-step.

Until a process is active, you can edit step ownership settings as desired. After 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 are regenerated as needed to reflect the new settings, including sending new Step Activated notifications (if enabled for the process).

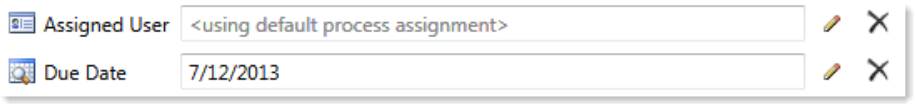
Defining a default user assignment for the process

If desired, you can specify a default user assignment at the process level. This user will apply to any step that uses the assignment type of User but does not have an explicitly assigned user. 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 uses the default assignment. This is indicated in the step properties as follows:



After a process has started, the default process assignment cannot be changed. You can, however, 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, be sure that the owner has the appropriate security permissions to perform the associated task for the step.

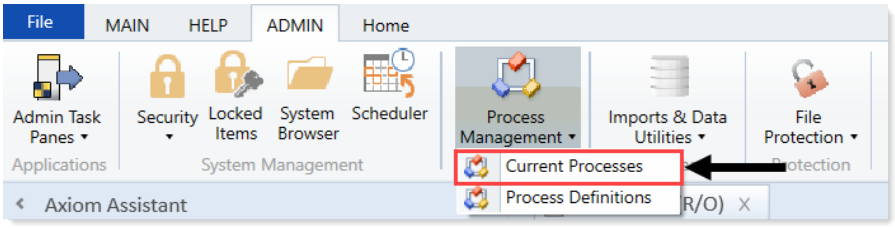
For example, imagine that the step is "Import actuals data" and the step is linked to the GLActuals import utility. If the user has permission to execute that import (as defined in security), then the user can click **Open import** for the task in the Process task pane to execute that import. If the user does not have permission to execute the import, however, 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.

Viewing process history

Each time a process starts, 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.

Product administrators and process owners can view the history for a process. There are several ways to access this history.

- On the **Admin** tab, in the **Workflow** group, click **Process Management > Current Processes**.



- In the **My Files and Tasks**task pane, click **View status**. In the **Process Status** dialog, click **Process history**.

- In the **Explorer** task pane or **Axiom Explorer** system browser, right-click the process definition, and click **Process Status**. In the **Process Status** dialog, click **Process history**.

All of these options open the Process Manager dialog. Product administrators can see all processes in this dialog; process owners can only see the processes they own. To view the history for a process:

1. Select the process in the **Current Processes** section.
2. 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.
- **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.

5

Configuring the Review and Approval Process

Axiom Capital Planning allows your organization to structure your review and approval processes according to your preferences.

There are two primary ways your organization can approve projects:

- **Decentralized process** – Using this method, your organization allocates discretionary dollars to capital pools such as IT, Facilities, Clinical equipment, or even to a VP level. The recommended process for pro forma projects or high dollar summary projects include Capital Committee members evaluating and scoring these requests prior to voting on which projects to approve. This process involves a bit of setup for the administrator, but once configured should proceed automatically.
- **Manual process** – In the workbook, you can change the project status in the upper right corner of the project section or you can use the Project Approval report.

The standard steps in the default approval process include:

Step	Description
VP	The VP assigned to the department reviews and comments on the request.
Functional Review	Depending on the selections made by the owner, the plan file circulates to designated representatives of the following departments for review and comment: • Information Systems • Clinical Engineering • Facilities Management
Voting	If voting has been enabled, members of the Capital Committee score and rank the project in terms of priority relative to all other projects submitted for the active capital budget.
Approver	The plan file is submitted to the designated approver for Finance.

Your organization may opt to enable, disable, or re-order these steps for different types of requests or create additional custom steps. For more information, see Configuring Assumptions and Drivers.

Before your organization can review and approve projects, you must set up the following:

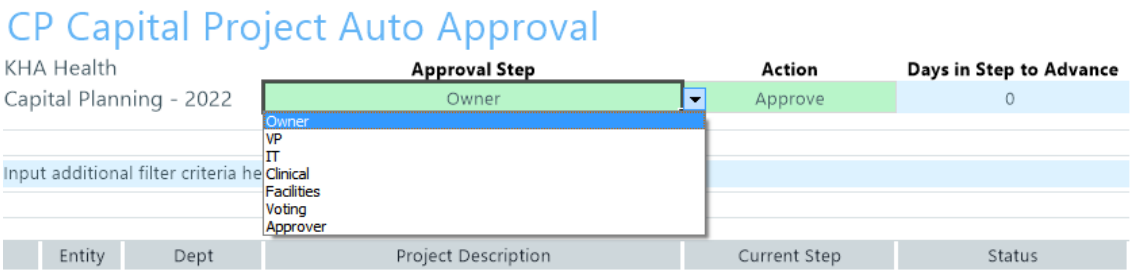
1. **Add reviewers and define dollar constraints** - The decentralized process assumes someone is in control of a discretionary pool of capital dollars. Normally these requests are low dollar, Non-Threshold requests. Often a VP controls these dollars. The approvers are listed in the ConstraintAlloc tab in the CP Constraint driver. For more information, see Configuring the CP Constraint driver.
2. **Designate Capital Committee members** - The members of the capital committee are listed on the **Capital Committee** page in the Capital Planning Drivers file. For more information, see Managing Capital Committee members.
3. **Define project scoring criteria** - These are the criteria your Capital Committee members will be scoring projects on. Normally these criteria are the pillars of your organization. Your organization can weight these however necessary. For more information, see Defining project scoring criteria.

Configuring project auto approval and advancement

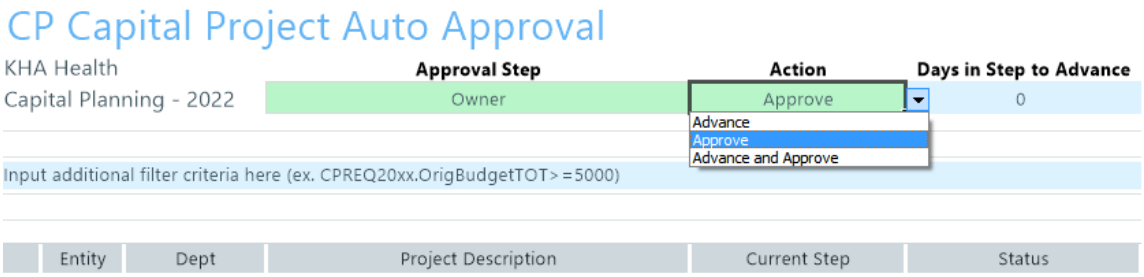
Use the CP Capital Project Auto Approval utility to automatically advance and/or approve project plan files if reviewers have not reviewed them by a specified time frame. For example, if a pending capital project has been in a step for seven days, you can set the system to automatically move the project to the next step without first getting approval.

To configure project auto approval and/or advancement:

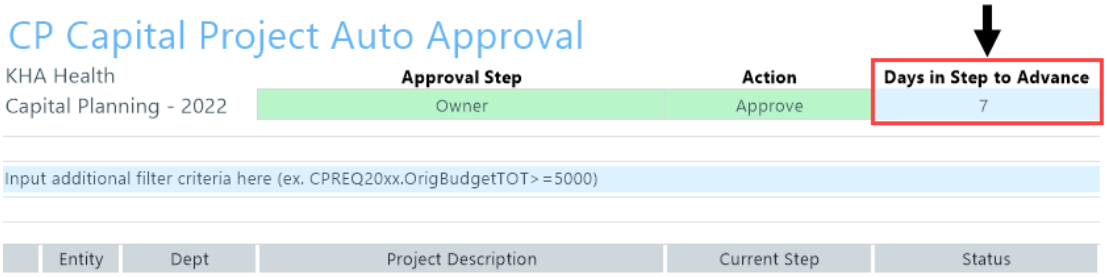
1. In the Cap Plan Admin task pane, in the **Administration** section, double-click **CP Capital Project Auto Approval**.
2. From the **Approval Step** drop-down, select the step in which to configure the auto advancement and/or approval.



3. From the **Action** drop-down at the top of the sheet, select one of the following actions:
   - **Advance** – Advance the project while keeping its current status.
   - **Approve** – Approve the project without moving it to the next step.
   - **Advance and Approve** – Approve the project and move it to the next step.



4. In the **Days to Step in Advance** cell, type the number of days in which the project remains in a step before it moves to the next step.



NOTE: Be default, this field displays zero. If you leave the field as zero, the system advances and/or approves the capital project or PO immediately—regardless of the number of days in the step.

5. After making your changes, in the **Main** ribbon tab, click **Save**.

Managing Capital Committee members

The Capital Committee driver lists individuals who will vote on capital projects.

The Voting Code column displays a unique ID that is assigned to each committee member. The user ID must already be set up in Security Manager. The voting code writes back to the database individual scores but allows for the blinding of those scores.

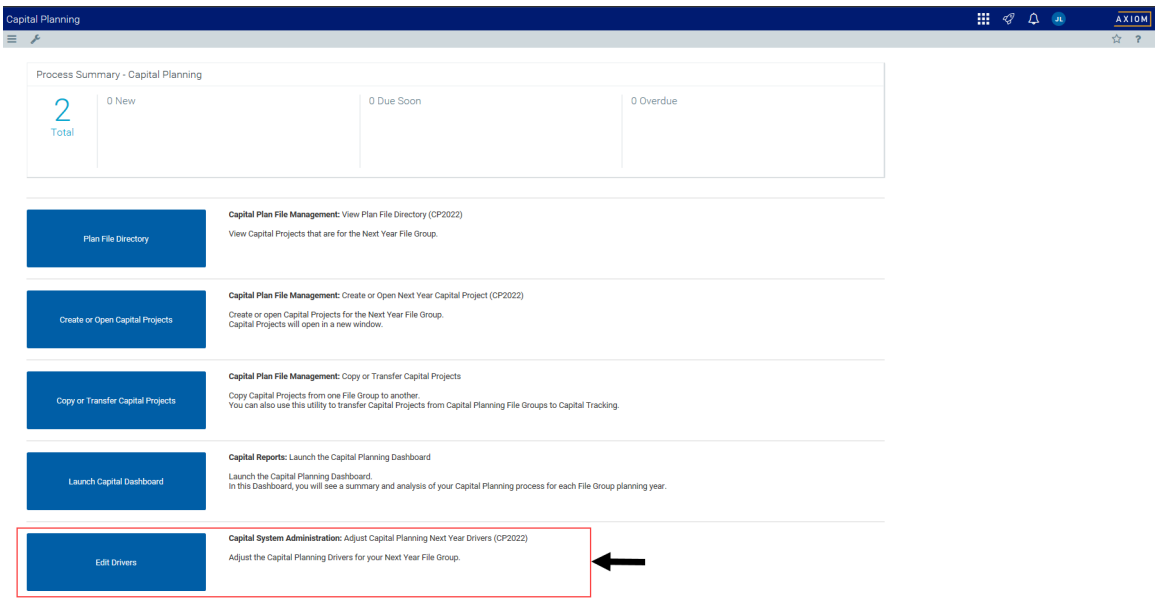
▶ Adding a member

Only users assigned the Capital Planning Evaluator role can be added to the committee.

To add a Capital Committee members:

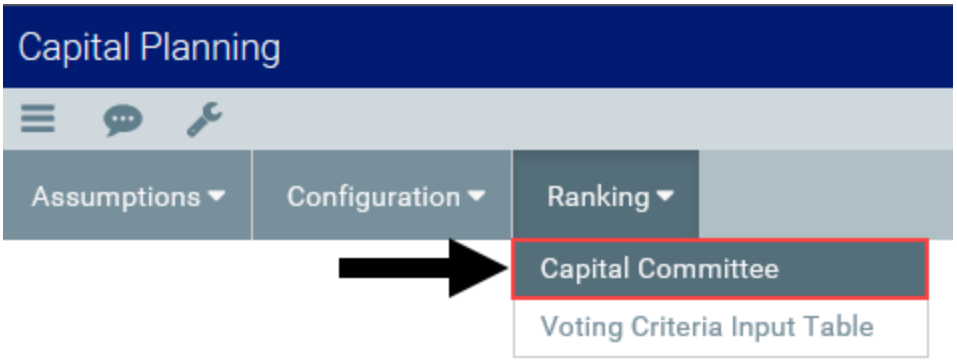
1. From the Axiom Capital Planning home page, click **Edit Drivers**.

NOTE: To access this location from the Cap Planning Admin task pane, in the **Administration** section, click **Capital Planning Drivers**, and double-click **Capital Planning Drivers**.



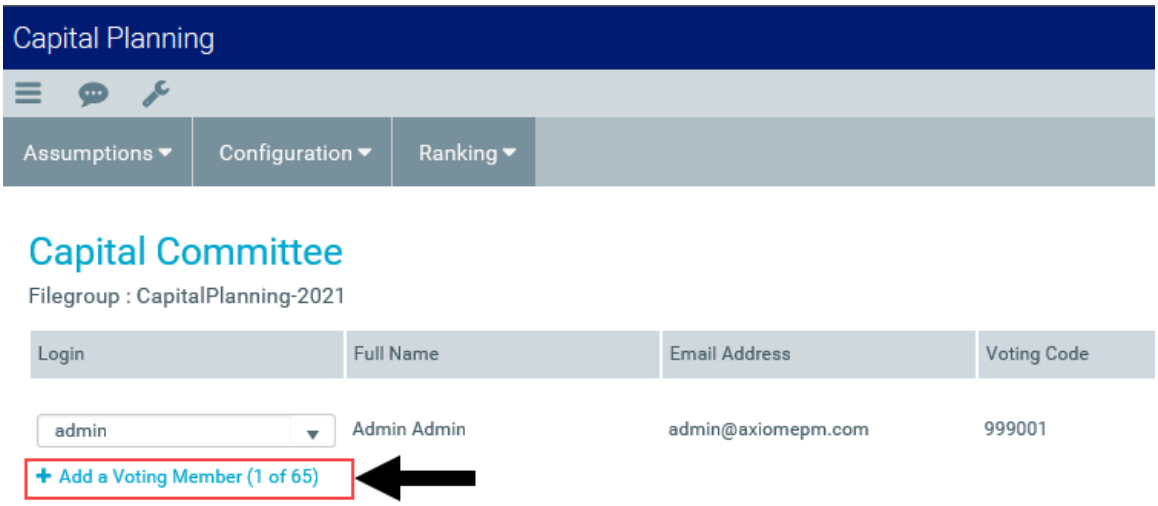
Click image to view full size

2. From the **Ranking** tab, click **Ranking > Capital Committee**.



Click image to view full size

3. Click **+ Add a Voting Member**.



Click image to view full size

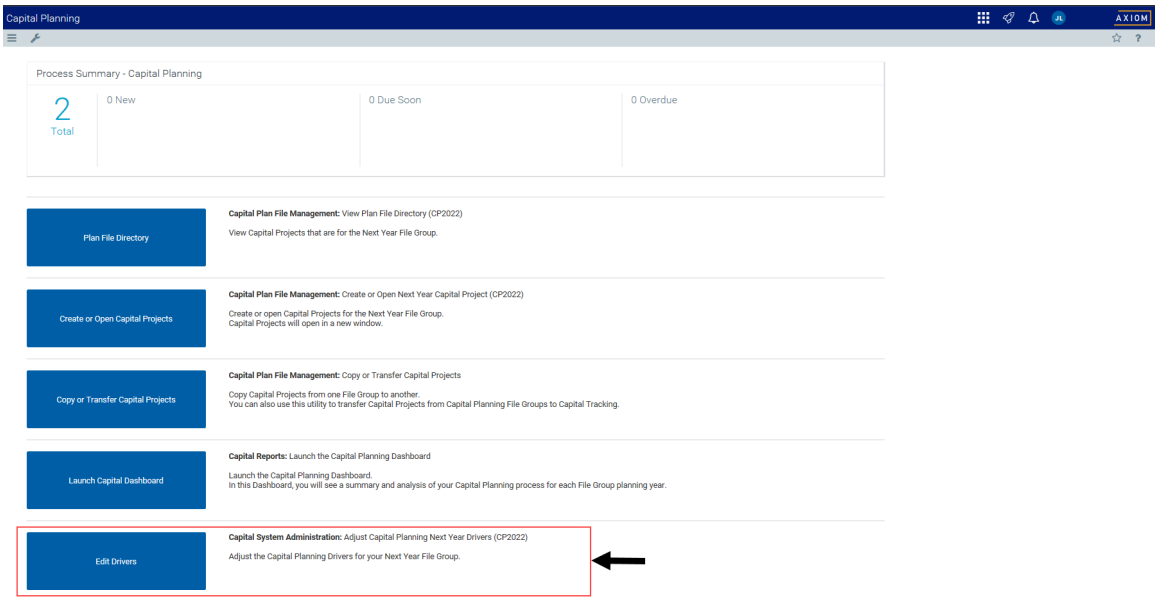
4. In the **Login** column, select the user's login ID.
5. After making your changes, in the upper right corner of the page, click the disk icon.
6. At the confirmation prompt, click **OK**.

Deleting a member

To delete a Capital Committee members:

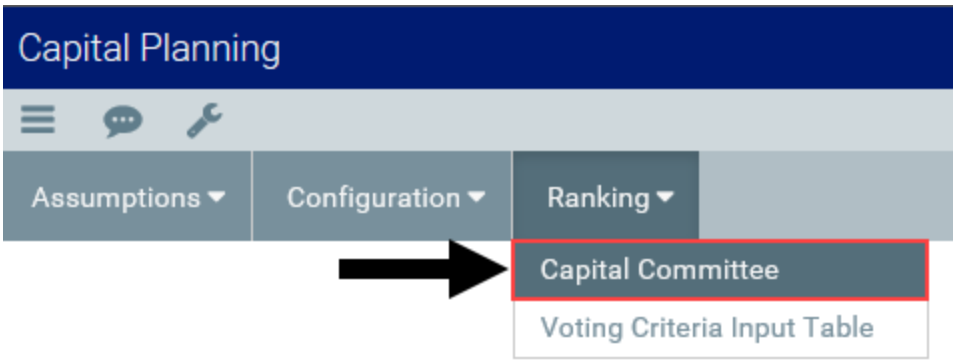
1. From the Axiom Capital Planning home page, click **Edit Drivers**.

> **NOTE:** To access this location from the Cap Planning Admin task pane, in the **Administration** section, click **Capital Planning Drivers**, and double-click **Capital Planning Drivers**.



Click image to view full size

2. From the **Ranking** tab, click **Ranking > Capital Committee**.



Click image to view full size

3. Click the check box next to the member login name. When you save, the member will be removed from the list.
4. In the **Login** column, select the user's login ID.
5. After making your changes, in the upper right corner of the page, click the disk icon.
6. At the confirmation prompt, click **OK**.

Defining project scoring criteria

Project scoring criteria are used by your Capital Committee members to score projects to determine their prioritization when it comes to planning next year's projects. Normally these criteria are the pillars of your organization. Your organization can weight these however necessary.

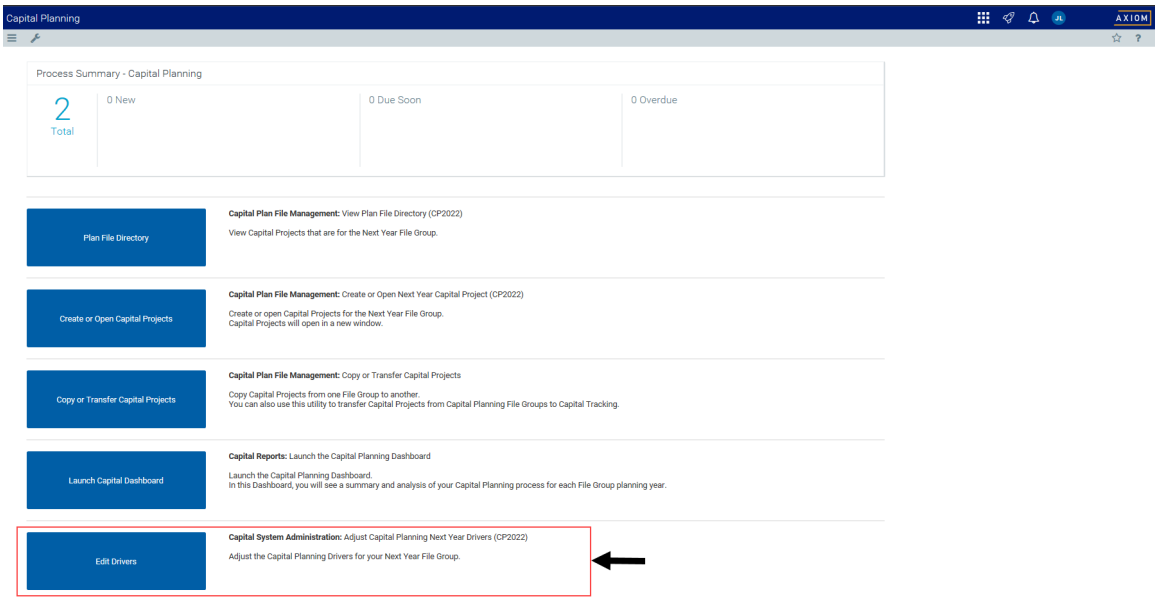
The Voting Criteria Input Table driver lists the criteria on which committee members will be asked to rate projects. Your organization enters the relative weight of each criterion, which adds up to the overall rating for the project.

You can add up to ten different criteria, which must add up to a weighting of 100%. Most organizations tie these criteria around the pillars of their organizations.

To define project scoring criteria:

1. From the Axiom Capital Planning home page, click **Edit Drivers**.

   NOTE: To access this location from the Cap Planning Admin task pane, in the **Administration** section, click **Capital Planning Drivers**, and double-click **Capital Planning Drivers**.

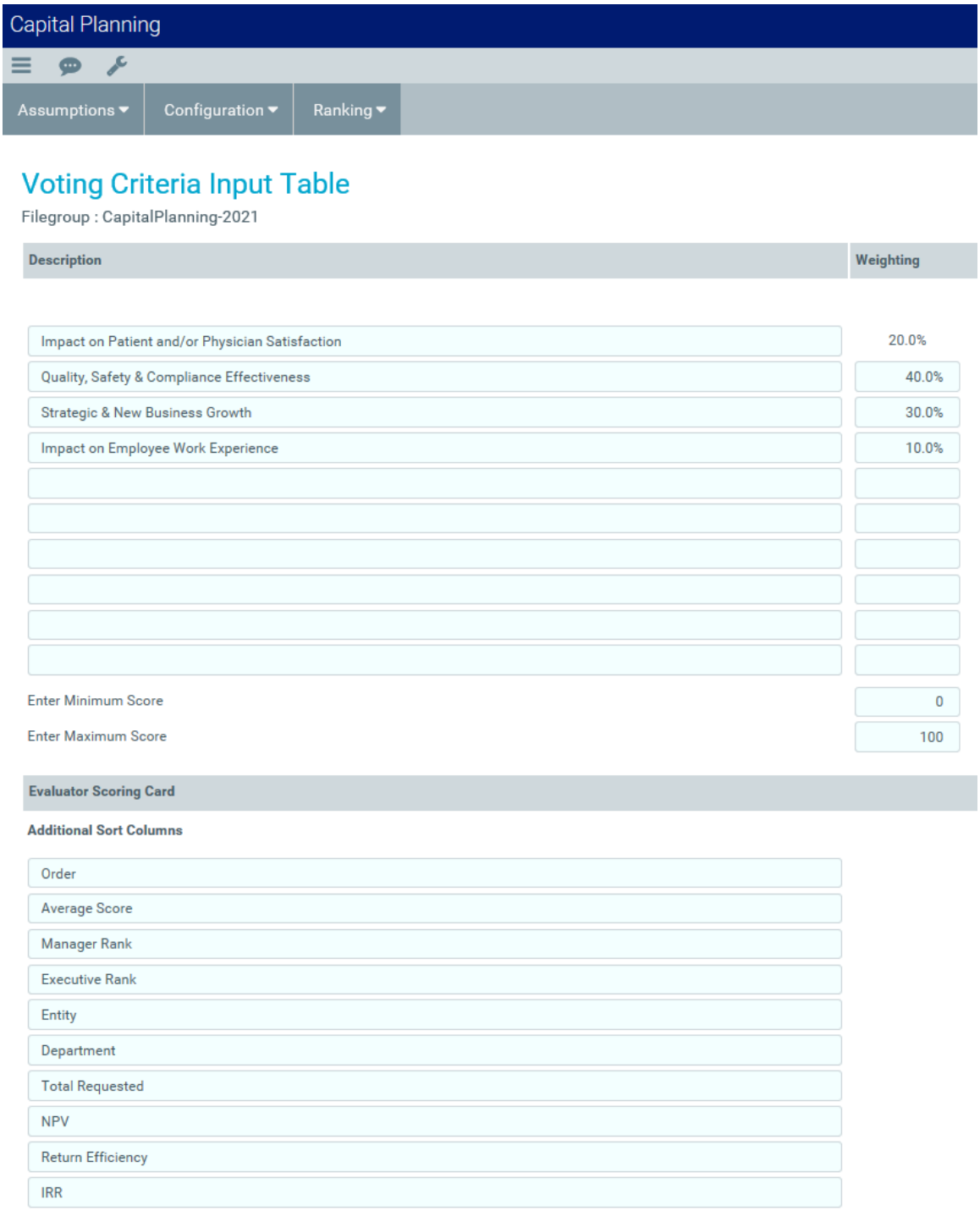


   Click image to view full size

2. From the **Ranking** tab, click **Voting Criteria Input Table**.

Click image to view full size

3. In the **Description** field, type a description for the criterion.



Click image to view full size

NOTE: This description is displayed throughout the various ranking reports and utilities.

4. In the **Weighting** column, type the percentage that the rating for this criteria contributes towards the overall rating for the project.
5. In the **Enter Minimum Score** field, type the minimum score a committee member may give for any single criterion.
6. In the **Enter Maximum Score** field, type the maximum score a committee member may give for any single criterion.
7. In the **Additional Sort Columns** section, enter any additional columns to use for sorting in the Evaluator Scoring Report.
8. After making your changes, in the upper right corner of the page, click the disk icon.
9. At the confirmation prompt, click **OK**.

For more information on the project ordering and selection process, see Determining capital projects for next year.

6

Managing Capital Projects

After an annual capital budget has been set up in Axiom Capital Planning, the primary tasks for users include creating, reviewing, and approving capital projects.

There are two broad categories of capital projects in Axiom Capital Planning:

- **Non-Threshold (Summary) Capital Projects** – Capital projects below a set dollar threshold that can be approved on an ad-hoc basis by a single executive.
- **Threshold (Pro Forma) Capital Projects** – Capital projects that exceed the set dollar threshold are recommended to be approved as part of a larger, organization-wide process of evaluating and prioritizing capital requests, involving a committee of multiple stakeholders.

While the administrator may define sub-categories for each type, whether a project is Summary versus Pro Forma is the main determinant of what data needs to be entered into a request and how the request is subsequently processed within the system.

Working with file groups

Axiom Capital Planning organizes files into groups related to a single year's capital budget. Within a file group, files are stored in a consistent folder structure and share a common set of configuration settings, preferences, key statistics, templates, macros, and so on.

The types of files in an Axiom Capital Planning file group include:

- **Plan Files** – Plan files are spreadsheet workbooks that allow you to view and modify data from the Axiom database.

  In Axiom Capital Planning, each plan file represents a single capital project request. Managers generate a new plan file within the active budget's file group each time they submit a new capital project for approval.

- **Driver Files** – Driver files display configuration settings that control the structure and behavior of plan files within the file group as well as assumptions, such as key inflation factors or drop-down menus needed for reporting or workflow.

  For example, a driver file might indicate that certain columns should be hidden in the plan files for that particular file group, set inflation assumptions, or define the expected increase or decrease in patient volume for that particular budget year.

- **Templates** – Templates are spreadsheets pre-populated with formulas that Axiom Capital Planning uses to generate plan files.

  IMPORTANT: Please do not edit template files because doing so might generate errors or cause the system to calculate output incorrectly. If you require a custom template, please contact Kaufman Hall so our consultants can help develop a solution that meets your specific needs.

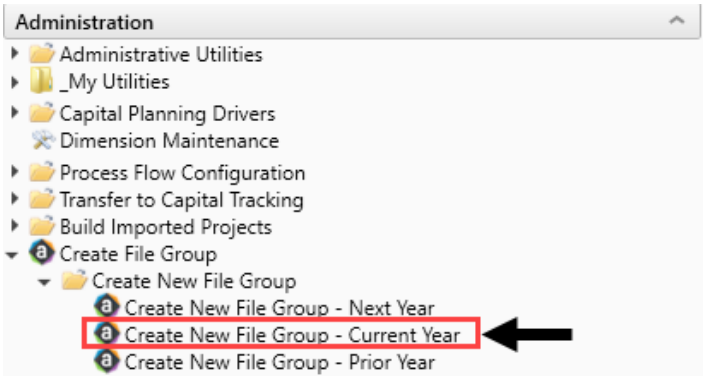
- **Reports and Utilities** – Axiom Capital Planning comes with a library of standard reports. Most of these reports only display information, but some reports allow you to perform more complex analysis and calculations. These type of reports are referred to as utilities.

- **Process Definitions** – Process Definitions are scripts that allow Axiom Capital Planning to automate certain processes involving file groups, individual files within the group, or even files outside the group.

The Create New File Group utility automatically creates a new file group by copying specified tables and saving the drivers. When you create a new file group, the system automatically changes the CP_ NextYear, CP_CurrentYear, or CP_PriorYear file group alias.

To create a new file group:

1. In the task pane, in the **Administration** section, click **Create File Group > Create New File Group**, and double-click **Create New File Group - Next Year**.



2. In the **New File Group Year** field, type the year to assign the new file group, and click **Next**.
3. In the **General Properties** dialog, click **Finish**.

4. The system then displays a list of the tables it will create as part of the new file group for the next year. To continue, click **OK**.

> **TIP:** The table names include the next year somewhere in the file name.

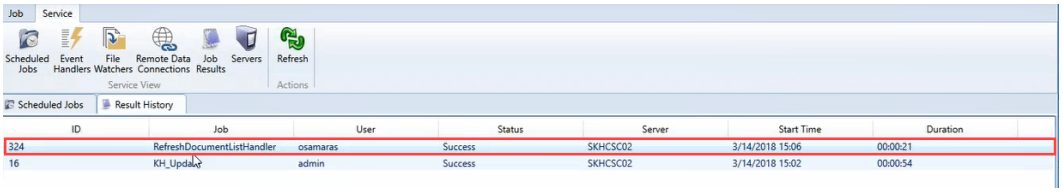
> **NOTE:** This may take a few minutes to complete.

5. The system displays a confirmation prompt that the file group saved successfully. Click **OK**.
6. In the **Edit File Group** dialog, to continue creating the file group, click **OK**.

> **IMPORTANT:** Do NOT make changes to any of the fields in this dialog. If you click **Cancel**, the system will not create the file group.

7. In the **Cap Plan Admin** task pane, double-click **Create New File Group - Current Year**, and repeat Steps 3-5.
8. In the **Cap Plan Admin** task pane, double-click **Create New File Group - Prior Year**, and repeat Steps 3-5.

9. Close and then re-open the **Cap Plan Admin** task pane.
10. After the file group is created, the system runs the RefreshDocumentListHandler Scheduler job that saves the default Kaufman Hall information to the Default Data driver. For this step, do the following to check that the job runs successfully:
    a. In the **Admin** ribbon tab, click **Scheduler**.
    b. Click **Job Results**.
    c. Check that **Success** displays in the **Status** column.



Proceed to Step 2: Configure the new file group for next year's planning cycle.

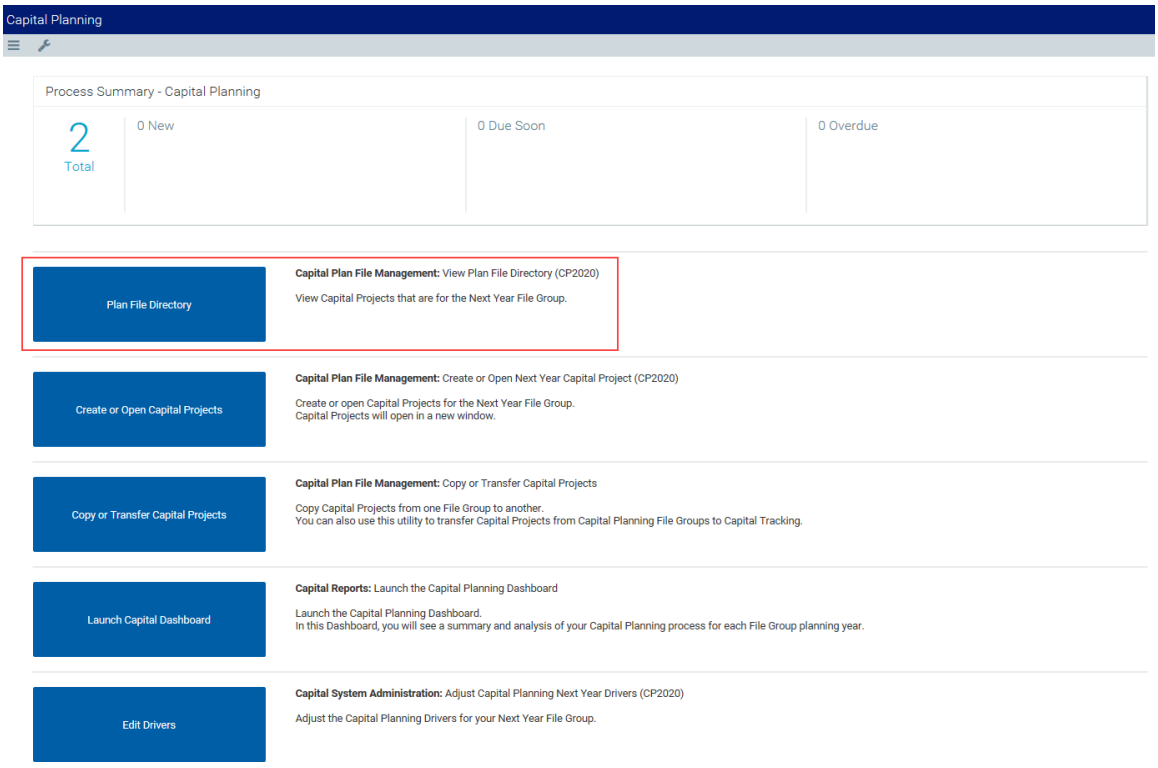
Viewing project plan files

When you click the Plan File Directory button, a list of the project plan files displays along with details about the request. This page lists all the current project files and their details. From this screen, you can also add a new capital project and search for existing projects. To open a project file, simply click any of the links in the CAPREQ or Description columns.

To view project plan files:

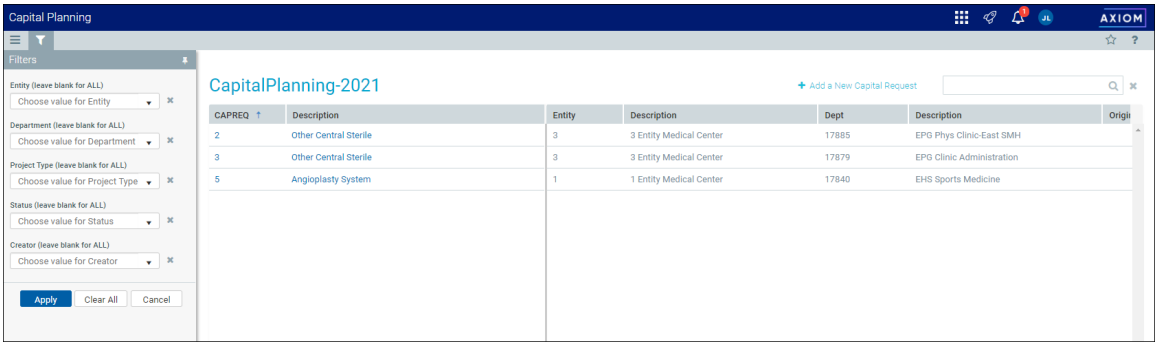
1. From the Axiom Capital Planning home page, click **Plan File Directory**.

> **NOTE:** To access this location from the **Cap Plan Admin** task pane, in the **Capital Planning Commands** section, double-click **Capital Projects Directory**. For more information, see Viewing the list of current capital projects.



Click image to view full size

2. From this page, do any of the following:
    - To narrow the list of projects, select the options in which to filter the list in the **Filters** panel, and click **Apply**. To clear a specific option, click **X** next to the drop-down list. To clear the entire filter, click **Clear All**.
    - To add a new project, click **+ Add a New Capital Request** at the top of the page. For instructions for adding a new capital project, see Creating or modifying a capital project.
    - To search for a project, type the project name or CAPREQ ID in the search field at the top of the page.



Navigating to capital project requests

You can create, modify, clone, and delete capital project requests for the previous, current, and next year, but each are located in different places within the task panes.

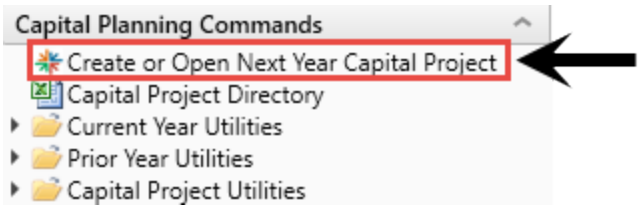
In the Cap Plan Admin or Cap Plan task pane, in the **Capital Planning Commands** section, do any of the following:

NOTE: If using the Web Client version, you can also open capital project requests from the Capital Planning home page by clicking the **Create or Open Plan Files** button.

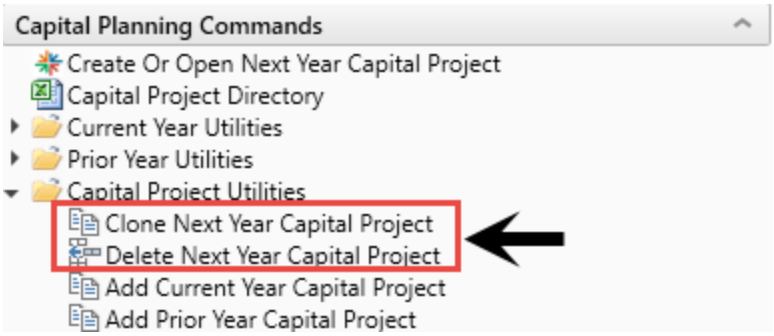
Next Year's project requests

Do one of the following:

- To create a project, double-click **Create or Open Next Year Capital Project**.

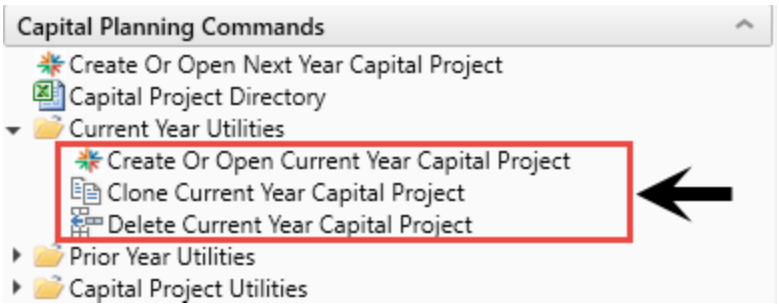


- To clone or delete a project, double-click Clone Next Year Capital Project or Delete Next Year Capital Project.



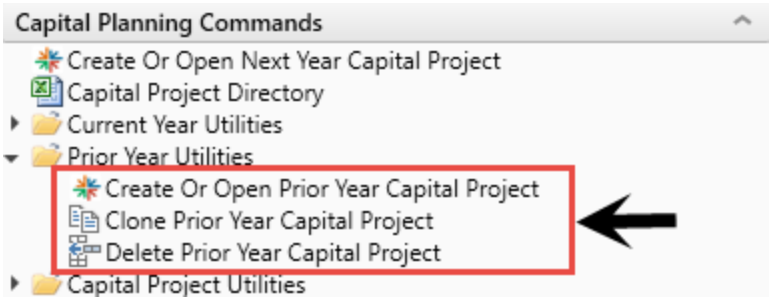
Current year's project requests

To create, clone, or delete a project for the current year, click **Current Year Utilities**.



Prior year's project requests

To create, clone, or delete a project for a prior year, click **Prior Year Utilities**.

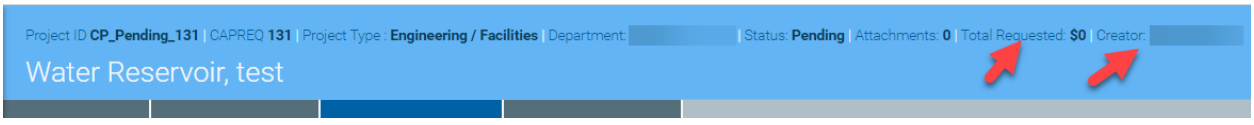


Creating or modifying a capital project

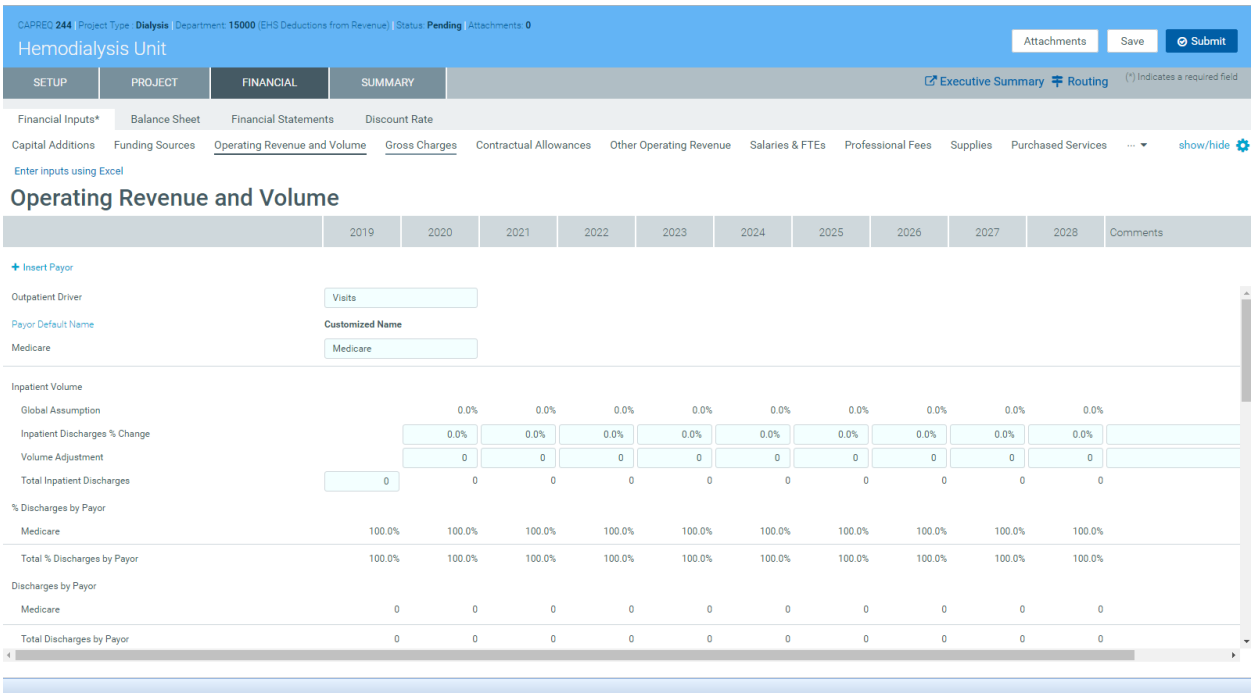
When creating a new capital project, you enter details about the project into Axiom Capital Planning. The information to add depends on various factors such as whether the project is a Threshold or Non-Threshold project.

After you create a project, a plan file opens with various tab levels and pages for you to complete. Which pages display depends on the project type for which you are submitting a request for. Each page includes a combination of pre-populated data and input fields. The pages include the following:

- Blue fields to input data.
- Drop-down menus to select options.
- White fields that are pre-populated with data.



The Project ID, CAPREQ, Project Type, Department, Status, Attachments, Total Requested and Creator display in the project header for quick reference.

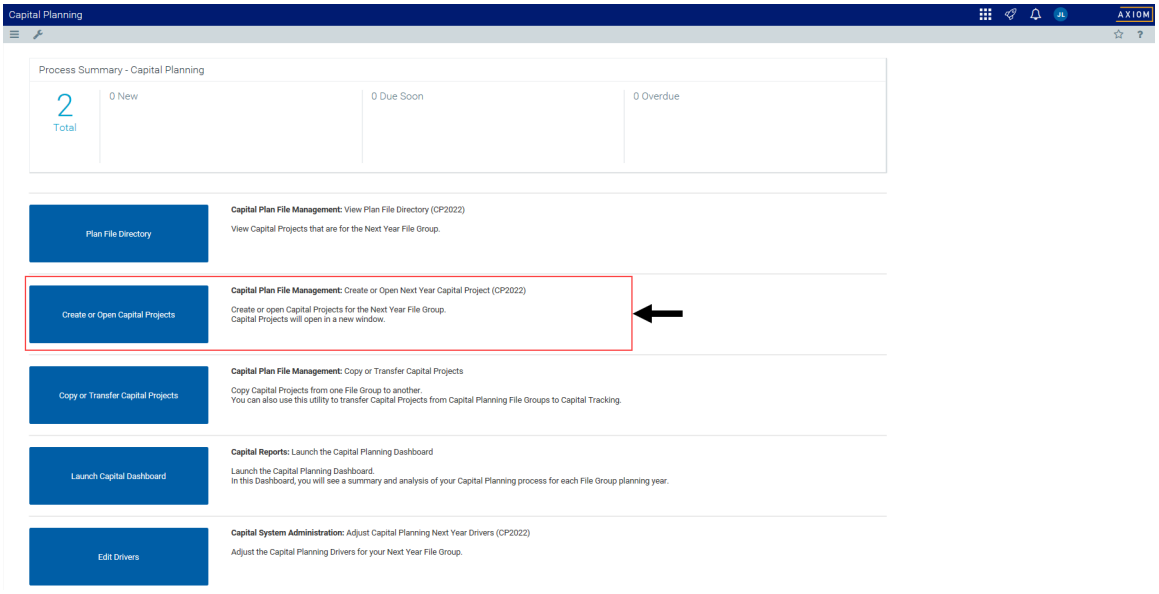


Click image to view full size

To create or modify a capital project:

1. From the Axiom Capital Planning home page, click **Create or Open Capital Projects**.

> **NOTE:** If using the Excel Client, see Navigating to capital project requests.



Click image to view full size

2. Do one of the following:
    - To modify an existing project, in the **Open Existing Capital Project** section, select a project from the drop-down, and click **OK**.

      TIP: You can search for a project by typing the project name or ID number. The system will automatically display projects that include that information.

    - To create a project, in the **Create a New Capital Request** section, complete the following, and click **OK**:

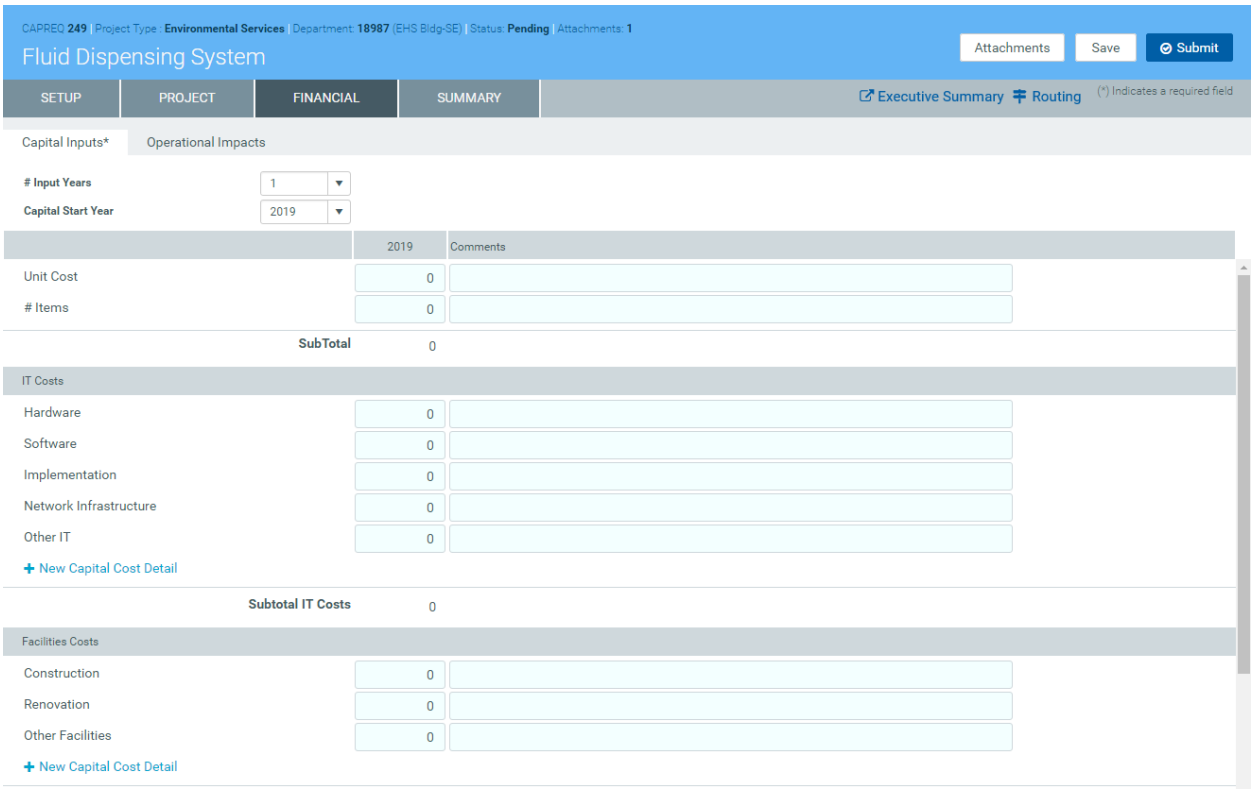
Field	Description
Project Type	Select the type of project you are requesting.
Project Type Detail	Select a detail type that further describes the project.
Department	Select the department to associate to the project. **NOTE:** The list of departments is limited to the departments for which you have been given access.
Template	Select to use Threshold or Non-Threshold template. **NOTE:** Though there are only two types of templates that your organization can create, there may be variations of each type available to you.

3. Complete the steps for one of the following capital project types:
    - Non-Threshold (Summary)
    - Threshold (Pro Forma)

Creating Non-Threshold (Summary) projects

The standard Non-Threshold (Summary) request form includes the following tabs:

- **Setup** – Displays the inputs entered from Creating Non-Threshold (Summary) projects.
- **Project** – Includes fields for entering basic information about the project and questionnaire sections to answer questions justifying the request.
- **Financial** – Includes fields for submitting capital pricing details and operational cost impacts.
- **Summary** – Displays the inputs entered in the Setup, Project, and Financial tabs to use for review before submitting your request.



Click image to view full size

To create Non-Threshold (Summary) projects:

1. Complete steps from Creating Non-Threshold (Summary) projects. The options you selected display in the **Setup** tab, which you can modify if needed.
2. In the **Project** tab, complete the following sub-tabs, as applicable:

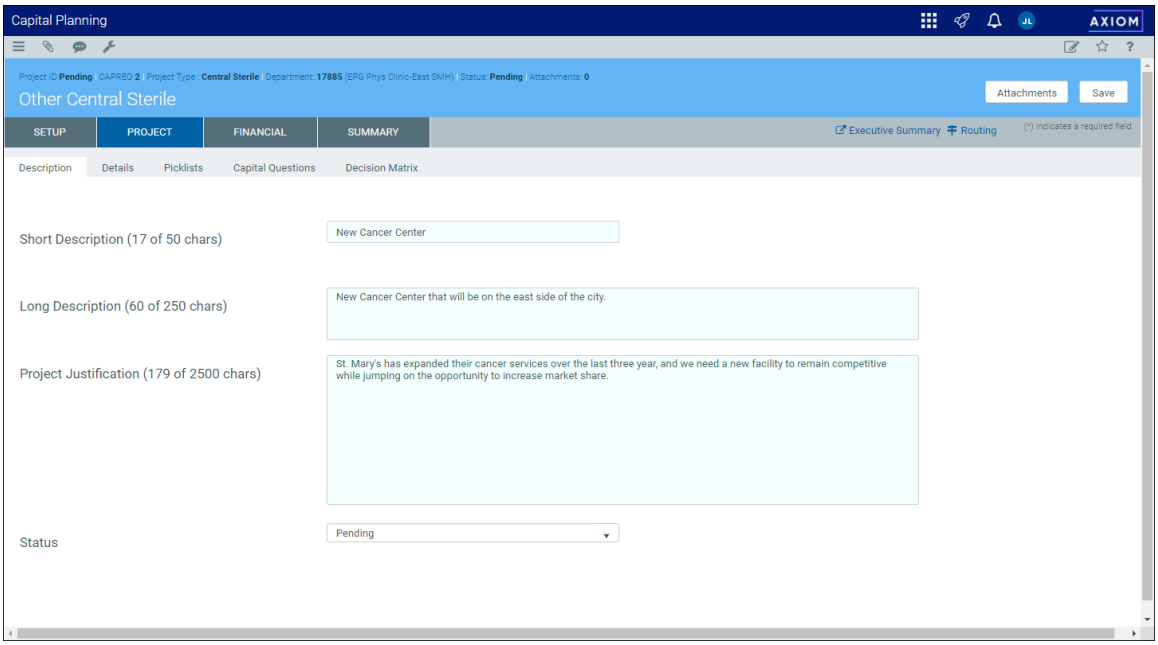
   IMPORTANT: To save or submit the request, you must complete fields with an asterisk (*)

   ### Description

   Provide a short and long description for the project as well as a justification statement for why your project should be approved.

   It also displays the approval status of the project. If you have administrator privileges or you are an approver, the **Status** drop-down allows you to select the status of the request.

   NOTE: One of the options in the Status drop-down is Funding Source. This type of project allows you to use its funding for other projects. For more information, see Creating capital projects as funding sources for other projects.

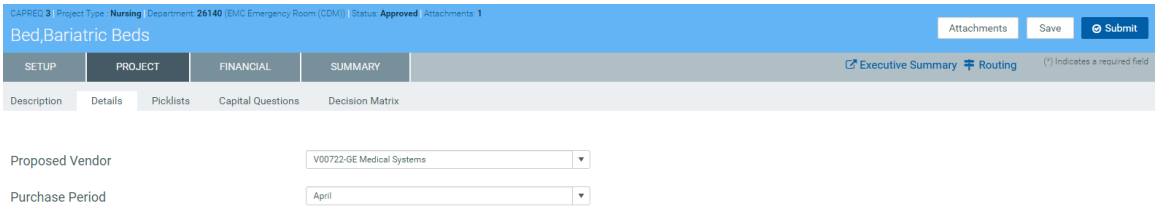


Click image to view full size

Details

Select the vendor for the item you are requesting for the project and the month the item will be purchased.

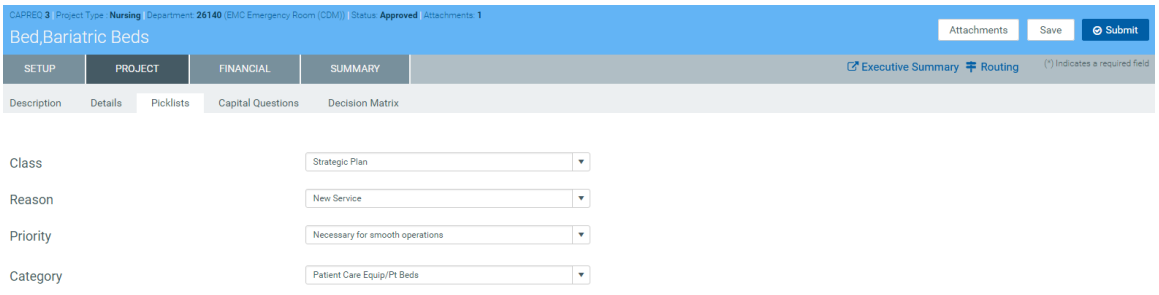
NOTE: Your organization may add other text fields to this section for you to complete.



Click image to view full size

Picklists

Select the class, reason, priority, and category for the requested project. There may also be other picklists specific to your organization.

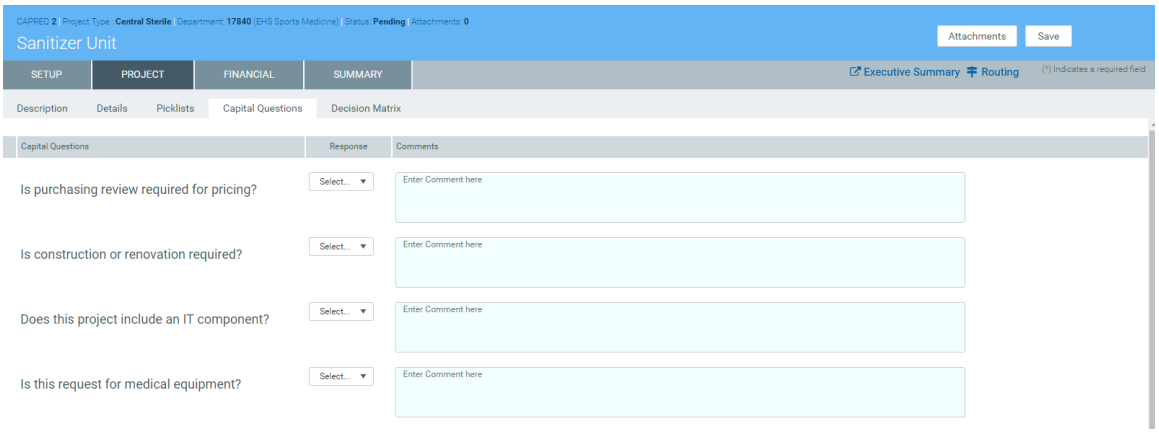


Click image to view full size

Capital Questions

From the drop-down, select **Yes** or **No** to answer the list of standard questions used to justify for your request. In the **Comments** box, you can enter additional information, if needed.

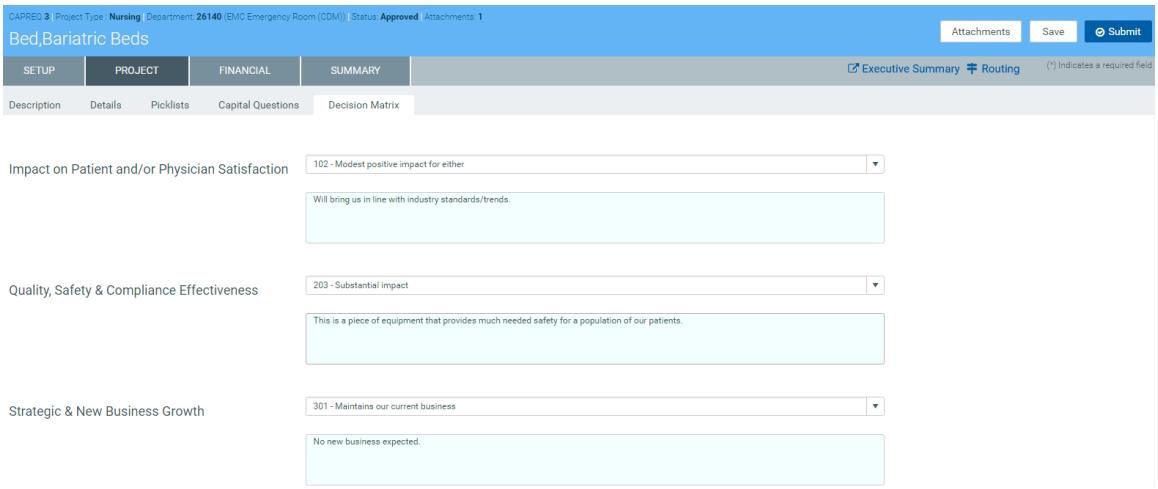
NOTE: Depending on how your organization has configured the project template, questions with asterisks may be required before you can save the project request.



Click image to view full size

Decision Matrix

Answer questions regarding how your project meets the criteria of multiple categories related to the pillars of your organization. The responses you provide are weighted to help your organization prioritize requests.



Click image to view full size

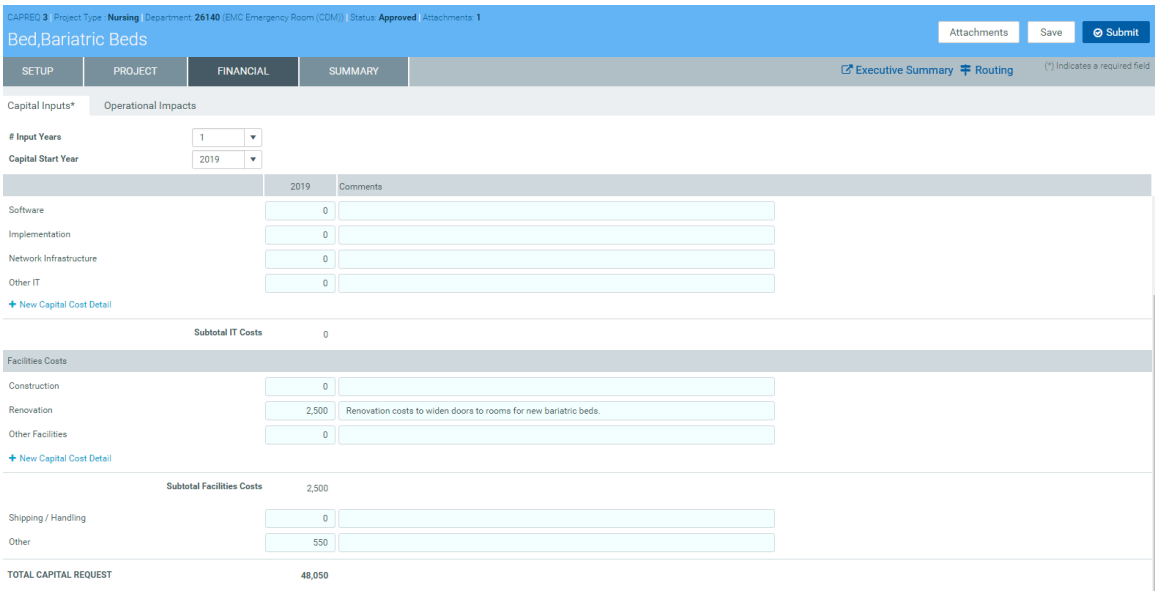
3. In the **Financial** tab, complete the following sub-tabs, as applicable:

Capital Inputs

Enter the specific costs for the project.

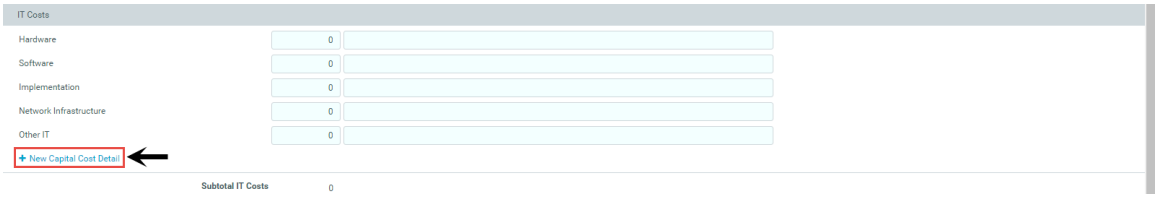
NOTE: Depending on how your organization configures the form, not all of the options listed in the following table will display.

Option	Description
# Input Years	Select the number of years to input costs. **NOTE:** 1 usually indicates the upcoming budget year. You can enter up to ten years of data, depending on how the template is configured by your organization.
Capital Start Year	Select the year the project to start. The default is the current budget year.
Unit Cost	The cost of the item per unit.
# Items	The number of items to purchase.
Shipping/Handling	The cost amount for shipping/handling of the item.
Other IT or Other Facilities	The cost of other items or services related to IT or Facilities. Use the Comments column to further describe the cost amount.
Trade-In Value	The amount an item is worth on trade-in for another item. Enter the amount as a negative number.



Click image to view full size

To add additional costs for IT, Facilities/Construction, and/or Clinical Engineering, click **+ New Capital Cost Detail** for the appropriate cost section.



Click image to view full size

Operational Impacts

Enter details related to the anticipated operational impacts on key drivers and statistics should the project be approved. For example, this might include the percentage by which the project might drive up patient volume or the number of additional FTEs required. Only include incremental business on this tab.

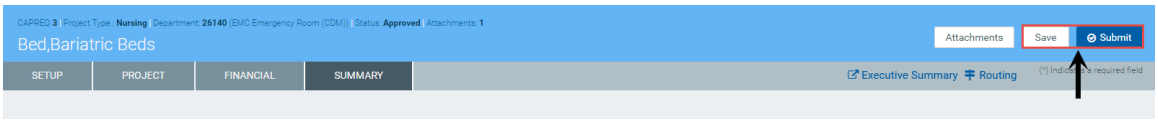
In the **# Years for Financial Analysis** field, type the number of years to determine how far out the impacts drive the financial return metrics of the project, such as Net Present Value (NPV), Internal Rate of Return (IRR), and so on.

4. In the **Summary** tab, review the inputs you entered in the Setup, Project, and Financial tabs. Return to the appropriate tab to make edits, if necessary.
5. To attach files to your request, at the top of the page, click **Attachments**.
    a. For each file to upload, in the **File Attachments** dialog, click **+Upload Attachment**.

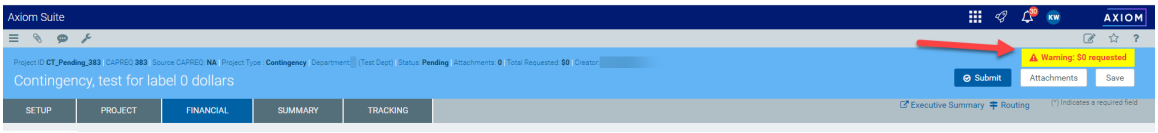
b. In the **Open File** dialog, select the file, and click **Open**.

c. Click **Close**.

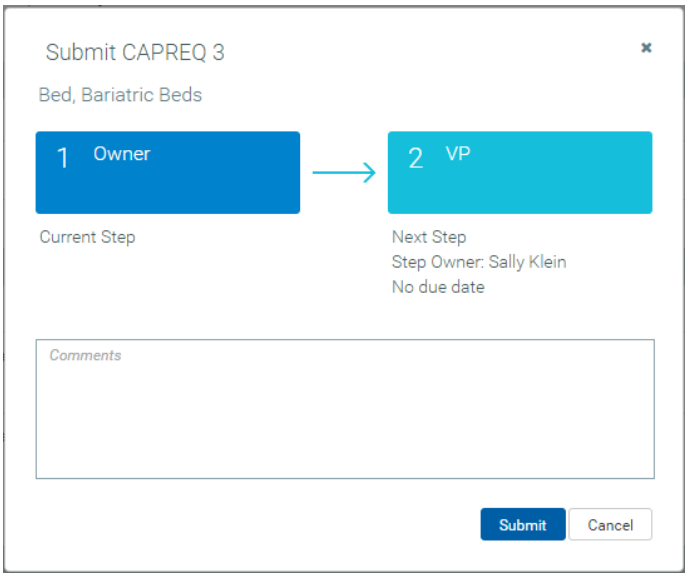
6. At the top of the page, do one of the following:
   - To save your changes before submitting your project request for approval, click **Save**.
   - To save and submit your project request for approval, click **Submit**.



NOTE: If you save a project with a total capital requested amount of $0.00, the following warning message will appear: Warning $0 requested.



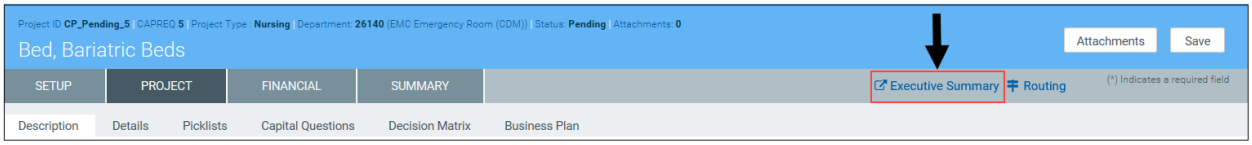
7. When you submit the request, the system displays a dialog that shows you the next step in the approval process. Enter comments to add to the request, if necessary, and click **Submit**.



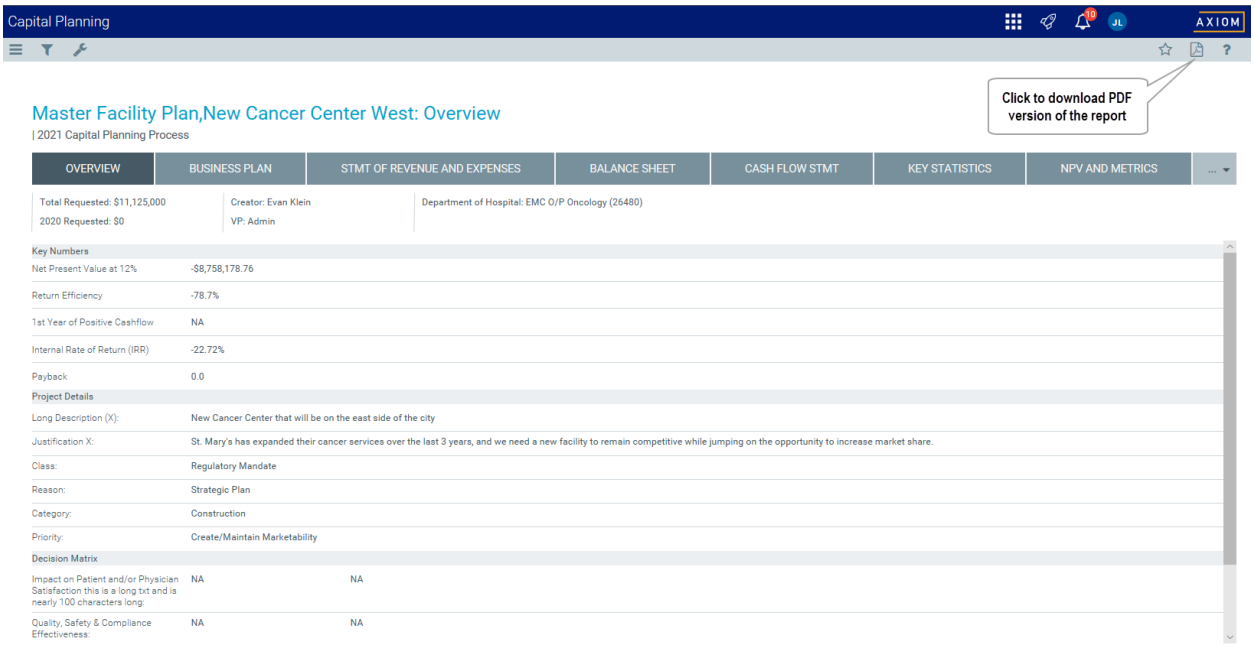
Viewing the Executive Summary report

Click the Executive Summary link in the upper right corner of the page to open the Executive Summary report.

NOTE: By default, the system is set up to link to this report, however, your administrator may customize it to open another report - including a custom report created by your organization. This may include renaming the link.



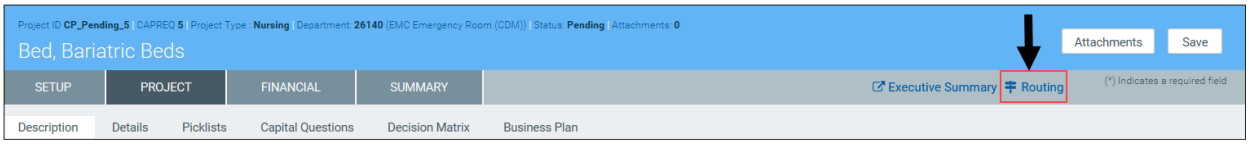
From his page, you can view the details of the report as well as print a PDF.



Click image to view full size

Viewing process status and details for the project

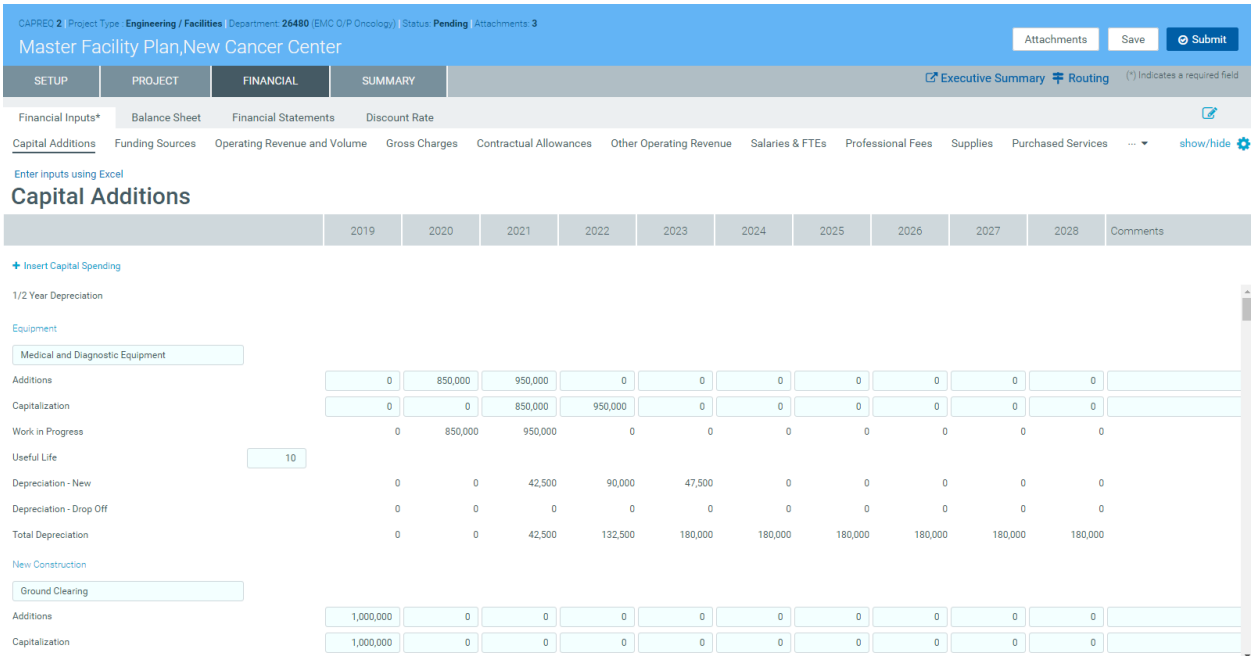
Click the Routing link in the upper right corner of the page to open the Process Routing page, which allows you to view the current process status and details for a particular capital project or purchase request. If you are the current step owner, you can also complete the task from this page. If you are an administrator, you can complete the task for the current step owner and/or move the step to another step in the process. For more information, see Viewing process routing details.



Creating Threshold (pro forma) projects

The standard Threshold (pro forma) request form includes the following tabs:

- **Setup** – Displays the inputs entered from Creating Threshold (pro forma) projects.
- **Project** – Includes fields for entering basic information about the project and questionnaire sections to answer questions justifying the request as well as a place to enter the project business plan.
- **Financial** – Includes fields for financial inputs, balance sheet, financial statements, and discount rates.
- **Summary** – Displays the inputs entered in the Setup, Project, and Financial tabs to use for review before submitting your request.



Click image to view full size

To create Threshold (pro forma) projects:

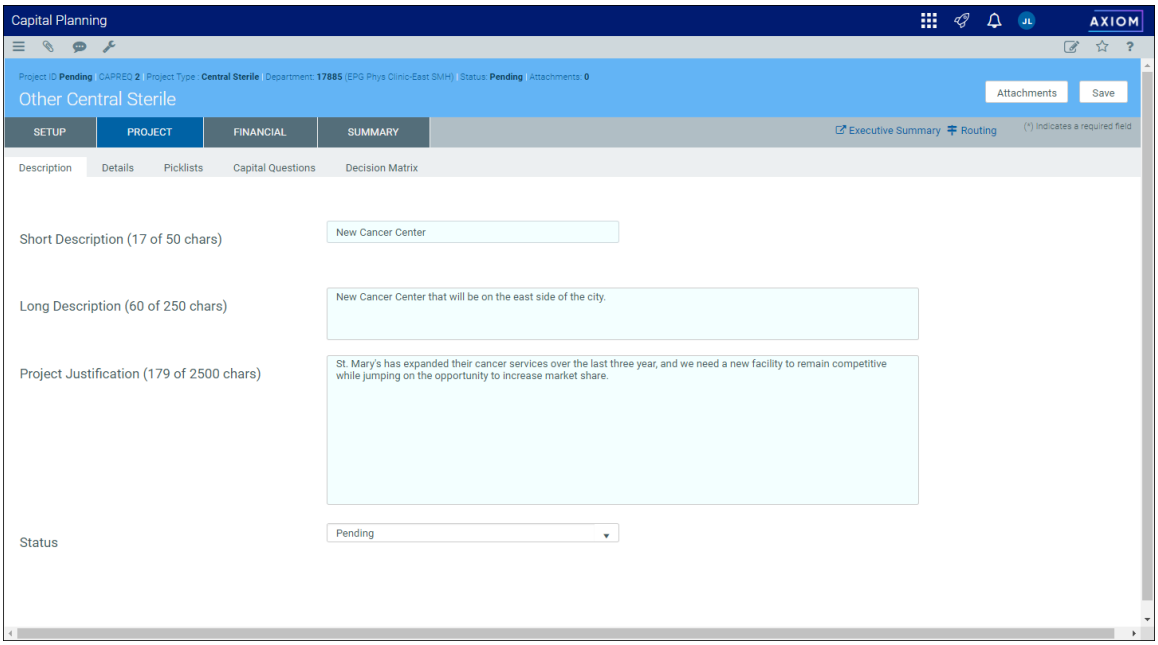
1. Complete steps from Creating or modifying a capital project. The options you selected display in the **Setup** tab, which you can modify if needed.
2. In the **Project** tab, complete the following sub-tabs, as applicable:

Description

Provide a short and long description for the project as well as a justification statement for why your project should be approved.

It also displays the approval status of the project. If you have administrator privileges or you are an approver, the **Status** drop-down allows you to select the status of the request.

NOTE: One of the options in the Status drop-down is Funding Source. This type of project allows you to use its funding for other projects. For more information, see Creating capital projects as funding sources for other projects.

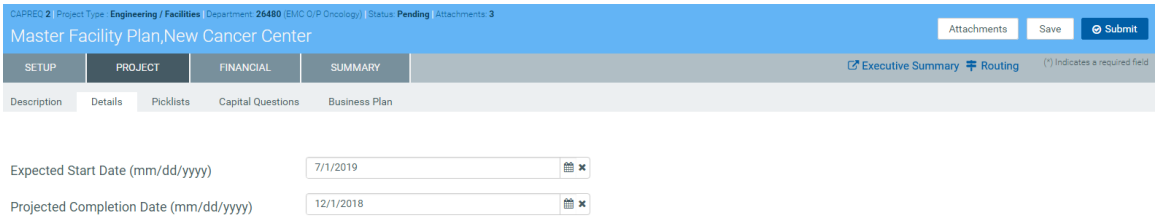


Click image to view full size

Details

Select the start and completion date for the project.

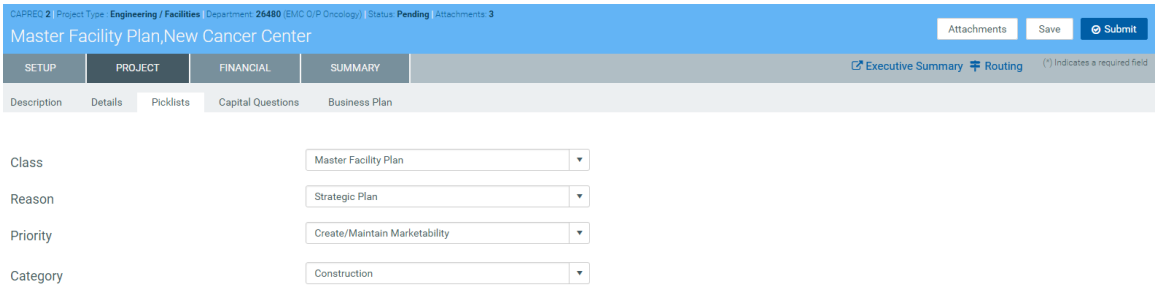
NOTE: Your organization may add other text fields to this section for you to complete.



Click image to view full size

Picklists

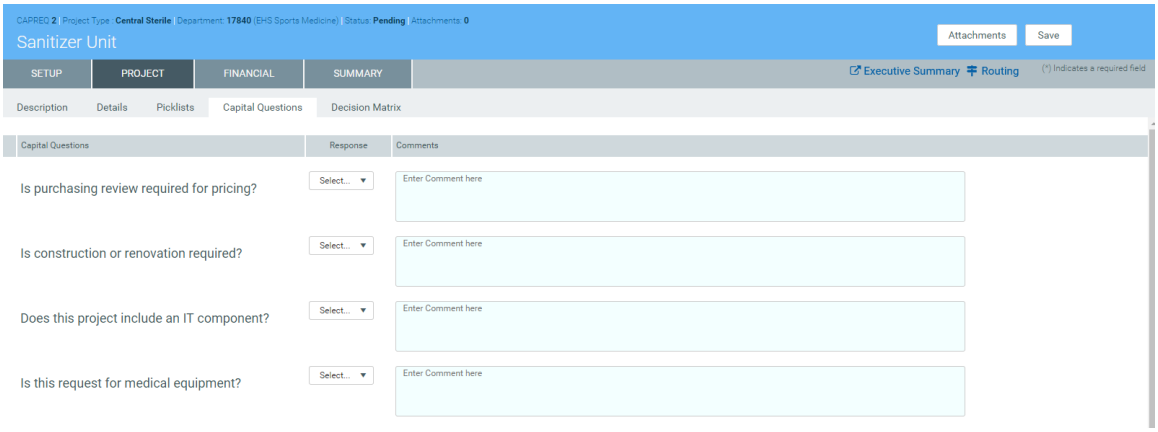
Select the class, reason, priority, and category for the requested project. There may also be other picklists specific to your organization.



Click image to view full size

Capital Questions

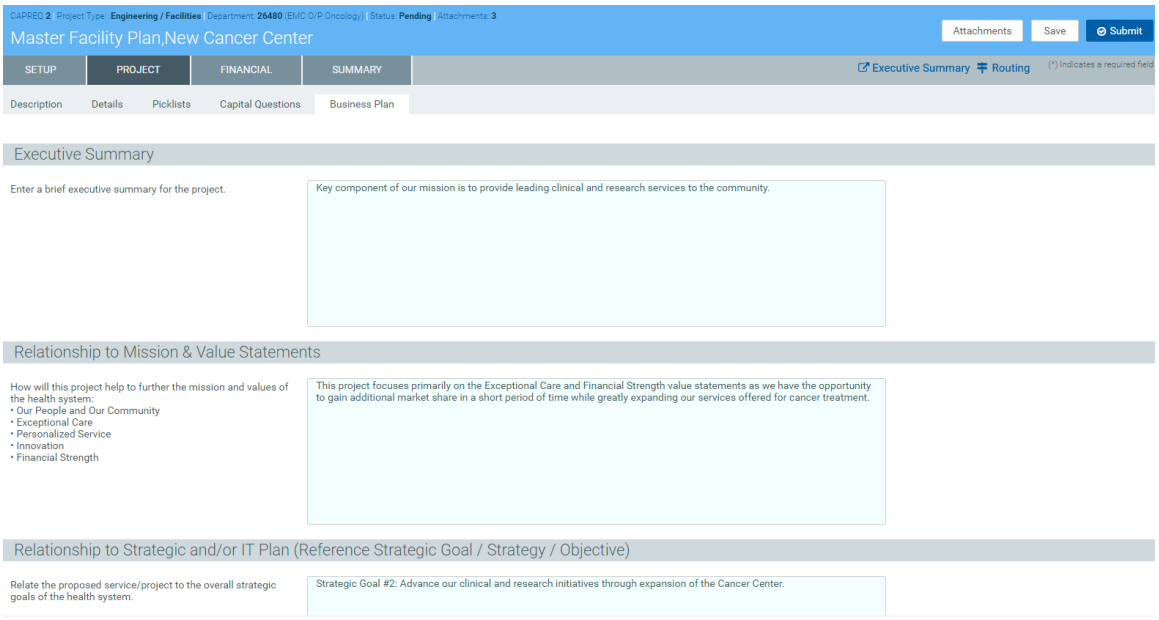
In the **Response** column, click the toggle to select **Yes** or **No** to answer the list of standard questions used to justify for your request. In the **Comments** box, you can enter additional information, if needed.



Click image to view full size

Business Plan

Answer more extensive questions to justify the expense for the capital project. This information is reflected in the Executive Summary report, which is often used by the Capital Selection Committee.



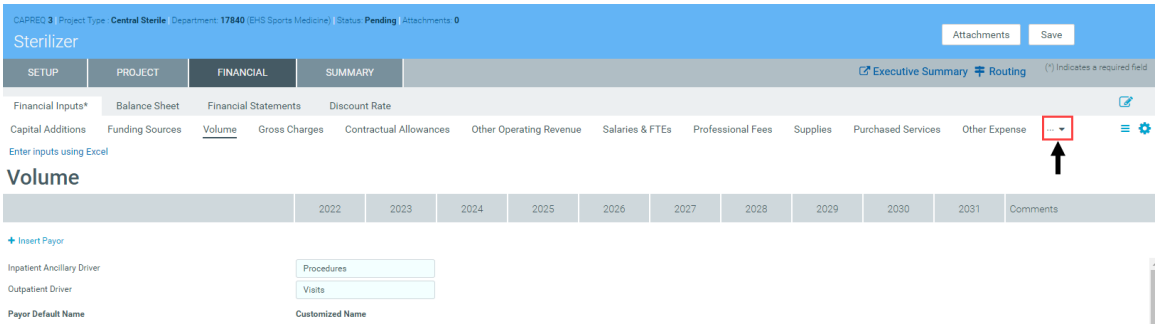
Click image to view full size

3. In the **Financial** tab, complete the following sub-tabs, as applicable:

Financial Inputs

This tab is segmented into up to 13 additional sub-tabs where you enter capital pricing details. If there are more sub-tabs than the system can display, click the drop-down in the upper right corner of the screen to select other available sub-tabs.

NOTE: Not all of the sub-tabs you see in the example above will display in your system. What you see depends on how your organization has set up the system. Your organization can add tabs later, as needed.



Click image to view full size

For more information and instructions for each tab, see the following:

TIP: Instead of entering values using the web form version of the pro forma project, you can use Excel Pro Forma utility by clicking **Entering input using Excel** at the top of the page. **NOTE:** This feature will not display if a user is assigned a role profile that has read-only permission to plan files or if someone else has the plan file open and has Save Lock enabled. For more information, see Entering financial inputs for Threshold (Pro Forma) projects using Excel.

- Capital Additions
- Funding Sources
- Volume
- Gross Charges
- Contractual Allowances
- Other Operating Revenue
- Salaries & FTEs
- Professional Fees
- Supplies
- Purchased Services
- Other Expense
- Statement of Revenue and Expenses
- Capital Summary

For additional instructions related to this tab, see the following:

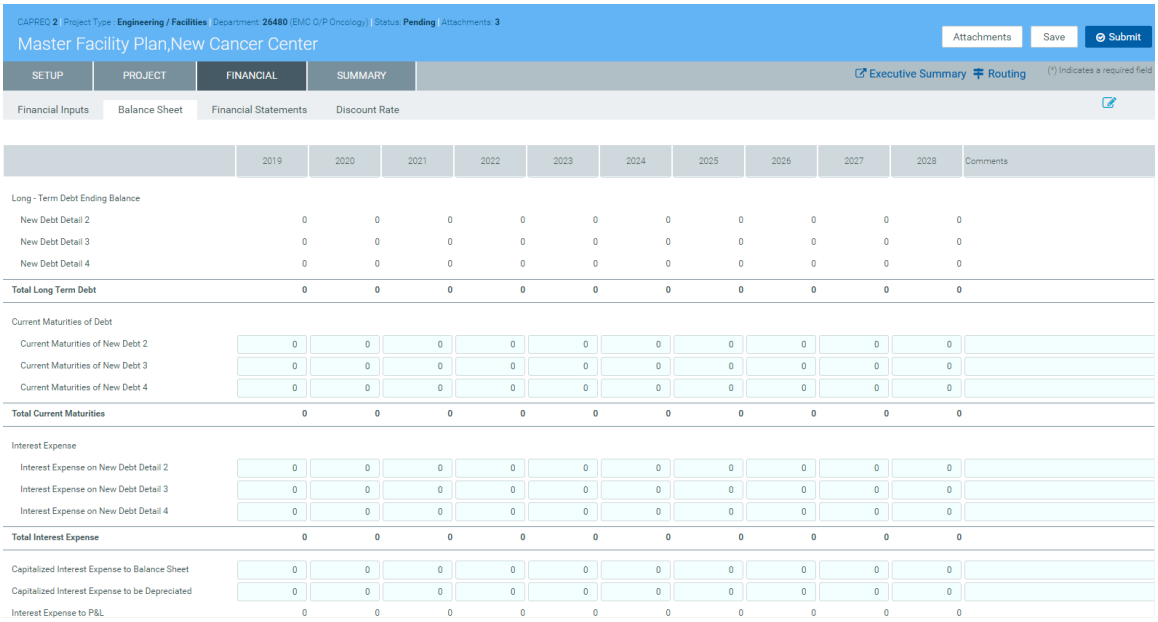
- Set forecast years
- Add additional Financial input sheets
- Refresh additional Financial input sheets

Balance Sheet

Enter debt, assets, and expenses related to the project for each upcoming fiscal year. Inputs include the following:

- Long-Term Debt Additions
- Current Maturities of Debt
- Interest Expense
- Unrestricted Net Assets
- Unrestricted and Board Designated Investments

TIP: Instead of entering values using the web form version of the pro forma project, you can use Excel Pro Forma utility by clicking **Entering input using Excel** at the top of the page. **NOTE:** This feature will not display if a user is assigned a role profile that has read-only permission to plan files or if someone else has the plan file open and has Save Lock enabled. For more information, see Entering financial inputs for Threshold (Pro Forma) projects using Excel.

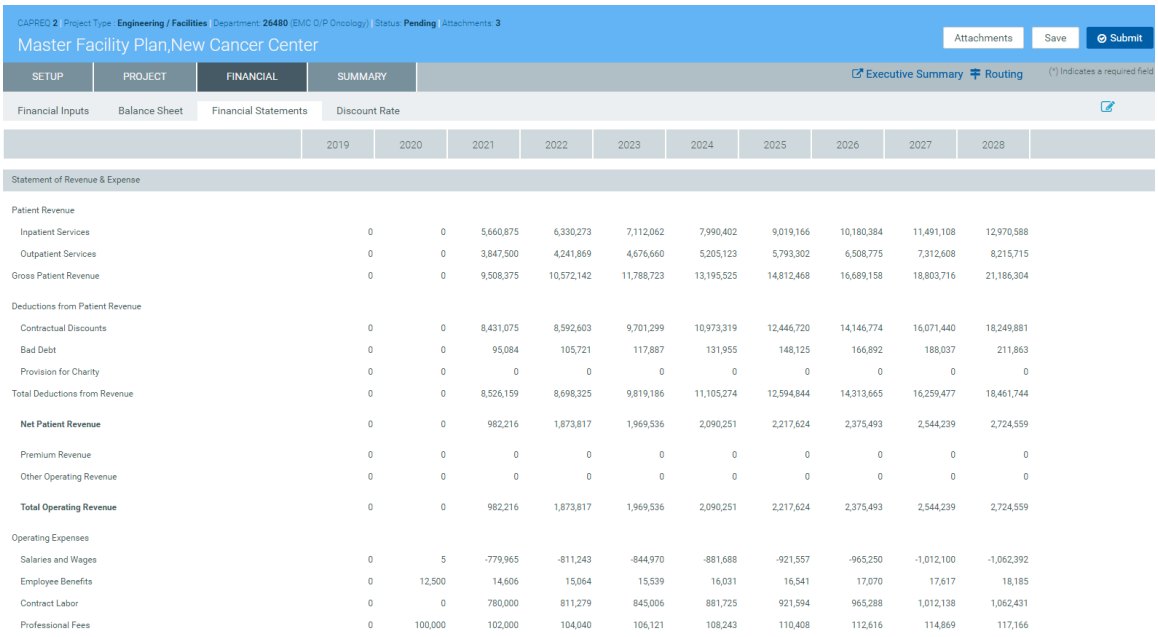


Click image to view full size

Financial Statements

Displays the projected impact of the project for each upcoming fiscal year. At the bottom of the page, you can input data for the following:

- NPV and Financial Metrics:
  - Perpetuity Cash Flow Change
  - Total Project Life for NPV
  - NPV for up to 100 years to mimic perpetuity
  - Capital Investment Detail
- Performance Tracking Measures



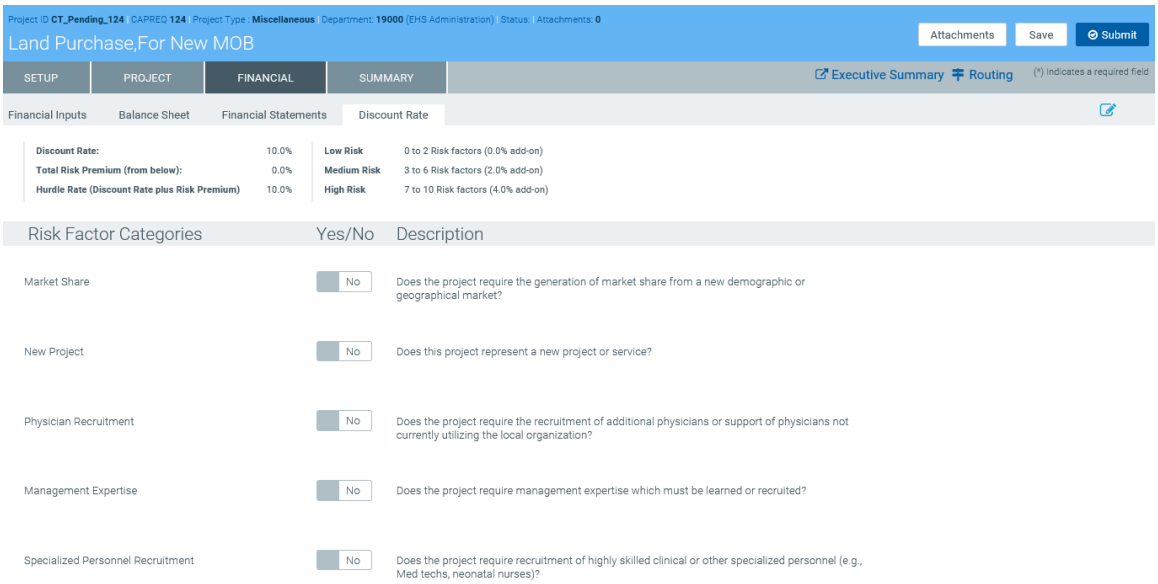
	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
Statement of Revenue & Expense										
Patient Revenue										
Inpatient Services	0	0	5,660,875	6,330,273	7,112,062	7,990,402	9,019,166	10,180,384	11,491,108	12,970,588
Outpatient Services	0	0	3,847,500	4,241,869	4,676,660	5,205,123	5,793,302	6,508,775	7,312,608	8,215,715
Gross Patient Revenue	0	0	9,508,375	10,572,142	11,788,723	13,195,525	14,812,468	16,689,158	18,803,716	21,186,304
Deductions from Patient Revenue										
Contractual Discounts	0	0	8,431,075	8,592,603	9,701,299	10,973,319	12,446,720	14,146,774	16,071,440	18,249,881
Bad Debt	0	0	95,084	105,721	117,887	131,955	148,125	166,892	188,037	211,863
Provision for Charity	0	0	0	0	0	0	0	0	0	0
Total Deductions from Revenue	0	0	8,526,159	8,698,325	9,819,186	11,105,274	12,594,844	14,313,665	16,259,477	18,461,744
Net Patient Revenue	0	0	982,216	1,873,817	1,969,536	2,090,251	2,217,624	2,375,493	2,544,239	2,724,559
Premium Revenue	0	0	0	0	0	0	0	0	0	0
Other Operating Revenue	0	0	0	0	0	0	0	0	0	0
Total Operating Revenue	0	0	982,216	1,873,817	1,969,536	2,090,251	2,217,624	2,375,493	2,544,239	2,724,559
Operating Expenses										
Salaries and Wages	0	5	-779,965	-811,243	-844,970	-881,688	-921,557	-965,250	-1,012,100	-1,062,392
Employee Benefits	0	12,500	14,606	15,064	15,539	16,031	16,541	17,070	17,617	18,185
Contract Labor	0	0	780,000	811,279	845,006	881,725	921,594	965,288	1,012,138	1,062,431
Professional Fees	0	100,000	102,000	104,040	106,121	108,243	110,408	112,616	114,869	117,166

Click image to view full size

Discount Rate

Displays questions used to determine the risk factors of a project. For each question, click the toggle to **Yes** or **No** if the question applies to your project.

NOTE: Depending on how your organization has configured the project template, questions with asterisks may be required before you can save the project request.



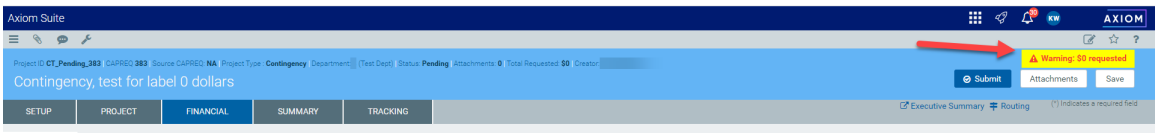
Click image to view full size

4. In the **Summary** tab, review the inputs you entered in the Setup, Project, and Financial tabs. Return to the appropriate tab to make edits, if necessary.
5. To attach files to your request, at the top of the page, click **Attachments**.

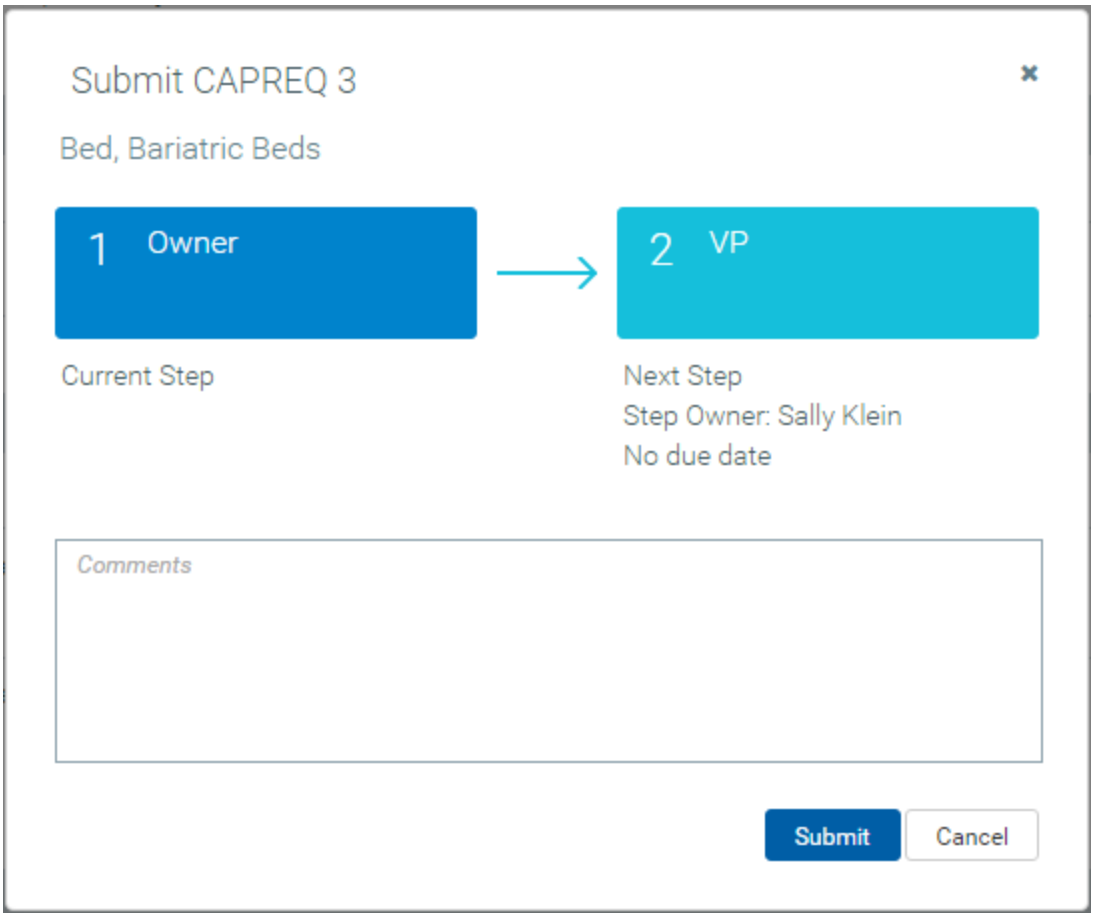
   a. For each file to upload, in the **File Attachments** dialog, click **+Upload Attachment**.
   b. In the **Open File** dialog, select the file, and click **Open**.
   c. Click **Close**.

6. At the top of the page, do one of the following:
   - To save your changes before submitting your project request for approval, click **Save**.
   - To save and submit your project request for approval, click **Submit**.

NOTE: If you save a project with a total capital requested amount of $0.00, the following warning message will appear: Warning $0 requested.



7. When you submit the request, the system displays a dialog that shows you the next step in the approval process. Enter comments to add to the request, if necessary, and click **Submit**.

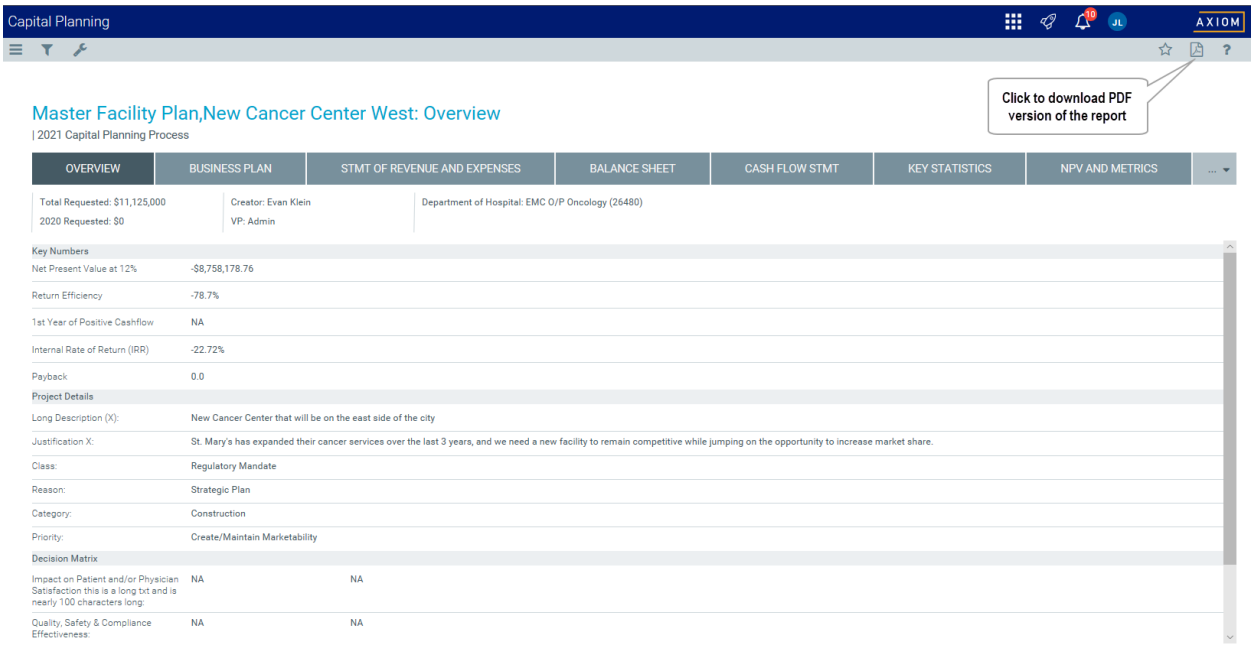


Viewing the Executive Summary report

Click the Executive Summary link in the upper right corner of the page to open the Executive Summary report.

NOTE: By default, the system is set up to link to this report, however, your administrator may customize it to open another report - including a custom report created by your organization. This may include renaming the link.

From his page, you can view the details of the report as well as print a PDF.



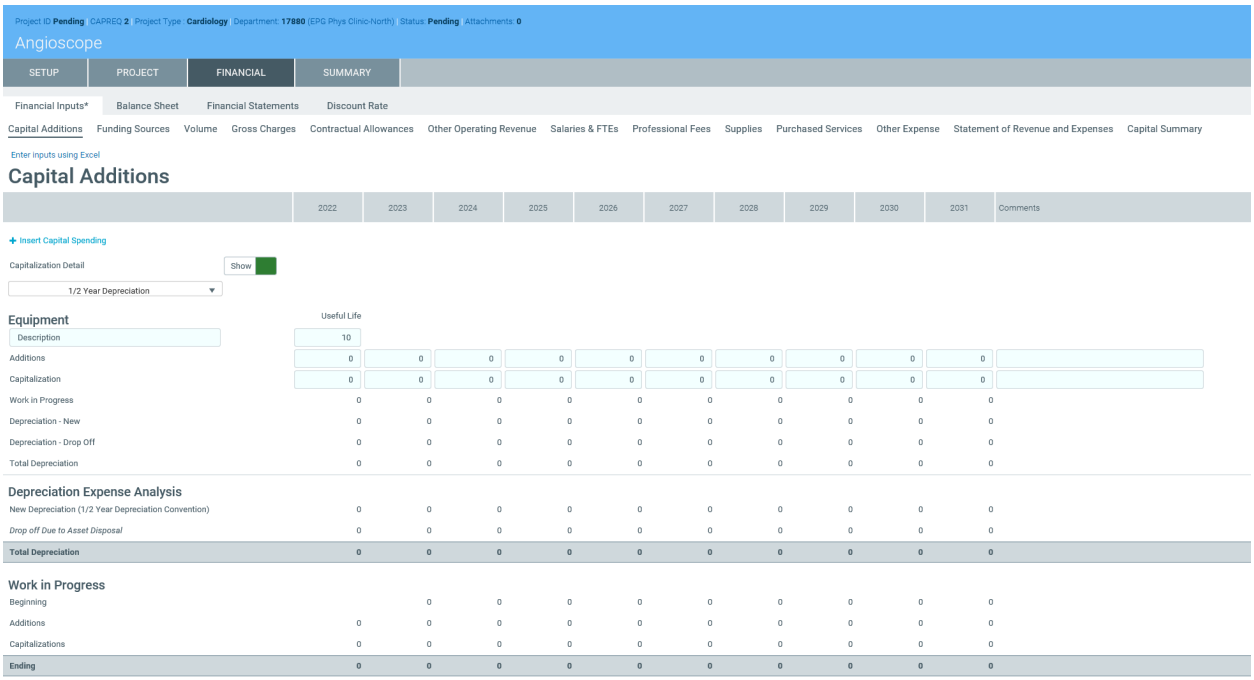
Click image to view full size

Viewing process status and details for the project

Click the Routing link in the upper right corner of the page to open the Process Routing page, which allows you to view the current process status and details for a particular capital project or purchase request. If you are the current step owner, you can also complete the task from this page. If you are an administrator, you can complete the task for the current step owner and/or move the step to another step in the process. For more information, see Viewing process routing details.

Capital Additions tab

This tab is located in the **Financial Inputs** tab of the project plan file.



NOTE: The system allows you to make a copy of the Financial Inputs tab and rename it. This allows you to model different scenarios in your project. As a result, you may see several versions of the Financial Inputs tab with different names in the project plan.

Use this tab to enter details regarding the capital spending items for your project.

To add or edit capital spending items:

1. From the drop-down, select the depreciation type to use for your items: Full Year Depreciation, 1/2 Year Depreciation, or Monthly Input.
2. To insert an item, click **+ Insert Capital Spending**.
3. From the **Calc Method Variables** dialog, select the project item type from the list, and click **Apply**.
4. In the **Capitalization Detail** row, click the **Show/Hide** toggle to show or hide the capitalization detail, including the Work in Progress, New and Drop Off Depreciation, and Total Depreciation rows.

   NOTE: Click the toggle to **Show** to adjust capitalization. By default, capitalization will occur in the same year as additions.

5. In the **Description** field under the item name, type a description of the item, if needed.
6. In the **Useful Life** field, type the number of years the item will remain in service.

NOTE: Depending on how your organization has configured your project template and your role profile, this field may not display.

7. In each column, enter the capitalization amount for the applicable years.
8. After making any changes, click **Save** in the upper right corner of the page.

At the bottom of the tab, the page displays the following:

Depreciation Expense Analysis
Shows the calculated depreciation amount based on the useful life, the methodology you selected, and when items are capitalized. This information will show up on your income statement.

Work in Progress
Shows the dollars that you have spent but not yet capitalized.

Funding Sources tab

This tab is accessed in the project plan file, in the **Financial Inputs** tab.

NOTE: The system allows you to make a copy of the Financial Inputs tab and rename it. This allows you to model different scenarios in your project. As a result, you may see several versions of the Financial Inputs tab with different names in the project plan.

Use this tab to maintain the funding sources for the project.

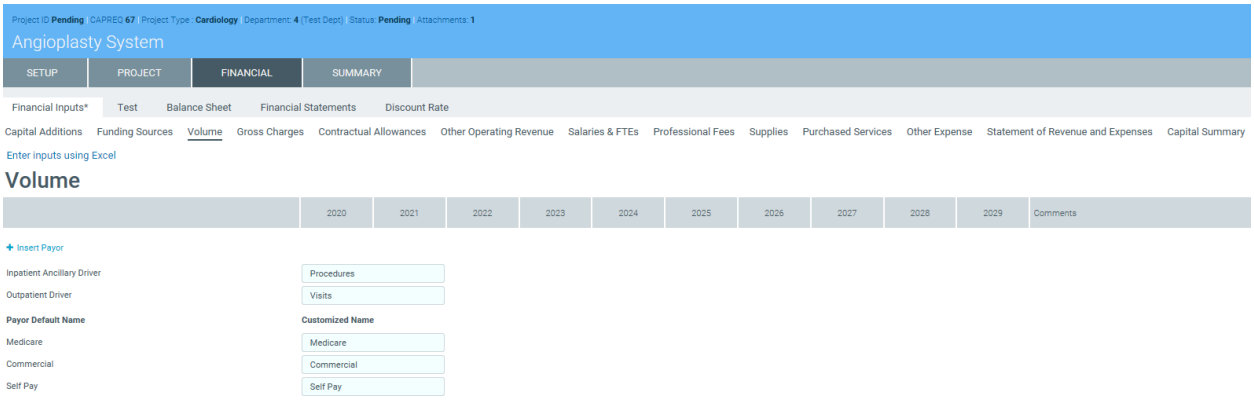
The page displays a default funding source. If you add more funding sources, any amounts you add will be removed from the default funding source.

To add or edit a funding source:

1. To add a funding source, click **+ Insert Funding Source**.
2. From the **Calc Method Variables** dialog, select the funding source, and click **Apply**.
3. In each column year, type the funding source amount.
4. In the **Comments** column, enter further details, if necessary.
5. After making any changes, click **Save** in the upper right corner of the page.

Volume tab

This tab is accessed in the project plan file, in the **Financial Inputs** tab.



NOTE: The system allows you to make a copy of the Financial Inputs tab and rename it. This allows you to model different scenarios in your project. As a result, you may see several versions of the Financial Inputs tab with different names in the project plan.

Use this tab to view and adjust patient volume by payor.

To adjust volume:

1. To insert a payor, click **+ Insert Payor**.
2. From the **Calc Method Variables** dialog, select the payor from the list, and click **Apply**.
3. In the **Inpatient Ancillary Driver** and **Outpatient Driver** field, type the drivers to use for each.

   NOTE: By default, the system has been set up with drivers entered in these fields.

4. For each payor default name, enter a name in the **Customized Name** field that best fits your organization, if needed.
5. For each section, enter rate and/or volume adjustments in the blue cells.

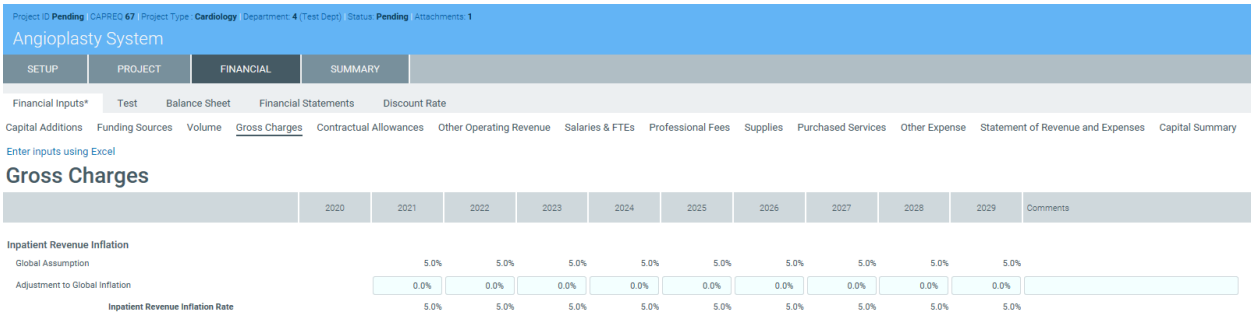
   You can use the **Volume Adjustment** row to add or subtract values from the Total Inpatient Charges, Total Inpatient Procedures, Total Outpatient Visits, and Total % Discharges by Payor cells.

   For example, the Total Inpatient Procedures for 2025 is expected to be 1,000. For 2026, the organization expects 1,500. Instead of entering 1,500, the user can just enter 500 in the Volume Adjustment row. This allows users to easily adjust volume amounts without having to enter totals for each year.
6. In the **Comments** row, enter details, as needed.
7. After making any changes, click **Save** in the upper right corner of the page.

At the bottom of the page, an income statement displays, summarizing the impacts of the project.

Gross Charges tab

This tab is accessed in the project plan file, in the **Financial Inputs** tab.



NOTE: The system allows you to make a copy of the Financial Inputs tab and rename it. This allows you to model different scenarios in your project. As a result, you may see several versions of the Financial Inputs tab with different names in the project plan.

Use this tab to enter growth-rate adjustments to inpatient and outpatient revenue at the global level as well as by day, procedure, and/or visit. This determines the rate to associate with the volume in the Volume tab to determine your organization's revenue.

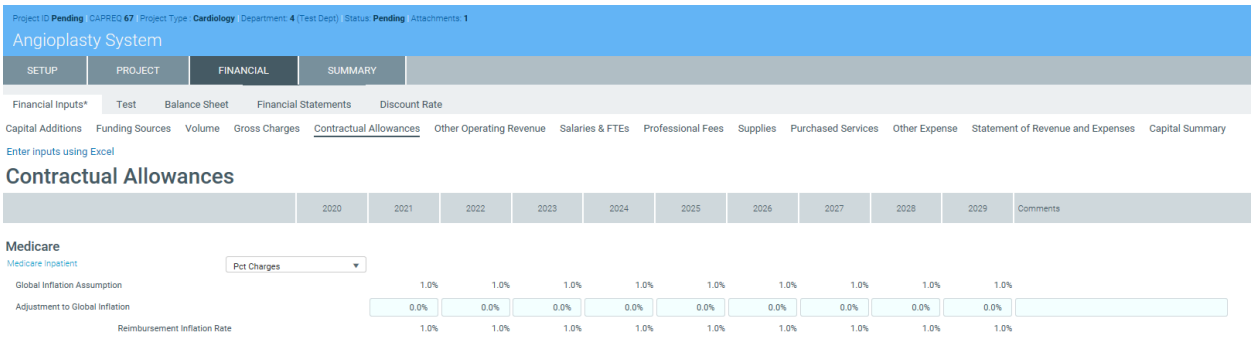
To adjust gross charges:

1. In each blue cell, enter the adjustment percentage or dollar amounts for each revenue type, as needed.
2. In the **Comments** column, enter further details, if needed.
3. After making any changes, click **Save** in the upper right corner of the page.

At the bottom of the page, you can view Total Inpatient Revenue, Total Inpatient Procedure Revenue, and Total Outpatient Revenue.

Contractual Allowances tab

This tab is accessed in the project plan file, in the **Financial Inputs** tab.



NOTE: The system allows you to make a copy of the Financial Inputs tab and rename it. This allows you to model different scenarios in your project. As a result, you may see several versions of the Financial Inputs tab with different names in the project plan.

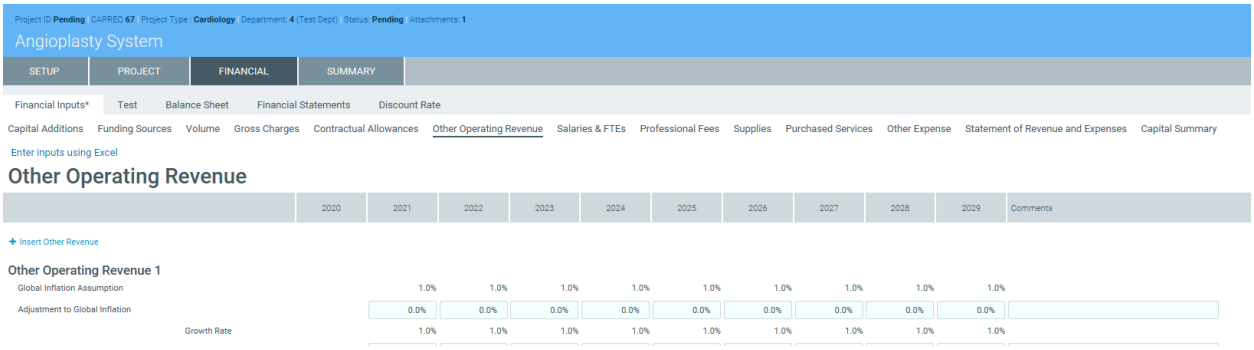
Use this tab to manage reimbursement adjustments from your default payors to model out your reimbursements from year to year.

To make adjustments to payor reimbursements:

1. From the drop-down next to the Inpatient, Inpatient Ancillary, and Outpatient sections for each payor, select how you want to model out the reimbursements by selecting one of the following:
   - ***Payor Name* Inpatient:** Pct Charges, Per Case, Per Diem, Lump Sum
   - ***Payor Name* Inpatient Auxiliary:** Pct Charges, Lump Sum, Per Procedure
   - ***Payor Name* Outpatient:** Pct Changes, Lump Sum, Per Visit
2. In each blue cell, enter a percentage or amount adjustment, as needed.
3. At the bottom of the page, in the **Bad Debt** and **Charity** section, make adjustments for bad debt and charity, which are calculated as a percentage of gross charges.
4. In the **Comments** column, enter further details, if necessary.
5. After making any changes, click **Save** in the upper right corner of the page.

Other Operating Revenue tab

This tab is accessed in the project plan file, in the **Financial Inputs** tab.



NOTE: The system allows you to make a copy of the Financial Inputs tab and rename it. This allows you to model different scenarios in your project. As a result, you may see several versions of the Financial Inputs tab with different names in the project plan.

Use this tab to add additional operating revenue not related to a patient (i.e. gift shop) by entering a first year amount and then applying a growth rate to it.

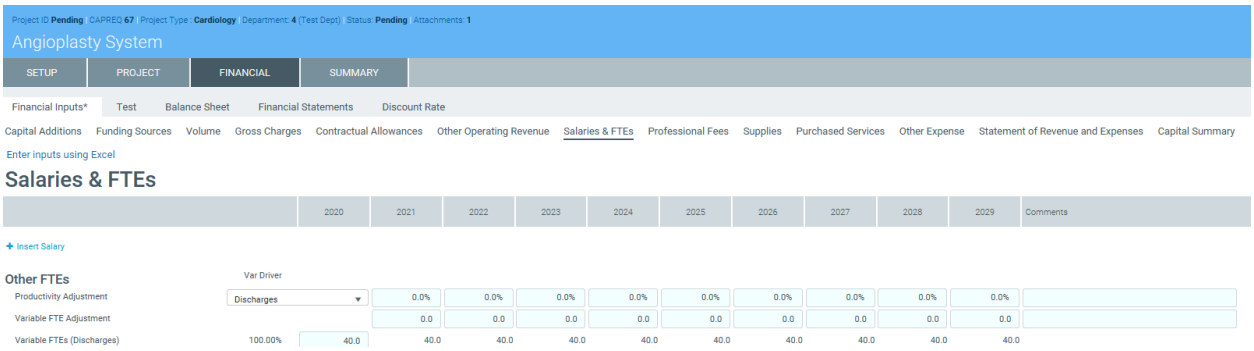
To add or edit operating revenue:

1. To add an other revenue type, click **+ Insert Other Revenue**.

2. From the **Calc Methods Variables** dialog, select an other operating revenue type from the list, and click **Apply**.
3. In the first year column, enter an amount.
4. In the remaining year columns, enter a percent and/or dollar adjustment, as needed.
5. In the **Comments** column, enter further details, if needed.
6. After making any changes, click **Save** in the upper right corner of the page.

Salaries & FTEs tab

This tab is accessed in the project plan file, in the **Financial Inputs** tab.



NOTE: The system allows you to make a copy of the Financial Inputs tab and rename it. This allows you to model different scenarios in your project. As a result, you may see several versions of the Financial Inputs tab with different names in the project plan.

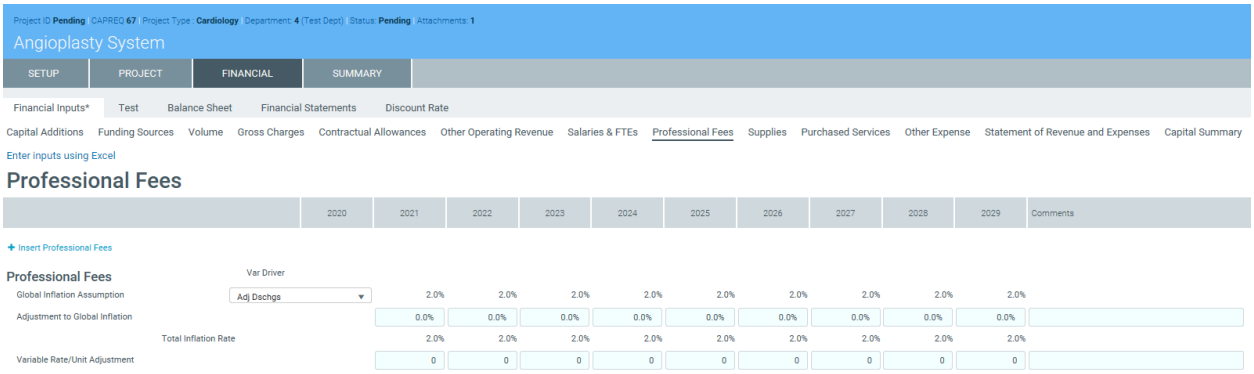
Use this tab manage the salary adjustments for variable and fixed FTEs.

To forecast salaries:

1. To add a salary, click **+ Insert Salary**.
2. From the **Calc Method Variables**, select a salary type from the list, and click **Apply**.
3. In the first column of the **Variable FTEs**, enter the number of variable FTEs.
4. In the **Fixed FTEs** row, enter the number of fixed FTEs.
5. In the **Annual Salary/FTE** row, enter the salary associated with the FTE.
6. In the **Productivity Adjustment** row, from the **Var Driver** drop-down, select the driver to use to drive your variable FTEs.
7. In each blue cell for each year, enter the variable and fixed adjustments for each column, as needed.
8. In the **Comments** column, enter further details, if necessary.
9. After making any changes, click **Save** in the upper right corner of the page.

Professional Fees tab

This tab is accessed in the project plan file, in the **Financial Inputs** tab.



NOTE: The system allows you to make a copy of the Financial Inputs tab and rename it. This allows you to model different scenarios in your project. As a result, you may see several versions of the Financial Inputs tab with different names in the project plan.

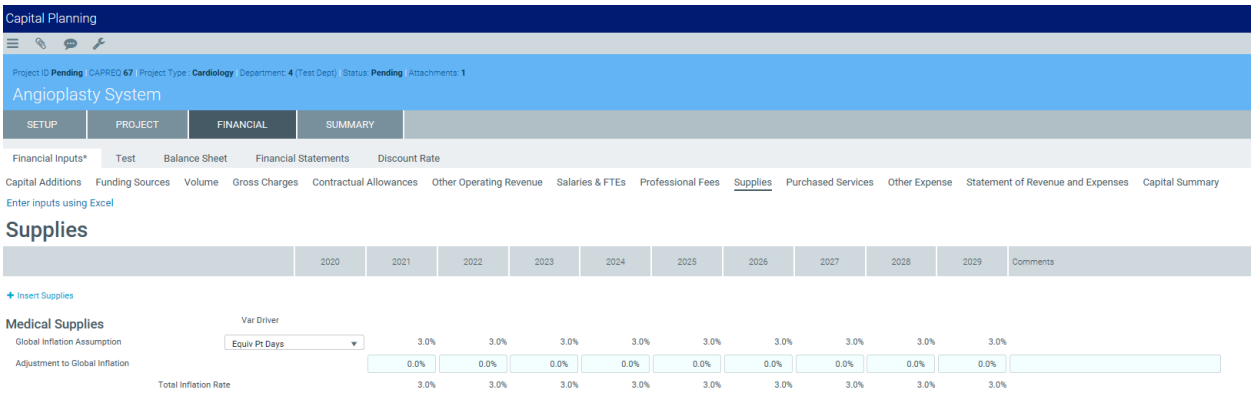
Use this tab manage the adjustments for variable and fixed professional fees.

To forecast professional fees:

1. To add a professional fee, click **+ Insert Professional Fees**.
2. From the **Calc Method Variables** dialog, select a fee type from the list, and click **Apply**.
3. In the **Variable Rate per Unit** row, in the first column, enter a rate.
4. In the **Fixed Expense** row, in the first column, enter a fixed dollar amount.
5. In the **Global Inflation Assumption** row, from the **Var Driver** drop-down, select the driver to use to calculate the variable or fixed fee expense.
6. In each blue cell for each year, enter the variable and fixed adjustments for each column, as needed.
7. In the **Comments** column, enter further details, if necessary.
8. After making any changes, click **Save** in the upper right corner of the page.

Supplies tab

This tab is accessed in the project plan file, in the **Financial Inputs** tab.



NOTE: The system allows you to make a copy of the Financial Inputs tab and rename it. This allows you to model different scenarios in your project. As a result, you may see several versions of the Financial Inputs tab with different names in the project plan.

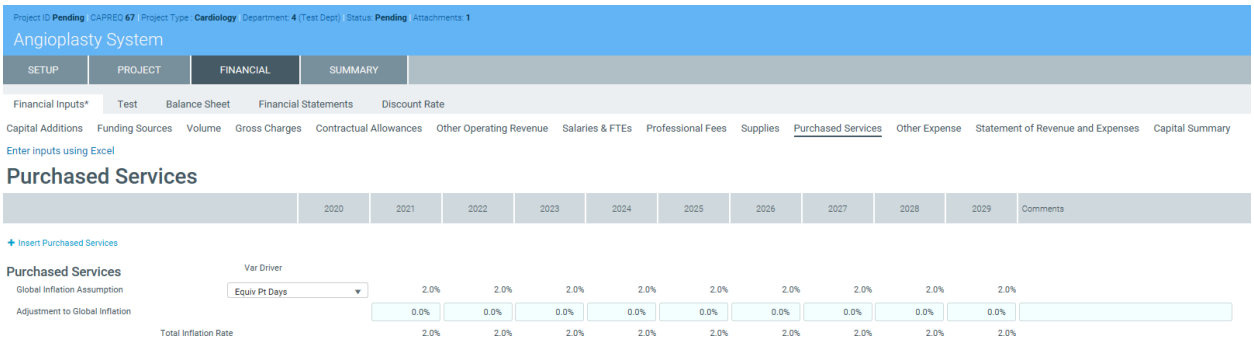
Use this tab manage the adjustments for variable and fixed supplies.

To forecast supplies:

1. To add a supply, click **+ Insert Supply**.
2. From the **Calc Method Variables** dialog, select a supply type from the list, and click **Apply**.
3. In the **Variable Rate per Unit** row, in the first column, enter a rate.
4. In the **Fixed Expense** row, in the first column, enter a fixed dollar amount.
5. In the **Global Inflation Assumption** row, from the **Var Driver** drop-down, select the driver to use to calculate the variable or fixed supply expense.
6. In each blue cell for each year, enter the variable and fixed adjustments for each column, as needed.
7. In the **Comments** column, enter further details, if necessary.
8. After making any changes, click **Save** in the upper right corner of the page.

Purchased Services tab

This tab is accessed in the project plan file, in the **Financial Inputs** tab.



NOTE: The system allows you to make a copy of the Financial Inputs tab and rename it. This allows you to model different scenarios in your project. As a result, you may see several versions of the Financial Inputs tab with different names in the project plan.

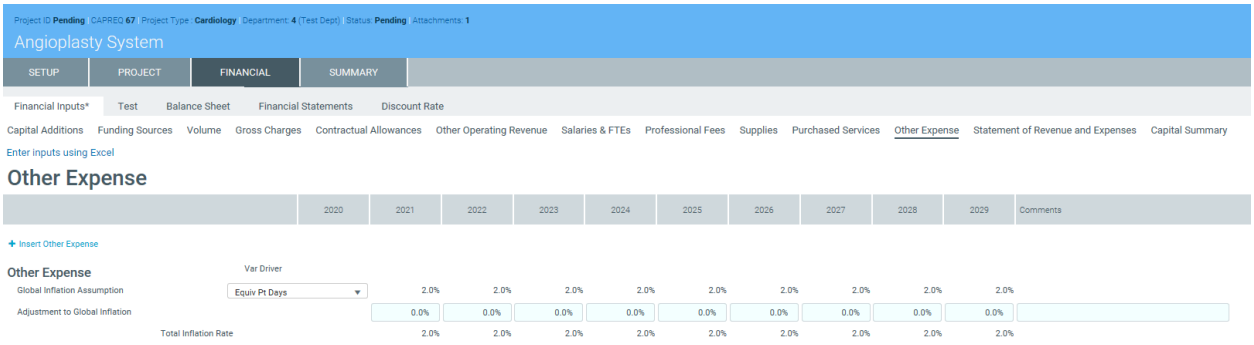
Use this tab manage the adjustments for variable and fixed purchased services.

To forecast purchased services:

1. To add a supply, click **+ Insert Purchased Services**.
2. From the **Calc Method Variables**, select a purchased supply type from the list, and click **Apply**.
3. In the **Variable Rate per Unit** row, in the first column, enter a rate.
4. In the **Fixed Expense** row, in the first column, enter a fixed dollar amount.
5. In the **Global Inflation Assumption** row, from the **Var Driver** drop-down, select the driver to use to calculate the variable or fixed purchased services expense.
6. In each blue cell for each year, enter the variable and fixed adjustments for each column, as needed.
7. In the **Comments** column, enter further details, if necessary.
8. After making any changes, click **Save** in the upper right corner of the page.

Other Expense tab

This tab is accessed in the project plan file, in the **Financial Inputs** tab.



NOTE: The system allows you to make a copy of the Financial Inputs tab and rename it. This allows you to model different scenarios in your project. As a result, you may see several versions of the Financial Inputs tab with different names in the project plan.

Use this tab manage the adjustments for other variable and fixed expenses.

To forecast purchased services:

1. To add a supply, click **+ Insert Other Expense**.
2. From the **Calc Method Variables** dialog, select an expense type from the list, and click **Apply**.
3. In the **Variable Rate per Unit** row, in the first column, enter a rate.
4. In the **Fixed Expense** row, in the first column, enter a fixed dollar amount.
5. In the **Global Inflation Assumption** row, from the **Var Driver** drop-down, select the driver to use to calculate the variable or fixed expense.
6. In each blue cell for each year, enter the variable and fixed adjustments for each column, as needed.
7. In the **Comments** column, enter further details, if necessary.
8. After making any changes, click **Save** in the upper right corner of the page.

Statement of Revenue and Expenses tab

This tab is accessed in the project plan file, in the **Financial Inputs** tab.

NOTE: The system allows you to make a copy of the Financial Inputs tab and rename it. This allows you to model different scenarios in your project. As a result, you may see several versions of the Financial Inputs tab with different names in the project plan.

Use this tab to review patient revenue, deductions from revenue, and operating expenses for the Financial Inputs tab.

Capital Summary tab

This tab is accessed in the project plan file, in the **Financial Inputs** tab.

NOTE: The system allows you to make a copy of the Financial Inputs tab and rename it. This allows you to model different scenarios in your project. As a result, you may see several versions of the Financial Inputs tab with different names in the project plan.

Use this tab to view a summary of your capital spending (from the Capital Additions tab) by category in the following areas:

- Total requested
- Total capitalization
- Total depreciation

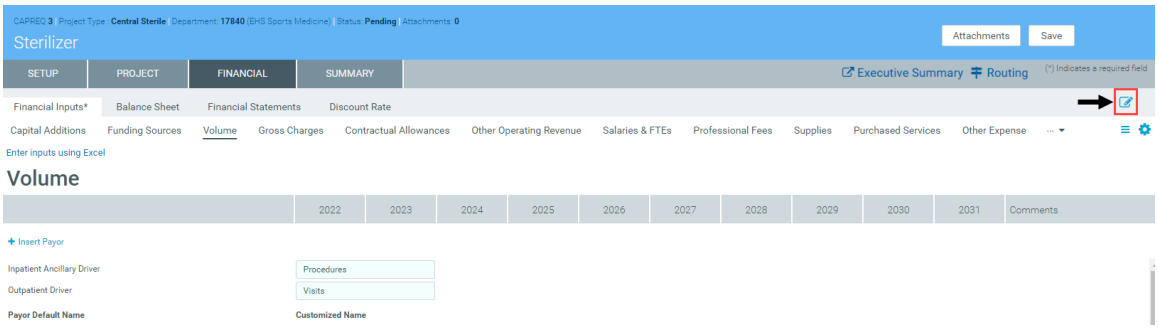
Adding or renaming additional Financial Input sheets

When creating a Threshold capital project, you can add multiple Financial Input sheets to help you input different financial information for a project. You can also rename the Financial Input and any additional sheets to best suit the needs of your organization.

By default, the financials from each Financial Input sheet that you add flow into the Balance Sheet and Financial Statements worksheets, but you can integrate this functionality in the Settings options for each sheet. If you disable this option, the system will not include the financial information in the Balance Sheet or Financial Statement. By enabling and disabling the Financial Input sheets, you can see what impact each analysis will have on your consolidated analysis by calculating the individual contribution margin and income statement for each sheet.

To add additional Financial Input sheets to a Threshold project:

1. Create a Threshold capital project or open an existing project.
2. Click the **Financials** tab.
3. On the right side of the page, click the notepad icon.

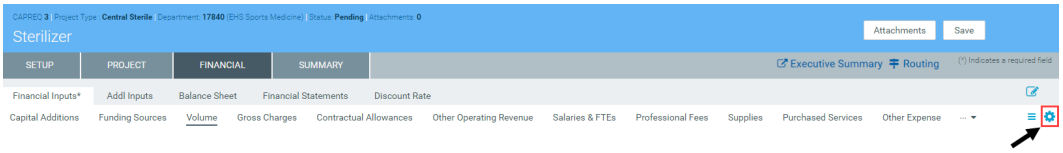


4. In the **Manage Financial Sheets** dialog, do any of the following, as needed, and click **Save**:

   - In the **New Sheet Name** field, type a name for the sheet.
   - In the **Renaming Existing Financial Sheets** section, type a new name for one or more Financial Input sheets.

   The new sheet displays as a sub-tab next to the Financial Inputs sub-tab.

5. Configure the settings for additional sheets by doing the following:
   a. On the left side of the page, click the gear icon.



   b. In the **Settings** dialog, do the following, as needed:

Option	Description
Integrated Financials	• To include the results in the Balance Sheet and Financial Statements sheet, from the drop-down, select **Yes**. **NOTE:** This is set to Yes by default. • To exclude the results from the Balance Sheet and Financial Statements sheet, from the drop-down, select **No**. **TIP:** To analyze different Financial Input scenarios, you can integrate this functionality for each sheet that you add.

Option	Description
Pro Forma Start Year	The start year for the project. **NOTE:** You cannot edit this field. It is assumed that any additional Financial Input tabs that you add apply to the same start year.
Input Years	The default input years for the project based on the template configurations set up by your organization.
Input Years	To change the input years, from the drop-down, select a number.

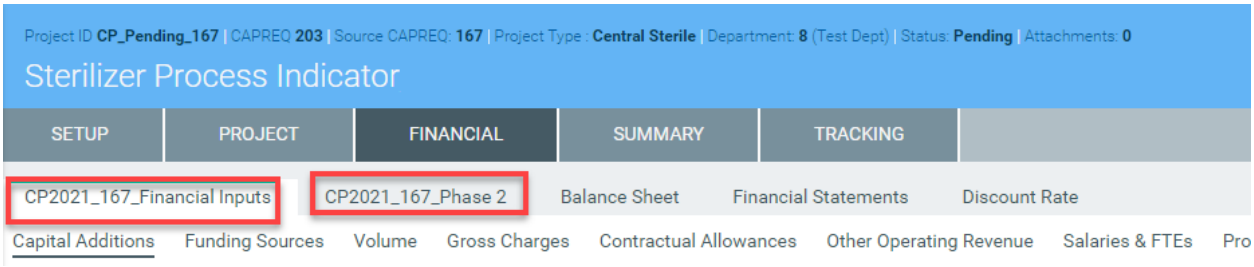
c. Click **OK**.

6. Complete the fields in the tab using the instructions in the following topic .
7. Complete steps 3-6 for each new sheet to add to your project.
8. After making your changes, in the upper right corner of the page, click **Save**.

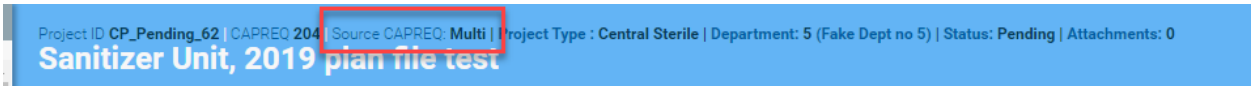
IMPORTANT: When you add additional Financial Input sheets, you will need to refresh each sheet when the Pro Forma Start Year is changed in the original Financial Inputs sheet. For more information, see Refreshing additional Financial Input sheets.

▶ Transferring capital projects with additional Financial Input sheets to Axiom Capital Tracking

When transferring capital project plan files that include additional or renamed Financial Input sheets to Capital Tracking, the tab names will display CP_source file group year_sheet name, as shown in the following example:



Also, when transferring multiple Capital Project plan files to an existing Capital Tracking plan file, the **Source CAPREQ** area at the top of the plan file page displays "Multi" as shown in the following example:

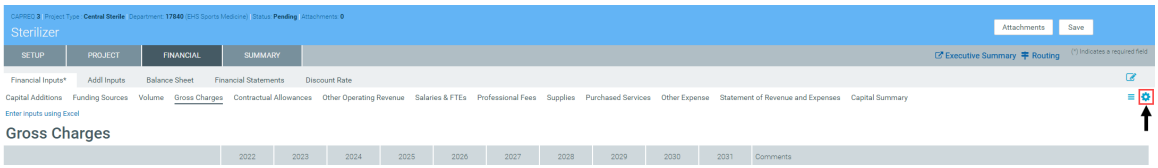


Setting forecast years in a Threshold project

Use this option to configure a driver to include a forecast between three and ten years of projections.

To set forecast years in a Threshold project:

1. Create a Threshold capital project or open an existing project.
2. Click the **Financial** tab.
3. In the **Financial Inputs** sub-tab, click the gear icon on the right side of the page.



4. In the **Settings** dialog, do the following, as needed:

Option	Description
Integrated Financials	• To include the results in the Balance Sheet and Financial Statements sheet, from the drop-down, select **Yes**. **NOTE:** This is set to Yes by default. • To exclude the results from the Balance Sheet and Financial Statements sheet, from the drop-down, select **No**.
Pro Forma Start Year	Select the year the project will start. **IMPORTANT:** If the plan file includes additional Financial Input sheets, the system displays a warning message that you need to refresh each additional Financial Inputs tab that was added to the plan file. For more information, see Refreshing additional Financial Input sheets.
Input Years	The default input years for the project based on the template configurations set up by your organization.
Input Years	To change the input years, from the drop-down, select a number.

5. Click **OK**.
6. After making your changes, in the upper right corner of the page, click **Save**.

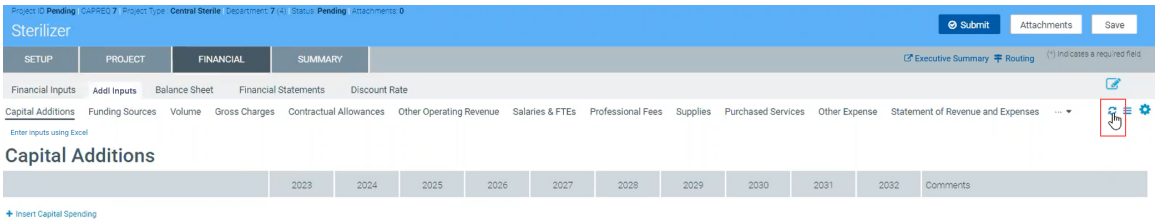
Refreshing additional Financial Input sheets

If your Threshold capital plan includes additional Financial Input sheets, you need to refresh them if you change the Pro Forma Start year in the original Financial Inputs page.

TIP: When you change the start year, the system will display a warning in the Settings dialog to refresh each additional Financial Input sheet.

To refresh additional Financial Input sheets:

1. In the **Financial Inputs** tab, change the Pro Forma start year.
2. Navigate to the additional Financial Input sheet.
3. For each additional sheet, click the refresh icon on the right side of the page.

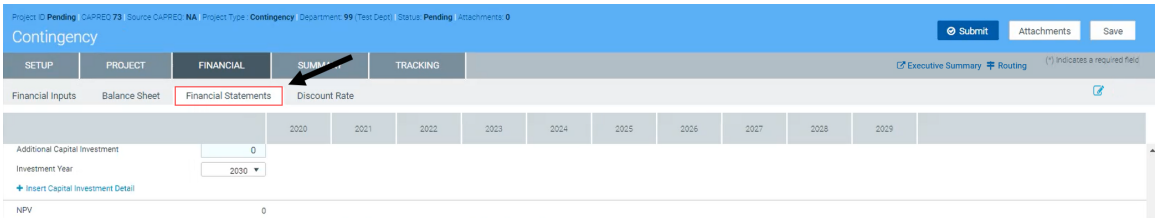


Entering performance tracking measures in a Threshold project

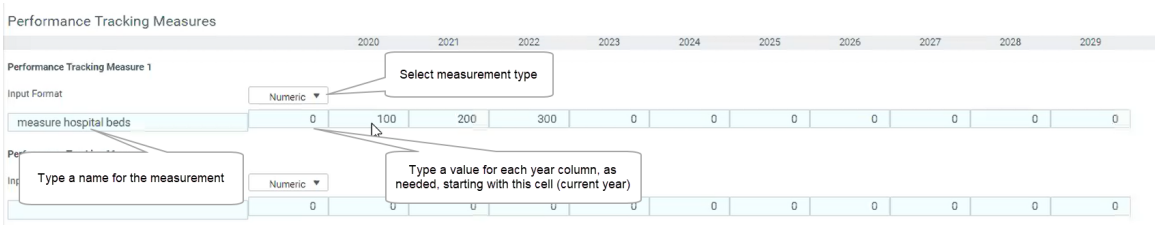
In Threshold projects, you can enter planned items that you want to track over the life of the project. For example, let's say your organization wants to track the number of hospital beds that will be added as a result of a specific project.

To enter performance tracking measures in a Threshold project:

1. Open or create a Threshold project.
2. In the **Financial** tab, click the **Financial Statements** tab.



3. In the **Performance Tracking Measures** section at the bottom of the page, complete the following for each measurement you want to track:
   a. In the **Input Format** field, type the measure name. For example, Number of Beds.
   b. From the drop-down, select the measure value type to track.
   c. In the current year column (the first year column) and for each subsequent year, type the value to track.



4. Click **Save**.

NOTE: This information is included in the Retrospective Comprehensive Update report in Axiom Capital Tracking.

Entering financial inputs for Threshold (Pro Forma) projects using Excel

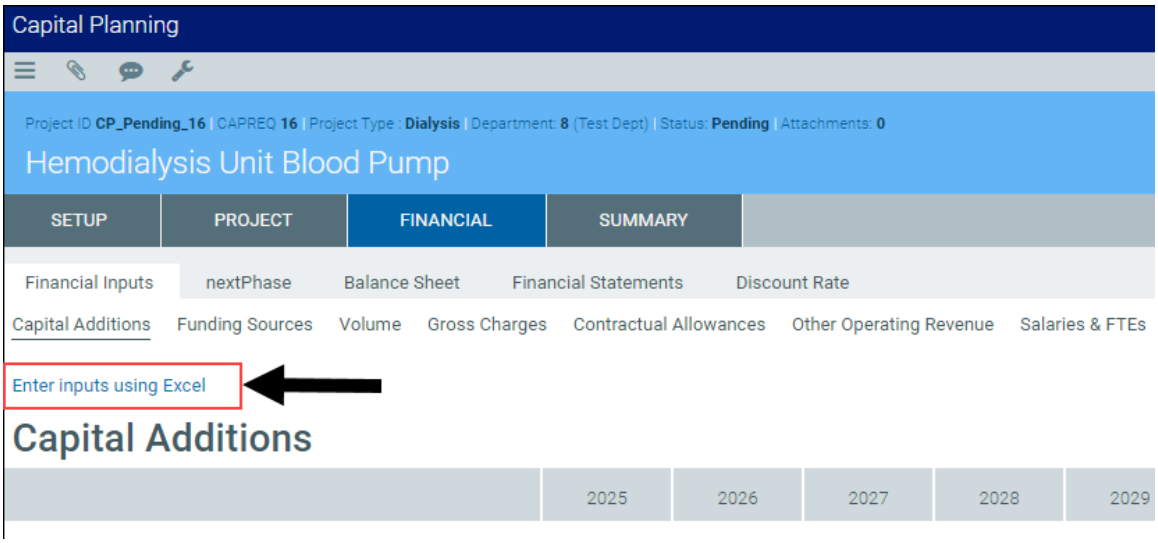
Instead of using the Threshold (Pro Forma) project web form, you can enter financial input and balance sheet values using the Excel Pro Forma utility. This gives you all the functionality of Excel for greater control when auditing and viewing the formulas used to calculate project budget values.

NOTE: This feature will not display if a user is assigned a role profile that has read-only permission to plan files or if someone else has the plan file open and has Save Lock enabled.

TIP: The Excel Pro Forma Utility launches to display the sheet you were on. However, if the plan file has more than one sheet, you can open other sheets by refreshing the Excel utility (F9), and selecting another sheet from the Refresh Variables dialog.

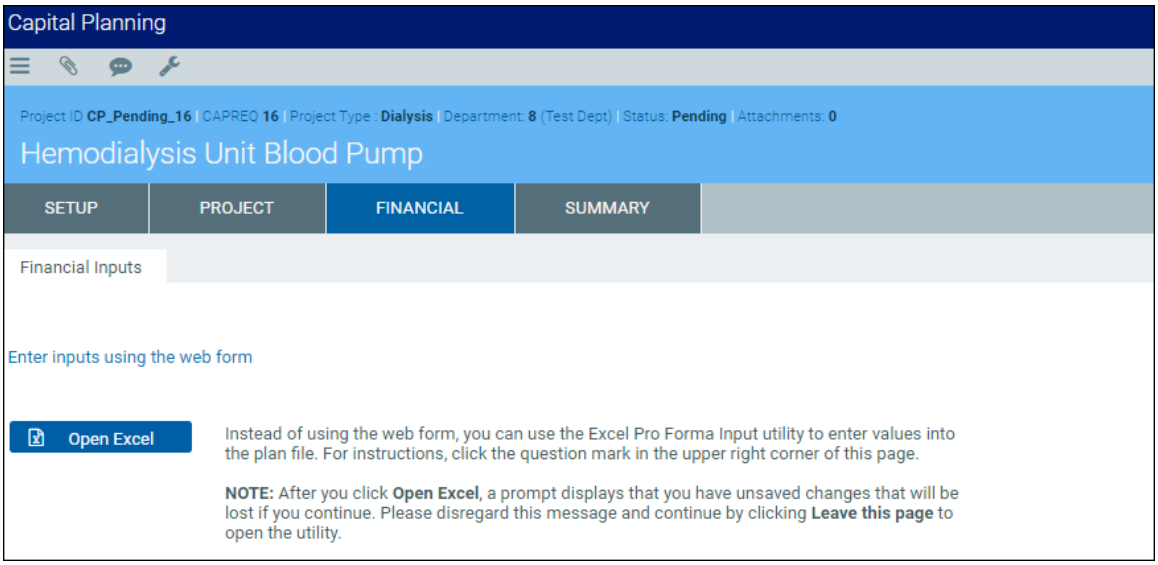
To enter financial inputs for Threshold (Pro Forma) projects using Excel:

1. Create or open the Threshold project.
2. In the **Financial Inputs** tab (or a copy of the Financial Inputs tab), click **Enter inputs using Excel**.



Click image to view full size

3. At the **Click OK to save and continue to Excel Pro Forma Input** prompt, click **OK**.
4. The content in the **Financial Inputs** tab is replaced with a description and instructions for the Excel Pro Forma utility and an **Open Excel** button. Click the button to launch the utility.



Click image to view full size

5. A prompt displays that you have unsaved changes that will be lost if you continue. Disregard this message and continue by clicking **Leave this page** to open the utility.

   NOTE: The utility opens in the Desktop Client version of Axiom Capital Planning.

6. In the **Financial** tab, complete the following sections in the worksheet, as described in the sections listed in the following table:

   TIP: To jump directly to a section in the worksheet, in the **Main** ribbon tab, click **GoTo > Financials**, and select the section.

Section	Description
Capital Additions	Enter details regarding the capital spending items for your project
Funding Sources	Designate and manage the funding sources for the project
Volume	View and adjust patient volume by payor
Gross Charges	Enter growth-rate adjustments to inpatient and outpatient revenue at the global level as well as by day, procedure, and/or visit.
Contractual Allowances	Manage reimbursement adjustments from your default payors to model out your reimbursements from year to year

Section	Description
Other Operating Revenue	Manage additional operating revenue not related to a patient
Salaries & FTEs	Manage salary adjustments for variable and fixed FTEs
Professional Fees	Manage adjustments for variable and fixed professional fees
Supplies	Manage adjustments for variable and fixed supplies
Purchased Services	Manage adjustments for variable and fixed purchased services
Other Expenses	Manage adjustments for other variable and fixed expenses
Statement of Revenue and Expense	Review patient revenue, deductions from revenue, and operating expenses
Capital Summary	View a summary of your capital spending (from the Capital Additions section) by category

7. In the **Balance Sheet** tab, enter debt, assets, and expenses related to the project for each upcoming fiscal year. Inputs include the following:
   - Long term debt additions
   - Current maturities of debt
   - Interest expense
   - Unrestricted net assets
   - Unrestricted and board designated investments
8. After making your changes, in the **Main** ribbon tab, click **Save**. The changes are saved back to the Summary tab of the Threshold project web form.
9. At the **Save to Database Status** prompt, click **OK**.
10. Close the Desktop Client.
11. In the Threshold project web form, click the **Summary** tab to view your changes.

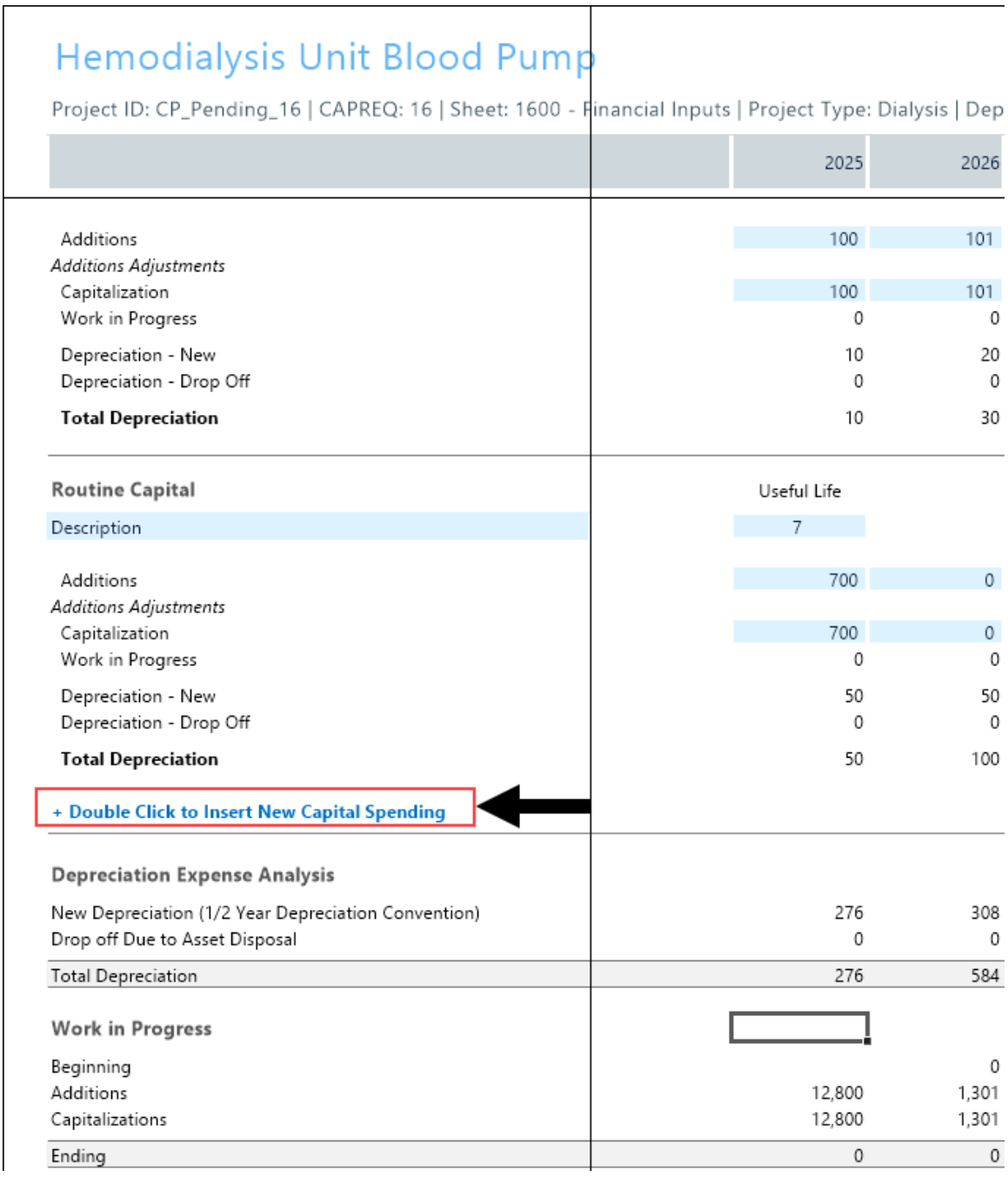
▶ Capital Additions

Use this section to enter details regarding the capital spending items for your project.

To add or edit capital spending items:

1. From the **Depreciation Methodology** drop-down, select the depreciation type to use for your items: Full Year Depreciation, 1/2 Year Depreciation, or Monthly Input.
2. To add an item, click **+ Double Click to Insert New Capital Spending**.

TIP: You may have to scroll down a bit to see this. It is located right above the **Depreciation Expense Analysis** section, as shown in the following screen shot.



Hemodialysis Unit Blood Pump

Project ID: CP_Pending_16 | CAPREQ: 16 | Sheet: 1600 - Financial Inputs | Project Type: Dialysis | Dep

	2025	2026
Additions	100	101
Additions Adjustments		
Capitalization	100	101
Work in Progress	0	0
Depreciation - New	10	20
Depreciation - Drop Off	0	0
Total Depreciation	10	30
Routine Capital	Useful Life	
Description	7	
Additions	700	0
Additions Adjustments		
Capitalization	700	0
Work in Progress	0	0
Depreciation - New	50	50
Depreciation - Drop Off	0	0
Total Depreciation	50	100
+ Double Click to Insert New Capital Spending		
Depreciation Expense Analysis		
New Depreciation (1/2 Year Depreciation Convention)	276	308
Drop off Due to Asset Disposal	0	0
Total Depreciation	276	584
Work in Progress		
Beginning		0
Additions	12,800	1,301
Capitalizations	12,800	1,301
Ending	0	0

Click image to view full size

3. From the **Calc Method Variables** dialog, click **Choose Value** to select the project item type from the list, and then click **OK**.

4. In the **Description** field under the item name, type a description of the item, if needed.
5. In the **Useful Life** field, type the number of years the item will remain in service.

   NOTE: Depending on how your organization has configured your project template and your role profile, this field may not display.

6. In each column, enter the capitalization amount for the applicable years.
7. After making your changes, in the **Main** ribbon tab, click **Save** .

At the bottom of the Capital Additions section, the worksheet displays the following:

Depreciation Expense Analysis
This area shows the calculated depreciation amount based on the useful life, the methodology you selected, and when items are capitalized. This information will show up on your income statement.

Work in Progress
This area shows the dollars that you have spent but not yet capitalized.

Funding Source

Use this section to designate the funding sources for the project.

The section of the worksheet displays a default funding source. If you add more funding sources, any amounts you add will be removed from the default funding source.

To add or edit a funding source:

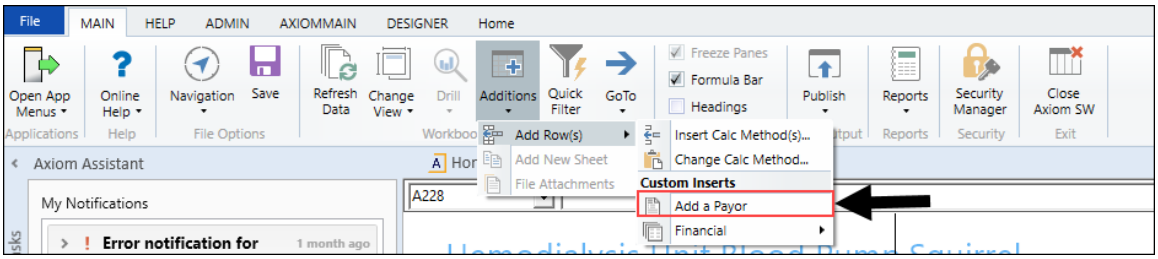
1. To add a funding source, click **+ Double Click to Insert Funding Source**.
2. From the **Calc Method Variables** dialog, click Choose Value to select the funding source, and click **OK**.
3. In each column year, type the funding source amount.
4. In the **Comments** column, enter further details, if necessary.
5. After making your changes, in the **Main** ribbon tab, click **Save** .

Volume

Use this section to view and adjust patient volume by payor.

To adjust volume:

1. To insert a payor, in the **Main** ribbon tab, click **Additions** > **Add Row(s)** > **Add a Payor**.



Click image to view full size

2. From the **Choose Value** dialog, select the payor from the list, and click **OK**.
3. In the **Inpatient Ancillary Driver** and **Outpatient Driver** fields, type the driver to use for each.

   NOTE: By default, the system has been set up with drivers entered in these fields.

4. For each payor default name, enter a name in the **Customized Name** field that best fits your organization, if needed.
5. For each section, enter rate and/or volume adjustments in the blue cells.

   You can use the **Volume Adjustment** row to add or subtract values from the Total Inpatient Charges, Total Inpatient Procedures, Total Outpatient Visits, and Total % Discharges by Payor cells.

   For example, the Total Inpatient Procedures for 2025 is expected to be 1,000. For 2026, the organization expects 1,500. Instead of entering 1,500, the user can just enter 500 in the Volume Adjustment row. This allows users to easily adjust volume amounts without having to enter totals for each year.
6. In the **Comments** row, enter details, as needed.
7. After making your changes, in the **Main** ribbon tab, click **Save** .

At the bottom of the section, an income statement displays, summarizing the impacts of the project.

Gross Charges

Use this tab to enter growth-rate adjustments to inpatient and outpatient revenue at the global level as well as by day, procedure, and/or visit. This determines the rate to associate with the volume in the Volume tab to determine your organization's revenue.

To adjust gross charges:

1. In each blue cell, enter the adjustment percentage or dollar amounts for each revenue type, as needed.
2. In the **Comments** column, enter further details, if needed.
3. After making your changes, in the **Main** ribbon tab, click **Save** .

At the bottom of the page, you can view Total Inpatient Revenue, Total Inpatient Procedure Revenue, and Total Outpatient Revenue.

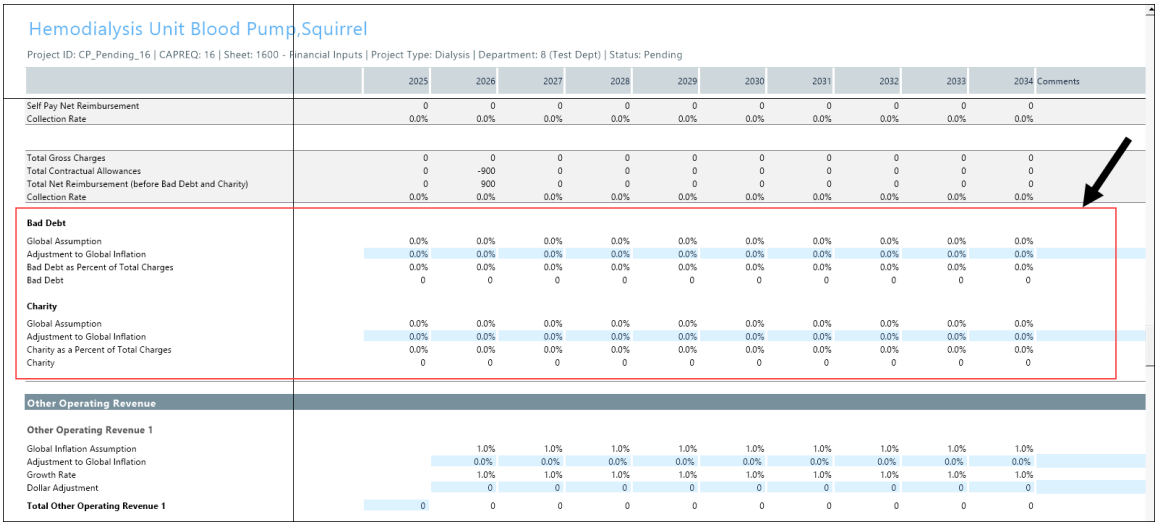
Contractual Allowances

Use this tab to manage reimbursement adjustments from your default payors to model out your reimbursements from year to year.

To adjustment payor reimbursements:

1. From the drop-down next to the Inpatient, Inpatient Ancillary, and Outpatient sections for each payor, select how you want to model out the reimbursements by selecting one of the following:
   - ***Payor Name* Inpatient:** Pct Charges, Per Case, Per Diem, Lump Sum
   - ***Payor Name* Inpatient Auxiliary:** Pct Charges, Lump Sum, Per Procedure
   - ***Payor Name* Outpatient:** Pct Changes, Lump Sum, Per Visit
2. In each blue cell, enter a percentage or amount adjustment, as needed.
3. At the bottom of the page, in the **Bad Debt** and **Charity** section, enter adjustments for bad debt and charity, which are calculated as a percentage of gross charges.

   TIP: You may have to scroll down a bit to see these sections. It is located right above the **Other Operating Revenue** section, as shown in the following screen shot.



Click image to view full size

4. In the **Comments** column, enter further details, if necessary.
5. After making your changes, in the **Main** ribbon tab, click **Save** .

Other Operating Revenue

Use this section to manage additional operating revenue not related to a patient (i.e. gift shop) by entering a first year amount and then applying a growth rate to it.

To add or edit operating revenue:

1. To add another revenue type, click **+ Double Click to Insert Other Revenue**.
2. From the **Calc Methods Variables** dialog, select an operating revenue type from the list, and click **OK**.
3. In the **Total Other Operating Revenue** row, in the first column, enter an amount.
4. In the remaining year columns, enter a percent and/or dollar adjustment, as needed.
5. In the **Comments** column, enter further details, if needed.
6. After making your changes, in the **Main** ribbon tab, click **Save** .

Salaries & FTEs

Use this tab manage the salary adjustments for variable and fixed FTEs.

To forecast salaries:

1. To add a salary, click **+ Double Click to Insert Salaries**.
2. From the **Calc Method Variables** dialog, click **Choose Value** to select a salary type from the list, and click **OK**.
3. In the **Productivity Adjustment** row, from the **Var Driver** drop-down, select the driver to use to drive your variable FTEs.
4. In the first column of the **Variable FTEs**, enter the number of variable FTEs.
5. In the **Fixed FTEs** row, enter the number of fixed FTEs.
6. In the **Annual Salary/FTE** row, enter the salary associated with the FTE.
7. In each blue cell for each year, enter the variable and fixed adjustments for each column, as needed.
8. In the **Comments** column, enter further details, if necessary.
9. After making your changes, in the **Main** ribbon tab, click **Save** .

Professional Fees

Use this section to manage the adjustments for variable and fixed professional fees.

To forecast professional fees:

1. To add a professional fee, click **+ Double Click to Insert Professional Fees**.
2. From the **Calc Method Variables** dialog, click **Choose Value** to select a fee type from the list, and

click **OK**.

3. In the **Global Inflation Assumption** field, from the **Var Driver** drop-down, select the driver to use to calculate the variable or fixed fee expense.
4. In the **Variable Rate per Unit** row, in the first column, enter a rate.
5. In the **Fixed Expense** row, in the first column, enter a fixed dollar amount.
6. In the **Global Inflation Assumption** row, from the **Var Driver** drop-down, select the driver to use to calculate the variable or fixed fee expense.
7. In each blue cell for each year, enter the variable and fixed adjustments for each column, as needed.
8. In the **Comments** column, enter further details, if necessary.
9. After making your changes, in the **Main** ribbon tab, click **Save** .

Supplies

Use this section to manage the adjustments for variable and fixed supplies.

To forecast supplies:

1. To add a supply, click **+ Double Click to Insert Supply**.
2. From the **Calc Method Variables** dialog, click **Choose Value** to select a supply type from the list, and click **OK**.
3. In the **Global Inflation Assumption** row, from the **Var Driver** drop-down, select the driver to use to calculate the variable or fixed supply expense.
4. In the **Variable Rate per Unit** row, in the first column, enter a rate.
5. In the **Fixed Expense** row, in the first column, enter a fixed dollar amount.
6. In each blue cell for each year, enter the variable and fixed adjustments for each column, as needed.
7. In the **Comments** column, enter further details, if necessary.
8. After making your changes, in the **Main** ribbon tab, click **Save** .

Purchased Services

Use this section to manage the adjustments for variable and fixed purchased services.

To forecast purchased services:

1. To add a supply, click **+ Double Click to Insert Purchased Services**.
2. From the **Calc Method Variables**, click **Choose Value** to select a purchased supply type from the list, and click **OK**.

3. In the **Global Inflation Assumption** row, from the **Var Driver** drop-down, select the driver to use to calculate the variable or fixed purchased services expense.
4. In the **Variable Rate per Unit** row, in the first column, enter a rate.
5. In the **Fixed Expense** row, in the first column, enter a fixed dollar amount.
6. In each blue cell for each year, enter the variable and fixed adjustments for each column, as needed.
7. In the **Comments** column, enter further details, if necessary.
8. After making your changes, in the **Main** ribbon tab, click **Save** .

Other Expenses

Use this section to manage the adjustments for other variable and fixed expenses.

To forecast purchased services:

1. To add a supply, click **+ Double Click to Insert Other Expense**.
2. From the **Calc Method Variables** dialog, click **Choose Value** to select an expense type from the list, and click **OK**.
3. In the **Global Inflation Assumption** row, from the **Var Driver** drop-down, select the driver to use to calculate the variable or fixed expense.
4. In the **Variable Rate per Unit** row, in the first column, enter a rate.
5. In the **Fixed Expense** row, in the first column, enter a fixed dollar amount.
6. In each blue cell for each year, enter the variable and fixed adjustments for each column, as needed.
7. In the **Comments** column, enter further details, if necessary.
8. After making your changes, in the **Main** ribbon tab, click **Save** .

Statement of Revenue and Expense

Use this section to review patient revenue, deductions from revenue, and operating expenses for project financial inputs.

Capital Summary

Use this section to view a summary of your capital spending (from the Capital Additions section) by category in the following areas:

- Total requested
- Total capitalization
- Total depreciation

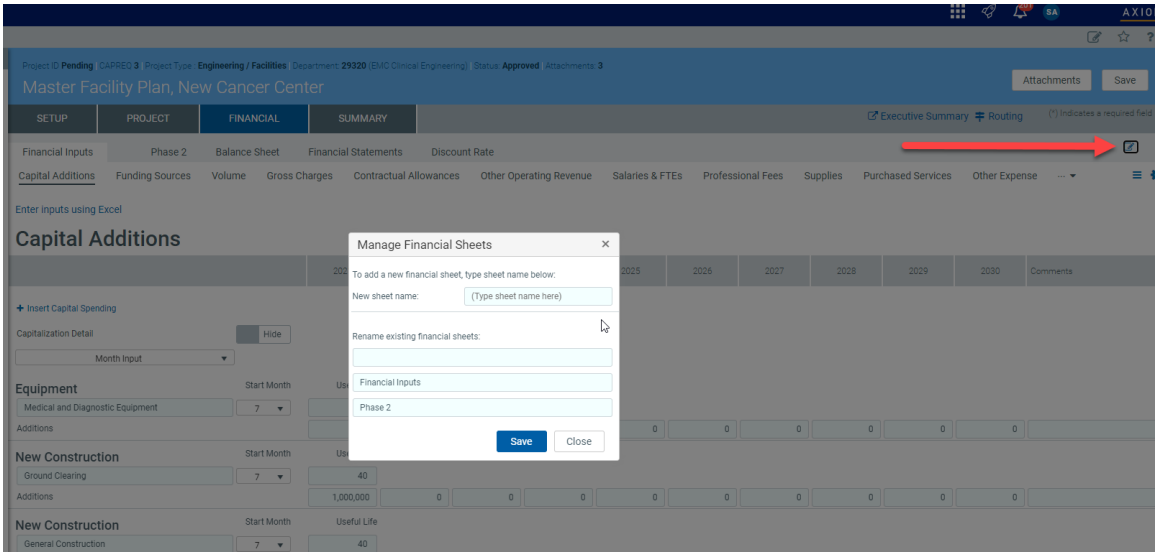
Deleting sheets from a Threshold (pro forma) project

You can delete additional sheets added to a pro forma project but not the original sheet itself.

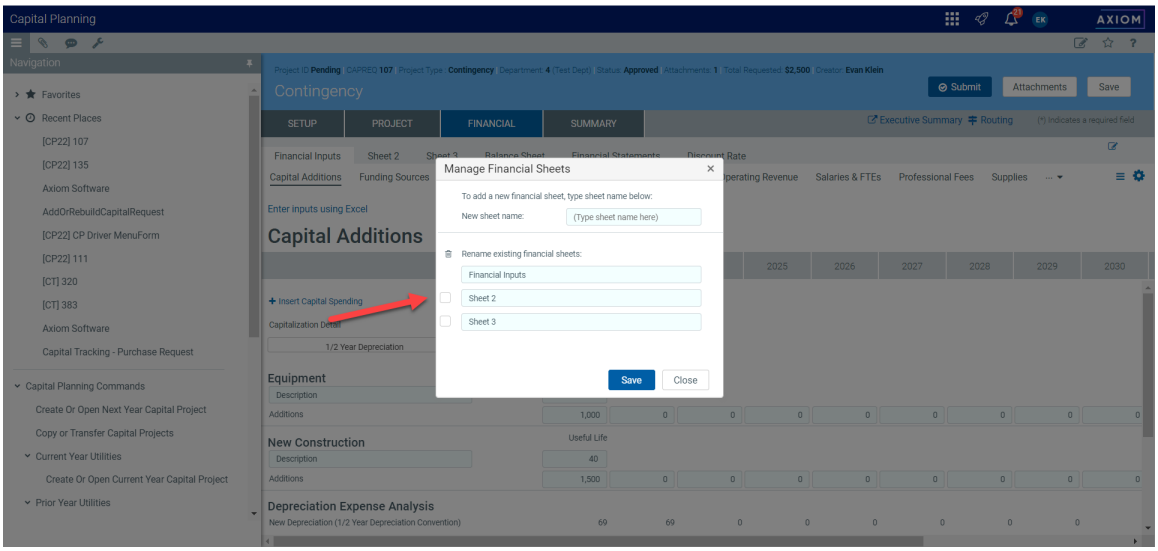
IMPORTANT: All accompanying data will be permanently lost when you delete sheets from the project.

To delete sheets from a Threshold (pro forma) project:

1. Open the project.
2. Click the notepad icon in the upper left corner of the page.



3. In the **Manage Financial Sheets** dialog, select the check box next to the sheets to delete, and click **Save**.



Creating capital projects as funding sources for other projects

In Axiom Capital Planning, you can create a project designated as a funding source for other projects. The process of creating these types of projects is almost exactly the same as creating any other type of project. The difference is that the Axiom Capital Planning administrator designates the project plan file as Funding Source in the Project Approval report. Funding from projects designated as a funding source can then be used to allocate funds to other projects.

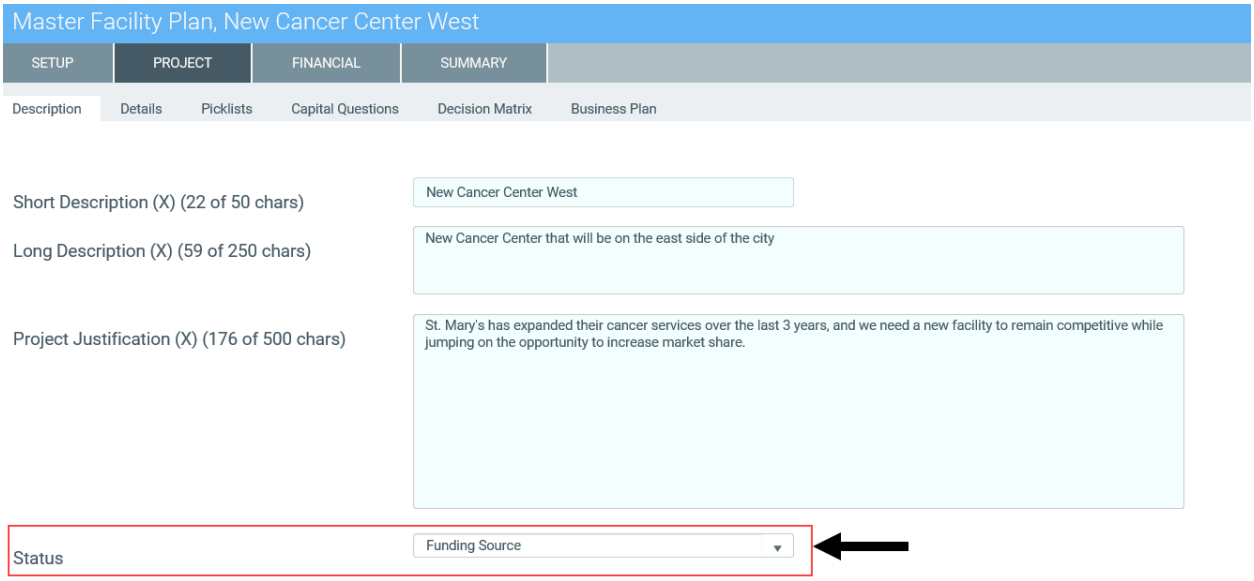
NOTE: Only Axiom Capital Planning administrators can designate a funding source project.

To create a funding source capital project:

1. Create a new capital project.
2. In the Project Approval report, in the **Approval Status** column, select **Funding Source**.
3. In the **Approval Comments** column, type additional comments, as needed.
4. After you finish making changes, in the **Main** ribbon tab, click **Save**.

In the Project tab > Description tab of the project plan file, the Status field will display "Funding Source" to inform the project requestor the status of the project.

NOTE: The Status field displays as a drop-down list only for administrators and approvers.



Click image to view full size

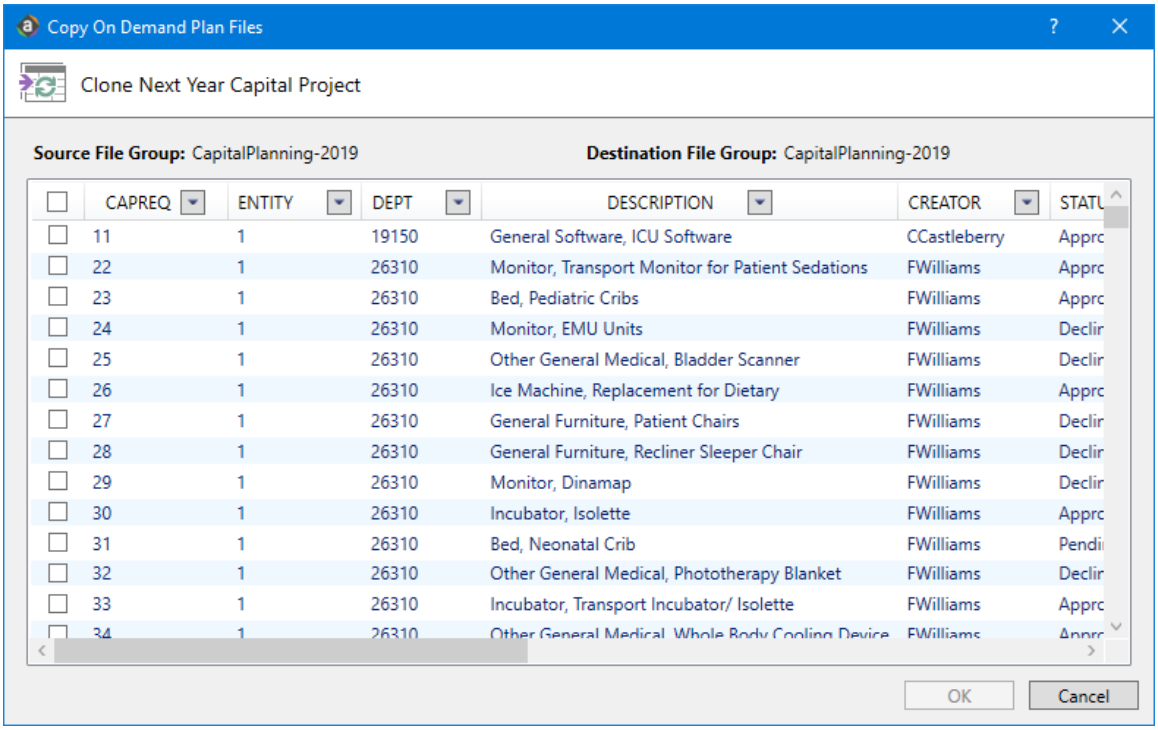
Cloning a capital project

Instead of creating a capital project from scratch, you can clone an existing project, make changes to it, and a save it as a new project.

NOTE: If your organization uses the Web version of Axiom Capital Planning, use the Copy or Transfer Capital Projects utility.

To clone a capital project:

1. In the Cap Plan Admin or Cap Plan task pane, in the **Capital Planning Commands** section, navigate to capital project requests for the previous year, current year, or next year.
2. In the **Copy On Demand Plan Files** dialog, select the projects to clone, and click **OK**.



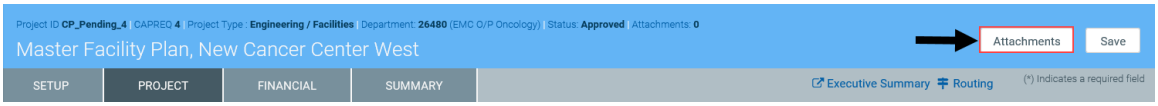
3. At the confirmation prompt, click **OK**.
4. At the Successfully Copied message, click **OK**.
5. Open the cloned project file, make the appropriate changes to it, and save it.

Managing attachments for capital project requests

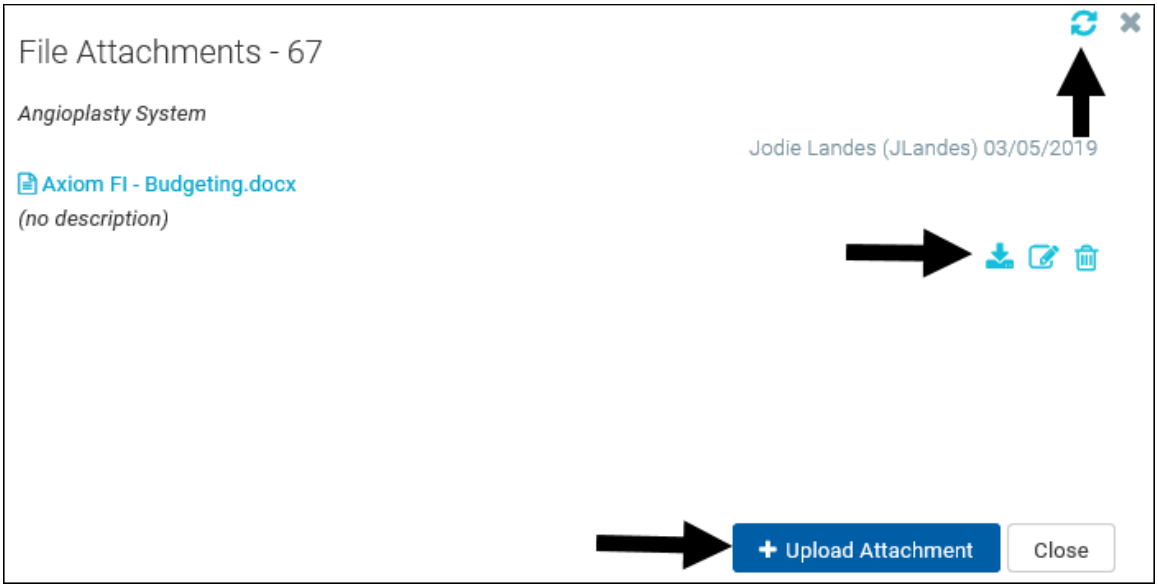
Your capital project request may require that you include supporting files and other documentation. In the Capital Project

To manage attachments for capital project requests:

1. Create or modify a capital project plan.
2. Click the **Attachments** button in the upper left corner of the page.



3. Do any of the following:
   - **Upload an attachment** - Click **+ Upload Attachment**. Select the file to upload, and click **Open**.
   - **Download an attachment** - Hover your mouse cursor near the file name, click the down arrow icon . Open or save the document to your workstation.
   - **Edit an attachment** - Hover your mouse cursor near the file name, and click the notepad icon. Edit the file name and/or description, and click **OK**.
   - **Delete an attachment** - Hover your mouse cursor near the file name, and click the trashcan icon. At the confirmation prompt, click **OK**.
   - **Refresh attachment list** - Click the circular arrows icon.



4. After making your changes, click **Close**.

Updating the project creator

The CP Update Project Initiator report provides a list of all the projects, their descriptions, and their creators. You can change the creator by selecting a username from the Creator column. For example, if a user leaves the organization or moves to a new role.

The report also lists the process initiator, which refers to the user who started the plan file in the process. In most cases, the plan file creator and the process initiator are the same user. To change the process initiator to be different from the project creator, see Changing the process initiator for active plan files.

CP Update Project Initiator

KHA Health

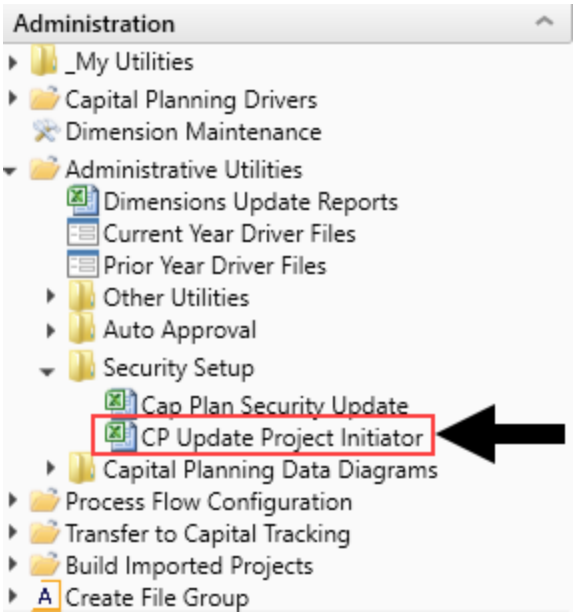
2022 Capital Planning Process

Capital Planning Year: 2022

CAPREQ	Project Description	Creator	ProcessInstanceID	ProcessInitiatorName	ProcessInitiatorID
2	Angioscope	HBurns	3985	Jodie Landes	153
3	Sterilizer Process Indicator	Jlandes	3986	Jodie Landes	153

To update the project creator:

1. In the Cap Plan Admin task pane, in the **Administration** section, click **Administrative Utilities > Security Setup**, and then double-click **CP Update Project Initiator**.



Click image to view full size

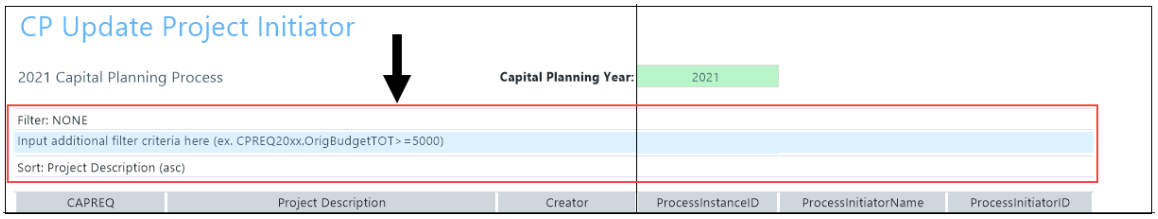
2. From the **Main** ribbon tab, click **Refresh Data**.

> **TIP:** You can also refresh data by pressing **F9**. At the bottom of the Refresh Variables dialog, you can also set the sort order.

3. In the **Refresh Variables** dialog, enter or select the variables to determine the records to include in the report, and press **OK**.

   TIP: To include all records in the report, leave the fields blank.

4. To filter the list even further, in the Filter section above the table, type a filter statement using the appropriate filter syntax. For instructions, see Filter criteria syntax.



Click image to view full size

5. To change the person who created the project, select the user from the drop-down in the **Creator** column.
6. In the **Main** ribbon tab, click **Save**.

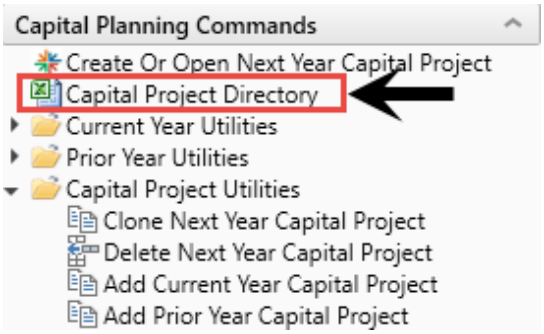
Viewing the list of current capital projects

The Capital Project Directory report lists all of the current projects for your organization. You can view the summary data on all projects or view the full project plan file for a specific project.

To view the list of current capital projects:

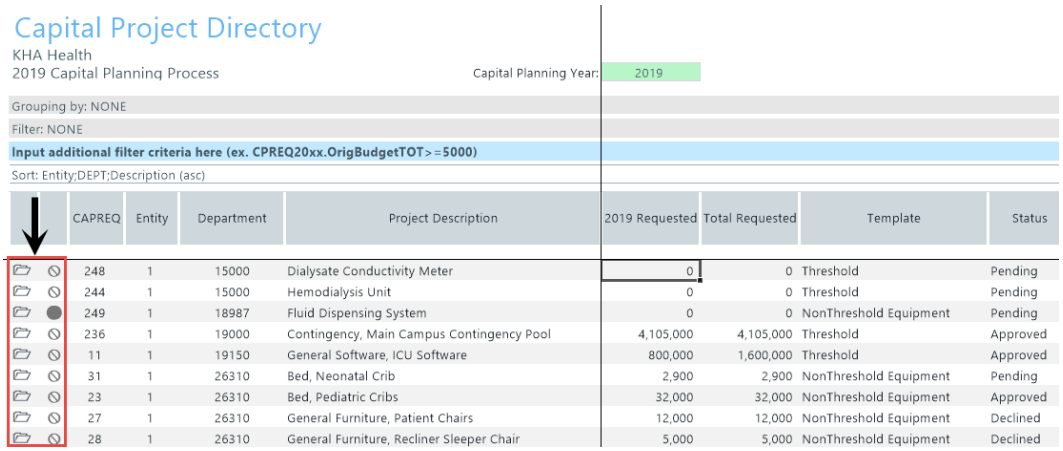
1. In the Cap Plan Admin task pane, in the **Capital Planning Commands** section, double-click **Capital Project Directory**.

   NOTE: You can also access a web version of this report from the Capital Planning home page. For more information, see Viewing project plan files.



2. Do any of the following:

- To open the project, double-click the folder icon next to the left of the CAPREQ column.
- If there are attachments associated with the project, a filled-in circle displays next to the folder icon. To view the attachments, double-click the circle.



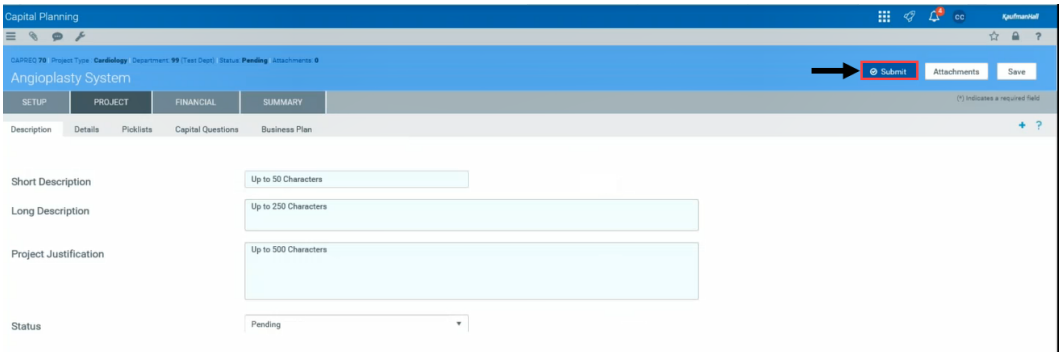
CAPREQ	Entity	Department	Project Description	2019 Requested	Total Requested	Template	Status
248	1	15000	Dialysate Conductivity Meter	0	0	Threshold	Pending
244	1	15000	Hemodialysis Unit	0	0	Threshold	Pending
249	1	18987	Fluid Dispensing System	0	0	NonThreshold Equipment	Pending
236	1	19000	Contingency, Main Campus Contingency Pool	4,105,000	4,105,000	Threshold	Approved
11	1	19150	General Software, ICU Software	800,000	1,600,000	Threshold	Approved
31	1	26310	Bed, Neonatal Crib	2,900	2,900	NonThreshold Equipment	Pending
23	1	26310	Bed, Pediatric Cribs	32,000	32,000	NonThreshold Equipment	Approved
27	1	26310	General Furniture, Patient Chairs	12,000	12,000	NonThreshold Equipment	Declined
28	1	26310	General Furniture, Recliner Sleeper Chair	5,000	5,000	NonThreshold Equipment	Declined

Submitting or rejecting capital projects

If you are an approver and a capital project is at your step in the process, a Submit button displays in upper right corner of the screen to send the project to the next step in the process. If you have rejection rights, a Reject button also displays so you can send the project back to the previous step in the process.

To submit or reject a capital project:

1. Open the capital project, and do one of the following:
   - To approve the project to send it to the next step in the process, in the upper right corner of the screen, click **Submit**.

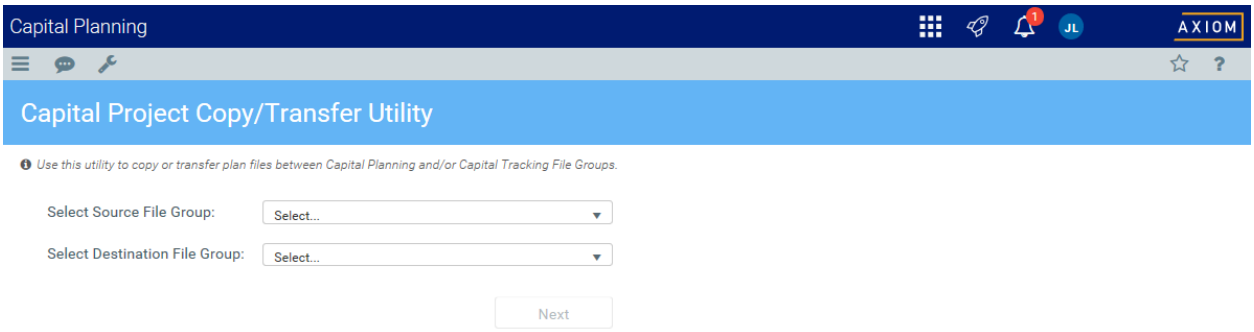


   After you click Submit, a dialog displays the next step in the process. You can add notes for the next reviewer. Click **Submit**.

   - To reject the project to send it back to the previous step, click **Reject** .

Copying or transferring capital projects

The Copy or Transfer Capital Projects utility allows you to easily copy projects and data from one file group to another in Axiom Capital Planning as well as copy unapproved or transfer approved capital project plan files and data to Axiom Capital Tracking.



Copying projects from one Capital Planning file group to another

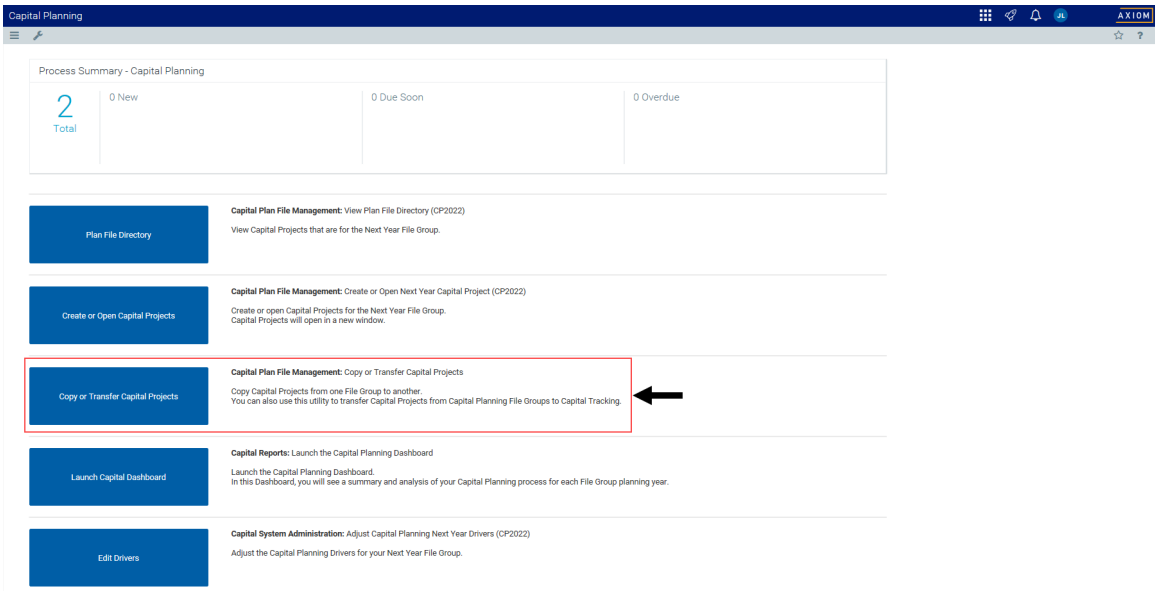
Use this utility to do the following in Axiom Capital Planning:

- Roll forward capital projects from one year to the next.
- If your organization upgrades from the Excel Legacy version of Axiom Capital Planning to the Web version, use this utility to move your Excel projects to the Web version.

To copy projects from one Capital Planning file group to another:

1. From the Axiom Capital Planning home page, click **Copy or Transfer Capital Projects**.

   NOTE: If using the Windows or Excel Client, see Navigating to capital project requests.



Click image to view full size

2. From the **Select Source File Group** drop-down, select the file group to copy from.
3. From the **Select Destination File Group** drop-down, select the file group to copy to.
4. From the **Shift Data Years?** drop-down, select one of the following:
    - To shift the destination start year, select **Yes - shift data to match FGstart year**. For example, if you want to copy data from 2019 to 2020, and start planning in 2020. By selecting Yes, your new plan files will keep all of the data from your source files, but it will start in 2020.
    - To continue using the start year in the current year plan file, select **No - maintain source year data**. For example, if you want to copy data from 2019 to 2020, but continue using the 2019 start year and data.
5. From the **Delete Prior Year Data?** drop-down, select one of the following:

    NOTE: This option only displays if you select No in Step 4 above.

    - To delete all of the data from the previous year's plan file, select **Yes - delete data prior to destination start year**. For example, if you want to copy data from 2019 to 2020, and delete the 2019 data.

        TIP: You may want to use this option to roll forward a multi-year plan file, but not include the source data prior to your destination start year.

- To keep all data prior to the destination file group you are copying data to, select **No - maintain all source data**. For example, if you want to copy data from 2019 to 2020, and keep the 2019 data.

6. From the **Preserve Creator?** drop-down, select one of the following:
   - To keep the original creator when copying the project, select **Yes - keep the original Creator on new project**.
   - To assign yourself as the creator, select **No - update new project with you as the Creator**.
7. From the **Preserve ProjectID?** drop-down, select one of the following:
   - To use the original project ID when copying the project, select **Yes - keep the original ProjectID on the new project**.
   - To assign a new project ID, select **No - use the default ProjectID**.
8. Click **Next**.
9. Select the projects to copy by clicking the check box in the far left column.

   TIP: To copy all of the projects, click the check box left of the **CAPREQ** column header.

10. Click **Submit**.

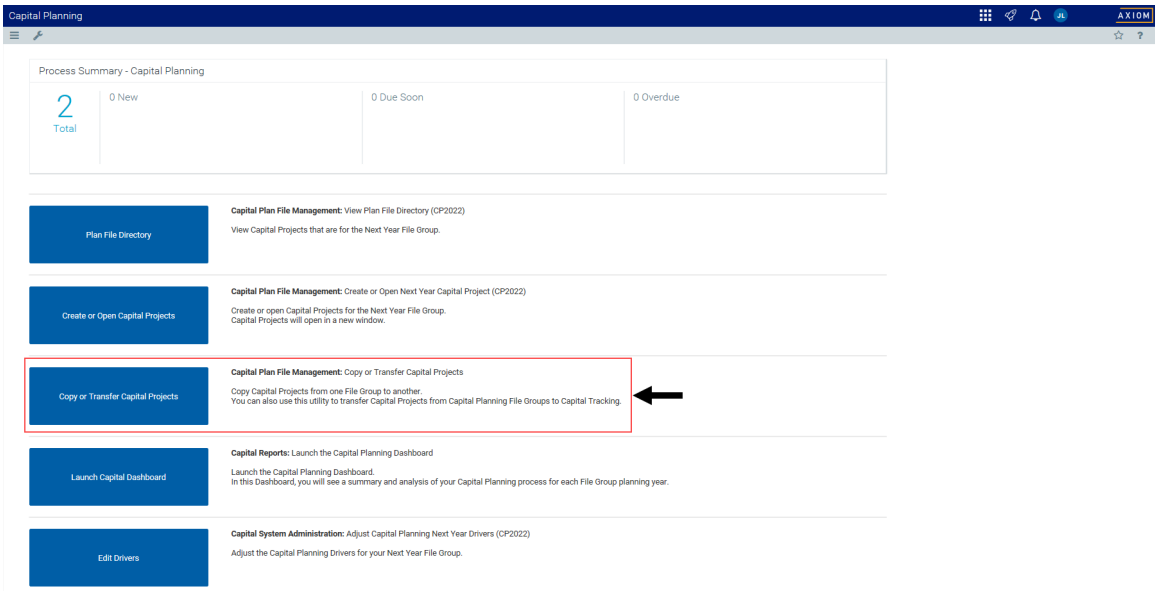
Copying Capital Planning projects to Capital Tracking

Use this option to copy unapproved Capital Planning projects to a Capital Tracking project.

To copy Capital Planning projects to Capital Tracking:

1. From the Axiom Capital Planning home page, click **Copy or Transfer Capital Projects**.

   NOTE: If using the Excel Client, see Navigating to capital project requests.



Click image to view full size

2. From the **Select Source File Group** drop-down, select the file group to copy.
3. From the **Select Destination File Group** drop-down, select **Capital Tracking**.
4. From the **Select Action** drop-down, select **Copy Unapproved Plan File from CP**.
5. From the **Preserve Creator?** drop-down, select one of the following:
   - To keep the original creator when copying the project, select **Yes - keep the original Creator on new project**.
   - To assign yourself as the creator, select **No - update new project with you as the Creator**.
6. From the **Preserve ProjectID?** drop-down, select one of the following:
   - To use the original project ID when copying the project, select **Yes - keep the original ProjectID on the new project**.
   - To assign a new project ID, select **No - use the default ProjectID**.
7. Select the projects in which to copy the data by clicking the check box in the far left column, and click **Next**.

   NOTE: The system only displays unapproved projects available for copy. For approved projects, you can transfer them. See the section **Transferring Capital Planning projects to Capital Tracking** below for instructions.

   TIP: To copy the data for all of the projects, click the check box left of the **CAPREQ** column header.

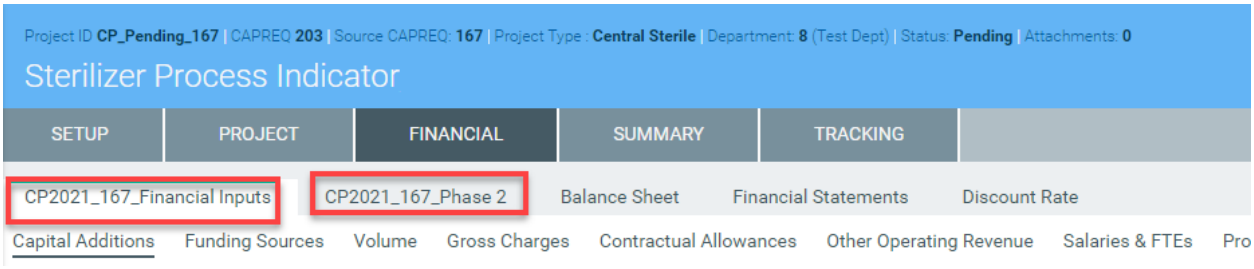
8. Click **Submit**.

Transferring Capital Planning projects to Capital Tracking

Use this option to transfer one or more approved Capital Planning projects to a Capital Tracking project.

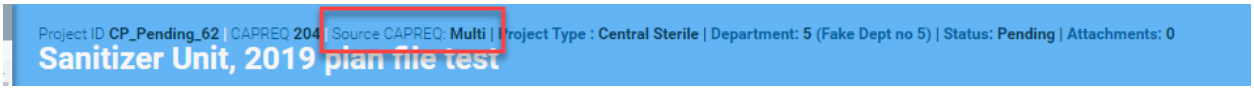
NOTE: Only Threshold (Pro Forma) projects can be transferred to an existing Capital Tracking project.

If the Capital Planning project includes additional or renamed Financial Input sheets and the project is opened in Capital Tracking, then the tab names will display CP_source file group year_sheet name, as shown in the following example:



For more information on additional Financial Input sheets, see Adding or renaming additional Financial Input sheets.

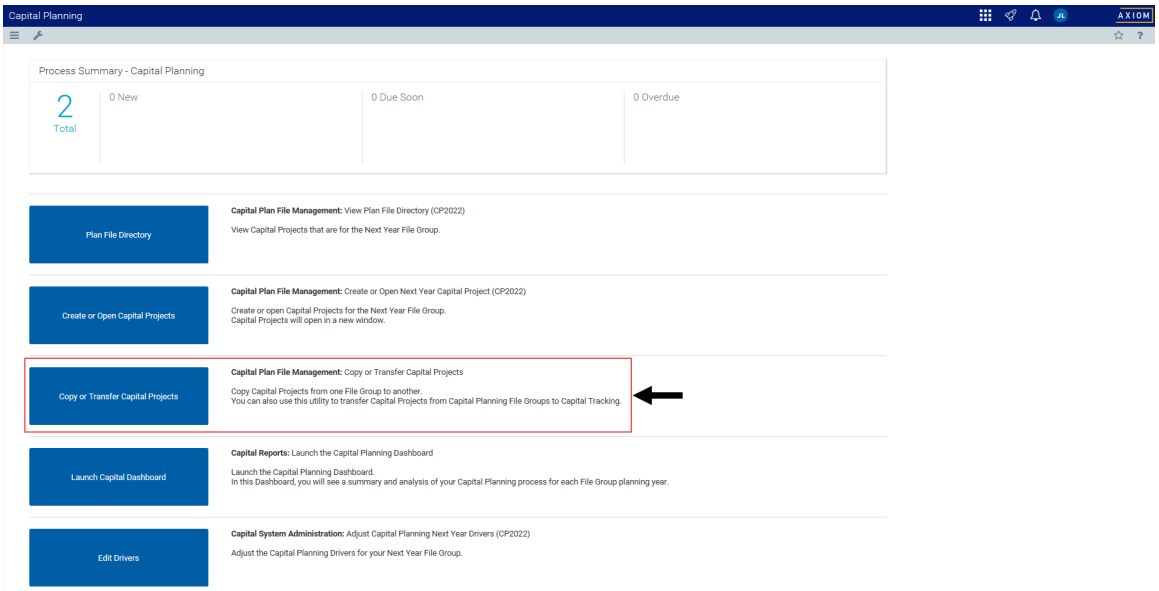
Also, when transferring multiple Capital Project files to an existing Capital Tracking plan file, the **Source CAPREQ** area at the top of the plan file page displays "Multi" as shown in the following example:



To transfer Capital Planning projects to Capital Tracking:

1. From the Axiom Capital Planning home page, click **Copy or Transfer Capital Projects**.

   NOTE: If using the Windows or Excel Client, see Navigating to capital project requests.



Click image to view full size

2. From the **Select Source File Group** drop-down, select the file group to transfer.
3. From the **Select Destination File Group** drop-down, select Capital Tracking.
4. From the **Select Action** drop-down, select **Transfer Approved Plan File from CP**:
5. Complete the following steps:

To...	Then...
Transfer project data to an existing Capital Tracking project	a. From the **Transfer to Existing CT Project** drop-down, select **Yes - transfer to existing CT project**. b. From the **Add to Original Budget?** drop-down, select one of the following: • **Yes - add to existing CT project's original budget** **TIP:** If the project is unbudgeted or if you will transfer funds from another project, select No. • **No - keep CT project's original budget as is** c. From the **Select Years to Transfer** drop-down, click the check box next to the years to transfer, and click **OK**. **NOTE:** You can select to transfer up to three years of data prior to the file group you are transferring. d. Click **Next**.

To...	Then...
Create a new Capital Tracking project	a. From the **Transfer to Existing CT Project** drop-down, select **No - create new CT project**. b. From the **Set Original Budget = 0?** drop-down, select one of the following: • **Yes - set Original Budget values = 0** **TIP:** For example, you may want to set the original budget to zero for unbudgeted projects that you want to transfer to Axiom Capital Tracking. • **No - keep Original Budget values from CP** c. From the **Select Years to Transfer** drop-down, click the check box next to the years you DO NOT want to transfer, and click **OK**. **NOTE:** By default, all of the available years are selected. You can select to transfer up to three years of data prior to the file group you are transferring. d. Click **Next**.

6. Select the projects in which to copy the data by clicking the check box in the far-left column, and click **Next**.

   NOTE: The system only displays approved plan files.

   TIP: To copy or transfer the data for all of the projects, click the check box left of the **CAPREQ** column header.

7. If transferring the data to an existing Capital Tracking project, select the project to transfer the data to, and click **Submit**.

Deleting a capital project

You can only delete a capital project if it is in your stage of the work flow; Otherwise, only Axiom Capital Planning administrators can delete the project.

IMPORTANT: Deleting a project permanently removes it from the system, and there is no way to recover the data. This includes deleting the workbook, deleting the data from the table, and removing it from the work flow. Please be very careful when using this utility. You cannot delete a project if it is not in your stage of the work flow.

To delete a capital project:

1. In the Cap Plan Admin or Cap Plan task pane, in the **Capital Planning Commands** section, navigate to capital project requests for the previous year, current year, or next year.
2. In the **Delete Plan Files** dialog, select one or more projects, and click **OK**.
3. At the confirmation prompt, click **OK**.

Monitoring capital project requests

Project owners can monitor their capital project requests using the following three reports:

- CP Process Flow by Step – Shows the status of project requests and where they are in the project flow. This report also shows the completed steps up to the current step and the steps to be completed.
- CP Process Flow Days in Step – Similar to the CP Process Flow by Step report, but adds the days in each step.
- CP Process Flow Routing Slip – Shows the project request's current stage and its history, including comments.

After all of the projects have made it to the voting stage in the workflow, use the Project Ranking report to rank each projects importance to the owner.

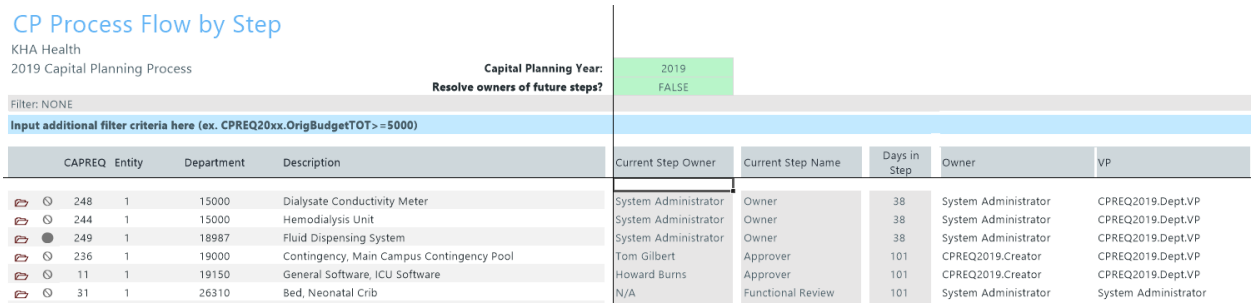
NOTE: Each of these reports requires that you point it to the appropriate plan year, hence the drop-down to choose the correct planning year (2018).

Running the CP Process Flow by Step report

Use this report to view the process flow details for each capital project, such as:

- Current step
- Days in current step
- Future steps with owner assignments

On the right side of the report, gray columns are approval columns and white-shaded columns are functional review areas. White-shaded cells on the rows are completed steps all the way to the last white-shaded cell on the row, which shows the current owner of that step. Grey-shaded cells are steps that have not been started.

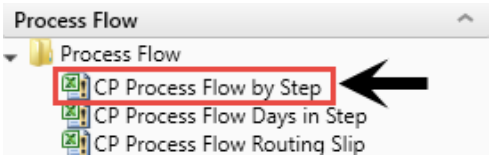


Click image to view full size

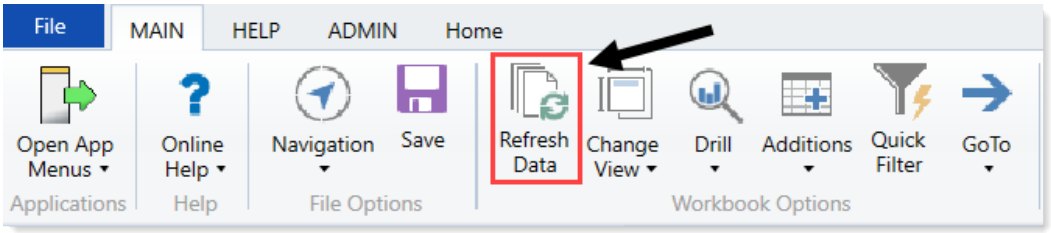
After all functional review areas have signed off on their projects, the Completed cells will change to the user who updated the project for that functional area.

To run the CP Process Flow by Step report:

1. In the Cap Plan Admin or Cap Plan task pane, in the **Process Flow** section, click **Process Flow**, and double-click **CP Process Flow by Step**.



2. Refresh the report data by doing one of the following:
   - In the **Main** ribbon tab, in the **Workbook Options** group, click **Refresh Data**.



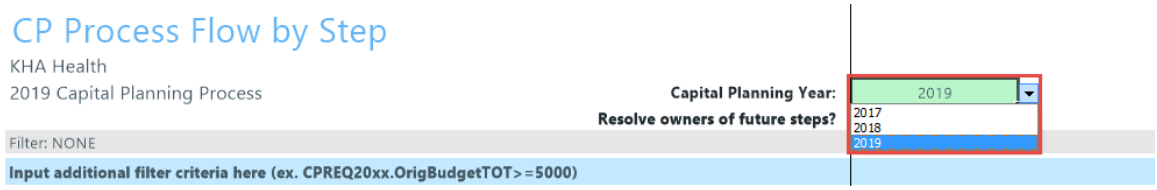
   - Press **F9**.

3. Do one of the following:

Option	Description
Select values to include in the report	a. In the **Refresh Variables** dialog, for each item to include, click **Choose Value**. b. In the **Choose Value** dialog, select the values to include, and click **OK**. c. In the **Refresh Dialog**, click **OK**.

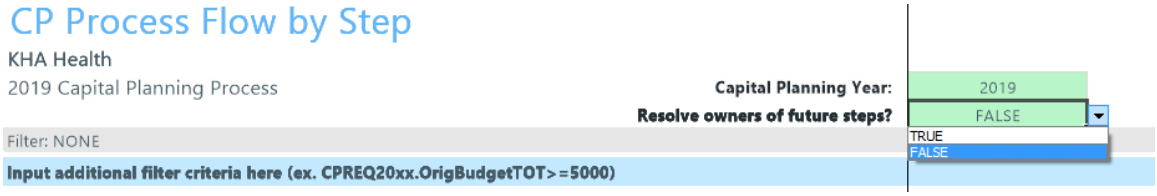
Option	Description
Include all values in the report	In the **Refresh Variables** dialog, leave the fields blank, and click **OK**.

4. From the **Capital Planning Year** drop-down at the top of the page, select the planning year for the projects to view.



Click image to view full size

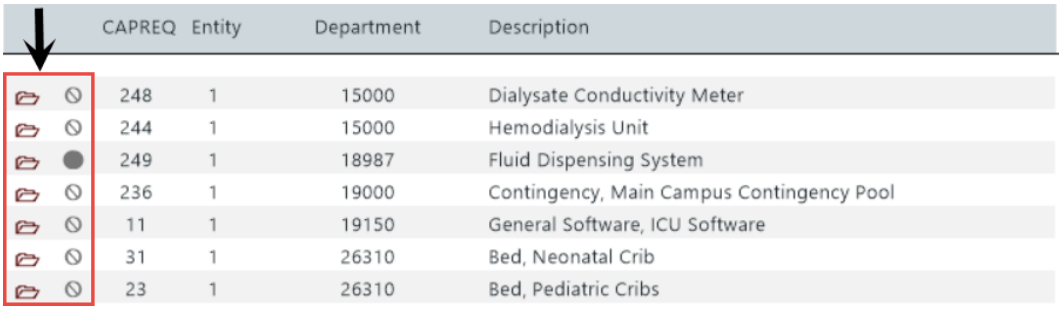
5. To display the VP (User Name) in the **Approver (Step Name)** column, in the **Resolve owners of future steps?**, select **TRUE**.



Click image to view full size

6. Do any of the following:

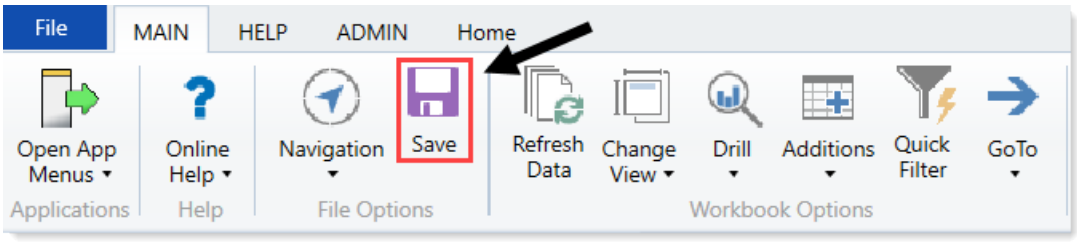
   - To view the project, double-click the folder icon to the left of the **CAPREQ** column.
   - To view attachments, double-click the filled-in circle next to the folder icon. If the circle is not filled in, there are no attachments associated with the project.



	CAPREQ	Entity	Department	Description
	248	1	15000	Dialysate Conductivity Meter
	244	1	15000	Hemodialysis Unit
	249	1	18987	Fluid Dispensing System
	236	1	19000	Contingency, Main Campus Contingency Pool
	11	1	19150	General Software, ICU Software
	31	1	26310	Bed, Neonatal Crib
	23	1	26310	Bed, Pediatric Cribs

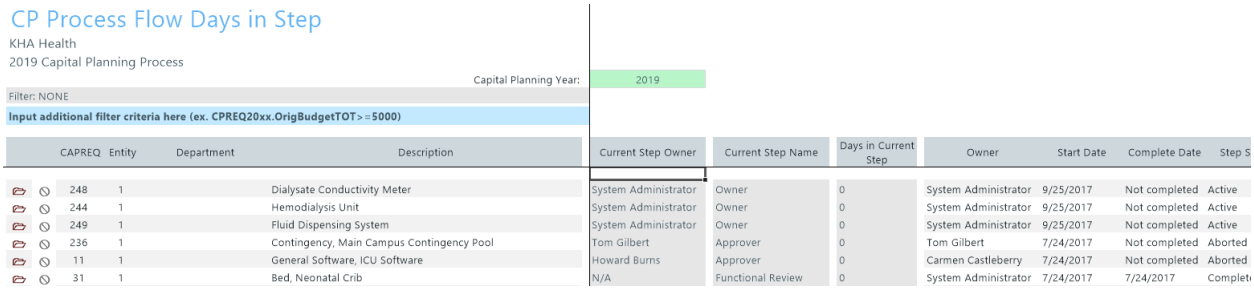
Click image to view full size

7. When you are ready to save the report, in the **Main** ribbon tab, click **Save**.



Running the CP Process Flow Days in Step report

Use this report to view the average days in each step of the process flow.

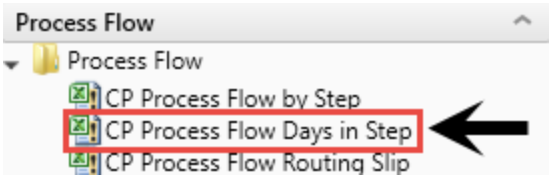


Click image to view full size

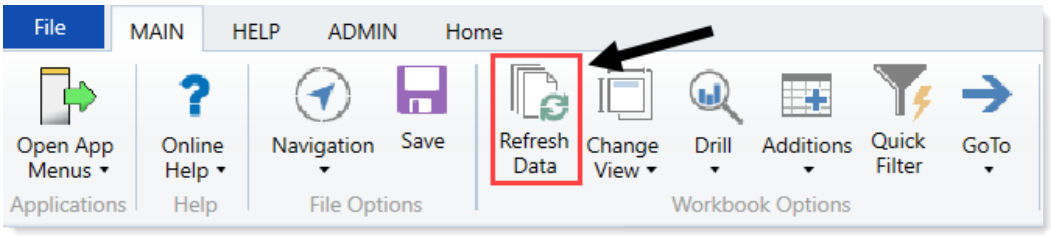
This report is very similar to the CP Process Flow by Step report. The only difference is this report adds days in each step.

To run the CP Process Flow by Step report:

1. In the Cap Plan Admin or Cap Plan task pane, in the **Process Flow** section, click **Process Flow**, and double-click **CP Process Flow Days in Step**.



2. Refresh the report data by doing one of the following:
   - In the **Main** ribbon tab, in the **Workbook Options** group, click **Refresh Data**.

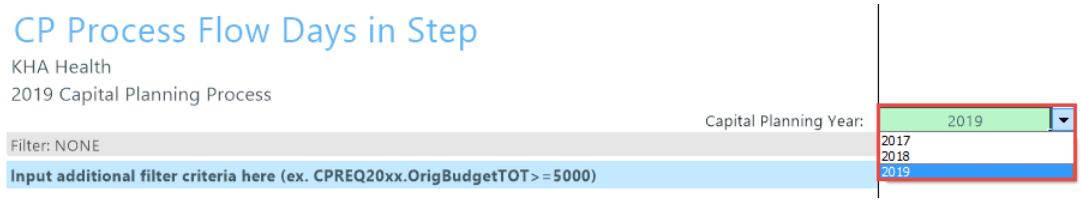


   - Press **F9**.

3. Do one of the following:

Option	Description
Select values to include in the report	a. In the **Refresh Variables** dialog, for each item to include, click **Choose Value**. b. In the **Choose Value** dialog, select the values to include, and click **OK**. c. In the **Refresh Dialog**, click **OK**.
Include all values in the report	In the **Refresh Variables** dialog, leave the fields blank, and click **OK**.

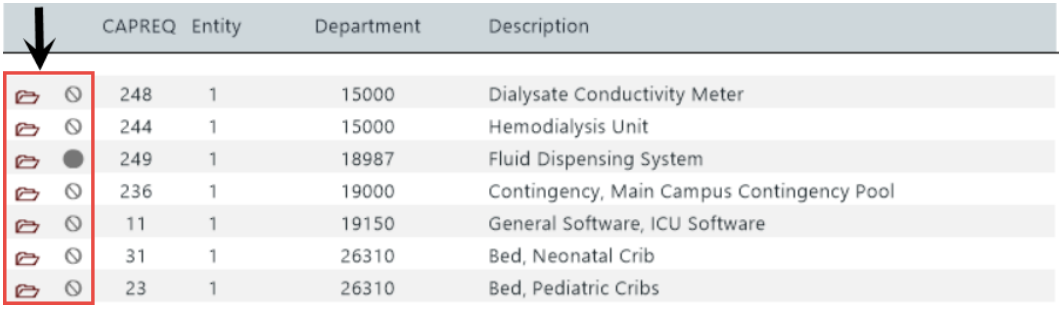
4. From the **Capital Planning Year** drop-down at the top of the page, select the planning year for the projects to view.



Click image to view full size

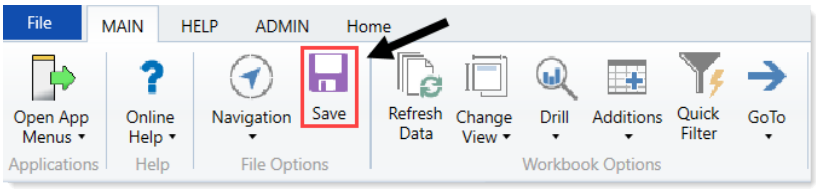
5. To display the VP(User Name) in the **Approver (Step Name)** column, in the **Resolve owners of future steps?**, select **TRUE**.

6. Do any of the following:
   - To view the project, double-click the folder icon to the left of the **CAPREQ** column.
   - To view attachments, double-click the filled-in circle next to the folder icon. If the circle is not filled in, there are no attachments associated with the project.



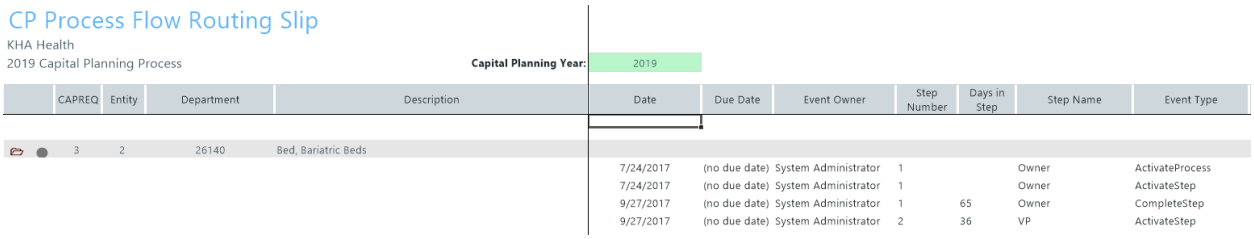
Click image to view full size

7. When you are ready to save the report, in the **Main** ribbon tab, click **Save**.



Running the CP Process Flow Routing Slip report

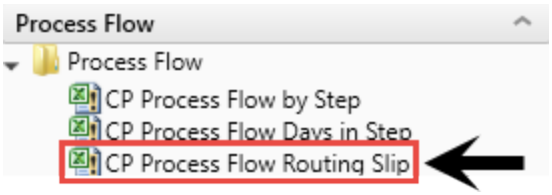
Use this report to view the project request's current stage and its history, including comments.



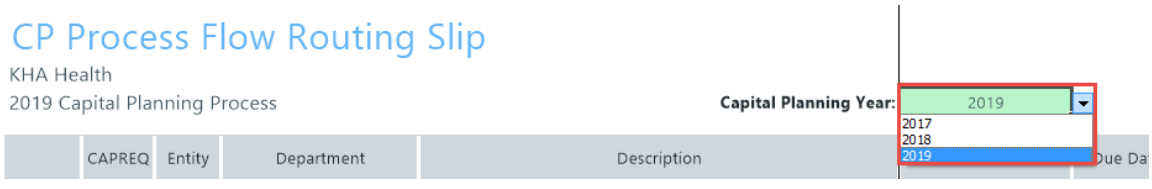
Click image to view full size

To run the CP Process Flow Routing Slip report:

1. In the Cap Plan Admin or Cap Plan task pane, in the **Process Flow** section, click **Process Flow**, and double-click **CP Process Flow Routing Slip**.

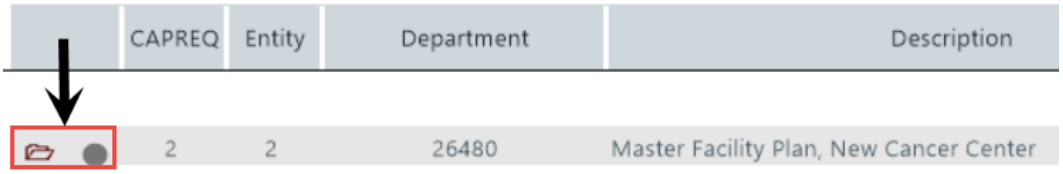


2. In the **Refresh Variables** dialog, click **Choose Value**.
3. In the **Choose Values** dialog, select the check mark boxes next to the capital projects to include in the report, and click **OK**.
4. In the **Refresh Variables** dialog, click **OK**.
5. From the **Capital Planning Year** drop-down at the top of the page, select the planning year for the projects to view.



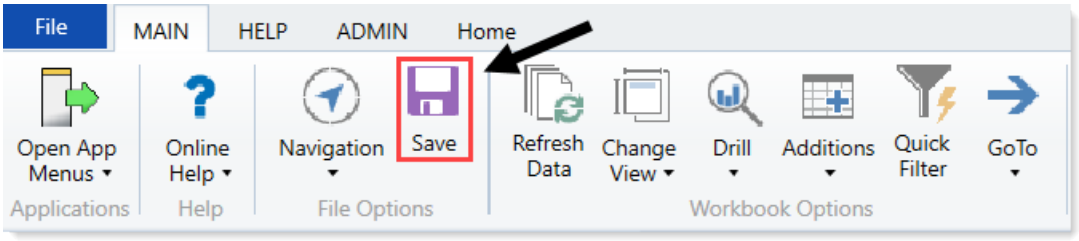
Click image to view full size

6. Do any of the following:
    - To view the project, double-click the folder icon to the left of the **CAPREQ** column.
    - To view attachments, double-click the filled-in circle next to the folder icon. If the circle is not filled in, there are no attachments associated with the project request.



Click image to view full size

7. When you are ready to save the report, in the **Main** ribbon tab, click **Save**.

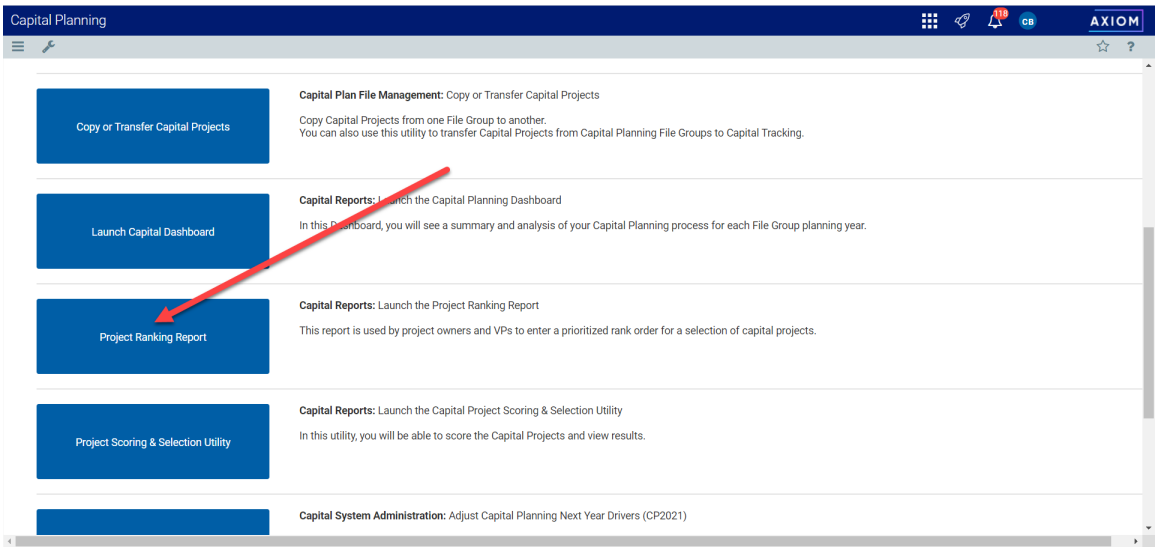


Ranking capital projects

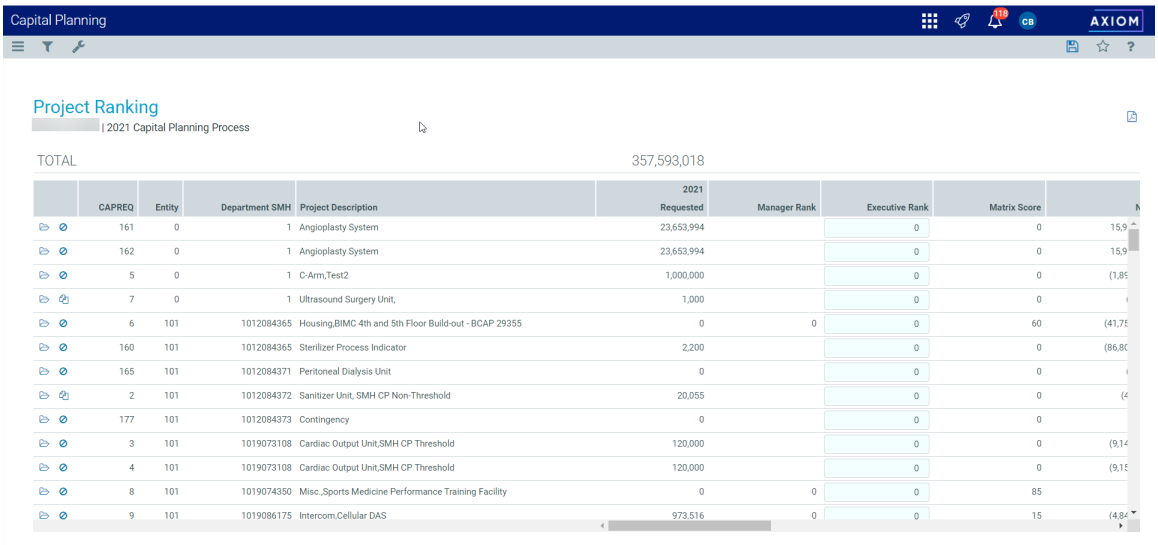
If you are a capital project owner that has multiple project requests for the same budget year, you can use the Project Ranking report to indicate the relative priority of each project.

To rank capital projects:

1. From the **Capital Planning** home page, click **Project Ranking Report**.



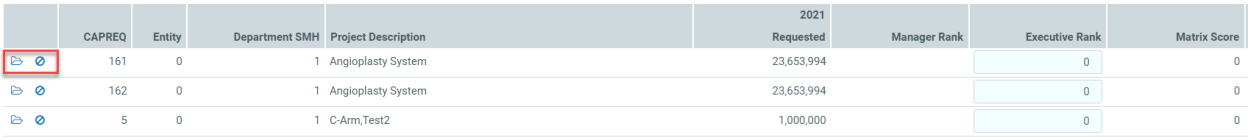
2. In the **Manager Rank** column, enter a number for each project, with 1 representing the highest-priority project.



NOTE: If you are assigned to the Capital Approver security role, you can enter data into the Executive Rank column.

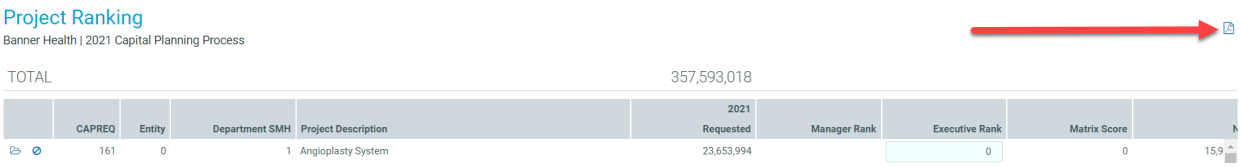
From this report, you can also do the following:

- To view the project, double-click the folder icon to the left of the **CAPREQ** column.
- To view attachments, double-click the filled-in circle next to the folder icon. If the circle is not filled in, there are no attachments associated with the project request.



	CAPREQ	Entity	Department SMH	Project Description	2021 Requested	Manager Rank	Executive Rank	Matrix Score
	161	0	1	Angioplasty System	23,653,994		0	0
	162	0	1	Angioplasty System	23,653,994		0	0
	5	0	1	C-Arm,Test2	1,000,000		0	0

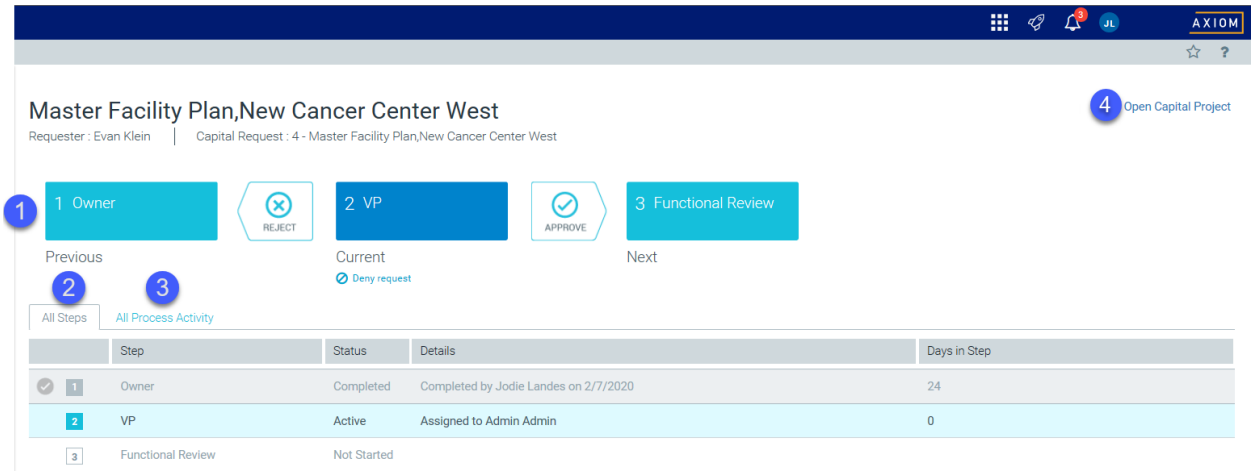
- To download the report as a PDF, click the PDF symbol in the upper left corner of the page.



Viewing process routing details

The Process Routing page allows you to view the current process status and details for a particular capital project or purchase request. If you are the current step owner, you can also complete the task from this page. If you are an administrator, you can complete the task for the current step owner and/or move the step to another step in the process.

Any user who can access the plan file can access this page, but only the current step owner can complete the task. If you are not the current step owner, then the action button(s) at the top are grayed out.



On this page, you can see the following information:

1. This section displays the current step of the plan file, as well as the next step in the progression. If the current step is an approval step, then the prior step also displays because the plan file may be rejected back to it.
2. The **All Steps** tab shows the plan file's status in the full step progression. You can see which steps have been completed or skipped, the current step, and future steps.
3. The **All Process Activity** tab shows the complete process details for the plan filet, including

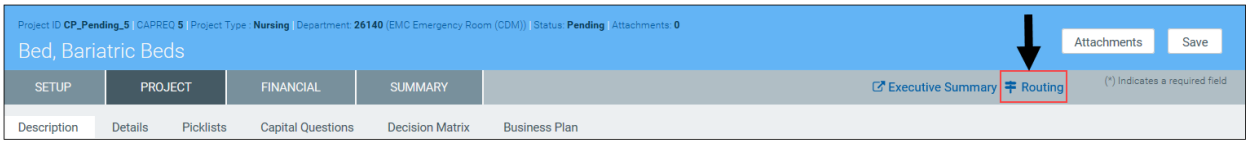
activities such as step activation and completion, task regeneration, and comments made when completing tasks.

4. To open the plan file from this page, click the **Open Capital Project** link.

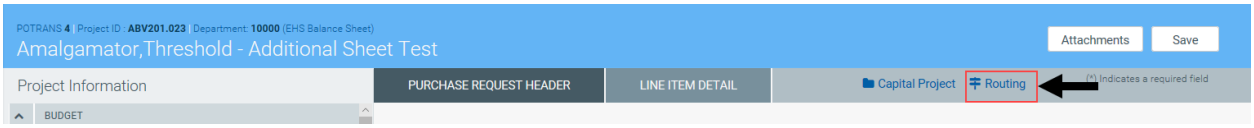
> **TIP:** It is likely that you will not need to use this link because the system opens the Process Routing page in a new browser tab, meaning that the plan file remains open in the browser.

Opening the Process Routing page

You can access the Process Routing page by clicking the **Routing** link in the top right corner of the plan file page.



Capital project screen



Purchase request screen

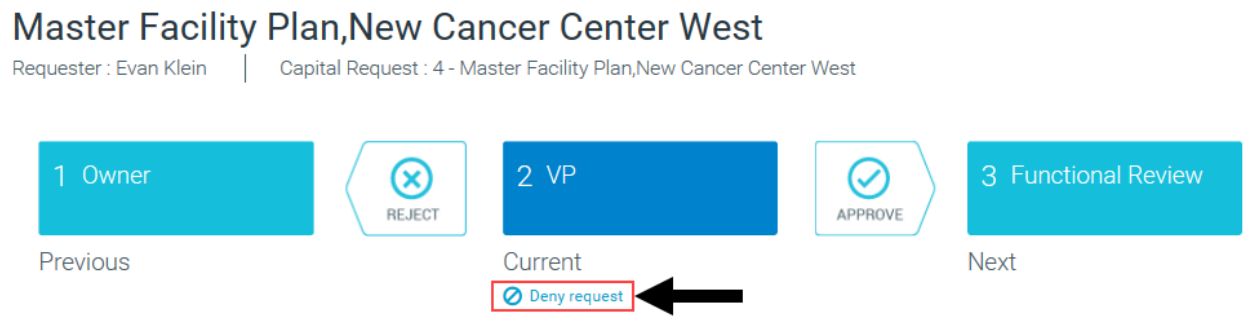
Completing the process task

If you are the current step owner, then you can complete the process task for the plan file request by clicking the appropriate action buttons at the top of the page:

- If the current step is an Edit Plan File step, then click **Submit** to submit the plan file request to the next step.
- If the current step is an Approval step, then click **Approve** to approve the plan file request and move it to the next step, or click **Reject** to reject the plan file and return it to the prior step.

Clicking any of these actions opens the task completion dialog. In this dialog, you can optionally enter a comment to that the system stores in the process history and sends to the next step owner.

Some approval steps may also provide the option to abort the process for the project or purchase request, meaning that the request is stopped in the process and does not progress any further. This action is called **Deny request** and displays underneath the current step, as shown in the following example:



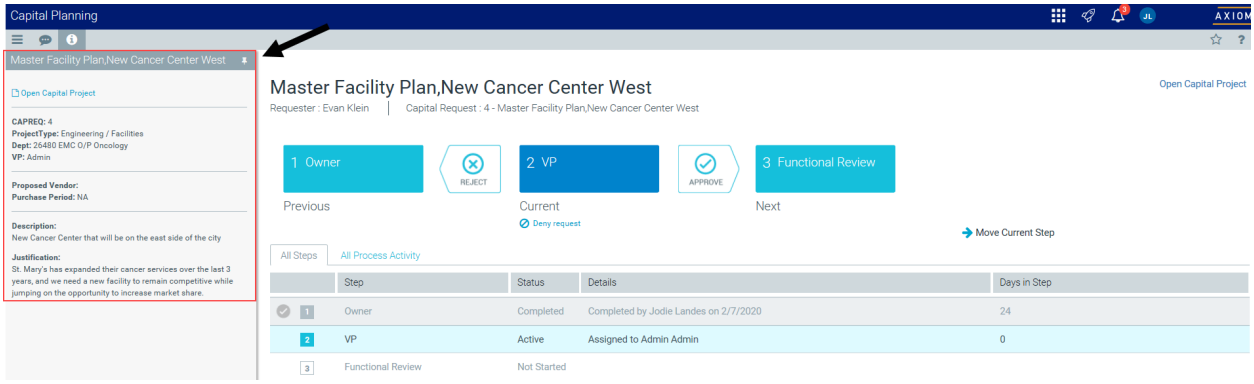
If you choose to deny the request and abort the project/purchase request in the process, the plan file is effectively removed from the process. The system gives you the opportunity to enter an optional comment to explain the denial.

IMPORTANT: The denial action cannot be reversed. Once a plan file has been aborted in the process, only a process administrator can restart it if necessary.

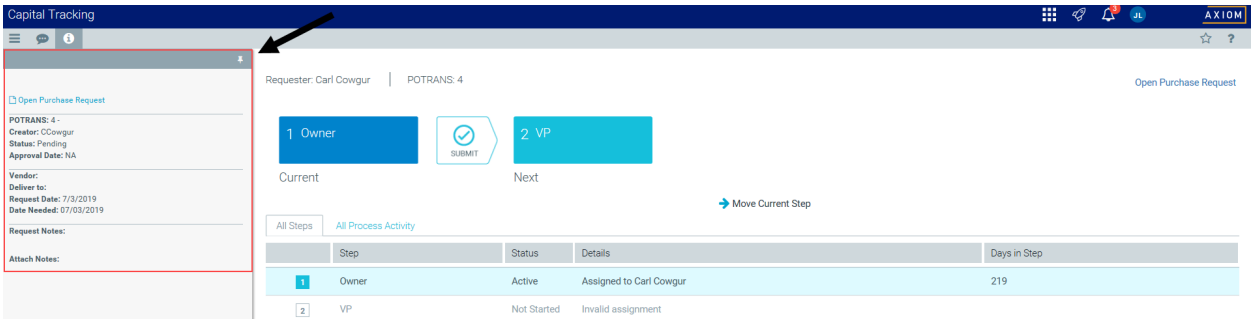
Viewing plan file information

The Process Routing page shows plan file information in the Information panel when you access the page. This panel shows details about the plan file, which may be useful in determining whether you are ready to complete the process task. You can also open the plan file by clicking the Open Capital Project link at the top of the panel.

You can toggle this panel open and closed by clicking the **Information** icon .



Capital project screen



Purchase request screen

You can also view the message stream for the plan file from this page, so that you can view and add comments about the plan file. Click the **Message** icon to open the Message Stream panel. For more information on the message stream, see Commenting on form documents.

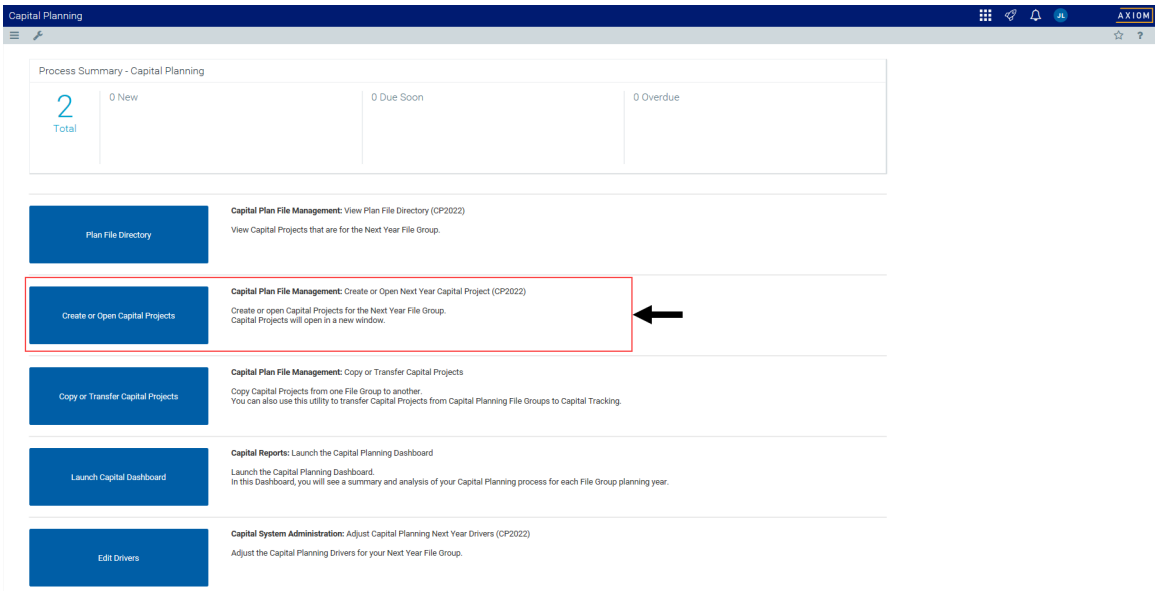
Viewing the status of a project

After you create and submit a project for approval, you can view its status at anytime.

To view the status of a project:

1. From the Axiom Capital Planning home page, click **Create or Open Capital Projects**.

   NOTE: If using the Excel Client, see Navigating to capital project requests.

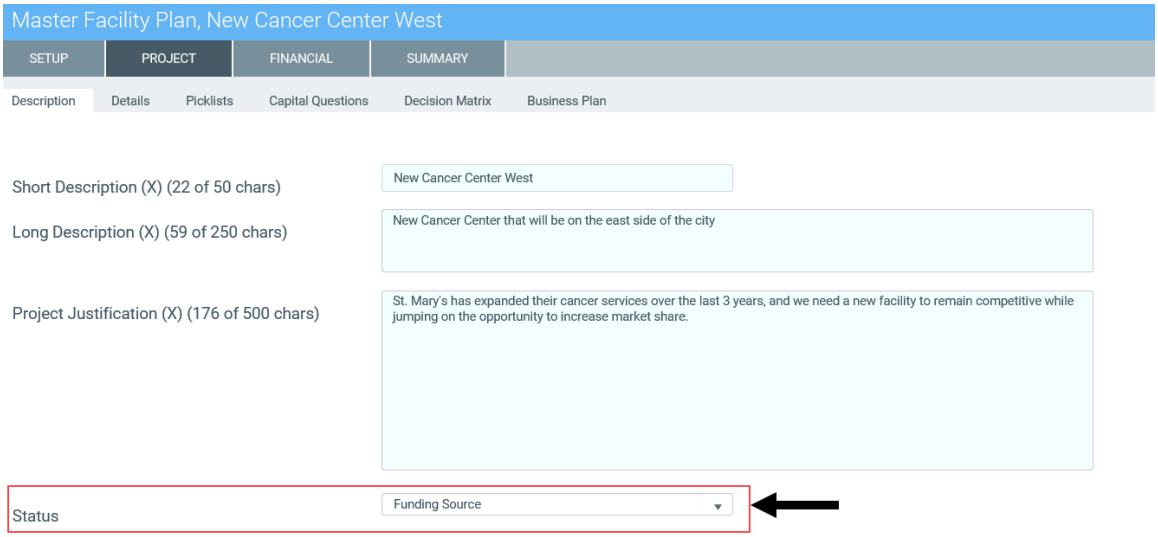
   

   Click image to view full size

2. From the **Project** tab, click the **Description** tab.

3. View the **Status** field. If you have administrator privileges or you are an approver, the **Status** drop-down allows you to select the status of the request.

NOTE: One of the options in the Status drop-down is Funding Source. This type of project allows you to use its funding for special projects that fall outside the normal approval process. For more information, see Creating capital projects as funding sources for other projects. These project types can only be set up by an Axiom Capital Planning administrator or approver.



Click image to view full size

Determining capital projects for next year

After the capital project request is entered in Axiom Capital Planning, the plan files move through a review and approval process.

When plan files pass through the prior steps in the process, it remains in the Voting step, awaiting evaluation and scoring by the Capital Committee members.

Scoring can begin whenever the committee deems appropriate. We recommend that your organization specifies and communicates a deadline date to all managers and reviewers to make sure all potential projects for a budget year are included in the evaluation and prioritization process.

This process includes the following steps:

1. Sort and order projects to review - The Capital Planning administrator determines the projects for the Capital Committee members to review.
2. Score projects - The Capital Committee members score each project according to criteria set up by the organization and implemented by the Capital Planning administrator.
3. Modeling capital allocation portfolios - The Capital Planning administrator works with the Capital Committee members to determine the list of approved projects for the next year.
4. Approve or reject projects - The designated final approver (usually someone in the Finance department) approves or declines each project.

NOTE: The processes discussed in this section assumes that your Capital Planning administrator has configured the system for reviewing and approving capital projects. For more information, see Configuring the Review and Approval Process.

Sorting and ordering projects for review

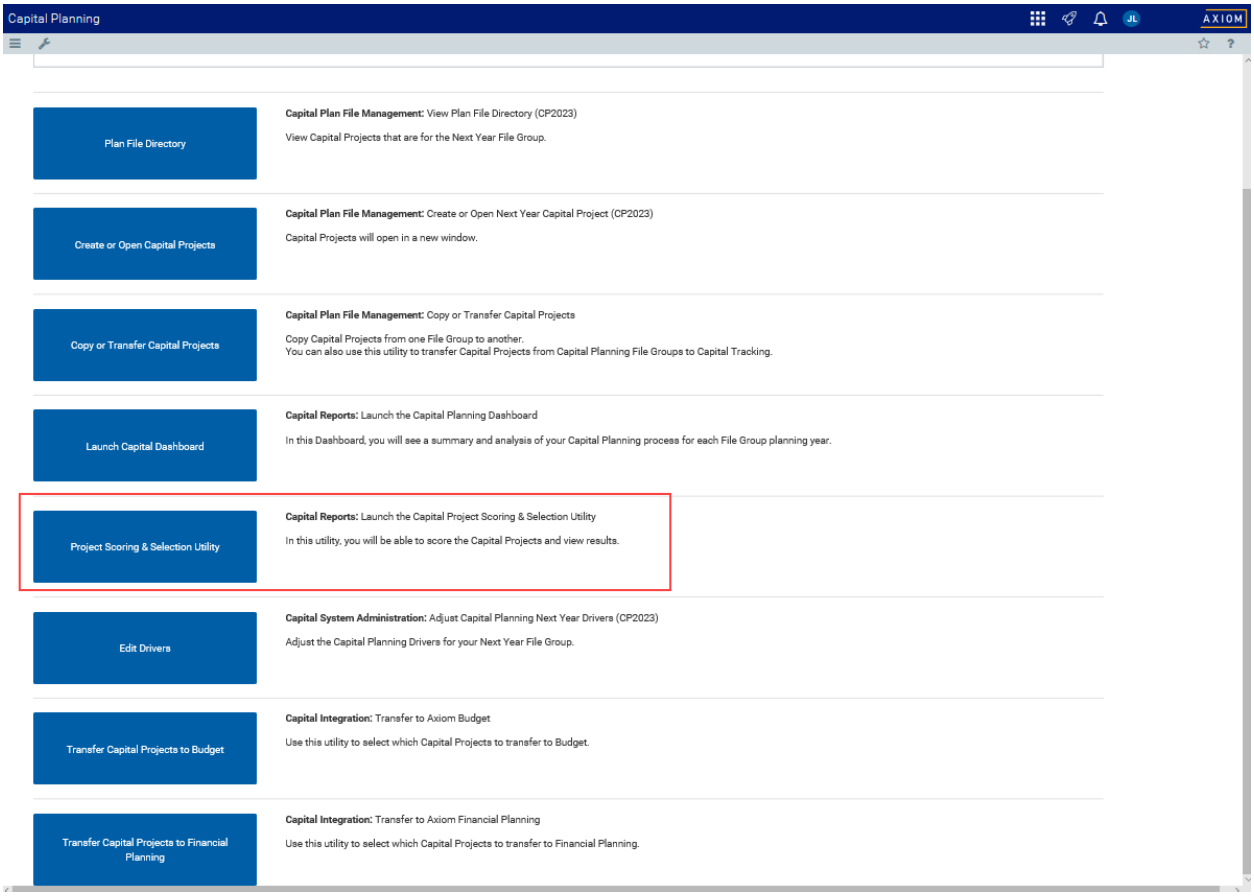
If you are an Axiom Capital Planning administrator, the Project Ordering and Scoring tab in the Capital Project Scoring and Selection utility allows you to configure the order of projects for the Capital

Committee members to evaluate. Capital Committee members must be CP Approvers at the time of the scoring sessions. Administrators should also ensure that each team member has the appropriate filters in security to access the Capital Requests being presented in the scoring sessions.

For more information on configuring Axiom Capital Planning for this process, see Configuring the Review and Approval Process.

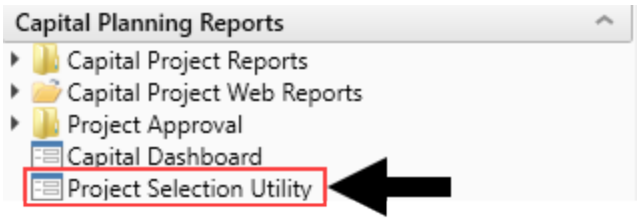
Opening the Capital Project Scoring and Selection utility

If your organization uses the Web Client, from the Axiom Capital Planning home page, click **Project Scoring & Selection Utility**.



Click image to view full size

If your organization uses the Windows or Excel Client, in the **Cap Plan Admin** task pane, in the **Capital Planning Reports** section, double-click **Project Selection Utility**.

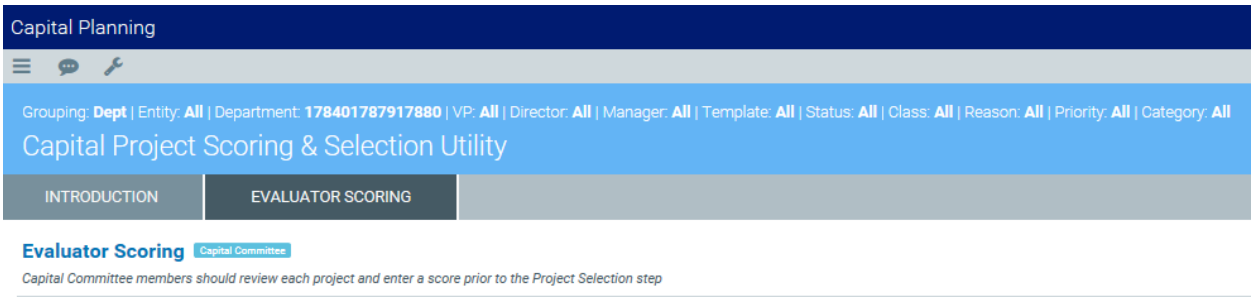


Click image to view full size

Sorting and filtering the list of projects

Before you order the projects, you will likely want to narrow down the list of projects to review with the Capital Committee by using the Filter dialog. When you filter the project list, the system will hide the projects that do not meet the filter parameters. The system then places the project in an initial order, which you can edit.

If you save the filtering options, the filter information displays to the committee member evaluator at the top of the page when they score the projects. This will inform the user what types of projects are included in the list.



Click image to view full size

To sort and filter the list of projects:

1. Open the utility.
2. In the upper left corner of the page, click the icon.

   TIP: To keep the dialog open while you are working in it, click the icon.

3. Configure any of the following:

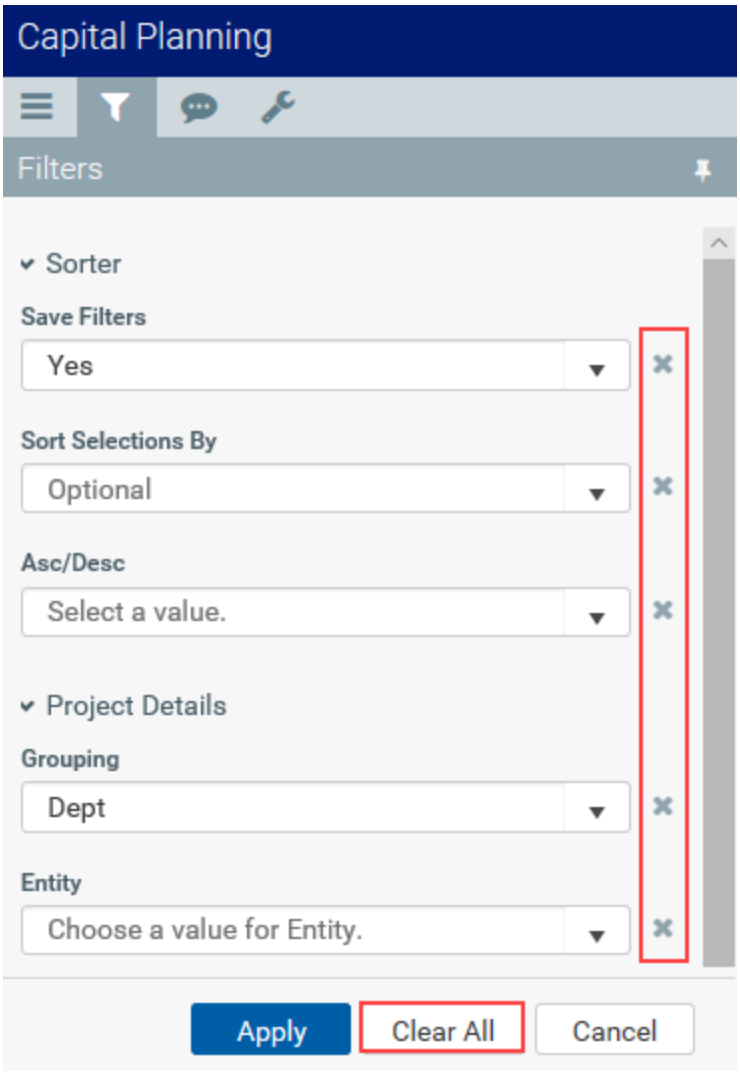
Option	Description
Save Filters	• To save the filter configurations so that the list of only the filtered projects display to the evaluators after you save and exit the utility, select **Yes**. • To discard the filter configurations after you save and exit the utility, click **No**. This means that each time you use the utility, you will need to reconfigure any sort or filter options you may have previously set up.
Sort Selections By	Select how to sort the list of projects
Asc/Desc	Select to sort the list of projects in ascending or descending order.
Grouping	Select how to group the list of projects.
Entity, Department, VP, Directory, Manager, Template, Status, Class, Reason, Priority, and Category	From these drop-downs, select an option in which to filter the list of projects.
User Defined Custom	Use this option to create your own filter, which you can then save for future use. For more information, see Using the Advanced Filter Wizard.

4. Click **Apply**.

Clearing the filter

When you configure and apply the filter, the system shows only those projects that meet the filter criteria and hides the rest. You can return to seeing the full list of projects by clearing the filter by doing any of the following:

- To clear one option at a time, click the **X** next to the filter drop-down. When you are finished, click **Apply**.
- To clear the entire filter, click **Clear All** at the bottom of the filter dialog, and then click **Apply**.

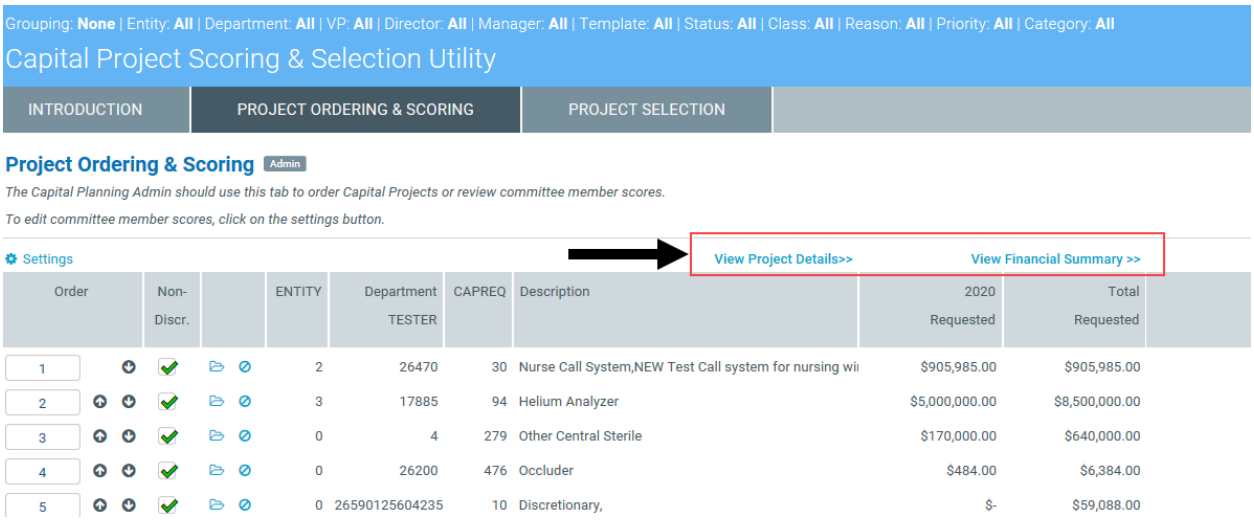


Click image to view full size

Configuring project order and non-discretionary projects

The Capital Project Scoring and Selection utility allows you to order projects in multiple ways, depending on how far you want to move the project up or down the list. You can also select which projects are non-discretionary.

As you evaluate projects, you can view hidden project detail columns by clicking the **View project details >>** and **View Financial Summary >>** links above the table.



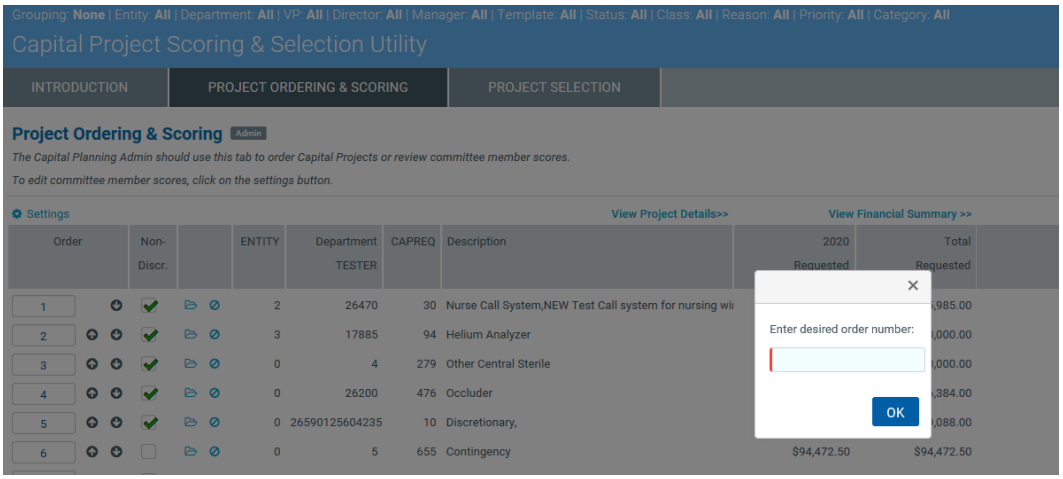
Click image to view full size

To configure project order and non-discretionary projects:

1. Open the utility.
2. Navigate to the **Project Ordering and Scoring** tab.

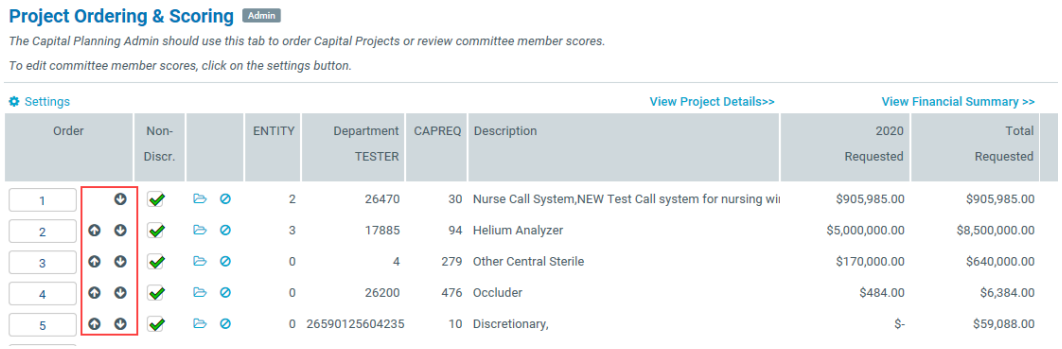
   NOTE: This tab is not available to reviewers. Only administrators have access to this tab in the utility.

3. In the **Order** column, do any of the following:
   - To move a project to a specific place in the order, click the number button, and in the **Enter desired order number** dialog, type the number, and click **OK**.



Click image to view full size

   - To move a project up or down one line at a time, click the up or down arrow icon.



Click image to view full size

4. To set a project as non-discretionary, click the check box in the **Non-Discr.** column.
5. After making your changes, click the disk icon in the upper right corner of the page.

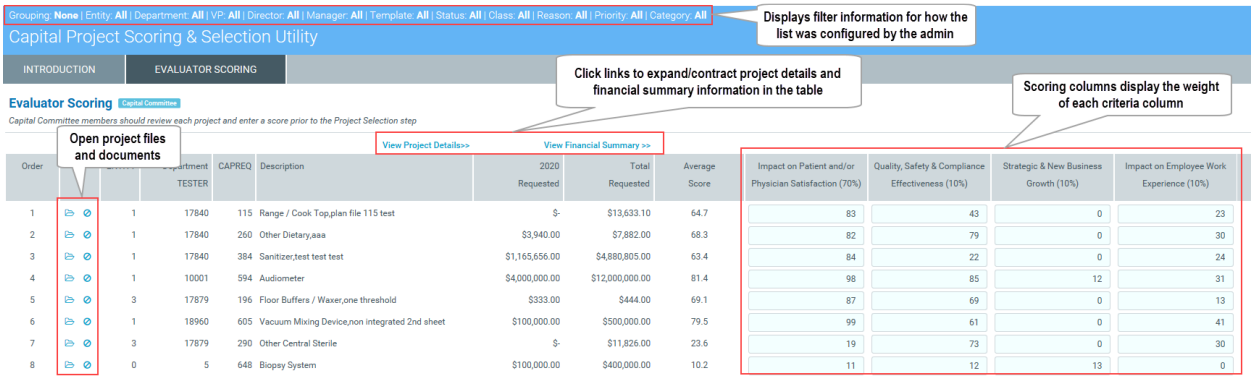
Scoring projects

Before the project selection process can begin, Capital Committee members must first score projects as a way for your organization to prioritize them for the next planning year. Scoring is done using the Capital Project Scoring & Selection utility, in the Evaluation Scoring tab, which lists the available projects as set up by your Capital Planning administrator.

The tab includes columns for a variety of criteria that committee members use to score on a scale determined by the administrator (the default scale is 0 to 100). The scoring columns are indicated by the blue cells, each of which is weighted as indicated by the percentage in the parenthesis in the column header.

To evaluate projects before scoring, committee members can open project plan files and corresponding documents as well as view project details and financial summary information as part of the table.

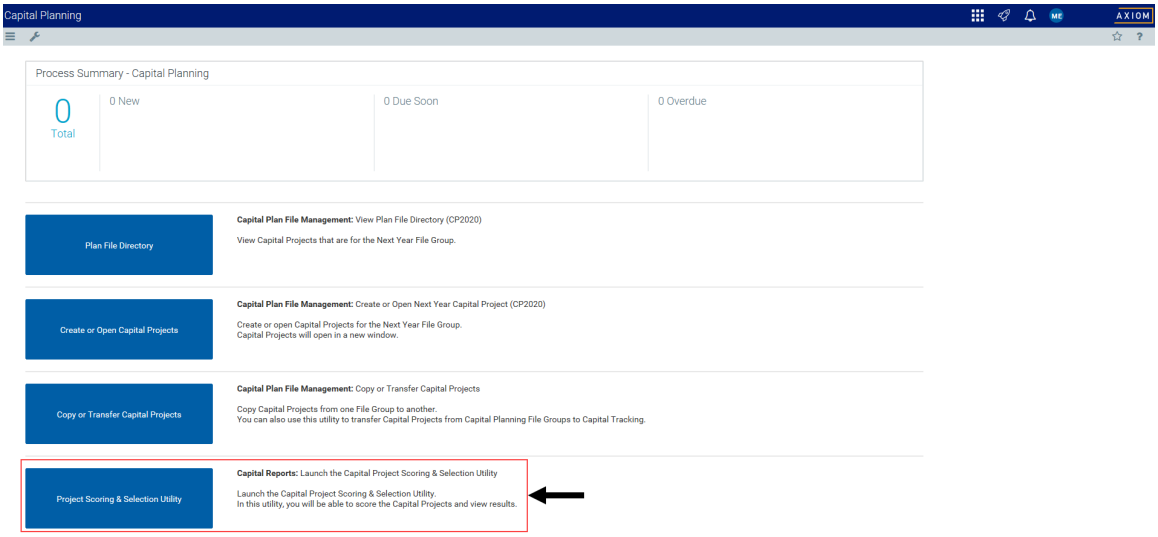
NOTE: Projects with attachments are indicated by a document icon. The icon means there are no documents associated with the project.



To score projects:

1. From the Axiom Capital Planning home page, click **Project Scoring & Selection Utility**.

> **NOTE:** To access this location from the Cap Plan task pane, in the **Capital Planning Reports**section, double-click **Project Selection Utility**.



Click image to view full size

2. In the blue cells of the Evaluation Scoring tab, enter a score for each criterion on a 100-point scale in regards to how much the project will benefit the company, as follows:

> **NOTE:** This is the default scoring system. It may be modified by your Capital Planning administrator.

Score	Description
100	The maximum benefit
75	Above average benefit
50	Average benefit
25	Below average benefit
0	No benefit

3. After making your changes, click the disk icon in the upper right corner of the page.

> **TIP:** If you enter and save a score incorrectly, contact your Axiom Capital Planning administrator and they can change the score for you.

NOTE: When a project is approved or declined, the system updates the project plan file with this information. A project is usually declined because it does not meet the budget qualifications through scoring or is declined by the final approver (usually someone in the Finance department).

Viewing or modifying evaluator scores

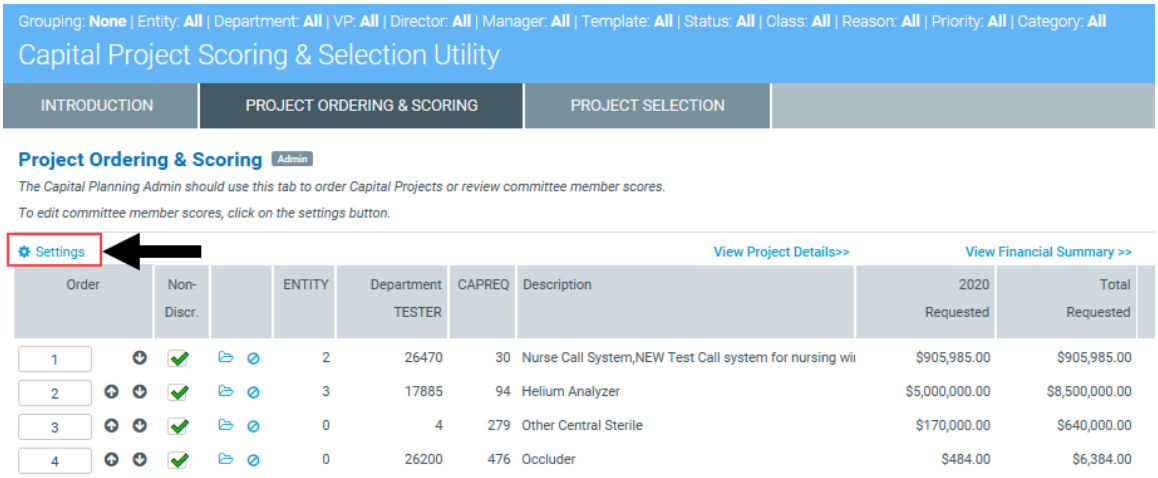
If you are a Capital Planning Administrator, you can use the Capital Project Scoring and Selection utility to ensure that committee members have scored projects as well as modify scores for members, for example, if they enter an incorrect score.

To view or modify evaluator scores:

1. From the Axiom Capital Planning home page, click **Project Scoring & Selection Utility**.

   NOTE: To access this location from the Cap Plan Admin task pane, in the **Capital Planning Reports** section, double-click **Project Selection Utility**.

2. Click the **Project Selection** tab.
3. Above the right corner of the table, click **Settings**.



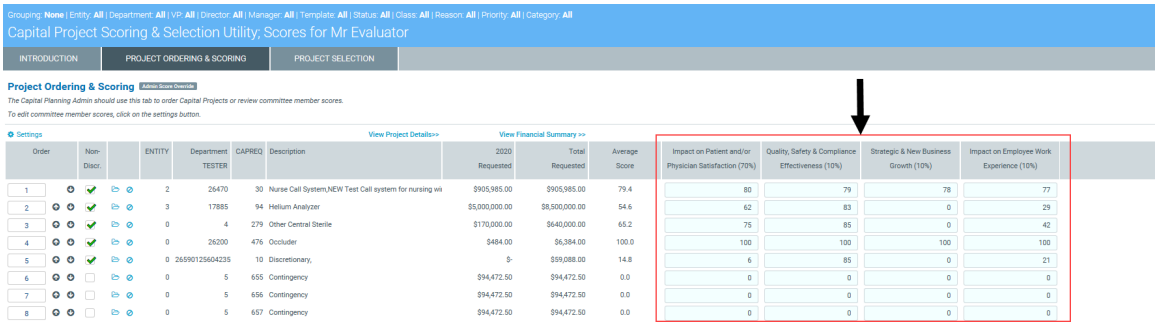
Click image to view full size

4. In the **Settings** dialog, do any of the following:

To...	Then...
View scores	a. Click the Evaluate Score Override toggle to **No**. b. From the **See Scores for** drop-down, select the committee member. c. Click **OK**.

To...	Then...
Modify scores	a. Click the Evaluate Score Override toggle to **Yes**. b. From the **Edit Scores for** drop-down, select the committee member. **TIP:** To find the committee member quickly, you can type the name in the drop-down box. c. Click **OK**. The screen displays **Admin Score Override** next to the Project Ordering & Scoring page title.

5. If modifying scores, make your edits in the appropriate scoring column.



Click image to view full size

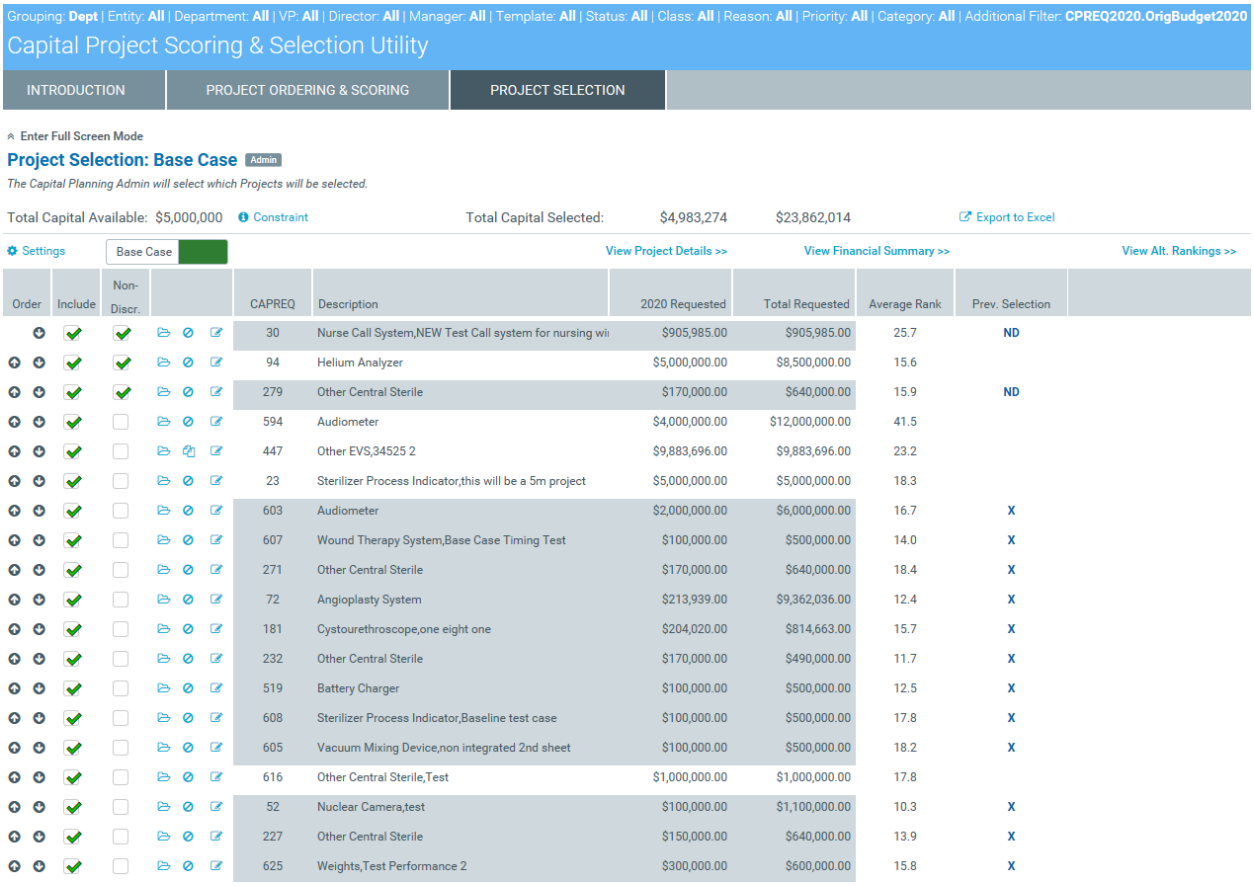
6. After making your changes, click the disk icon in the upper right corner of the page.

Modeling capital allocation portfolios

The Project Selection tab of the Capital Project Scoring and Selection utility allows the Capital Planning administrator to model different capital allocation portfolios before selecting projects to include in the final portfolio. Projects are automatically added to the portfolio in rank order based on scores provided by the Capital Committee members until all available capital has been allocated. You can also mark projects to include in a portfolio, regardless of score. For example, projects that must be completed due to regulatory mandates, prior approval, and so on.

The projects that qualify for the portfolio display in gray shading, meaning that according to their rank order (Average Rank column) and the amount requested (20XX Requested column), these projects qualify for capital dollars for the upcoming year.

NOTE: The system automatically deducts the dollar amounts for any non-discretionary projects for the purposes of determining available capital for allocation. These projects are indicated with a check mark in the Non-Discr. column. Please ensure that your Contingency dollars are accounted for.

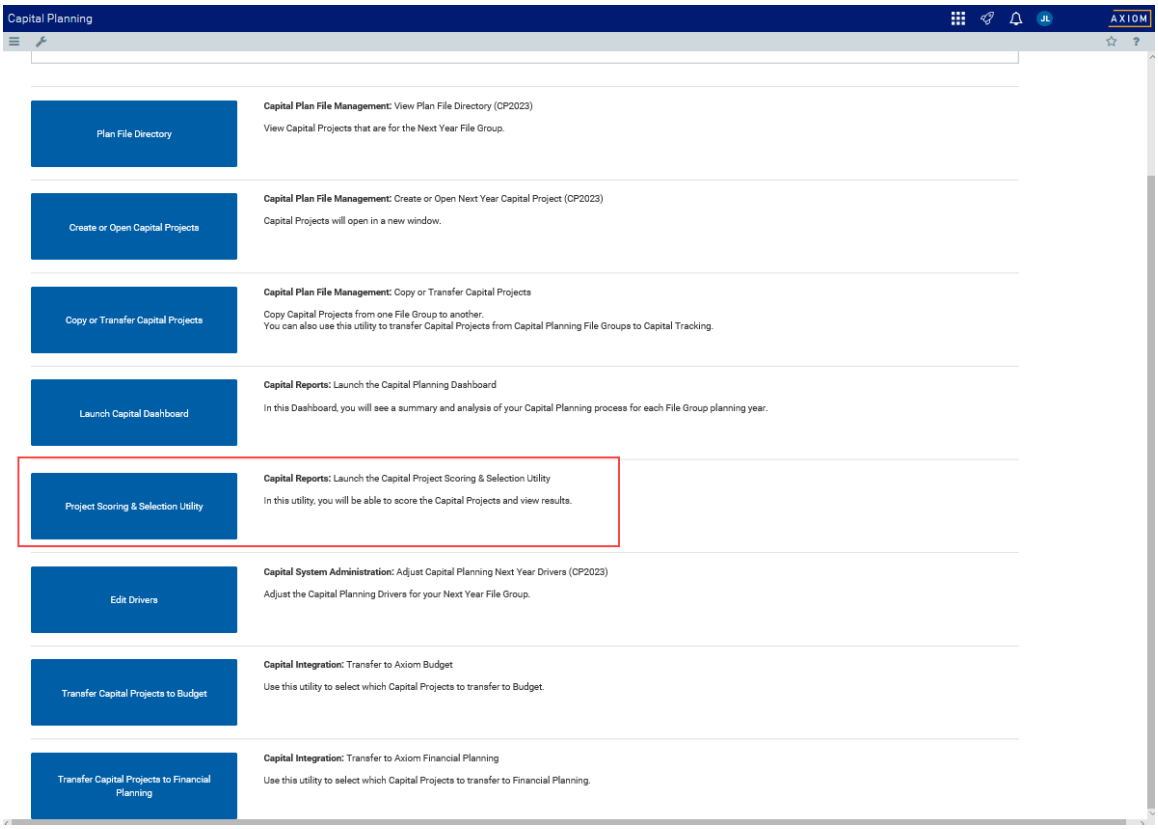


Click image to view full size

Selecting projects for approval

To select projects for approval:

1. From the Axiom Capital Planning home page, click **Project Scoring & Selection Utility**.



Click image to view full size

NOTE: In the Cap Plan Admin task pane, in the **Capital Planning Reports** section, double-click **Project Selection Utility**.

2. Click the **Project Selection** tab.
3. Above the table, click **Settings** to configure of the following options:
    - **Show Project Selection to Committee** - Click the toggle to enable (**Yes**) or disable (**No**) the system from showing the list of selected projects to committee members.
    - **Activate Olympic Scoring** - Click the toggle to enable (**Yes**) or disable (**No**) the system from discarding the highest and lowest score for each project for each criterion.
    - **Save Approval Status** - Click the toggle to enable (**Yes**) or disable (**No**) flipping the Approval Status to Approved. Disabling this option means that the Approval Status will remain as-is.

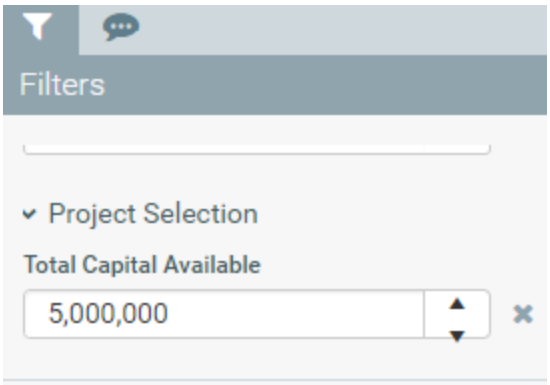
      IMPORTANT: If this option is set to Yes, the system updates the approval status in the CPREQ20XX data table in the Status column when changes are saved in this utility. We recommend leaving this option set to No until the list is ready to be finalized and submitted to the final approver (usually someone in the Financial department).

4. To set the total capital amount available, do the following:

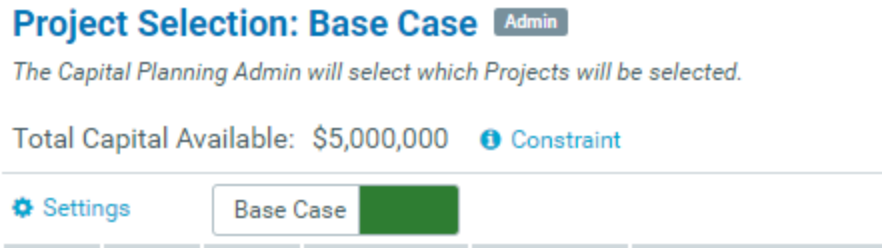
   a. In the upper left corner of the page, click the icon.

   > **TIP:** To keep the dialog open while you are working in it, click the icon.

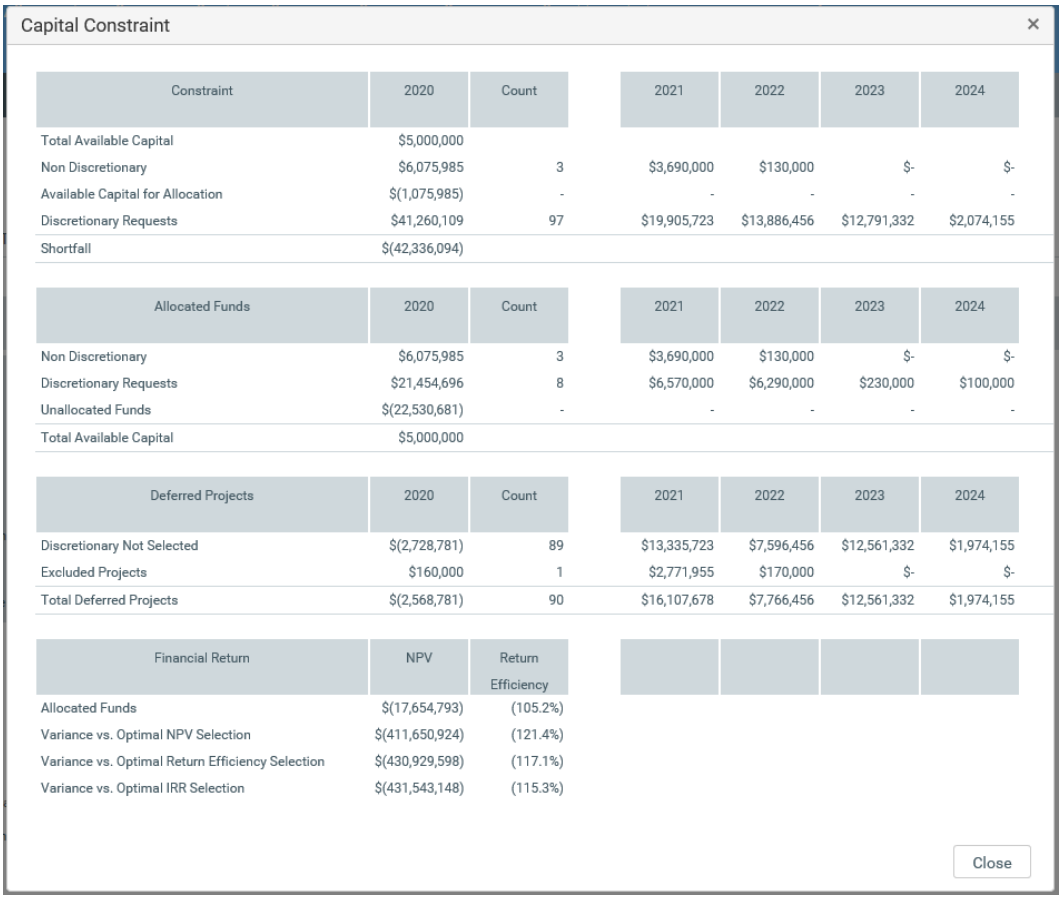
   b. Scroll to the bottom of the Filters dialog, and in the **Total Capital Available** field, type the upper limit of capital project dollars that can be selected.



   This number also displays above the table in the **Project Selection** tab.



   To view a financial summary of the budgeted project dollars, click Constraint (next to the Total Capital Available area above the Settings button).



Click image to view full size

c. Click **Apply**.

5. Click the scenario toggle (next to the Settings button) to **Base Case**.

> **NOTE:** To see how editing project requested amounts can change the portfolio of projects, you can create a scenario to help you determine the final list of projects.

6. As you evaluate projects, you can view project information by doing the following:

- To expand or contract hidden project detail columns, clicking the **View project details >>**, **View Financial Summary >>**, or **View Alt. Rankings >>** links above the table.

- To open and view the plan file, click the folder icon.
- To view associated documents, click the document icon. The circle icon means there are no documents associated with the project.
- To enter any notes about the project, click the notepad icon.
- The **Prev. Selection** column indicates the projects that were edited before the last save. **ND** indicates a non-discretionary project.

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

Column	Description
Order	Click the up or down arrow to move the project up or down one line at a time.
Include	Select the check box to force the inclusion of a must-do project that did not make the cut-off. For example, your CEO promised a physician practice that a capital project will occur in the following year. Alternatively, you can remove a check mark to defer any projects from competing for available capital dollars. This action keeps the project on the report, however, these projects will not be competing for the Capital Dollars available.
Non-Descr.	Select the check box if the project must be completed due to regulatory mandates, prior approval, etc.

8. After making your changes, click the disk icon in the upper right corner of the page.
9. At the **Save to database completed successfully** prompt, click **OK**.

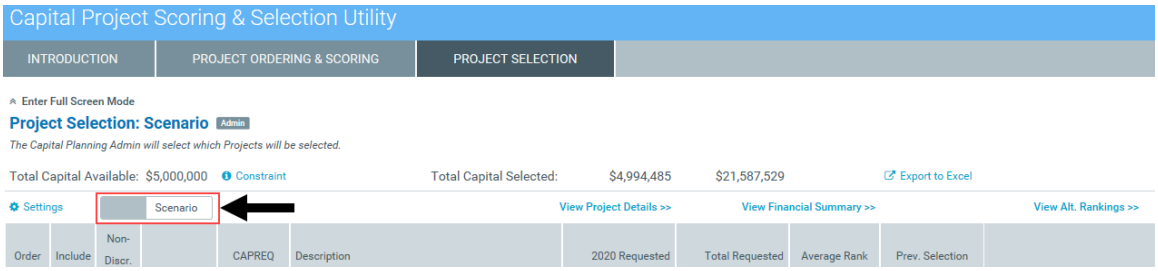
Creating a capital portfolio scenario

Before determining the final list of projects, the Capital Planning administrator can work with a "what if" version of the project portfolio list by creating a scenario. This allows the administrator to perform all the same actions as described in Selecting projects for approval, but they can also edit the project requested amounts to see how changes might affect the budgeted projects portfolio.

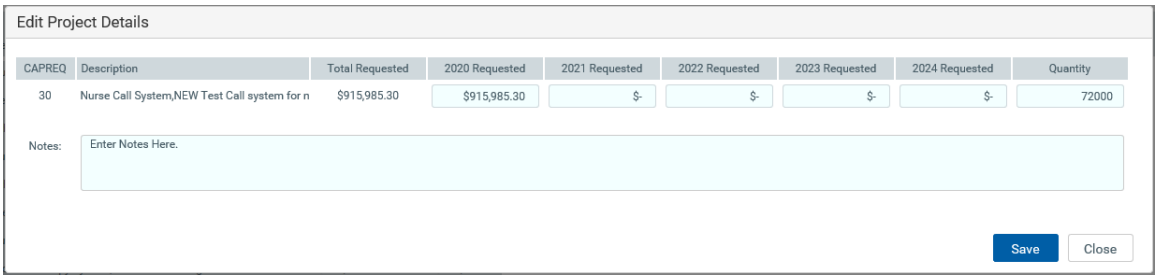
NOTE: Any amounts edited in a scenario do not propagate to the original project plan file. If it is determined that the requested amounts for the project need to be adjusted based on a scenario, then the administrator or requestor will need to make the adjustments in the actual plan file. The administrator will then need to return to the Capital Project Scoring and Selection utility to review the project ordering again with the updated request amounts.

To create a capital scenario:

1. Click the scenario toggle (next to the **Settings** button) to **Scenario**.



2. Next to the project to edit, click the notepad icon.
3. Edit the project requested amounts as needed, and click **Save**.



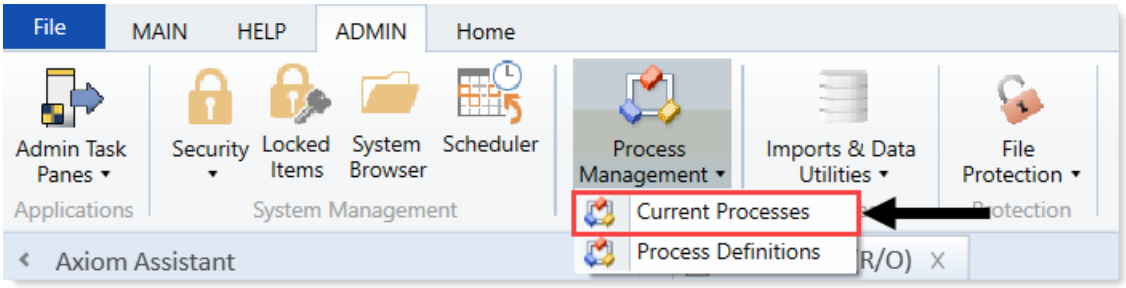
Finishing the Voting step

After the Capital Committee settles on its portfolio selections, the Capital Planning administrator runs the capital approval process.

In the process editor dialog, the administrator moves the approved projects from the voting stage to final approval stage. Projects that did not get approved can stay in the current voting stage for the next voting session of that year or move to the final stage. Most organizations approve projects on a yearly basis, while some do this process quarterly.

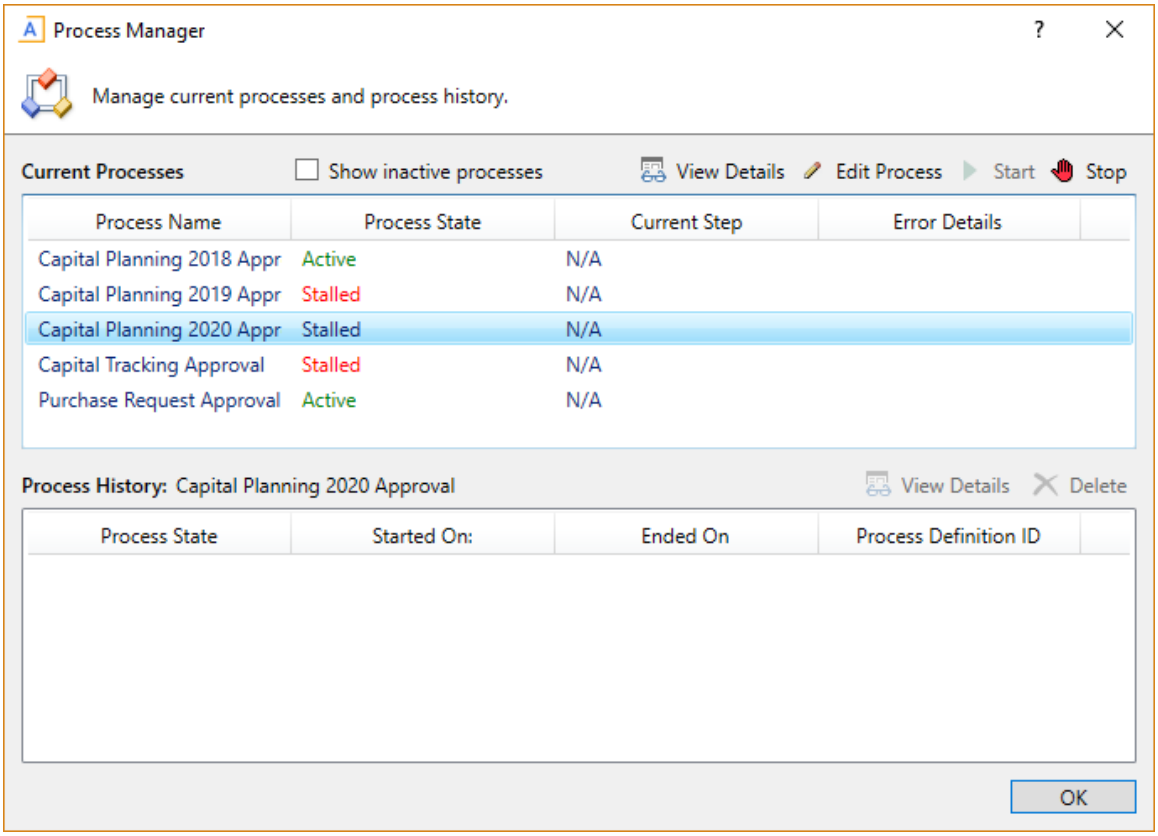
To finish the Voting step:

1. In the **Admin** ribbon tab, click **Process Management > Current Processes**.



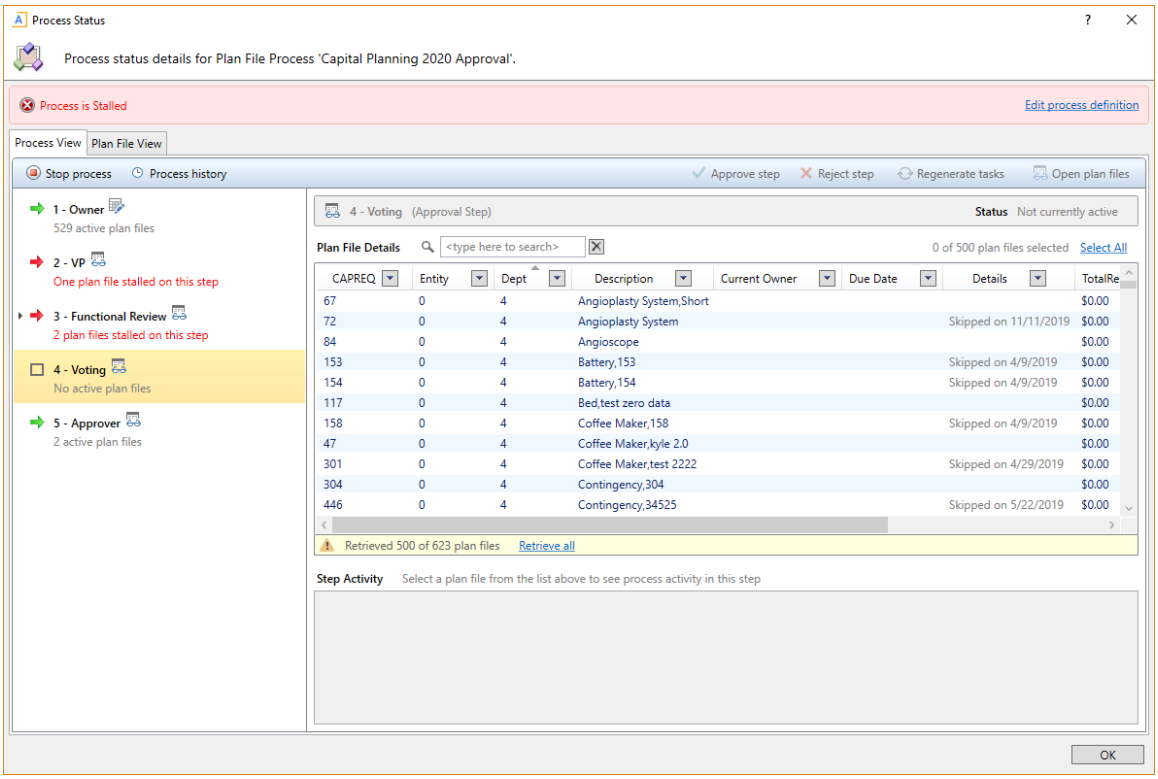
Click image to view full size

2. In the **Process Manager** dialog, select **Capital Planning 20XX Approval** process, and click **View Details**.



Click image to view full size

3. Select the **Voting** step.



Click image to view full size

4. Select the projects in the **Active Plan Files** section to approve.
5. After it is highlighted, select the **Approve Step** icon above this section.

All approved projects are now in the Approver step of the process.

Approving or declining projects

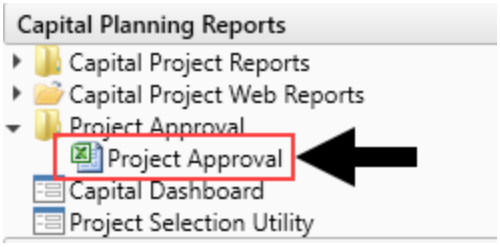
The final step of the review and approval process is for the designated final approver (usually someone in the Finance department) to approve or decline each project that reaches the final stage.

To do this, the final approver runs the Project Approval report, and sets the approval status to Approved, Declined, or Pending.

NOTE: If projects are approved on the Criteria tab of the Project Selection report, those projects are marked as Approved on this report.

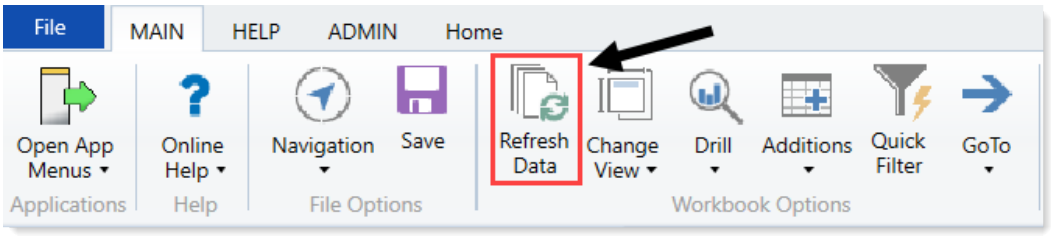
To approve or declining projects:

1. In the Cap Plan Admin task pane, in the **Capital Planning Reports** section, click **Project Approval**, and double-click **Project Approval**.



2. To refresh data, do one of the following:

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



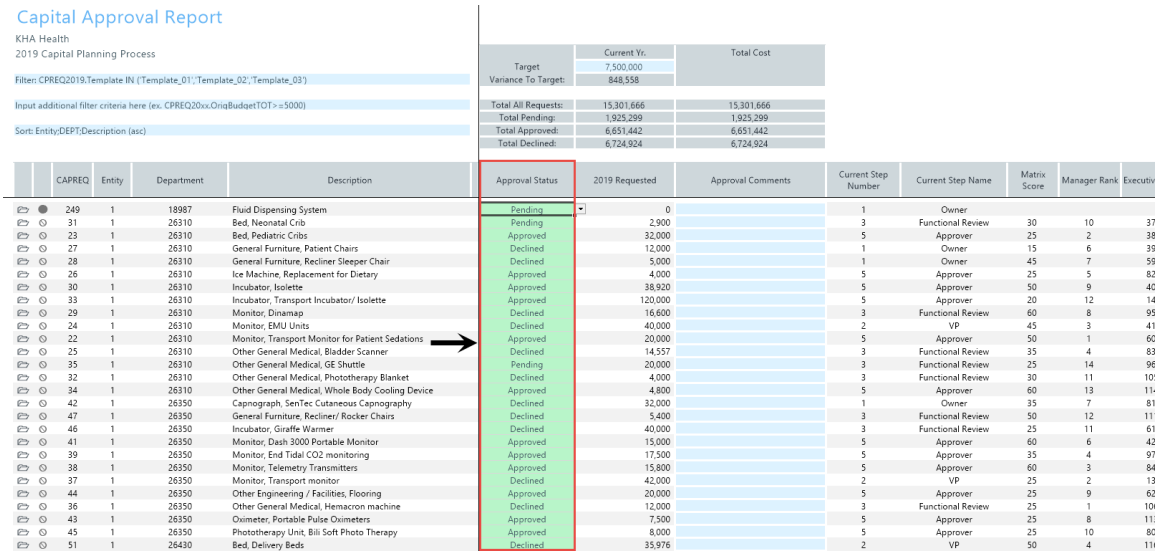
   - Press **F9**.

3. Do one of the following:

Option	Description
Select one or more projects to include in the report	a. In the **Refresh Variables** dialog, click **Choose Value** for each of the items to filter by. b. In the **Choose Value** dialog, click the variables, and click **OK**. c. In the **Refresh Variables** dialog, click **OK**.
Include all the projects in the report	In the **Refresh Variables** dialog, leave the fields blank, and click **OK**.

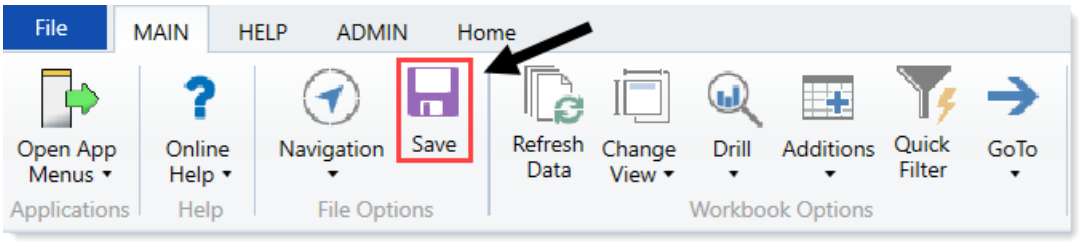
4. For each project, in the **Approval Status** column, select one of the following: **Approved**, **Declined**, **Pending**, or **Funding Source**.

> **TIP:** A project with Funding Source status is one in which money is budgeted for other projects. For more information, see Creating capital projects as funding sources for other projects.



Click image to view full size

5. For each project, in the **Approval Comments** column, type additional comments, as needed.
6. After you finish making changes, in the **Main** ribbon tab, click **Save**.



Viewing review or approval alerts

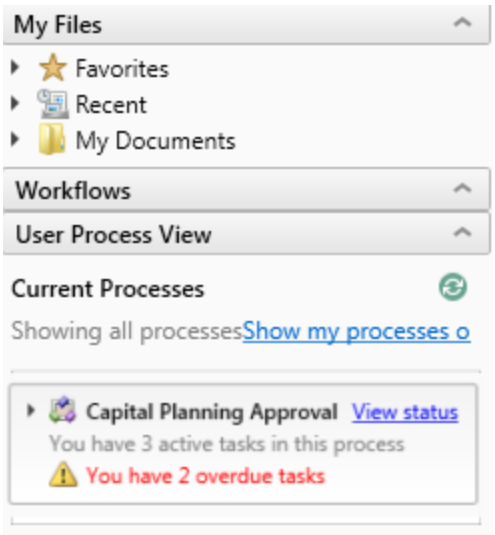
After a capital project owner submits a plan file for review and/or approval, the appropriate reviewer (s) and/or approver(s) receive a notification on the **My Files and Tasks** task pane or by email, if email notifications have been enabled.

When using My Files and Tasks task pane, a notification displays when there are capital project plan files pending the user's review and/or approval.

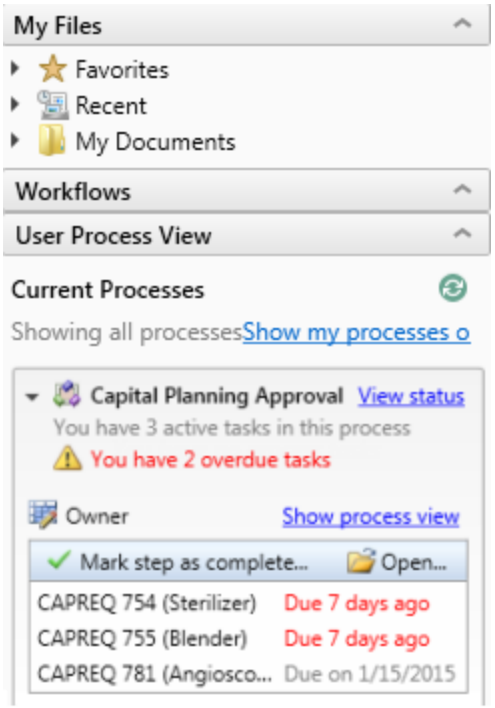
NOTE: Depending on how Axiom Capital Planning has been configured, different types of capital projects may be subject to various review and approval steps.

To view review or approval alerts:

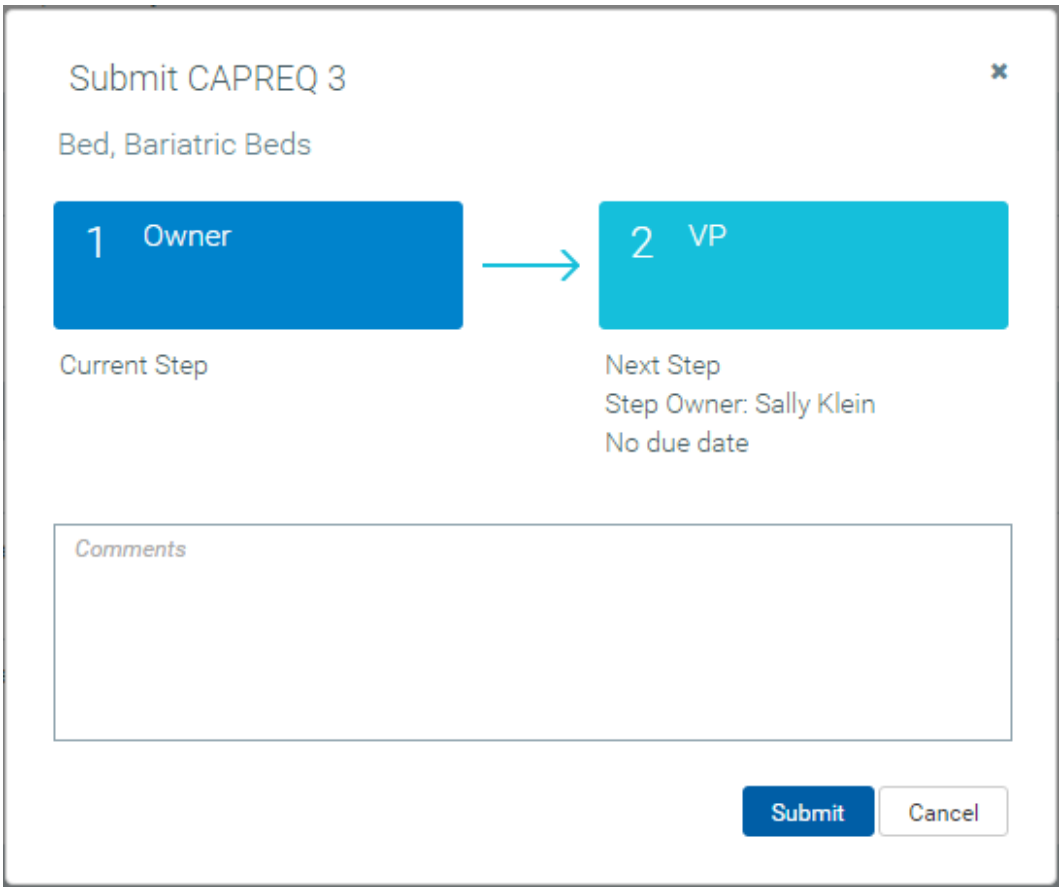
1. In the **My Files and Tasks** task pane, in the **Current Processes** section, view the alert.



2. To expand the list of pending plan files, click the alert.



3. Do one of the following:
    - To open the plan file for review, double-click it. When you are finished with the review, save the file. The system then displays a dialog that shows you the next step in the approval process. Enter comments to add to the request, if necessary, and click **Submit**.



- To approve a project without opening the plan file, select the plan file in the alert, and select **Mark step as complete**.
    - In the **Process Action** dialog, enter a comment, if needed, and then click OK, to move the review/approval process to the next step. If the plan file is in functional review and you return the plan file to the previous step, the functional review steps will begin again.

8

Working with Reports

Reports are spreadsheets designed to help review and analyze your organization's financial data. 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 capital budget year. You can use the same report to view data for any capital budget year or to compare data across multiple budget years. Reports can even incorporate data from other Kaufman Hall Healthcare Suite products, provided you have the necessary security permissions.

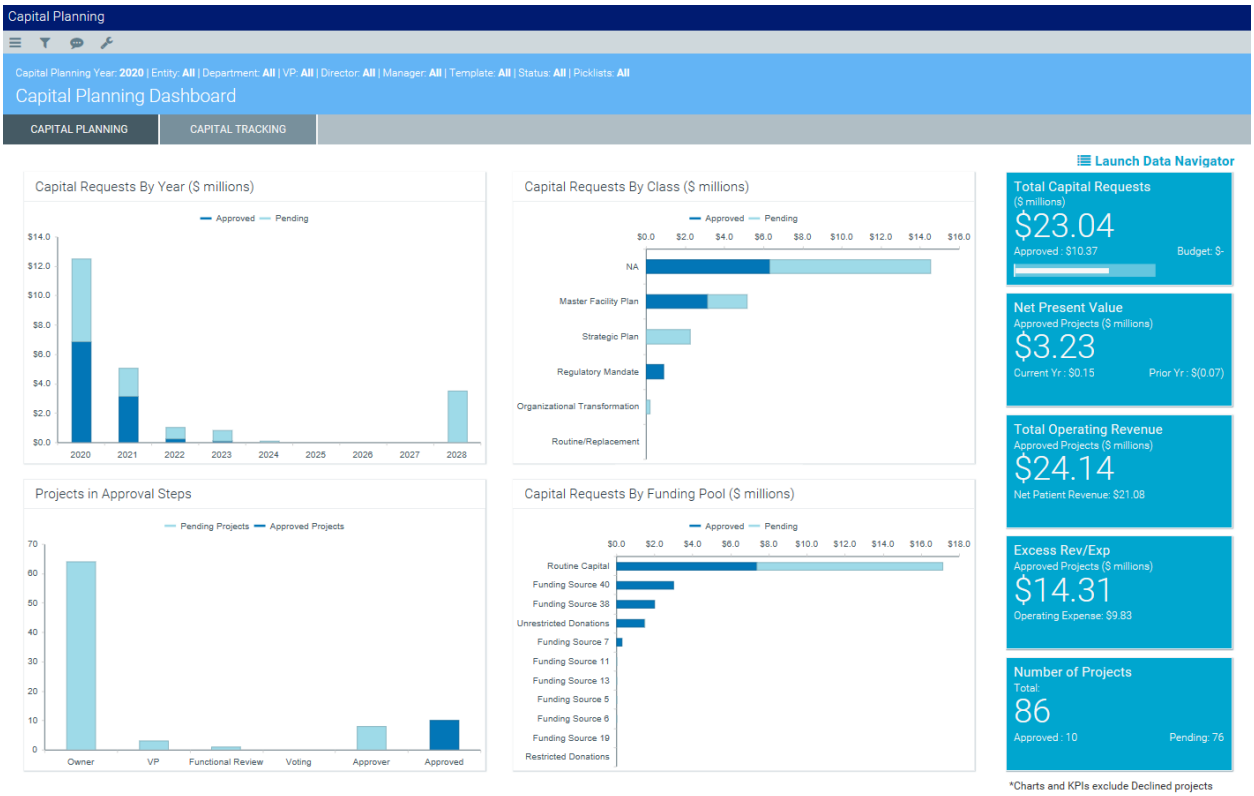
Working with the Capital Dashboard

The Capital Dashboard provides multiple views, filters, and deep dive capabilities you can use to do the following:

Capital Planning - View capital requests, workflow status, and approval summaries for your organization.

Capital Tracking - View capital budget vs. committed vs. actuals as well as workflow status.

NOTE: The tabs that display depends on the Axiom license purchased by your organization. For example, if you do not have a license for Axiom Capital Tracking, then that tab will not display.



Capital Planning

The Capital Planning tab provides a summary and analysis of you capital planning process for each file group planning year. The dashboard charts shows the capital requests by year, class, and funding pool as well as the number of pending projects and where they are in the approval process.

The dashboard also shows KPIs regarding:

- Total number of capital request dollars, including how much has been approved and budgeted
- Net present value (NPV) of approved projects, including current and prior year dollars
- Total operating revenue of approved projects, including net patient revenue
- Excess revenue and expenses of approved projects, including operating expenses
- Total number of projects, including the number of approved and pending projects

NOTE: The charts and KPIs do not include declined projects.

You can filter data in the report using the Refresh Variables in the Filters panel. You can also dive deeper into the data and configure how the data displays by using the Data Navigator.

Capital Tracking

The Capital Tracking tab provides a summary and analysis of your capital requests. The dashboard charts shows the capital requests by year, the number of pending projects and where they are in the approval process, and actual vs. committed vs. budget projects.

The dashboard also shows KPIs regarding:

- Total number of capital request dollars, including how much has been approved and budgeted
- Net present value (NPV) of approved projects
- Total operating revenue of approved projects, including operating expenses and net income
- The amount of committed dollars across projects, including actual and dollar variance
- Total number of projects, including the number of approved and pending projects

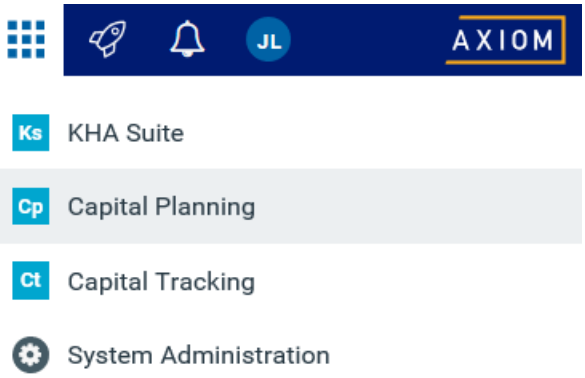
NOTE: The charts and KPIs do not include declined projects.

You can filter data in the report using the refresh variables in the Filters panel. You can also dive deeper into the data behind the charts and KPIs by using the Data Navigator.

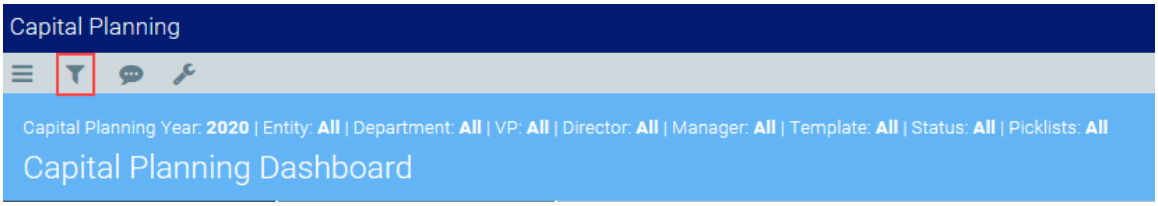
Using the Capital Dashboard

To use the Capital Dashboard:

1. Click the Area menu in the Global Navigation Bar, and click **Capital Planning**.



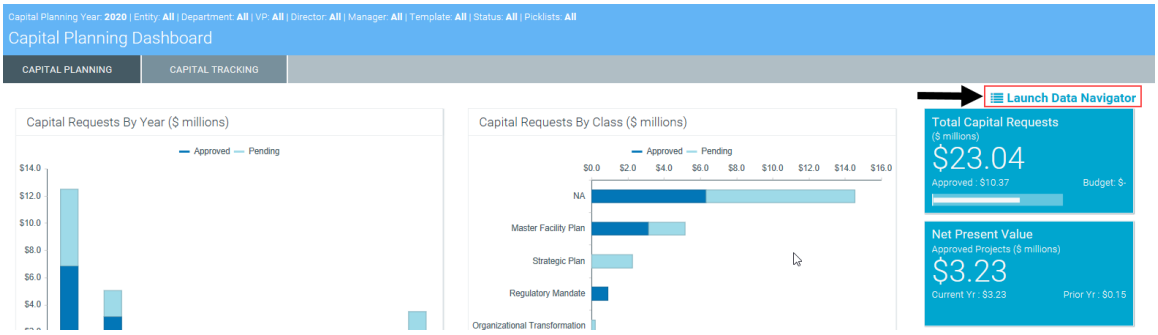
2. From the home page, click **Launch Capital Dashboard**.
3. To filter the data in the dashboard, click the funnel icon in the upper left corner of the screen.



4. In the **Filters** panel, configure the variables by selecting the filter options to use, and then click **Apply**.

> **TIP:** To keep the Filters panel open, click the thumb tack icon in the upper right corner of the panel.

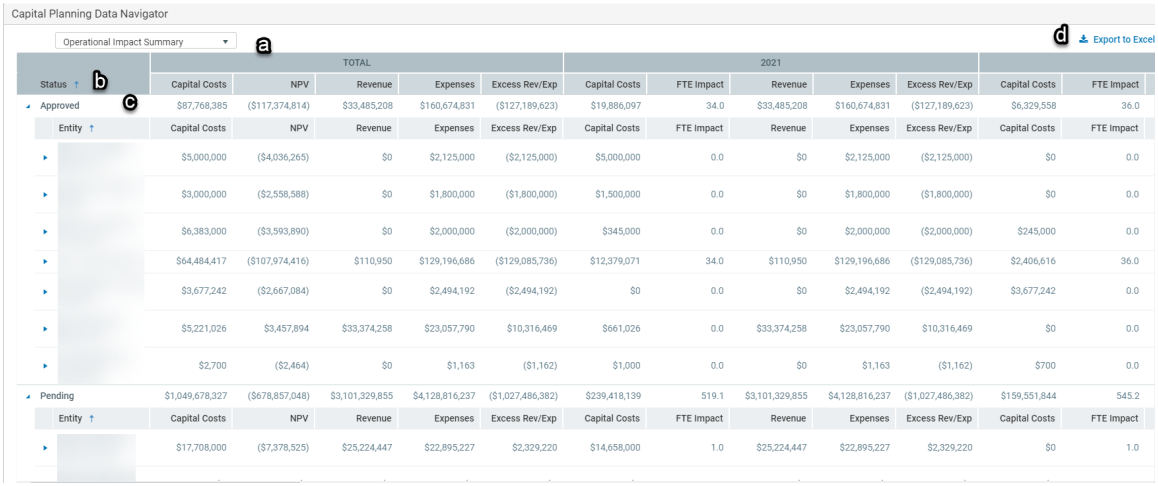
5. To deep dive into the data included in the report, click **Launch Data Navigator**.



6. From the Data Navigator, do any of the following:
   a. Click the drop-down to view data by the following: Operational Impact Summary, Project Summary by Dept, Project Summary by VP.

   > **NOTE:** Depending on the selection you make from this drop-down, the columns and hierarchical order will change.

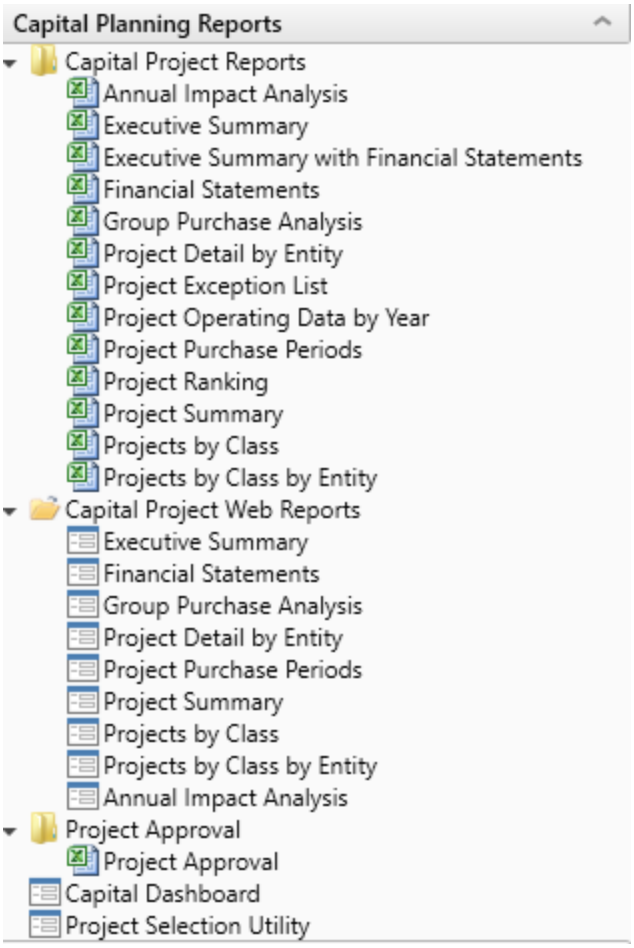
   b. Click the header to organize the column in ascending or descending order.
   c. Click the funnel icon to filter the data in the column.
   d. Export the information from the Data Navigator to Excel.



Reports included in Axiom Capital Planning

Reports are designed to help review and analyze your organization's financial data. 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 capital budget year. You can use the same report to view data for any capital budget year or to compare data across multiple budget years. Reports can even incorporate data from other Kaufman Hall Healthcare Suite products, provided you have the necessary security permissions.

Axiom Capital Planning includes capital project reports that you can access from the Cap Plan and Cap Plan Admin task panes in the Capital Planning Reports section.



Click image to view full size

There are two types of reports depending on whether your organization is licensed for the Excel (also referred to Legacy) system or Web system of Axiom Capital Planning:

- **Web reports** - Located in the Capital Project Web Reports folder. The Web versions of the reports are only available if your organization is licensed for the Web version of Axiom Capital Planning. For more information, see Running a web report.

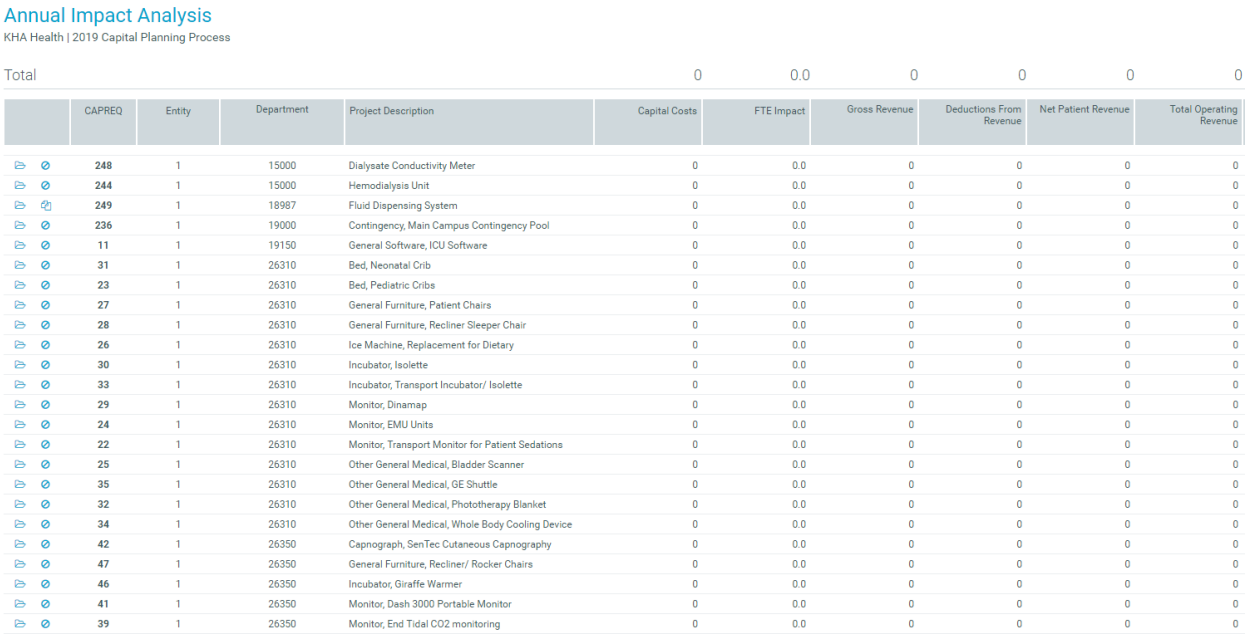
  NOTE: These reports are also available as an Excel version in the Capital Project Reports folder.

- **Spreadsheet reports** - Located in the Capital Project Reports, Project Approval, and Evaluator Scoring folders. For more information, see Working with spreadsheet reports.

The following lists a description and examples of the reports:

Annual Impact Analysis

Description:	Displays the incremental operating impacts by year for a selection of capital projects.
Location in Task Pane:	Capital Planning reports section • **Excel version:** Capital Project Reports folder • **Web version**: Capital Project Web Reports folder



Annual Impact Analysis

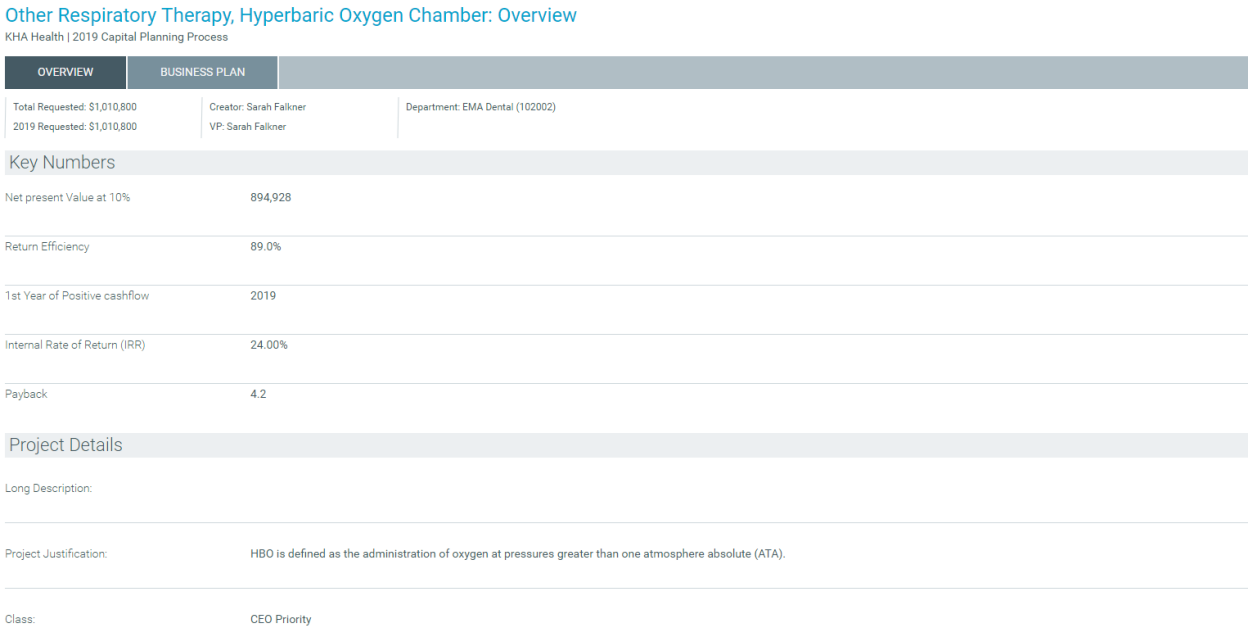
KHA Health | 2019 Capital Planning Process

Total						0	0.0	0	0	0	0
	CAPREQ	Entity	Department	Project Description	Capital Costs	FTE Impact	Gross Revenue	Deductions From Revenue	Net Patient Revenue	Total Operating Revenue
	248	1	15000	Dialysate Conductivity Meter	0	0.0	0	0	0	0
	244	1	15000	Hemodialysis Unit	0	0.0	0	0	0	0
	249	1	18987	Fluid Dispensing System	0	0.0	0	0	0	0
	236	1	19000	Contingency, Main Campus Contingency Pool	0	0.0	0	0	0	0
	11	1	19150	General Software, ICU Software	0	0.0	0	0	0	0
	31	1	26310	Bed, Neonatal Crib	0	0.0	0	0	0	0
	23	1	26310	Bed, Pediatric Cribs	0	0.0	0	0	0	0
	27	1	26310	General Furniture, Patient Chairs	0	0.0	0	0	0	0
	28	1	26310	General Furniture, Recliner Sleeper Chair	0	0.0	0	0	0	0
	26	1	26310	Ice Machine, Replacement for Dietary	0	0.0	0	0	0	0
	30	1	26310	Incubator, Isolette	0	0.0	0	0	0	0
	33	1	26310	Incubator, Transport Incubator/ Isolette	0	0.0	0	0	0	0
	29	1	26310	Monitor, Dinamap	0	0.0	0	0	0	0
	24	1	26310	Monitor, EMU Units	0	0.0	0	0	0	0
	22	1	26310	Monitor, Transport Monitor for Patient Sedations	0	0.0	0	0	0	0
	25	1	26310	Other General Medical, Bladder Scanner	0	0.0	0	0	0	0
	35	1	26310	Other General Medical, GE Shuttle	0	0.0	0	0	0	0
	32	1	26310	Other General Medical, Phototherapy Blanket	0	0.0	0	0	0	0
	34	1	26310	Other General Medical, Whole Body Cooling Device	0	0.0	0	0	0	0
	42	1	26350	Capnograph, SenTec Cutaneous Capnography	0	0.0	0	0	0	0
	47	1	26350	General Furniture, Recliner/ Rocker Chairs	0	0.0	0	0	0	0
	46	1	26350	Incubator, Giraffe Warmer	0	0.0	0	0	0	0
	41	1	26350	Monitor, Dash 3000 Portable Monitor	0	0.0	0	0	0	0
	39	1	26350	Monitor, End Tidal CO2 monitoring	0	0.0	0	0	0	0

Click image to view full size

Executive Summary

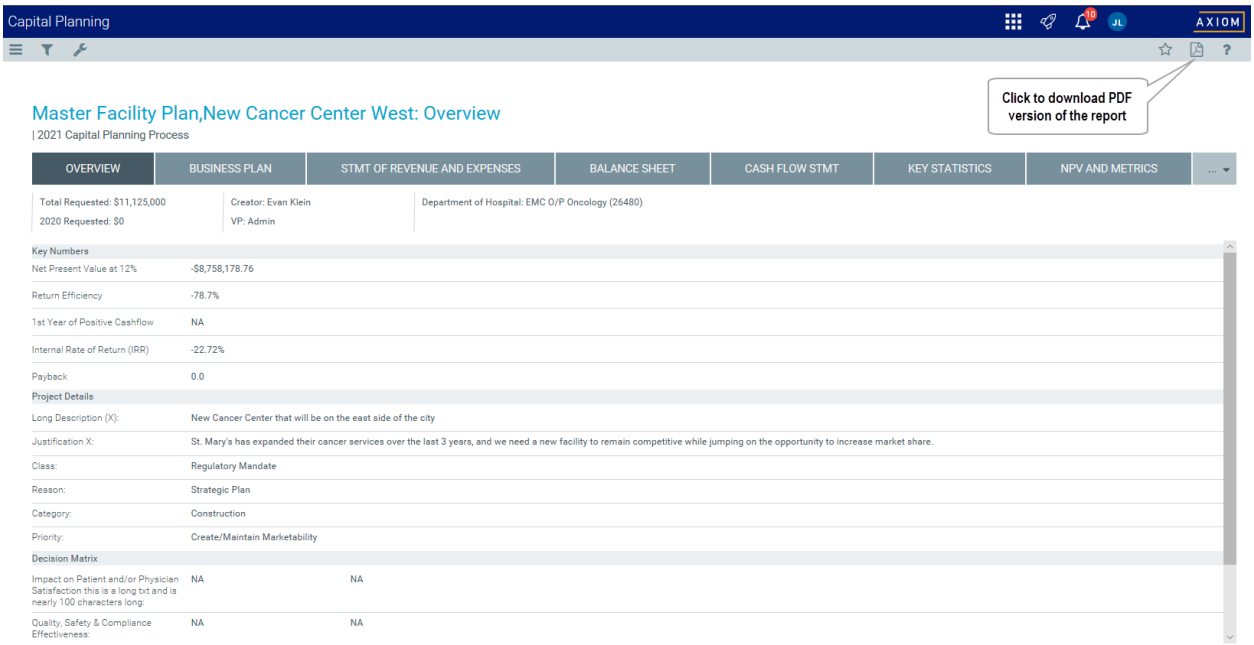
Description:	Use this report to create an executive summary for capital projects one request at a time.
Location in Task Pane:	Capital Planning reports section • **Excel version:** Capital Project Reports folder • **Web version**: Capital Project Web Reports folder



Click image to view full size

Executive Summary with Financial Statements

Description:	Use this report to create an executive summary with detailed financial statements for individual capital projects.
Location in Task Pane:	Capital Planning reports section • **Excel version:** Capital Project Reports folder • **Web version:** Capital Project Web Reports folder **TIP:** You can also access this report directly from a plan file by clicking the **Executive Summary** link.



Click image to view full size

Financial Statements

Description:	Use this report to view a financial snapshot of a selected set of capital projects. It presents the Income Statement, Balance Sheet, Cash Flow, Key Statistics, NPV, Financial Metrics, and Capital Summary for ten years.
Location in Task Pane:	Capital Planning reports section • **Excel version:** Capital Project Reports folder • **Web version**: Capital Project Web Reports folder

Financial Statements

KHA Health | 2019 Capital Planning Process

STMT OF REVENUE AND EXPENSES | BALANCE SHEET | CASH FLOW STMT | KEY STATISTICS | NPV AND METRICS | CAPITAL SUMMARY

Statement of Revenue and Expenses

	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
Patient Revenue										
Inpatient Services	34,692,300	51,701,421	56,639,711	61,327,278	66,599,221	69,607,871	74,541,870	79,871,219	85,632,050	91,167,030
Outpatient Services	17,848,900	25,197,532	27,710,850	30,086,251	32,612,963	35,390,844	38,511,112	41,962,164	45,786,601	49,593,994
Gross Patient Revenue	**52,541,200**	**76,898,953**	**84,350,561**	**91,413,528**	**99,212,184**	**104,998,714**	**113,052,982**	**121,833,383**	**131,418,651**	**140,761,024**
Deductions from Patient Revenue										
Contractual Discounts	31,152,073	50,239,975	55,392,603	61,387,586	68,018,139	73,408,552	80,360,960	87,974,185	96,320,827	104,360,144
Bad Debt	765,300	961,995	1,027,358	1,097,722	1,173,682	1,255,674	1,344,443	1,440,040	1,543,048	1,642,745
Provision for Charity	510,200	577,941	614,425	653,223	694,485	738,366	785,034	834,668	887,457	943,602
Total Deductions from Revenue	**32,427,573**	**51,779,911**	**57,034,386**	**63,138,531**	**69,886,305**	**75,402,592**	**82,490,437**	**90,248,893**	**98,751,332**	**106,946,490**
Net Patient Revenue	**20,113,627**	**25,119,042**	**27,316,175**	**28,274,997**	**29,325,878**	**29,596,123**	**30,562,544**	**31,584,490**	**32,667,319**	**33,814,534**
Premium Revenue	0	0	0	0	0	0	0	0	0	0
Other Operating Revenue	583,475	600,205	618,063	636,574	655,763	675,657	696,283	717,671	739,849	762,849
Total Operating Revenue	**20,697,102**	**25,719,247**	**27,934,238**	**28,911,571**	**29,981,641**	**30,271,780**	**31,258,828**	**32,302,161**	**33,407,168**	**34,577,383**
Operating Expenses										
Salaries and Wages	3,392,537	4,172,070	4,347,419	4,519,622	4,703,564	4,767,802	4,969,377	5,182,434	5,407,800	5,646,373
Employee Benefits	801,439	995,154	1,037,795	1,079,619	1,124,347	1,153,790	1,203,230	1,255,516	1,310,855	1,369,471
Contract Labor	5,000	0	0	0	0	0	0	0	0	0
Professional Fees	357,500	357,000	364,140	371,423	378,851	386,428	394,157	402,040	410,081	415,939
Supplies	7,131,519	9,437,876	10,021,518	10,539,063	11,111,323	11,575,675	12,161,707	12,783,347	13,443,248	14,097,905
Purchased Services	1,337,000	948,080	971,069	994,639	1,018,805	1,043,583	1,068,988	1,095,037	1,121,747	1,143,989
Depreciation & Amortization	2,670,158	7,068,473	7,902,111	8,158,189	8,264,262	7,578,129	6,886,433	6,516,763	6,206,789	6,364,742
Interest	200,000	424,000	652,480	885,530	923,240	941,705	960,539	979,750	999,345	1,014,186
Other Expense	1,878,541	2,590,539	2,649,602	2,711,085	2,775,392	2,842,629	2,913,290	2,986,850	3,063,507	3,111,452

Group Purchase Analysis

Description:	Use this report to view groupings by Project Type Detail for a selection of capital projects. This report can be used by Purchasing and Supply Chain to identify group purchase opportunities.
Location in Task Pane:	Capital Planning reports section • **Excel version:** Capital Project Reports folder • **Web version**: Capital Project Web Reports folder

Group Purchase Analysis

KHA Health | 2019 Capital Planning Process

Total

	CAPREQ	Entity	Department	Project Type Detail	Project Description	QTY	Vendor
CARDIOLOGY							
				Defibrillator / Pacemaker			
	19	2	26140		Defibrillator / Pacemaker, Defibrillators for ED	3	Cardinal Health
	221	1	29320		Defibrillator / Pacemaker, Defibrillator	1	Stryker Instruments
				Other Cardiology			
	6	2	26780		Other Cardiology, Cath Lab Expansion	0	
CENTRAL STERILE							
				Sterilizer			
	232	1	29320		Sterilizer, Central Sterile Sterilizer	1	TBD - Vendor To Be Determinec
	233	1	29320		Sterilizer, Sterrad Plasma 200NX	1	TBD - Vendor To Be Determinec
DIALYSIS							
				Dialysate Conductivity Meter			
	248	1	15000		Dialysate Conductivity Meter	0	
				Hemodialysis Unit			
	244	1	15000		Hemodialysis Unit	0	
DIETARY							
				Hood			
	131	1	27060		Hood, Gross Room Hoods	2	TBD - Vendor To Be Determinec
				Ice Machine			
	26	1	26310		Ice Machine, Replacement for Dietary	1	GE Medical Systems
				Refrigerator			
	121	1	27060		Refrigerator, 3-door Refrigerator	2	Cardinal Health
	217	1	29310		Refrigerator, Dry Cooler	1	TBD - Vendor To Be Determinec
ENGINEERING / FACILITIES							
				Compressor			
	202	1	29210		Compressor, Instrument Air Compressor	1	TBD - Vendor To Be Determinec

Project Approval

Description:	Use this report to approve capital projects based on capital constraint. For more information, see Approving or declining projects.
Location in Task Pane:	Capital Planning reports section > Project Approval folder **NOTE:** There is no web-enabled version available for this report.

Use this report to approve capital projects based on capital constraint. For more information, see Approving or declining projects.

Project Approval

KHA Health

Capital Tracking

Filter: NONE

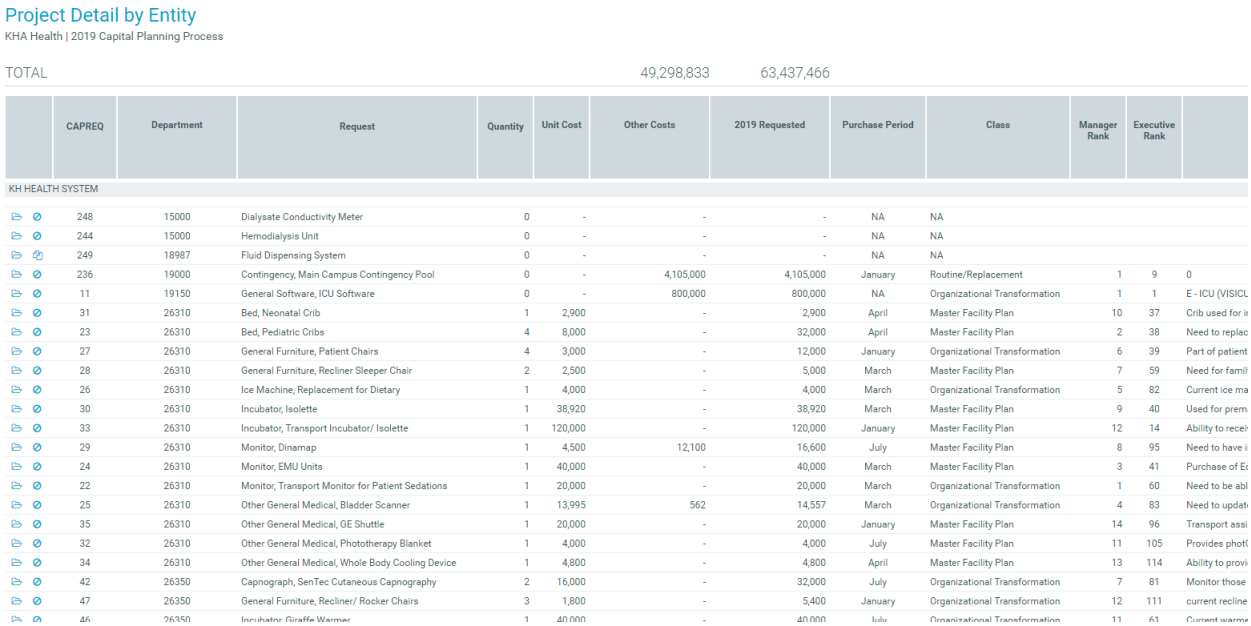
Input additional filter criteria here (ex. CTREQ.OrigBudgetTOT>=5000)

Sort: Entity;DEPT;Description (asc)

		CAPREQ	Entity	Department	Project ID	Description	Approval Status	Approval Comments	Current Step Number	Current Step Name	Original Budget
		126	1	19000	2018.001.19000.001	Land Purchase, For New MOB	Approved	=IF(AF152="","",AF152)	Not Active	Not Active	0
		122	1	19000	KH_Contingency	Contingency, Main Campus Contingency Pool	Pending	=IF(AF148="","",AF148)	1	Owner	4,105,000
		7	1	19150	2018.001.19150.001	General Software, ICU Software	Approved	=IF(AF39="","",AF39)	Not Active	Not Active	1,600,000
		15	1	26310	2018.001.26310.001	Monitor, Transport Monitor for Patient Sedations	Pending	=IF(AF47="","",AF47)	2	VP	20,000
		16	1	26310	2018.001.26310.002	Bed, Pediatric Cribs	Approved	=IF(AF48="","",AF48)	7	Funding Approval	32,000
		17	1	26310	2018.001.26310.003	Ice Machine, Replacement for Dietary	Approved	=IF(AF49="","",AF49)	7	Funding Approval	4,000
		18	1	26310	2018.001.26310.004	Incubator, Isolette/ Incubator	Pending	=IF(AF50="","",AF50)	1	Owner	38,920
		19	1	26310	2018.001.26310.005	Incubator, Transport Incubator/ Isolette	Approved	=IF(AF51="","",AF51)	Not Active	Not Active	120,000
		20	1	26310	2018.001.26310.006	Other General Medical, Whole Body Cooling Device	Pending	=IF(AF52="","",AF52)	3	Functional Review	4,800
		21	1	26350	2018.001.26350.001	Monitor, Telemetry Transmitters	Approved	=IF(AF53="","",AF53)	Not Active	Not Active	15,800
		23	1	26350	2018.001.26350.003	Bed, CCU Beds	Approved	=IF(AF55="","",AF55)	Not Active	Not Active	79,695
		24	1	26350	2018.001.26350.004	Monitor, Dash 3000 Portable Monitor	Pending	=IF(AF56="","",AF56)	1	Owner	15,000
		25	1	26350	2018.001.26350.005	Oximeter, Portable Pulse Oximeters	Approved	=IF(AF57="","",AF57)	Not Active	Not Active	7,500
		26	1	26350	2018.001.26350.006	Other Engineering / Facilities, Flooring	Pending	=IF(AF58="","",AF58)	2	VP	20,000
		27	1	26350	2018.001.26350.007	Phototherapy Unit, Bili Soft Photo Therapy	Approved	=IF(AF59="","",AF59)	Not Active	Not Active	8,000

Project Detail by Entity

Description:	Displays capital project details by Entity for a selection of capital projects.
Location in Task Pane:	Capital Planning reports section • **Excel version:** Capital Project Reports folder • **Web version**: Capital Project Web Reports folder



Project Detail by Entity
KHA Health | 2019 Capital Planning Process

TOTAL 49,298,833 63,437,466

	CAPREQ	Department	Request	Quantity	Unit Cost	Other Costs	2019 Requested	Purchase Period	Class	Manager Rank	Executive Rank	
KH HEALTH SYSTEM												
	248	15000	Dialysate Conductivity Meter	0	-	-	-	NA	NA			
	244	15000	Hemodialysis Unit	0	-	-	-	NA	NA			
	249	18987	Fluid Dispensing System	0	-	-	-	NA	NA			
	236	19000	Contingency, Main Campus Contingency Pool	0	-	4,105,000	4,105,000	January	Routine/Replacement	1	9	0
	11	19150	General Software, ICU Software	0	-	800,000	800,000	NA	Organizational Transformation	1	1	E - ICU (VISICU
	31	26310	Bed, Neonatal Crib	1	2,900	-	2,900	April	Master Facility Plan	10	37	Crib used for i
	23	26310	Bed, Pediatric Cribs	4	8,000	-	32,000	April	Master Facility Plan	2	38	Need to replac
	27	26310	General Furniture, Patient Chairs	4	3,000	-	12,000	January	Organizational Transformation	6	39	Part of patient
	28	26310	General Furniture, Recliner Sleeper Chair	2	2,500	-	5,000	March	Master Facility Plan	7	59	Need for famil
	26	26310	Ice Machine, Replacement for Dietary	1	4,000	-	4,000	March	Organizational Transformation	5	82	Current ice ma
	30	26310	Incubator, Isolette	1	38,920	-	38,920	March	Master Facility Plan	9	40	Used for prem
	33	26310	Incubator, Transport Incubator/ Isolette	1	120,000	-	120,000	January	Master Facility Plan	12	14	Ability to rece
	29	26310	Monitor, Dinamap	1	4,500	12,100	16,600	July	Master Facility Plan	8	95	Need to have i
	24	26310	Monitor, EMU Units	1	40,000	-	40,000	March	Master Facility Plan	3	41	Purchase of Ex
	22	26310	Monitor, Transport Monitor for Patient Sedations	1	20,000	-	20,000	March	Organizational Transformation	1	60	Need to be abl
	25	26310	Other General Medical, Bladder Scanner	1	13,995	562	14,557	March	Organizational Transformation	4	83	Need to updat
	35	26310	Other General Medical, GE Shuttle	1	20,000	-	20,000	January	Master Facility Plan	14	96	Transport assi
	32	26310	Other General Medical, Phototherapy Blanket	1	4,000	-	4,000	July	Master Facility Plan	11	105	Provides phott
	34	26310	Other General Medical, Whole Body Cooling Device	1	4,800	-	4,800	April	Master Facility Plan	13	114	Ability to provi
	42	26350	Capnograph, SenTec Cutaneous Capnography	2	16,000	-	32,000	July	Organizational Transformation	7	81	Monitor those
	47	26350	General Furniture, Recliner/ Rocker Chairs	3	1,800	-	5,400	January	Organizational Transformation	12	111	current recline
	46	26350	Incubator, Giraffe Warmer	1	40,000	-	40,000	July	Organizational Transformation	11	61	Current warme

Project Exception List

Description:	Use this report to identify missing data or incorrect information for a selection of capital projects.
Location in Task Pane:	Capital Planning reports section > Capital Project Reports folder **NOTE:** There is no web-enabled version available for this report.

Capital Project Exception List

KHA Health
2019 Capital Planning Process

Capital Planning Year: 2019

Filter: NONE

Input additional filter criteria here (ex. CPREQ20xx.OrigBudgetTOT>=5000)

Sort: (asc)

	CAPREQ	Entity	Department	Project Description	Missing Class	Missing Category	Missing Reason	Missing Priority	Missing Purchase Period	Missing Vendor	Matrix Score = 0	Unit Cost < Capital Min	Total Requested = 0	Total Requested < Capital Minimum	Total Requested > NonThreshold Max
	248	1	15000	Dialysate Conductivity Meter	₨	₨	₨	₨					₨	₨	
	244	1	15000	Hemodialysis Unit	₨	₨	₨	₨					₨	₨	
	249	1	18987	Fluid Dispensing System	₨	₨	₨	₨				₨	₨	₨	
	236	1	19000	Contingency, Main Campus Contingency Pool											₨
	11	1	19150	General Software, ICU Software											₨
	31	1	26310	Bed, Neonatal Crib											
	23	1	26310	Bed, Pediatric Cribs											
	27	1	26310	General Furniture, Patient Chairs											
	28	1	26310	General Furniture, Recliner Sleeper Chair											
	26	1	26310	Ice Machine, Replacement for Dietary											
	30	1	26310	Incubator, Isolette											
	33	1	26310	Incubator, Transport Incubator/ Isolette											₨
	29	1	26310	Monitor, Dinamap											
	24	1	26310	Monitor, EMU Units											
	22	1	26310	Monitor, Transport Monitor for Patient Sedations											
	25	1	26310	Other General Medical, Bladder Scanner											
	35	1	26310	Other General Medical, GE Shuttle											
	32	1	26310	Other General Medical, Phototherapy Blanket											
	34	1	26310	Other General Medical, Whole Body Cooling Device											

Project Operating Data by Year

Description:	Use this report to view the operating values by year for any of the Summary Codes used in the income statement.
Location in Task Pane:	Capital Planning reports section > Capital Project Reports folder **NOTE:** There is no web-enabled version available for this report.

Project Operating Data by Year

KHA Health
2019 Capital Planning Process

Capital Planning Year: 2019

Selected Value: Net Patient Revenue

Filter: NONE

Input additional filter criteria here (ex. CPREQ20xx.OrigBudgetTOT>=5000)

	CAPREQ	Entity	Department	Project Description	NPV	Return Efficiency	1st Year Positive Cash Flow	IRR	Payback	Total Capital Requested	2019	2020
	248	1	15000	Dialysate Conductivity Meter	0	0.0%		0.0%	0.0	0	0	0
	244	1	15000	Hemodialysis Unit	0	0.0%		0.0%	0.0	0	0	0
	249	1	18987	Fluid Dispensing System	0	0.0%		0.0%	0.0	0	0	0
	236	1	19000	Contingency, Main Campus Contingency Pool	(4,105,000)	(100.0%)	NA	0.0%	0.0	4,105,000	0	0
	11	1	19150	General Software, ICU Software	(4,540,127)	(284.0%)	NA	0.0%	0.0	1,600,000	0	0
	31	1	26310	Bed, Neonatal Crib	(2,900)	(100.0%)	NA	0.0%	0.0	2,900	0	0
	23	1	26310	Bed, Pediatric Cribs	(32,000)	(100.0%)	NA	0.0%	0.0	32,000	0	0
	27	1	26310	General Furniture, Patient Chairs	(12,000)	(100.0%)	NA	0.0%	0.0	12,000	0	0
	28	1	26310	General Furniture, Recliner Sleeper Chair	(5,000)	(100.0%)	NA	0.0%	0.0	5,000	0	0
	26	1	26310	Ice Machine, Replacement for Dietary	(4,000)	(100.0%)	NA	0.0%	0.0	4,000	0	0
	30	1	26310	Incubator, Isolette	(38,920)	(100.0%)	NA	0.0%	0.0	38,920	0	0
	33	1	26310	Incubator, Transport Incubator/ Isolette	(120,000)	(100.0%)	NA	0.0%	0.0	120,000	0	0
	29	1	26310	Monitor, Dinamap	(16,600)	(200.0%)	NA	0.0%	0.0	16,600	0	0
	24	1	26310	Monitor, EMU Units	(40,000)	(100.0%)	NA	0.0%	0.0	40,000	0	0
	22	1	26310	Monitor, Transport Monitor for Patient Sedations	(20,000)	(100.0%)	NA	0.0%	0.0	20,000	0	0
	25	1	26310	Other General Medical, Bladder Scanner	(14,557)	(100.0%)	NA	0.0%	0.0	14,557	0	0
	35	1	26310	Other General Medical, GE Shuttle	(20,000)	(100.0%)	NA	0.0%	0.0	20,000	0	0
	32	1	26310	Other General Medical, Phototherapy Blanket	(4,000)	(100.0%)	NA	0.0%	0.0	4,000	0	0
	34	1	26310	Other General Medical, Whole Body Cooling Device	(4,800)	(100.0%)	NA	0.0%	0.0	4,800	0	0
	42	1	26350	Capnograph, SenTec Cutaneous Capnography	(32,000)	(100.0%)	NA	0.0%	0.0	32,000	0	0
	47	1	26350	General Furniture, Recliner/ Rocker Chairs	(5,400)	(100.0%)	NA	0.0%	0.0	5,400	0	0
	46	1	26350	Incubator, Giraffe Warmer	(40,000)	(100.0%)	NA	0.0%	0.0	40,000	0	0
	41	1	26350	Monitor, Dash 3000 Portable Monitor	(15,000)	(100.0%)	NA	0.0%	0.0	15,000	0	0
	39	1	26350	Monitor, End Tidal CO2 monitoring	(17,500)	(100.0%)	NA	0.0%	0.0	17,500	0	0
	38	1	26350	Monitor, Telemetry Transmitters	(15,800)	(100.0%)	NA	0.0%	0.0	15,800	0	0
	37	1	26350	Monitor, Transport monitor	(42,000)	(200.0%)	NA	0.0%	0.0	42,000	0	0
	44	1	26350	Other Engineering / Facilities, Flooring	(20,000)	(100.0%)	NA	0.0%	0.0	20,000	0	0

Project Purchase Period

Description:	Displays the total capital requested for each Purchase Period for a selection of capital projects.
Location in Task Pane:	Capital Planning reports section • **Excel version:** Capital Project Reports folder • **Web version**: Capital Project Web Reports folder

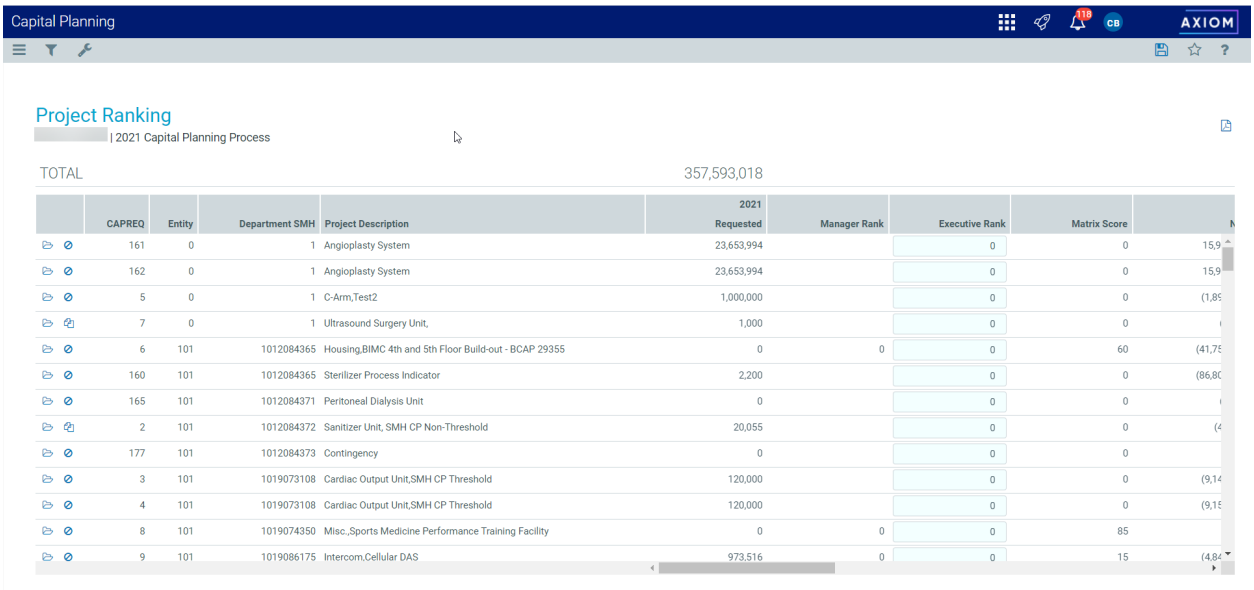
Project Purchase Periods

KHA Health | 2019 Capital Planning Process

Total					19,406,666	7,766,919	2,097,402	2,339,537	1,314,973	741,944	1,580,765	
	CAPREQ	Entity	Department	Project Description	Total Requested	January	February	March	April	May	June	
	236	1	19000	Contingency, Main Campus Contingency Pool	4,105,000	4,105,000	-	-	-	-	-	
	3	2	26140	Bed, Bariatric Beds	48,050	-	-	-	48,050	-	-	
	21	2	26140	Computer, Desktop PCs	10,200	-	-	-	10,200	-	-	
	19	2	26140	Defibrillator / Pacemaker, Defibrillators for ED	64,500	64,500	-	-	-	-	-	
	18	2	26140	General Furniture, Patient Waiting Area	53,875	-	-	-	-	-	-	
	20	2	26140	Monitor, Vital Signs Monitors	22,000	-	-	-	-	-	-	
	31	1	26310	Bed, Neonatal Crib	2,900	-	-	-	2,900	-	-	
	23	1	26310	Bed, Pediatric Cribs	32,000	-	-	-	32,000	-	-	
	27	1	26310	General Furniture, Patient Chairs	12,000	12,000	-	-	-	-	-	
	28	1	26310	General Furniture, Recliner Sleeper Chair	5,000	-	-	5,000	-	-	-	
	26	1	26310	Ice Machine, Replacement for Dietary	4,000	-	-	4,000	-	-	-	
	30	1	26310	Incubator, Isolette	38,920	-	-	38,920	-	-	-	
	33	1	26310	Incubator, Transport Incubator/ Isolette	120,000	120,000	-	-	-	-	-	
	29	1	26310	Monitor, Dinamap	16,600	-	-	-	-	-	-	
	24	1	26310	Monitor, EMU Units	40,000	-	-	40,000	-	-	-	
	22	1	26310	Monitor, Transport Monitor for Patient Sedations	20,000	-	-	20,000	-	-	-	
	25	1	26310	Other General Medical, Bladder Scanner	14,557	-	-	14,557	-	-	-	
	35	1	26310	Other General Medical, GE Shuttle	20,000	20,000	-	-	-	-	-	
	32	1	26310	Other General Medical, Phototherapy Blanket	4,000	-	-	-	-	-	-	
	34	1	26310	Other General Medical, Whole Body Cooling Device	4,800	-	-	-	4,800	-	-	
	40	2	26350	Bed, Patient Beds	79,695	-	-	-	-	-	79,695	
	42	1	26350	Capnograph, SenTec Cutaneous Capnography	32,000	-	-	-	-	-	-	
	47	1	26350	General Furniture, Recliner/ Rocker Chairs	5,400	5,400	-	-	-	-	-	
	46	1	26350	Incubator, Giraffe Warmer	40,000	-	-	-	-	-	-	

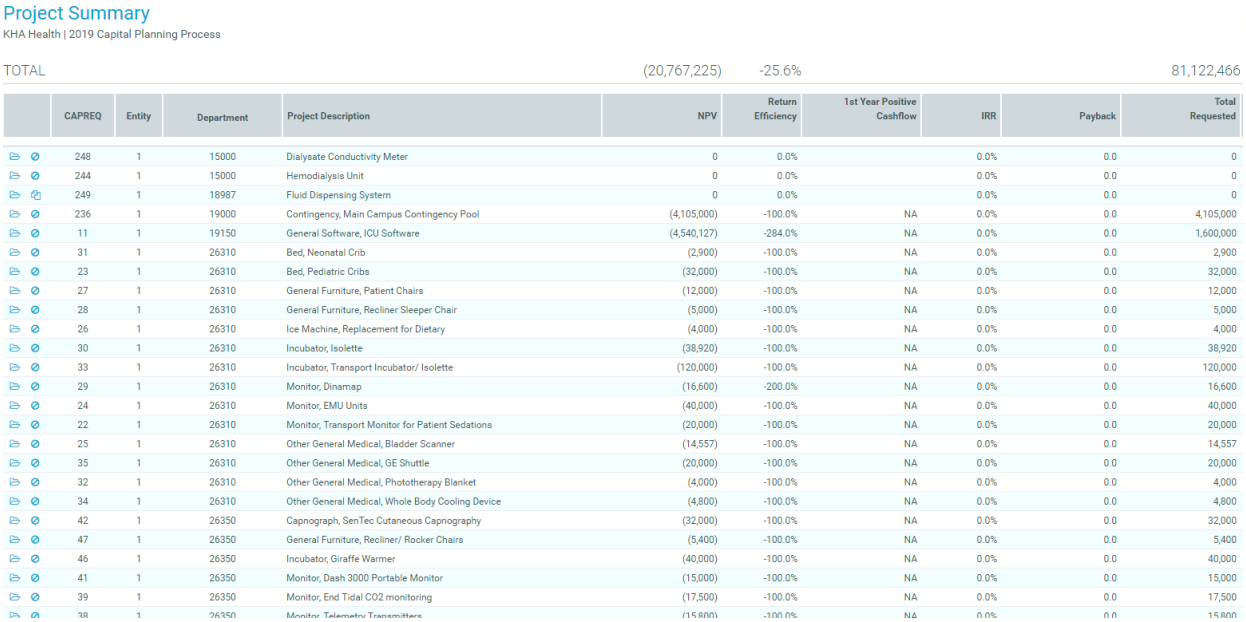
Project Ranking

Description:	Use this report to enter prioritized rank order for a selection of capital projects. This report is used by project owners and VPs. For more information, see Ranking capital projects.
Location:	Capital Planning home page> Project Ranking Report button • **Excel version:** Capital Project Reports folder • **Web version**: Capital Project Web Reports folder



Project Summary

Description:	Displays a summary of capital dollars requested by year for a selection of capital projects.
Location in Task Pane:	Capital Planning reports section • **Excel version:** Capital Project Reports folder • **Web version**: Capital Project Web Reports folder



Projects by Class

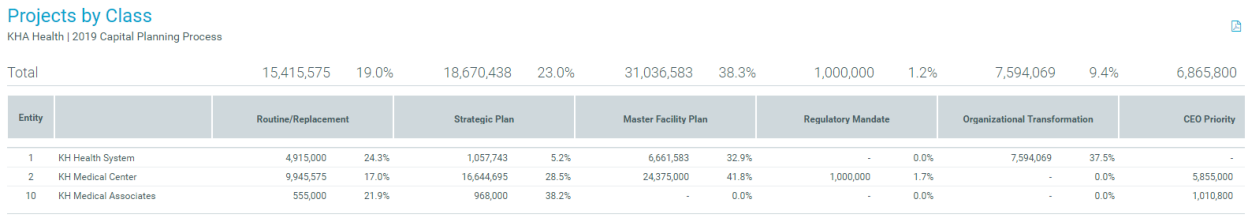
Description:	Displays the total capital requested by class for a selection of capital projects.
Location in Task Pane:	Capital Planning reports section • **Excel version:** Capital Project Reports folder • **Web version**: Capital Project Web Reports folder

Projects by Class
KHA Health | 2019 Capital Planning Process

TOTAL					15,415,575	18,670,438	31,036,583	1,000,000	7,594,069	6,865,800	
	CAPREQ	Entity	Department	Project Description	Routine/Replacement	Strategic Plan	Master Facility Plan	Regulatory Mandate	Organizational	CEO Priority	
	248	1	15000	Dialysate Conductivity Meter	-	-	-	-	-		
	244	1	15000	Hemodialysis Unit	-	-	-	-	-		
	249	1	18987	Fluid Dispensing System	-	-	-	-	-		
	236	1	19000	Contingency, Main Campus Contingency Pool	4,105,000	-	-	-	-		
	11	1	19150	General Software, ICU Software	-	-	-	-	1,600,000		
	31	1	26310	Bed, Neonatal Crib	-	-	2,900	-	-		
	23	1	26310	Bed, Pediatric Cribs	-	-	32,000	-	-		
	27	1	26310	General Furniture, Patient Chairs	-	-	-	-	12,000		
	28	1	26310	General Furniture, Recliner Sleeper Chair	-	-	5,000	-	-		
	26	1	26310	Ice Machine, Replacement for Dietary	-	-	-	-	4,000		
	30	1	26310	Incubator, Isolette	-	-	38,920	-	-		
	33	1	26310	Incubator, Transport Incubator/ Isolette	-	-	120,000	-	-		
	29	1	26310	Monitor, Dinamap	-	-	16,600	-	-		
	24	1	26310	Monitor, EMU Units	-	-	40,000	-	-		
	22	1	26310	Monitor, Transport Monitor for Patient Sedations	-	-	-	-	20,000		
	25	1	26310	Other General Medical, Bladder Scanner	-	-	-	-	14,557		
	35	1	26310	Other General Medical, GE Shuttle	-	-	20,000	-	-		
	32	1	26310	Other General Medical, Phototherapy Blanket	-	-	4,000	-	-		
	34	1	26310	Other General Medical, Whole Body Cooling Device	-	-	4,800	-	-		
	42	1	26350	Capnograph, SenTec Cutaneous Capnography	-	-	-	-	32,000		
	47	1	26350	General Furniture, Recliner/ Rocker Chairs	-	-	-	-	5,400		
	46	1	26350	Incubator, Giraffe Warmer	-	-	-	-	40,000		
	41	1	26350	Monitor, Dash 3000 Portable Monitor	-	-	-	-	15,000		
	39	1	26350	Monitor, End Tidal CO2 monitoring	-	-	17,500	-	-		
	38	1	26350	Monitor, Telemetry Transmitters	-	-	15,800	-	-		

Projects by Class by Entity

Description:	Displays the total capital requested by class for each entity
Location in Task Pane:	Capital Planning reports section • **Excel version:** Capital Project Reports folder • **Web version**: Capital Project Web Reports folder



Projects by Class
KHA Health | 2019 Capital Planning Process

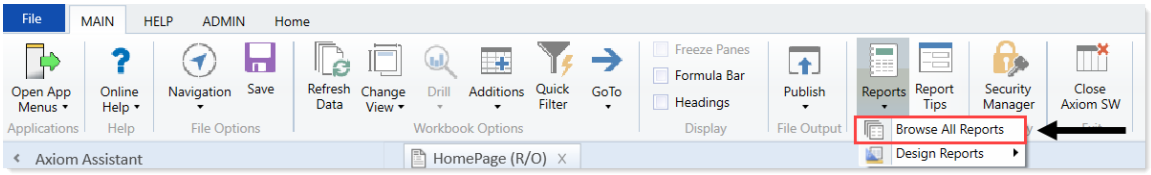
Total		15,415,575	19.0%	18,670,438	23.0%	31,036,583	38.3%	1,000,000	1.2%	7,594,069	9.4%	6,865,800
Entity		Routine/Replacement		Strategic Plan		Master Facility Plan		Regulatory Mandate		Organizational Transformation		CEO Priority
1	KH Health System	4,915,000	24.3%	1,057,743	5.2%	6,661,583	32.9%	-	0.0%	7,594,069	37.5%	-
2	KH Medical Center	9,945,575	17.0%	16,644,695	28.5%	24,375,000	41.8%	1,000,000	1.7%	-	0.0%	5,855,000
10	KH Medical Associates	555,000	21.9%	968,000	38.2%	-	0.0%	-	0.0%	-	0.0%	1,010,800

Browsing the Report Library

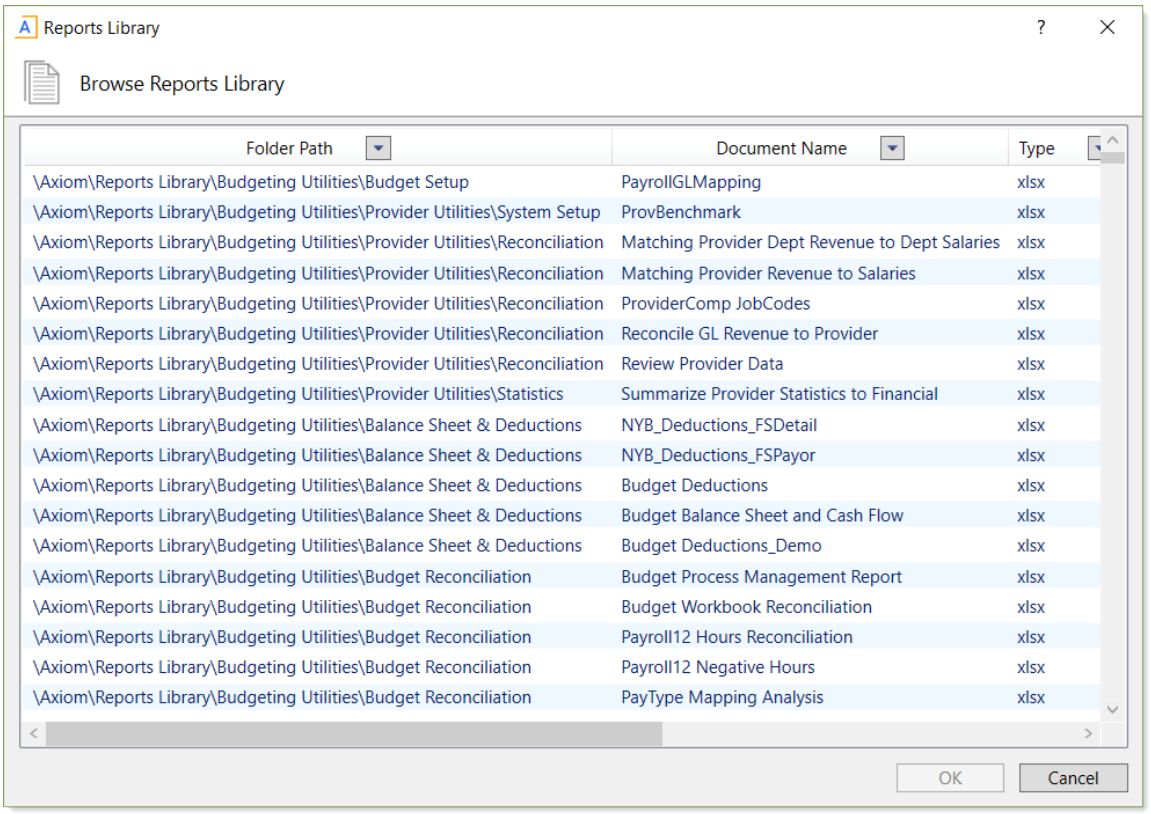
In addition to browsing the report folders in the Axiom Capital Planning task panes, you can search all of the available Axiom reports in the Reports Library.

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**.

Running a web report

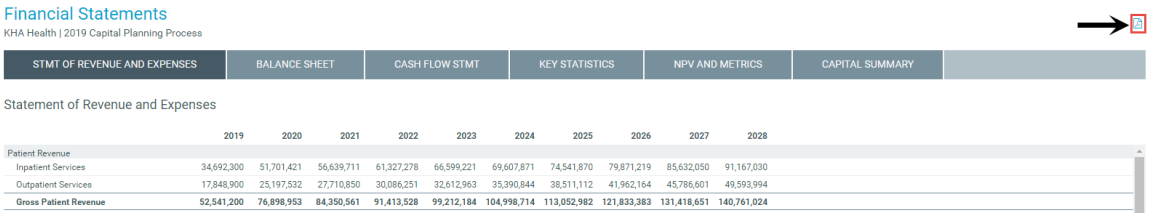
For a list and description of all the reports you can access, see Reports included in Axiom Capital Planning.

To run a web report:

1. In the Cap Plan Admin or Cap Plan task pane, in the **Capital Planning Reports** section, click **Capital Project Web Reports**.
2. Double-click the report to run.
3. On the left side of the screen, do one of the following:

Option	Description
To filter the information to include in the report	a. Select the data to filter the report by. b. Click **Apply**.
To include all of the projects in the report	Leave the fields blank, and click **Apply**.
To configure the way information is ordered in the report	• In the **Sort** drop-down, select the column to sort by. • In the **Order** drop-down, select ascending or descending order.
To remove all of the selections in the filter fields	Click **Clear All**.

4. To print or save a PDF version of the report, in the upper right corner of the report, click the PDF icon.



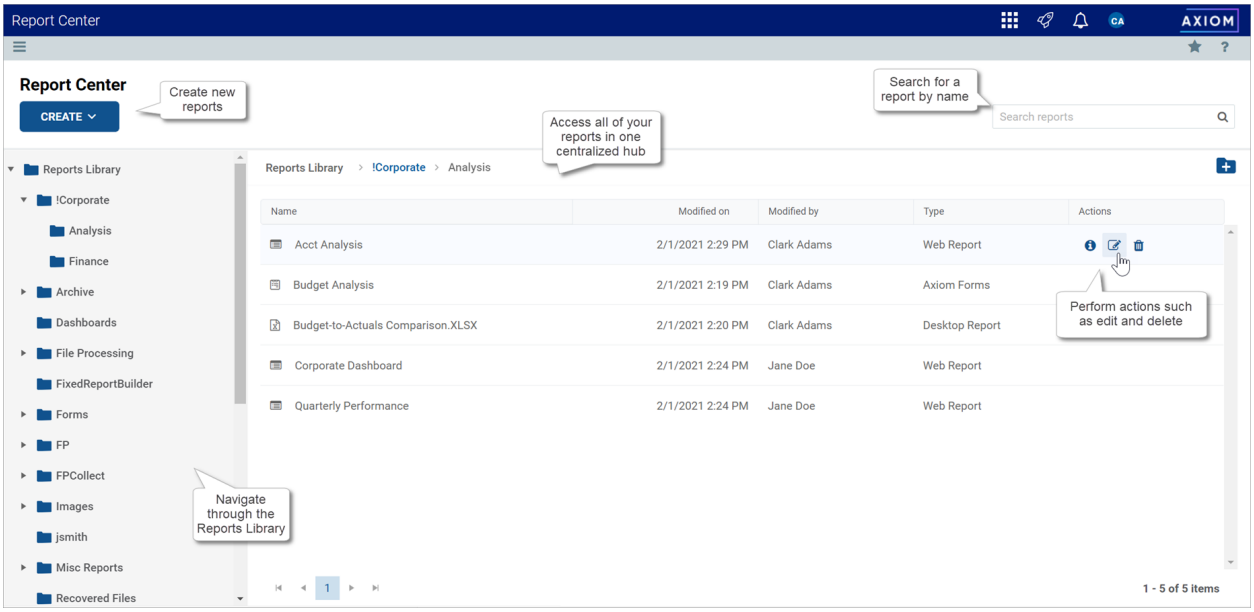
5. From the browser, print or save the report.

Report Center

The Report Center is a centralized hub where you can view any report that you have access to in the Axiom Reports Library—including web reports, Axiom forms, Axiom Intelligence reports, and desktop (spreadsheet) reports.

Using the Report Center, you can:

- View any report you have access to, regardless of the report type
- Create new web reports (all clients) and Axiom Intelligence reports (clients with certain product licenses)
- Open reports for editing, in the appropriate editor for the report type
- Perform other report management activities, such as creating and deleting folders

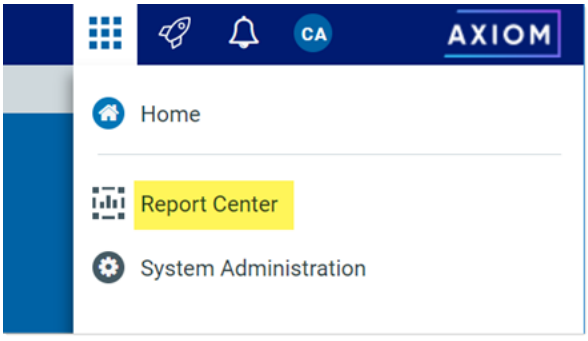


Example Report Center

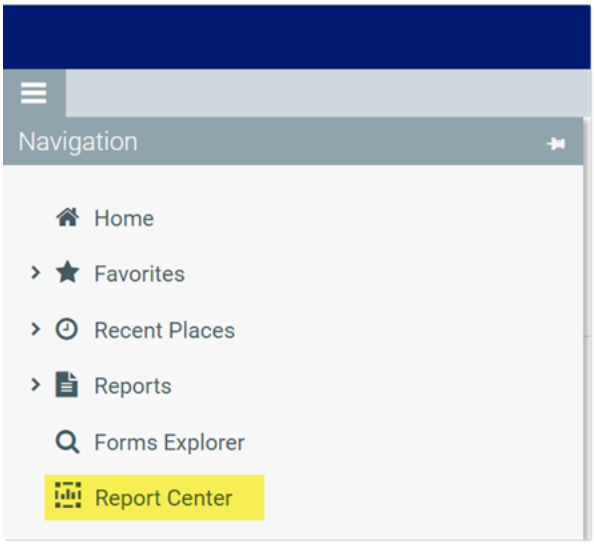
Accessing the Report Center

All users can access the Report Center in the Web Client browser:

- Click the menu icon in the Global Navigation Bar. From the Area menu, select **Report Center**.

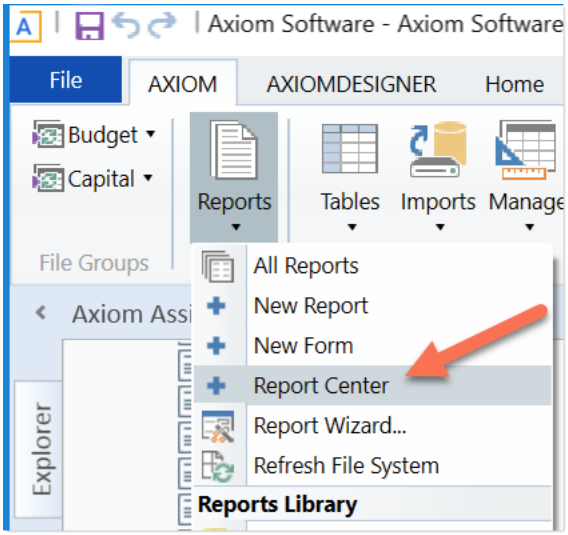


The Report Center may also be accessible from other areas of the Web Client, such as in the left-hand Navigation panel, or from links in product-specific pages.



Report Center in the default Navigation panel

In the Desktop Client, you can open the Report Center from the **Reports** menu. By default this menu is present on the **Axiom** tab. If your system has installed products, it may be available to you on the **Main** tab.



Report Center on the default Reports menu

Opening reports

You can open any report that displays in the Report Center. The Report Center is automatically filtered to only show the reports that you have access to.

To open a report from the Report Center:

1. Do one of the following to locate the report that you want to open:
   - Use the folder tree to navigate to the folder where the report is located.

     OR

   - Use the Search box at the top of the page to search for the report by name.

   For more information on how to search, filter, and sort the Report Center, see Report Center overview.
2. Once the report displays in the Report Center grid, click on the report name to open it.
   - If the report is web-enabled, the report opens in a new browser tab. This applies to web reports, Axiom forms, Axiom Intelligence reports, and deprecated web reports.
   - If the report is a desktop spreadsheet report, Axiom Capital Planning attempts to launch the Axiom Desktop Client and open the report. This works as follows:
     - The launch routine uses the client that you last opened. For example, if you last opened the Axiom Windows Client, then the report is opened in the Windows Client.
     - If a client is already open, the launch routine is skipped and the report is opened in that client.

If other types of files are present in the Reports Library—such as PDF, Word, or PowerPoint—these files can also be opened from the Report Center if you have a program capable of reading the file type. Axiom Capital Planning attempts to open the file using the same routine that opens the Axiom Desktop Client. You must have access to either the Axiom Windows Client or the Axiom Excel Client to open these files.

Creating new reports

You can create new reports using the **Create** button at the top of the Report Center:

- **New web report**: This option opens the web Report Builder so that you can create a new web report from scratch. See Creating new web reports.
- **New report from template**: This option creates a new web report using a template provided by an installed product. See Creating new web reports from template.
- **New Axiom Intelligence report**: This option creates a new Axiom Intelligence report. This option is only available in systems where Axiom Intelligence is licensed and enabled.
- **New fixed row structure**: This option creates a new fixed row structure for use in a web report. See Creating fixed row structures.

Other Report Center actions

In the Report Center, you can use the **Actions** column to perform other report and folder management activities. To view the available actions, navigate to the item that you want to work with, then hover your cursor over the Actions column. Actions are available for report files, report folders, and fixed row structures.

The following actions are available:

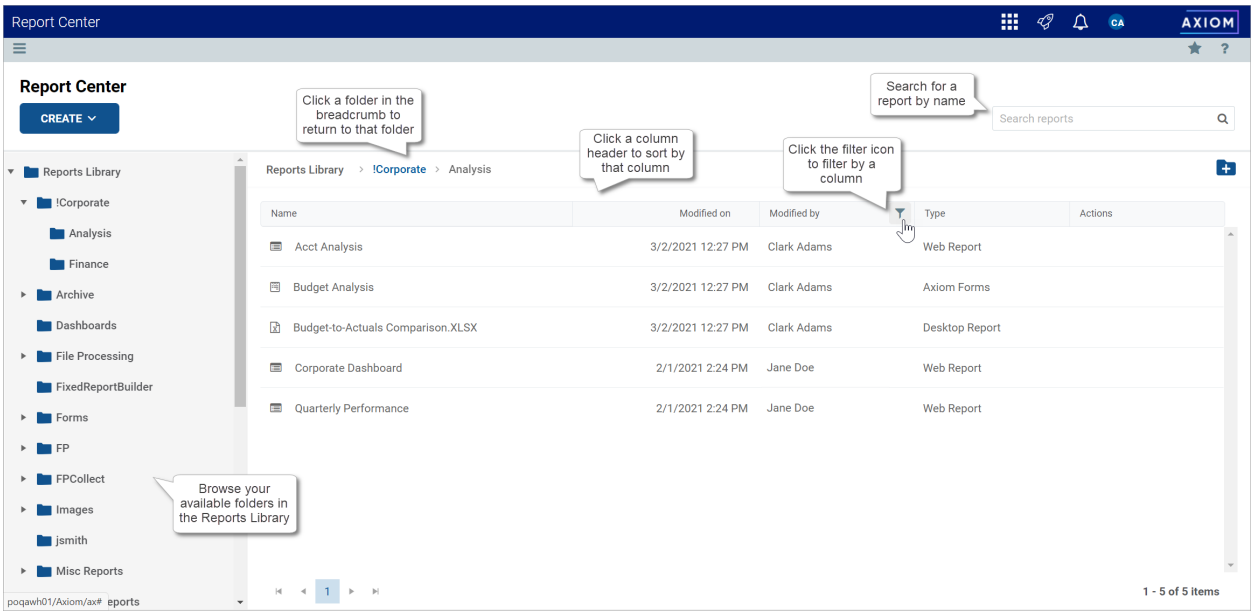
Icon	Action	Description	More Information
	Info	Opens an information panel for the current item. For folders, the panel can also be used to rename the folder.	• Renaming folders
	Edit	Opens the current item in the appropriate editor.	• Editing reports • Editing fixed row structures
	Copy	Generates a copy of the current item. Only available for fixed row structures.	• Copying fixed row structures
	Delete	Deletes the current item.	• Deleting reports • Deleting folders • Deleting fixed row structures

You can also create new folders by clicking the folder icon at the top right of the Report Center.

Report Center overview

Using the left side of the Report Center, you can navigate through the Reports Library folder tree. Once a folder is selected, the contents of that folder display in the report grid. You can click on a subfolder name to open that subfolder, or you can click on a report name to open that report.

As you navigate, a breadcrumb displays at the top of the report grid. You can click on a folder name in the breadcrumb to move to that folder location.



Navigating the Report Center

Searching the Report Center

You can use the Search box in the top right corner of the Report Center to find a report. The search matches on report name only.

To search for a report by name:

- Type your search text into the Search box, and then click the magnifying glass or hit the Enter key to search.

The report grid updates to show a list all reports that match your search text. You can open a report or perform other report actions using this list. You can also filter and sort this list as described in the following sections.

To clear a search:

- Click the **X** icon in the right side of the Search box.

Your search text is cleared, and you are returned to the folder location that you were viewing when you started the search.

Filtering the report grid

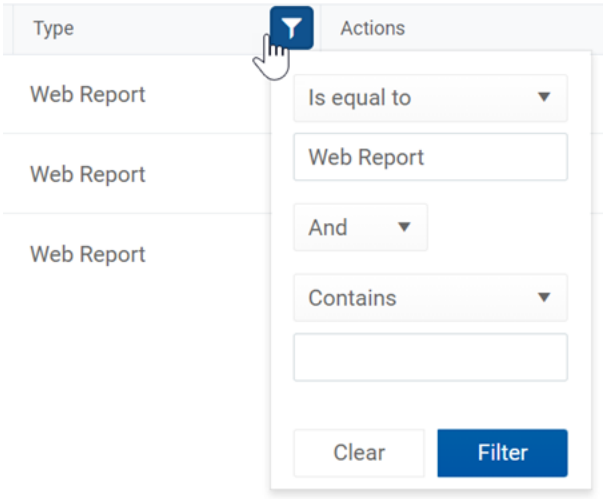
When you are viewing a folder in the Report Center (or when viewing search results), you can filter the contents by any column in the report grid. For example, you can filter to show all reports of a certain type, or to show all reports created after a certain date.

To filter the report grid based on a column:

1. Click the filter icon in the column header to show the filter options.

2. Set the filter options as desired. You can set up to two filter options, combined with either AND or OR.
3. Click **Filter**.

The report grid updates to only show reports that meet the filter. Additionally, the filter icon in the column header is now outlined in blue to indicate that the grid is filtered by this column.



Example Report Center column with a defined filter

If multiple columns are filtered, the filters are combined using AND—meaning the grid only shows records that match all of the filters.

The column filter is retained until you clear it, or until you navigate to a new folder location. If you have filtered the search results, clearing the search results also clears the filter.

To clear a filter:

1. Click the filter icon in the column header to show the filter options.
2. Click **Clear**.

The report grid updates to clear the filter.

Sorting the report grid

When you are viewing a folder in the Report Center (or when viewing search results), you can sort the list by any column in the report grid.

To sort the report grid by a column, click on the column header. Each click toggles between ascending sort, descending sort, and no sort. If the report grid is currently sorted by a column, the sort direction is indicated by an arrow on the column header (up for ascending, down for descending).

The sort is reset when you move to a new folder location. If you have sorted the search results, clearing the search results also clears the sort.

NOTE: The grid can only be sorted by one column at a time. If you have sorted by a column and then you click the column header of a different column, the sort on the original column is cleared and replaced by the new column sort.

Managing report files in the Report Center

Using the Report Center, you can create, edit, and delete reports in the Reports Library.

Creating new reports

You can create new reports using the **Create** button at the top of the Report Center:

- **New web report**: This option opens the web Report Builder so that you can create a new web report from scratch. See Creating new web reports.
- **New report from template**: This option creates a new web report using a template provided by an installed product. See Creating new web reports from template.
- **New Axiom Intelligence report**: This option creates a new Axiom Intelligence report. This option is only available in systems where Axiom Intelligence is licensed and enabled.
- **New fixed row structure**: This option creates a new fixed row structure for use in a web report. See Creating fixed row structures.

Different security permissions are required to create new web reports versus Axiom Intelligence reports. These security requirements are detailed in the relevant topics.

Editing reports

You can open a report for editing from the Report Center if the report is eligible to be edited, and you have read/write permissions to the report.

To edit a report from the Report Center:

1. In the Report Center, locate the report that you want to edit. You can use folder navigation to find the report, or use the Search box at the top of the page.
2. Once the report displays in the Report Center grid, hover your cursor over the **Actions** column to make the action icons visible, then click on the Edit icon .
3. The report is opened for editing as follows, depending on its file type:
   - **Web reports** are opened in the Report Builder, in a new browser tab.
   - **Axiom Intelligence reports** are opened in the Axiom Intelligence Report Editor, in a new browser tab.
   - **Desktop reports** and **Axiom forms** are opened in the Axiom Windows Client, as spreadsheet report files.

Why is the Edit icon missing for some reports?

The following report types *cannot* be opened for editing from the Report Center. The Edit icon does not display for these files:

- **Web reports built from template**: If a web report is built from a template, the report is tied to that template and cannot be separately edited. For more information, see Creating new web reports from template.
- **Deprecated web reports**: The prior implementation of web reporting is deprecated. To edit a deprecated web report, click the file name to open the report, then click the wrench icon in the toolbar to open the legacy web report editor.
- **Other non-report file types**: The Reports Library can be used to store other non-report, non-Axiom file types, such as PDF, DOC, PPT, JPG, and others. These file types cannot be edited in Axiom Capital Planning.

Why is the Edit icon disabled for some reports?

If the Edit icon is present but disabled, this means that although the report type is eligible to be edited, it is not possible for you to edit this particular report. One of the following reasons may apply:

- You do not have edit permissions (Read/Write access) to the file.
- The file is product-controlled and therefore cannot be edited.
- The file is configured to prevent editing (applies to certain Axiom Intelligence reports).

▶ Deleting reports

If a report is no longer needed, you can delete it using the Report Center. In order to delete a report (or any other file that resides in the Reports Library), you must have read-write access to the file and to the folder it resides in.

NOTE: In systems with installed products, product-controlled reports cannot be deleted.

To delete a report:

1. In the Report Center, locate the report that you want to delete. You can use folder navigation to find the report, or use the Search box at the top of the page.
2. Hover your cursor over the row with the report, then in the **Actions** column, click the Delete icon 🗑.

   If the report cannot be deleted, the Delete icon is disabled. This may occur because you do not have the necessary permissions to delete the report, or because the report belongs to an installed product.
3. When you are prompted to confirm that you want to delete the report, click **OK**.

The report is deleted from the system and no longer displays in the Report Center. If the report was deleted in error, an administrator may be able to restore the report using the **Restore Deleted Files** feature in the Desktop Client.

Managing folders in the Report Center

Using the Report Center, you can create, rename, and delete folders in the Reports Library.

Creating new folders

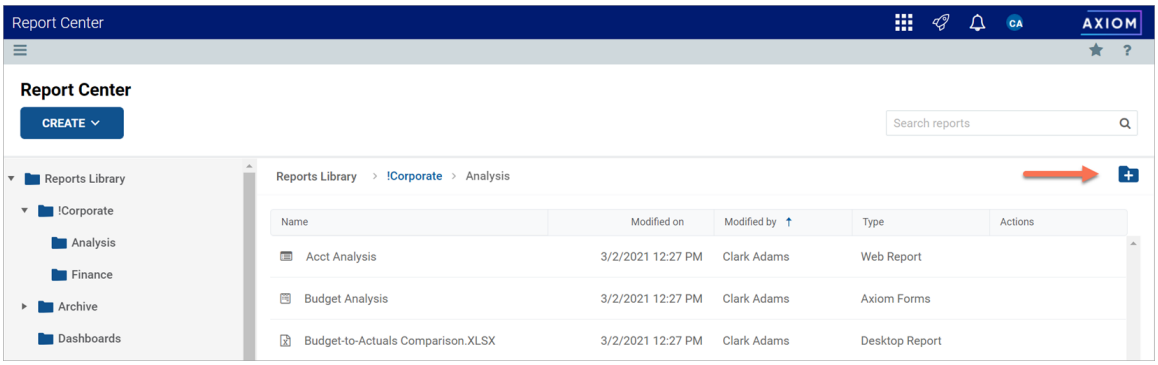
You can create new folders as needed in the Report Center. In order to create a folder, you must have read-write access to the parent folder.

To create a folder:

1. In the Report Center, navigate to the parent folder of the location where you want to create a new folder.

   For example, if you want to create a new top-level folder in the Reports Library, select the Reports Library. If you want to create a new folder underneath a folder such as Reports Library > Corporate Reports, then select the Corporate Reports folder.

2. Click the new folder icon at the top right of the Report Center grid.



3. In the **Create new folder** dialog, enter a name for the new folder, then click **OK**.

The new folder is created in the current location.

Renaming folders

You can rename folders as needed in the Report Center. In order to rename a folder, you must have read-write access to the folder.

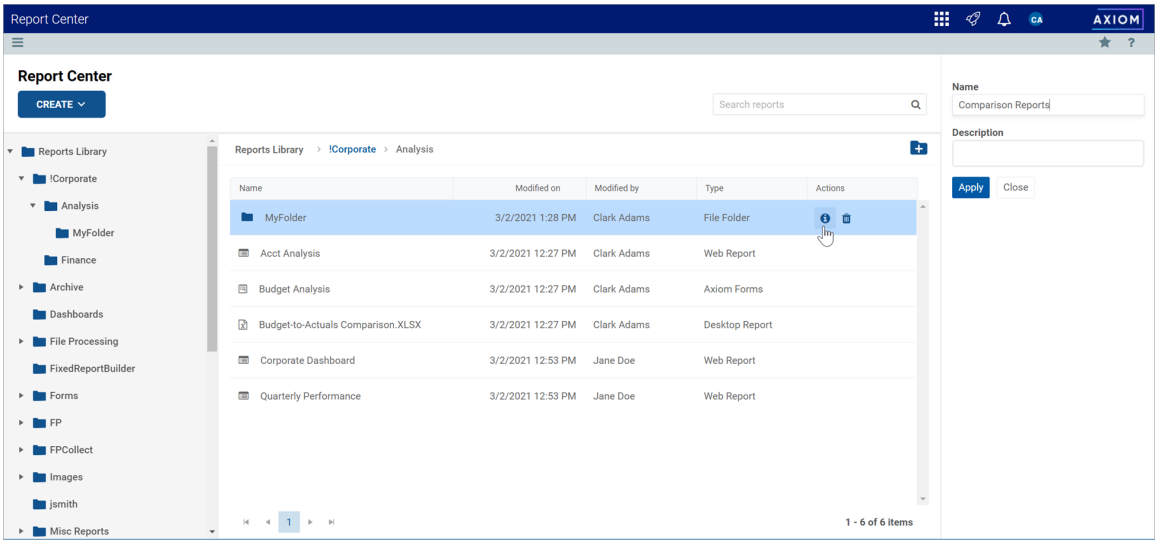
NOTE: In systems with installed products, product-controlled folders cannot be renamed.

To rename a folder:

1. In the Report Center, navigate to the parent folder of the folder that you want to rename, so that the folder you want to rename displays in the Report Center grid.
2. Hover your cursor over the row with the folder, then in the **Actions** column, click the Info icon .

   The Information panel opens along the right-hand side of the page.

3. In the Information panel, type the new folder name info the **Name** field, then click **Apply**.



   If the folder cannot be renamed, the **Apply** button does not display. This may occur because you do not have the necessary permissions to rename the folder, or because the folder belongs to an installed product.

The folder is renamed.

Deleting folders

If a folder is no longer needed, you can delete it using the Report Center. In order to delete a folder, the folder must be empty and you must have read-write access to the folder.

NOTE: In systems with installed products, product-controlled folders cannot be deleted.

To delete a folder:

1. In the Report Center, navigate to the parent folder of the folder that you want to delete, so that the folder you want to delete displays in the Report Center grid.
2. Hover your cursor over the row with the folder, then in the **Actions** column, click the Delete icon .

   If the folder cannot be deleted, the Delete icon is disabled. This may occur because you do not have the necessary permissions to delete the folder, or because the folder belongs to an installed product.

The folder is deleted from the system and no longer displays in the Report Center. There is no confirmation dialog before deleting an empty folder. If the empty folder was deleted in error, you can create a new folder with the same name.

Web Reports

Axiom web reports provide a fully browser-based reporting option for Axiom Capital Planning data. You can create, edit, and view web reports all within the Axiom Capital Planning Web Client.

Web reports are designed to be intuitive for report designers to build, and easy for report viewers to use. The Report Center provides a centralized hub to create new web reports and to view any report that you have access to.

Web reports support two different ways to display reporting data in a grid:

- **Dynamic rows**: Dynamically display data rows based on a specified dimension or grouping.
- **Fixed rows**: Use predefined fixed row structures to organize data rows into sections with headers, totals, and subtotals.

Web reports can be created from scratch using the Report Builder, or you can create them from templates provided by installed Axiom Capital Planning products.

Managing web reportsWeb Reports

Using the Report Center in the Axiom Capital Planning Web Client, you can create, edit, and delete web reports as needed. Web reports are designed to be intuitive for report builders to create, and easy for end users to consume.

▶ Creating new web reports

You can create new web reports using the **Create** button in the Report Center:

- New web report: This option opens the Report Builder so that you can create a new web report from scratch.
- New web report from template: This option creates a new web report based on a template provided by an installed product.

If you want to create a web report that uses a fixed row structure, the fixed row structure must be defined separately and then assigned to the report. Using the Report Center, you can create, edit, and delete fixed row structures. For more information, see Managing Fixed Row Structures fixed row structures for web reports.

In order to create a web report, you must be an administrator or have the **Create Web Reports** security permission. You must also have read/write access to at least one folder in the Reports Library.

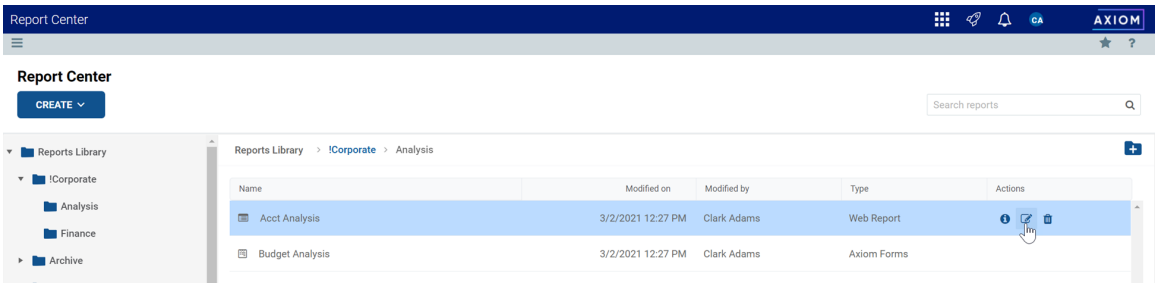
▶ Editing web reports

You can open a web report for editing from the Report Center if the report is eligible to be edited, and you have read/write permission to the report.

Only one user at a time can open a web report for editing in the Report Builder. However, other users can continue to view the report as normal.

To edit a web report from the Report Center:

1. In the Report Center, locate the web report that you want to edit. You can use folder navigation to find the report, or use the Search box at the top of the page.
2. Once the web report displays in the Report Center grid, hover your cursor over the **Actions** column to make the action icons visible, then click on the Edit icon .



   If the Edit icon is present but disabled, then you cannot edit this report. This may be because the report belongs to an installed product and cannot be edited, or because you do not have read/write access to the report.

The report opens in the Report Builder, in a new browser tab. You can now edit it as needed. For more information, see Using the Report Builder.

NOTE: Currently, it is not possible to "save as" in the Report Builder. If you want to create a copy of an existing web report, you must use Axiom Explorer in the Desktop Client to copy the file.

Deleting web reports

You can delete a client-created web report if it is no longer needed. You must have read/write access to the report and its folder in order to delete a report. Product-controlled web reports cannot be deleted.

Reports can be deleted from the Report Center in the Axiom Capital Planning Web Client, or from Axiom Capital Planning Explorer in the Axiom Desktop Client.

TIP: If a report is deleted in error, an administrator may be able to restore the report using the **Restore Deleted Files** feature in the Axiom Desktop Client.

To delete a web report from the Report Center:

1. In the Report Center, locate the web report that you want to delete. You can use folder navigation to find the report, or use the Search box at the top of the page.
2. Hover your cursor over the row with the web report, then in the **Actions** column, click the **Delete** icon.

   If the report cannot be deleted, the Delete icon is disabled. This may occur because you do not have the necessary permissions to delete the report, or because the report belongs to an installed product.

3. When you are prompted to confirm that you want to delete the report, click **OK**.

The report is deleted from the system and no longer displays in the Report Center.

To delete a web report from Axiom Explorer:

1. Launch the Desktop Client.
2. On the **Axiom** tab, in the **Administration** group, click **Manage > Axiom Explorer**.

   NOTE: If your system uses installed Axiom products, you can access this feature from the **Admin** tab. Click **System Browser** to open Axiom Explorer.

   TIP: You can also use the Explorer task pane to delete a web report.

3. Navigate to the **Reports Library**, and then locate the web report that you want to delete.
4. Right-click the report and then select **Delete**.
5. When you are prompted to confirm that you want to delete the report, click **Yes**.

The report is deleted from the system and no longer displays in Axiom Explorer.

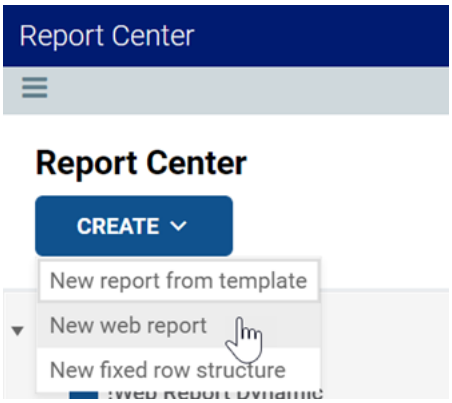
Creating new web reports

Using the Report Center, you can create new web reports from scratch so that you can build the report as needed.

In order to create a web report, you must be an administrator or have the **Create Web Reports** security permission. You must also have read/write access to at least one folder in the Reports Library. If you do not have permission to create web reports, then the option to create a new web report will not be available from the **Create** button in the Report Center. If the **Create** button does not have any available options to display, then the button is hidden entirely.

To create a new web report:

1. In the Report Center, click **Create > New web report**.

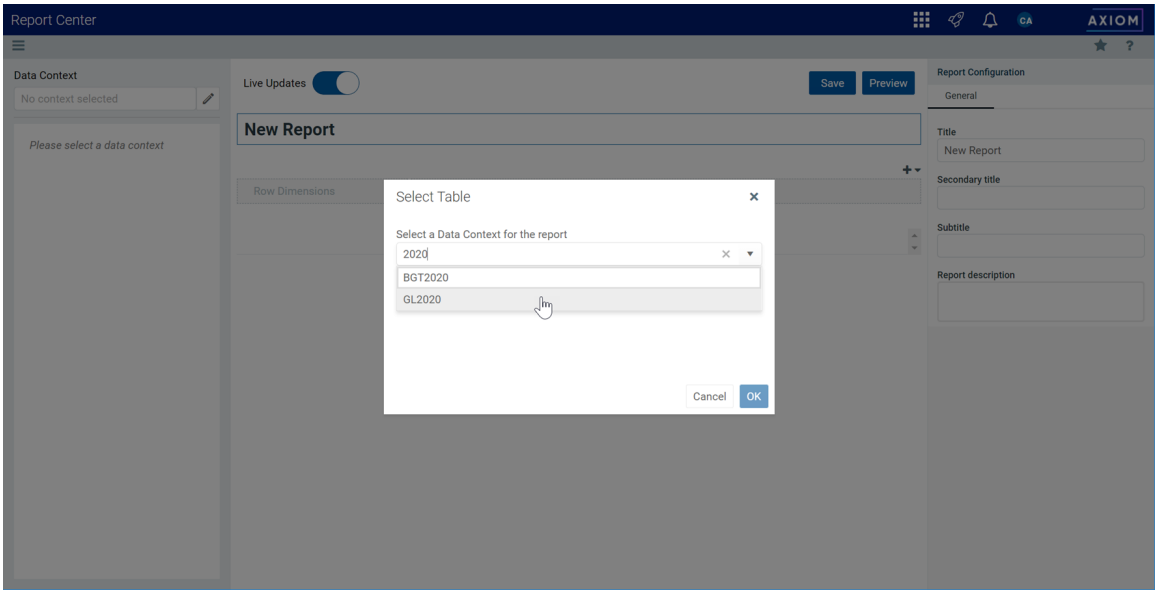


The Report Builder opens in a new tab, displaying a new blank report.

2. In the **Select Table** dialog, select a primary table to determine the data context for the report, then click **OK**.

   You can select a table from the drop-down list directly, or type into the box to search for a table name. The search uses "contains" matching to return any tables that contain the search text within the table name. In the following screenshot, the text `2020` has been used to search for tables with the year 2020 in the name.

   The *data context* determines the overall pool of data that is eligible to be included in the report. The selected primary table determines which other tables are eligible for inclusion in the report, based on lookup relationships. All table columns and filters used in the report must be compatible in the context of the primary table.



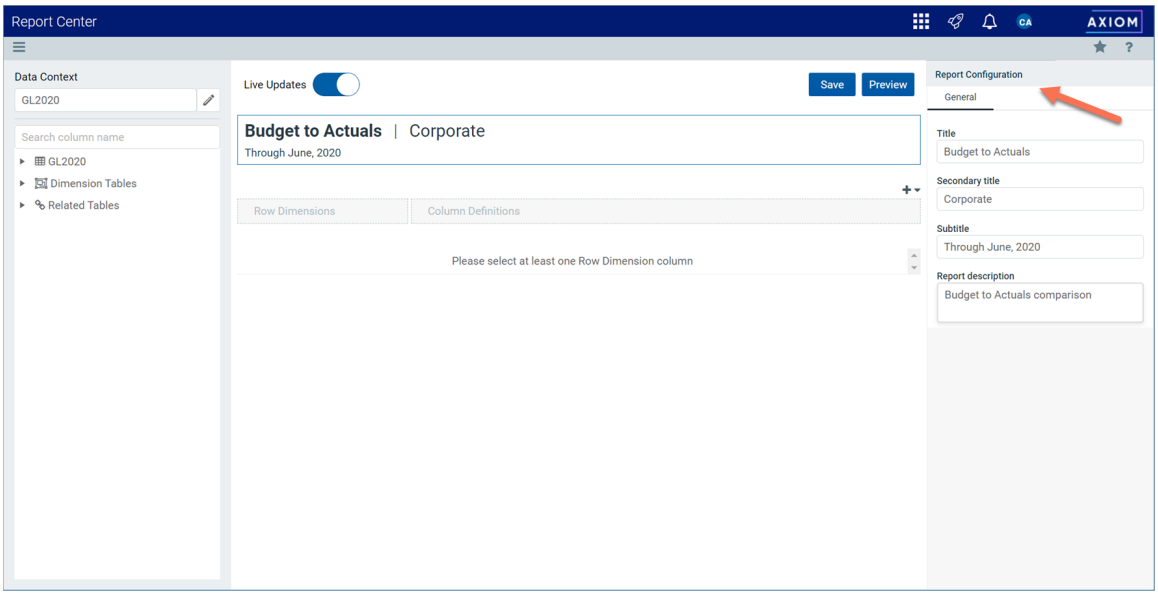
Although you can click **Cancel** if you are not ready to select a primary table for the data context, most activities in the Report Builder require a data context to be selected.

Once a table is selected for the data context, you can work with the report in the Report Builder. The Report Builder consists of three main areas as follows:

- The **Data Panel** on the left side is where you select the data to include in your report.
- The **Report Canvas** in the middle is where you build the report. Columns can be dragged and dropped from the Data Panel to the Report Canvas. You can also create calculations to display in the report columns, and define column groups.
- The **Configuration Panel** on the right side is where you define properties for the report, the data grid, and the individual columns. You can configure properties such as report titles, drilling and filtering options, and column formatting.

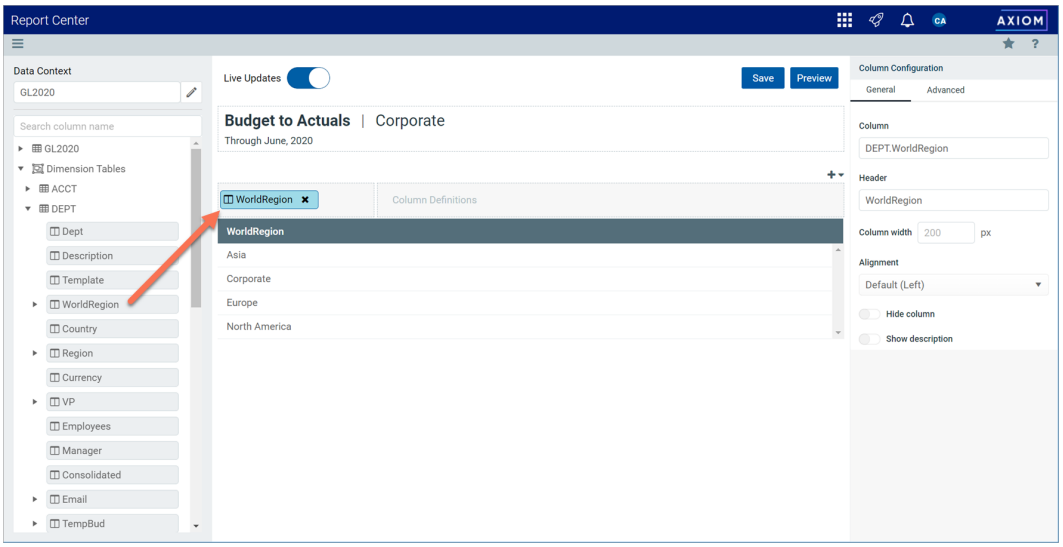
For more information on using the Report Builder, see Using the Report Builder.

3. In the **Report Configuration** panel along the right side of the page, define the report titles and description as needed. For more information, see Configuring report properties for a web report.



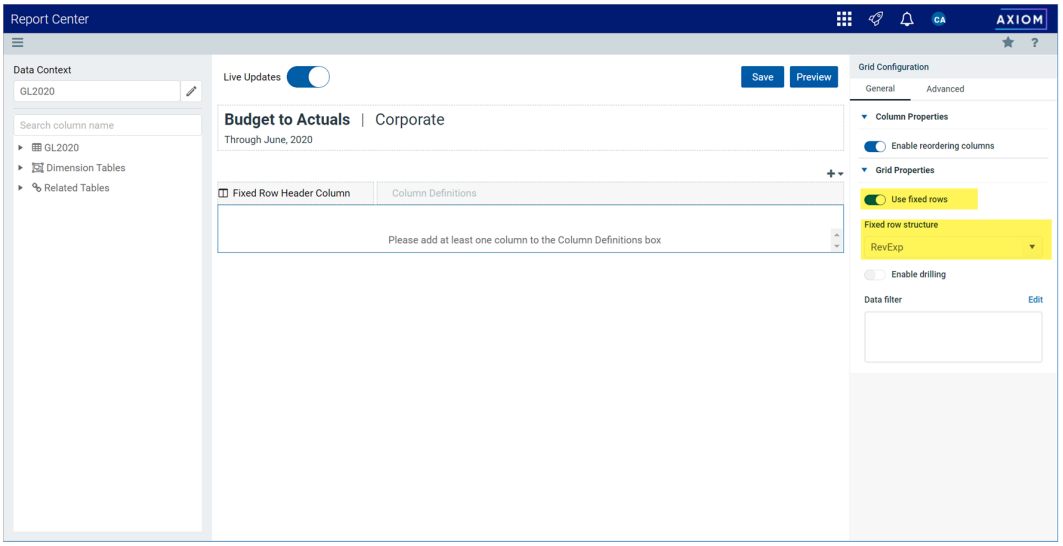
4. Define the rows of the report by doing one of the following, depending on whether you want to generate the rows dynamically or use a fixed row structure:
   - **Dynamic rows**: In the Data Panel, locate the table column that you want to use as the row dimension. Drag and drop the column to the **Row Dimensions** box in the Report Canvas.

     Once you drag and drop a column to use as a row dimension, the rows of the report dynamically populate based on the values in that column. For more information, see Specifying the row dimension for a web report.



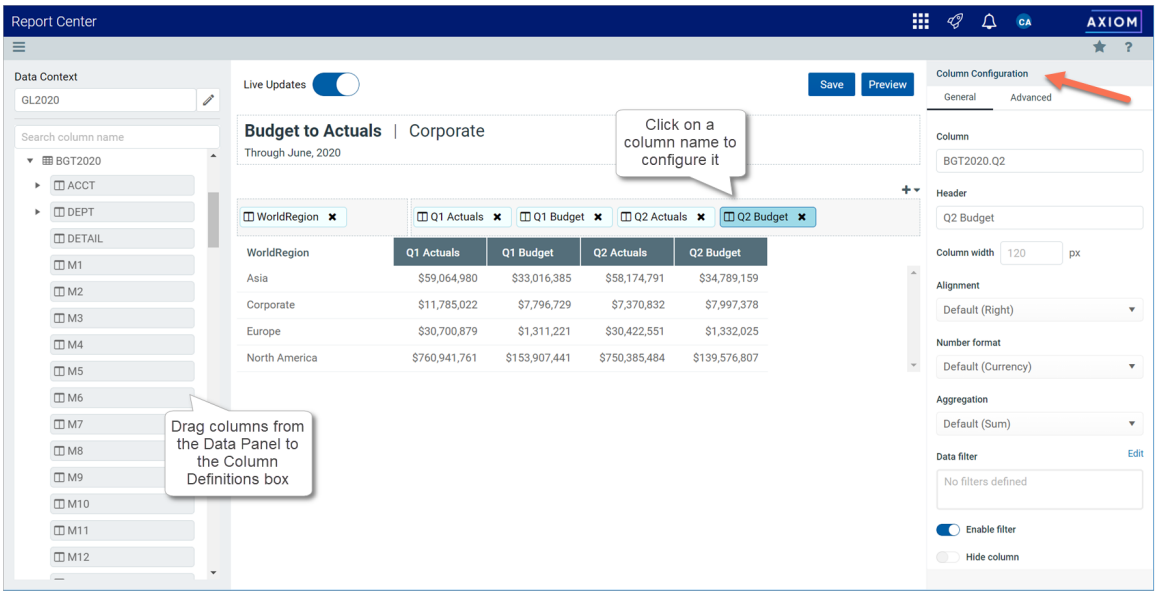
- **Fixed rows**: Select the placeholder text in the Report Canvas so that the **Grid Configuration** properties load into the Configuration Panel. On the **General** tab, enable **Use fixed rows** then select an existing **Fixed row structure**. For more information, see Specifying the fixed row structure for a web report.

  In this case, the rows will not load into the Report Canvas area until at least one data column is added to the Column Definitions box.



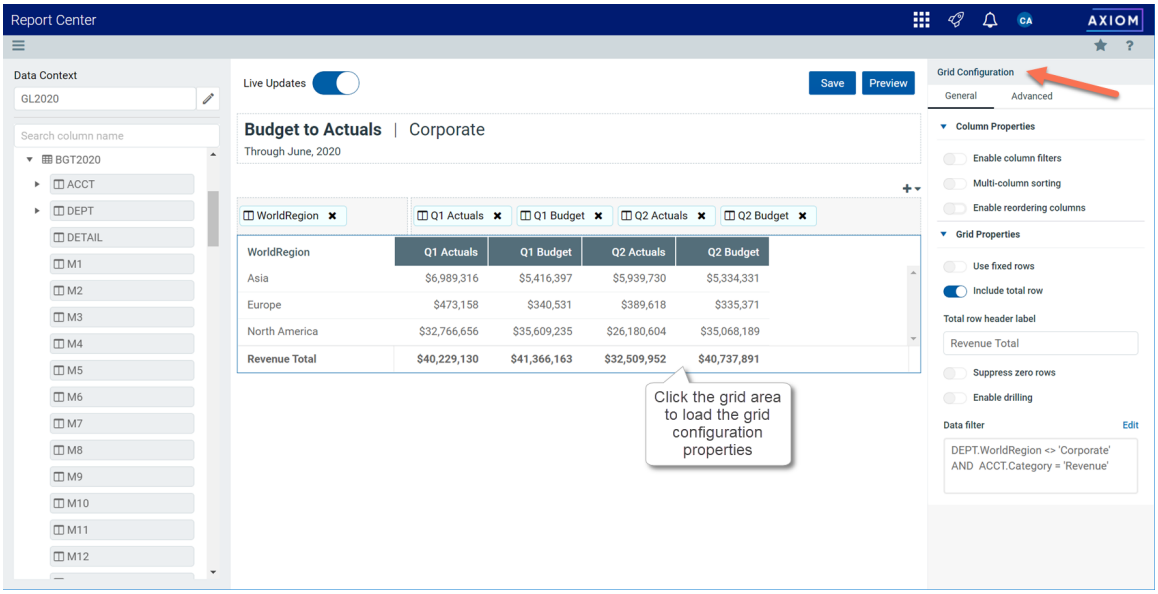
5. Use the Data Panel to locate the data columns that you want to display in the report, then drag and drop those columns out to the **Column Definitions** box in the Report Canvas. Once the columns are added to the grid, you can configure data and display properties for each column.

   For more information, see Adding data columns and calculated columns to a web report and Configuring column properties for a web report.

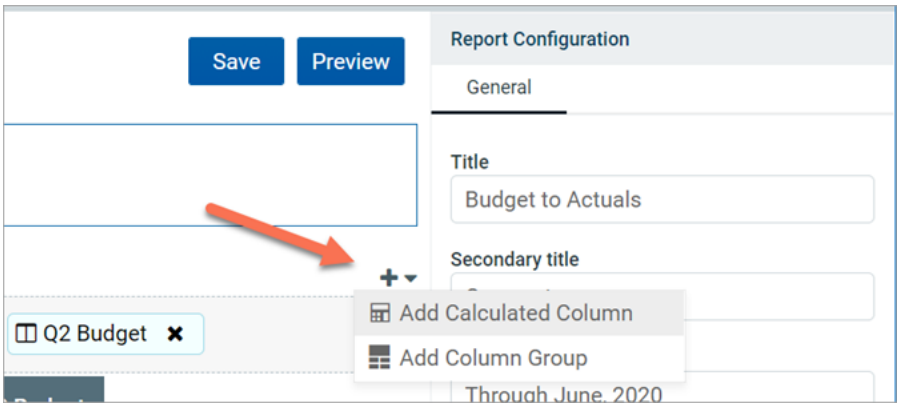


6. Select the grid in the report canvas so that the configuration panel changes to show the **Grid Configuration** settings. Define the grid settings as needed, such as to enable the total row, or define a data filter, or enable drilling options. For more information, see Configuring grid properties in a web report.

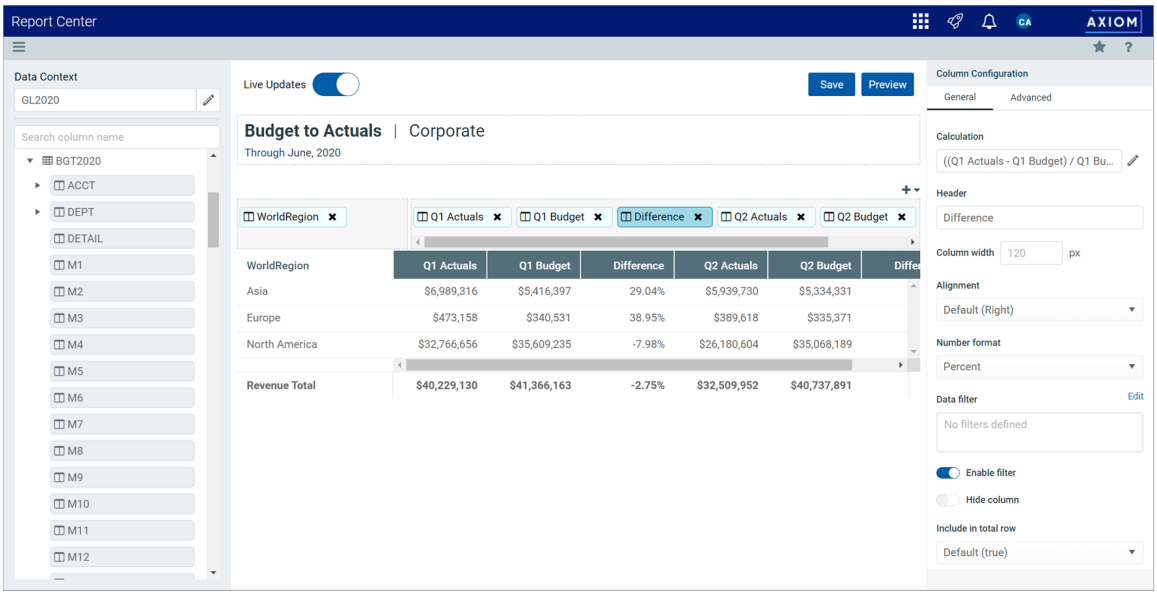
   In the following example, a filter has been defined for the grid which affects both the data displayed in the report and the row values. Additionally, the total row was enabled.



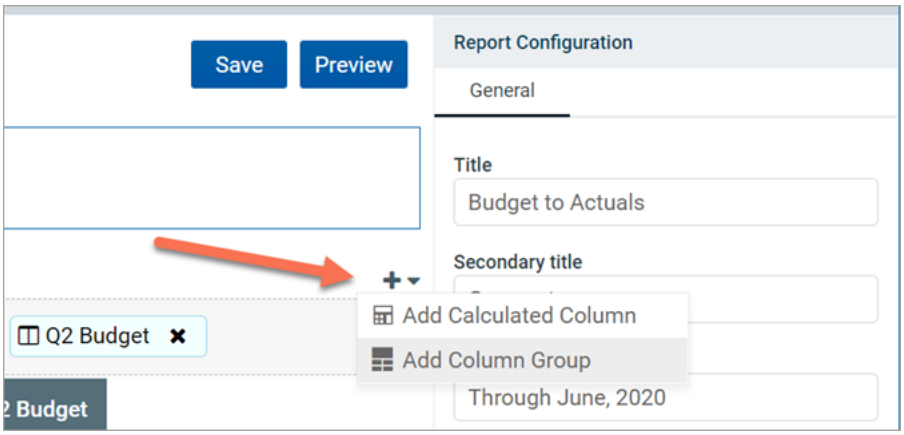
7. Use the plus icon at the top right of the **Column Definitions** box to add calculated columns to the grid as needed. For more information, see Adding data columns and calculated columns to a web report.



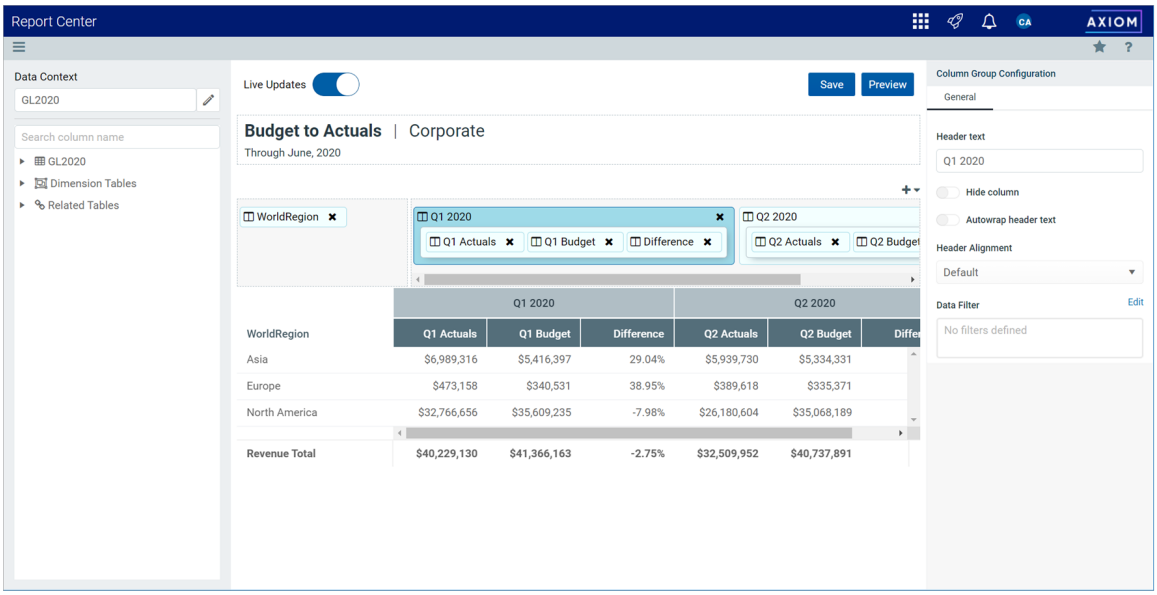
In the following example, two calculated columns have been added to calculate the difference between actuals and budget for each quarter.



8. Use the plus icon at the top right of the **Column Definitions** box to add column groups to the grid as needed. Using column groups, you can display multiple columns grouped underneath a header. For more information, see Defining column groups for a web report.



In the following example, two column groups have been added for Q1 and Q2.



9. Click **Save** to save the report.
10. In the **Save Report As** dialog, complete the following fields and then click **Save**:

Item	Description
File name	The name of the report file. This is the name that users will see in the Report Center.
Description	Optional. A description of the report. Currently, descriptions do not display in the Report Center, but they can be viewed in the Axiom Capital Planning Desktop Client using Axiom Explorer.
Save to folder	The folder in the Axiom repository where you want to save the report. • Click the folder icon to the right of the field. • In the **Choose output folder** dialog, select a folder in the Reports Library. You can only select folders where you have read/write access to the folder. If a folder name displays with a lock icon, this means you have read-only access to that folder and therefore cannot save a new report there. • Click **OK** to choose the folder and return to the save dialog. The path to your selected folder now displays in the field.

If you use a file name that already exists in the target folder, you will be prompted to choose whether or not to overwrite the existing file. If you choose not to overwrite, you are returned to the Save Report As dialog so that you can use a different name and/or output folder.

Keep in mind that many of these steps can be done in any order. You can configure the grid settings before defining report titles, and so on. The main dependency is that you must select a primary table for the data context before you can begin adding columns to the report.

Creating new web reports from template

Using the Report Center, you can create new web reports from a template. Currently, templates are only provided by installed Axiom Capital Planning products. For more information about any templates provided by your installed products, see the separate product documentation.

Some report templates require a fixed row structure to define the row dimensions and sections of the report. If you want to create a new web report from a template that requires a fixed row structure, this row structure must already exist so that you can assign it to the report when you create it. For more information, see Managing Fixed Row Structures fixed row structures for web reports.

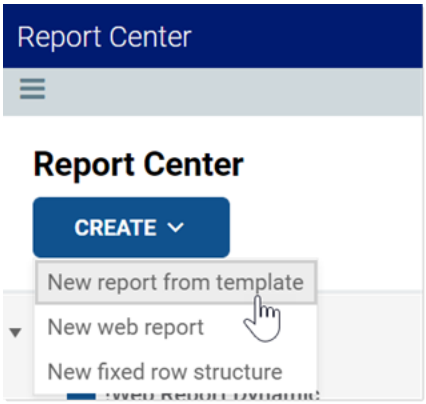
Web reports created from template remain linked to that template. If a template changes, that change is automatically available in all reports created from that template.

In order to create a web report, you must be an administrator or have the **Create Web Reports** security permission. You must also have read/write access to at least one folder in the Reports Library. If you do

not have permission to create web reports, then the option to create a new web report from template will not be available from the **Create** button in the Report Center. If the **Create** button does not have any available options to display, then the button is hidden entirely.

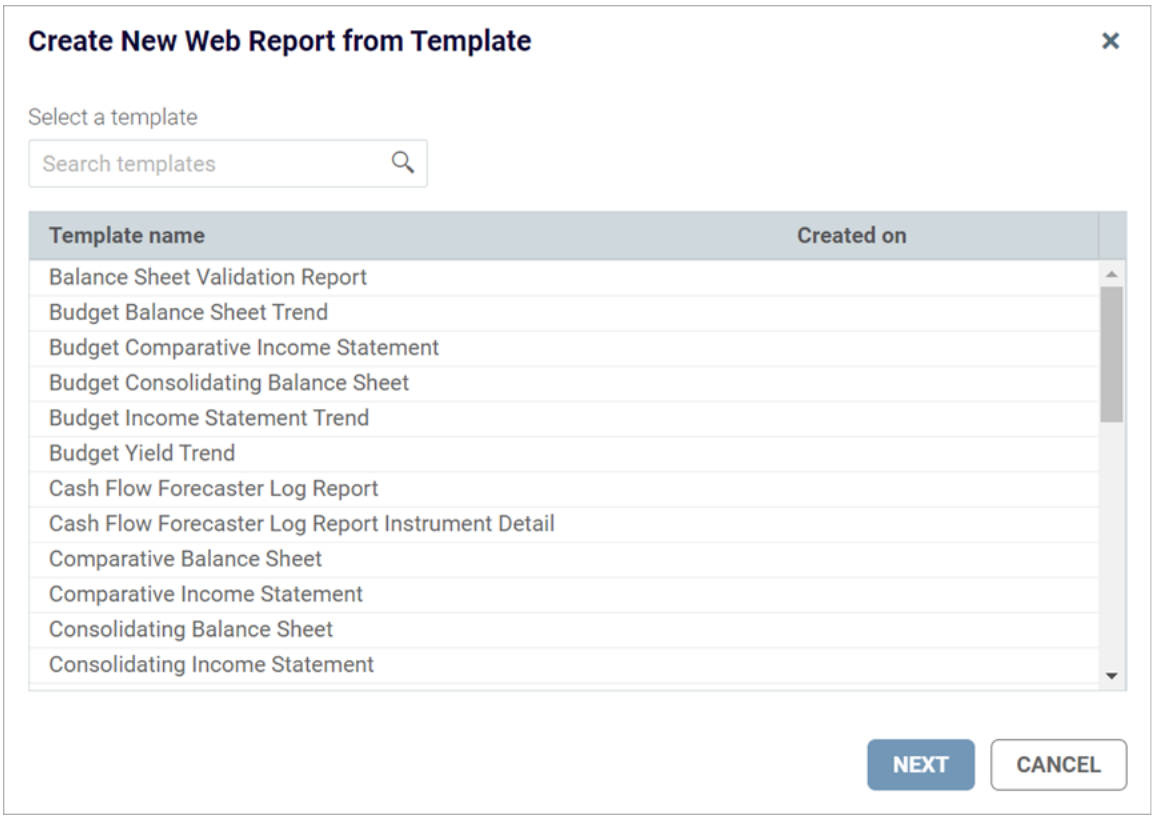
To create a new web report from template:

1. In the Report Center, click **Create** > **New report from template**.



   The **Create New Web Report from Template** dialog opens to walk you through the report creation process.

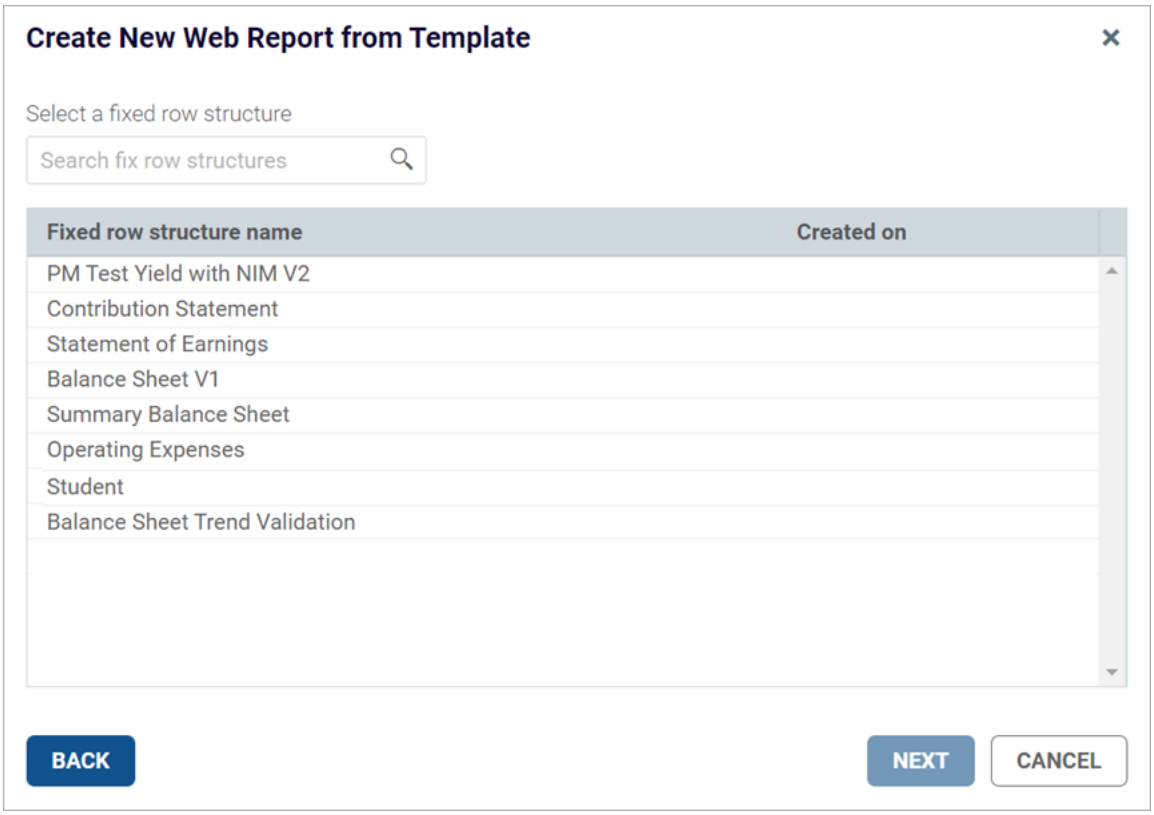
2. On the template screen, select the template that you want to use to create the report, and then click **Next**.



Example template screen showing product-delivered templates

NOTE: If no templates are listed, then your system does not have any available web report templates. You can click **Cancel** to exit the dialog and return to the Report Center.

3. On the fixed row structure screen, select the fixed row structure to use in the report, and then click **Next**. If the template you selected does not use a fixed row structure, then this screen does not display and you can skip to step 4.



NOTE: If no fixed row structures are listed, then your system does not have any available fixed row structures. You must create one before you can create a web report using the selected template. You can click **Back** to select a different template, or you can click **Cancel** to exit the dialog and return to the Report Center. For more information, see Managing Fixed Row Structures fixed row structures for web reports.

4. On the final screen, complete the following fields to save the new report, and then click **Create**.

Item	Description
Name	The name of the report file.
Description	Optional. A description for the report.

Item	Description
Save report in	The folder in the Axiom repository where you want to save the report. • Click the folder icon to the right of the field. • In the **Choose output folder** dialog, select a folder in the Reports Library. You can only select folders where you have read/write access to the folder. If a folder name displays with a lock icon, this means you have read-only access to that folder and therefore cannot save a new report there. • Click **OK** to choose the folder and return to the save dialog. The path to your selected folder now displays in the field.

The report is opened in a new browser tab. You can now review the data using a variety of tools available to web reports, such as sorting, filtering, and drilling. For more information, see Viewing and exploring data in web reports.

Once a report is created from template, it cannot be edited—for example, to choose a different fixed row structure. If you want to use a different fixed row structure, create a new report from template again. Remember that any changes to the template or to the fixed row structure will automatically flow through to all reports that use the template or the fixed row structure.

Using the Report Builder

Using the Report Builder, you can create and edit web reports using a drag-and-drop interface. Web reports are intended to be intuitive for report builders to create and easy for report viewers to use.

Web reports support two different ways to display reporting data in a grid:

- **Dynamic rows**: Dynamically display data rows based on a specified dimension or grouping.
- **Fixed rows**: Use predefined fixed row structures to organize data rows into sections with headers, totals, and subtotals.

The Report Builder opens when you do either of the following:

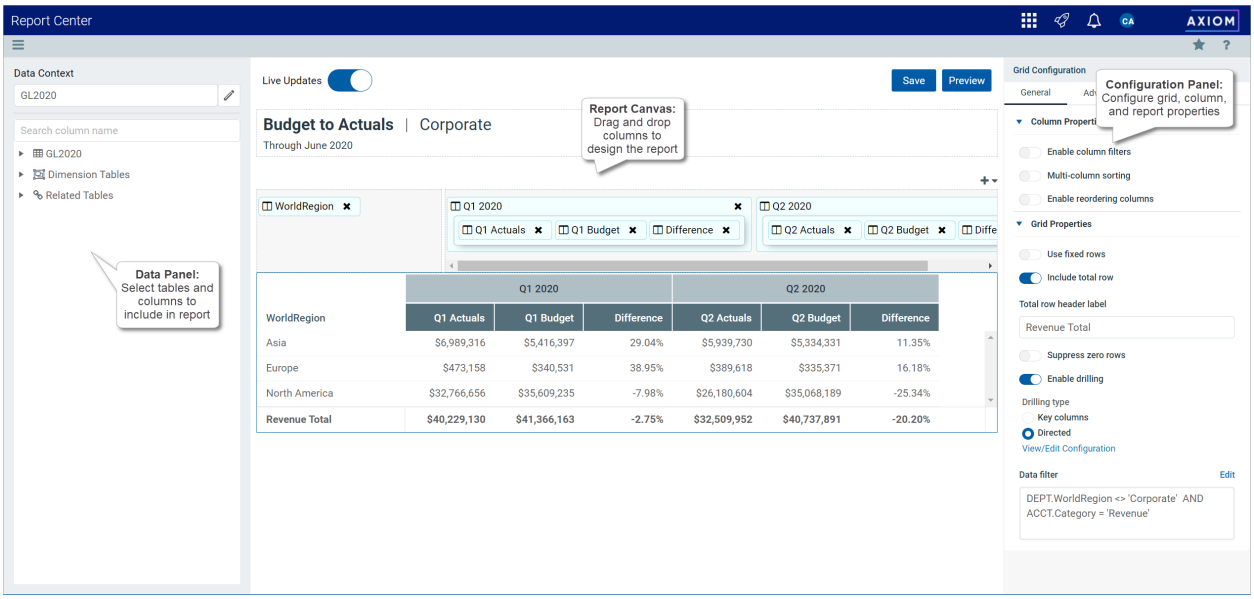
- Create a new web report from the Report Center.
- Edit an existing web report from the Report Center.

Overview of Report Builder

The Report Builder has three main areas:

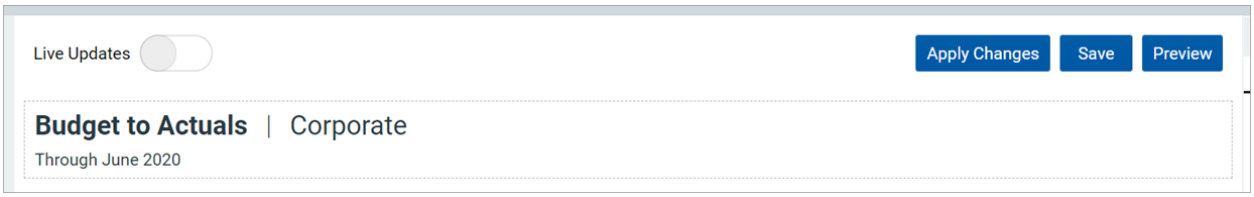
- The **Data Panel** on the left side is where you select the data to include in your report.
- The **Report Canvas** in the middle is where you build the report. Columns can be dragged and dropped from the Data Panel to the Report Canvas. You can also create calculations to display in the report columns, and define column groups.

- The **Configuration Panel** on the right side is where you define properties for the report, the data grid, and the individual columns. You can configure properties such as report titles, drilling and filtering options, and column formatting.



Overview of the Report Builder

As you build and configure the report, a limited preview of the grid displays in the Report Canvas area, so that you can see the effect of your choices in real time. If you want to work on the report without this live update, you can disable the **Live Updates** toggle at the top of the canvas. When live updates are disabled, a new **Apply Changes** button displays at the top of the canvas. You can use this button to manually refresh the preview (or you can re-enable **Live Updates**).



Report Builder with Live Updates disabled

Building a report in the Report Builder

The following is an overview of how to build a report in the Report Builder:

- Define a data context: Each report must have a specified primary table to determine the data context for the report. Once the data context is defined, you can build the report using columns from the primary table and from related tables.

- Define the grid rows: Web reports can use dynamically generated rows based on a dimension, or they can use a fixed row structure. Do one of the following depending on the type of report that you want to make:
    - For dynamic rows, add a row dimension to the grid by dragging and dropping a table column.
    - For fixed rows, specify a fixed row structure by modifying the grid properties.
- Add data columns and calculated columns: Drag and drop table columns out to the grid to define the data columns for the report, and define calculated columns as needed. You can also define column groups to create grouped headers in the report.
- Configure report properties: Define report title text and an optional report description.
- Configure grid properties: Configure grid properties such as a data filter and user interaction options. This includes enabling and configuring drilling options as needed.
- Configure column properties: Configure properties for each column such as alignment, width, number format, and column filters.

Previewing a report

Although the grid shown in the Report Canvas updates in response to report configuration changes made in the Report Builder, it is not intended to be a fully live representation of the report. If you want to see how the report will appear to end users without leaving the Report Builder, click the **Preview** button at the top of the Report Canvas.

The report preview opens in a separate dialog that overlays the Report Builder. Using this preview, you can try out end-user features like sorting, filtering, and drilling the report. When you are done viewing the preview, click **Close** at the bottom of the dialog to return to the Report Builder.

NOTE: If you drill the report preview, the drill results open in a new browser tab.

Saving a report

Use the **Save** button at the top of the Report Canvas to save the report. If the report is a brand new report, you will be prompted to define a name and folder location for the report. Otherwise, the existing report is saved.

If you have made changes to the report but have not yet saved, you will be prompted to save when you attempt to close the browser tab or navigate to a new location.

NOTE: Currently, it is not possible to "save as" in the Report Builder. If you want to create a copy of an existing web report, you must use Axiom Explorer in the Desktop Client to copy the file.

Defining the data context for a web report

The *data context* for a web report determines the overall pool of data that is eligible to be included in the report. To define the data context, you select a *primary table* as the "base" table for the report. This primary table then determines which other tables are eligible for inclusion in the report, based on lookup relationships. All table columns and filters used in the report must be compatible in the context of the primary table.

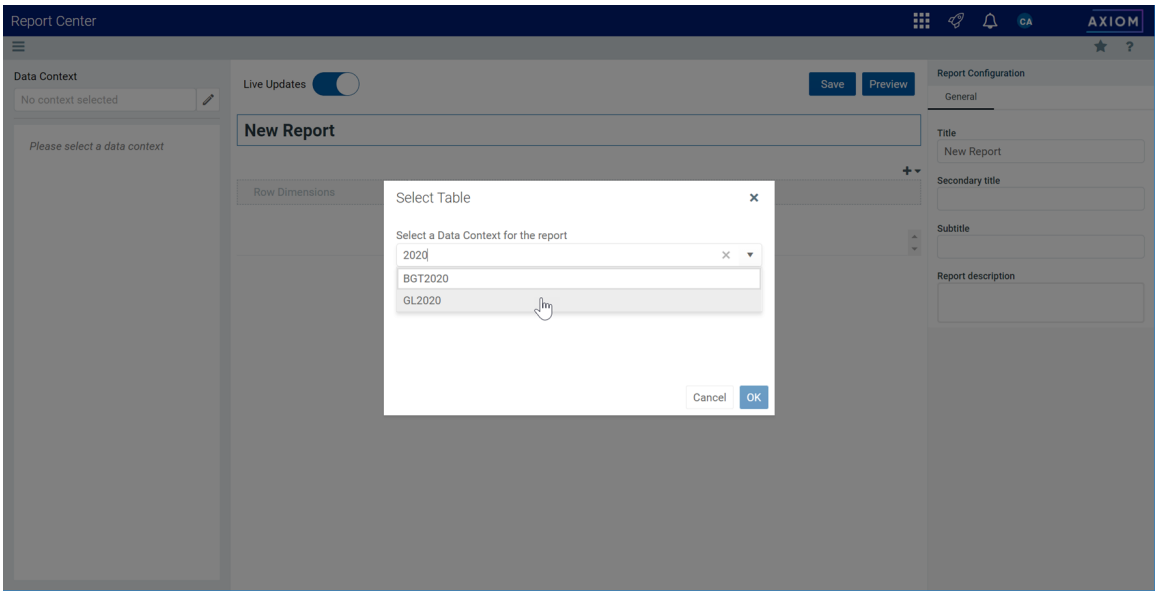
In the Report Builder, the primary table for the data context is specified in the left-hand Data Panel. You must select the primary table before you can drag and drop any table columns out to the grid.

To select a primary table for the data context:

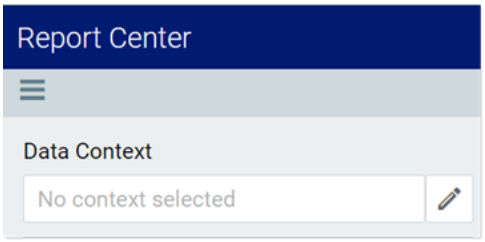
There are two ways to select a primary table for the data context.

- When you create a brand new report, you are automatically prompted to select a primary table for the data context.

  You can select a table from the drop-down list directly, or type into the box to search for a table name. The search uses "contains" matching to return any tables that contain the search text within the table name. In the following screenshot, the text `2020` has been used to search for tables with the year 2020 in the name.

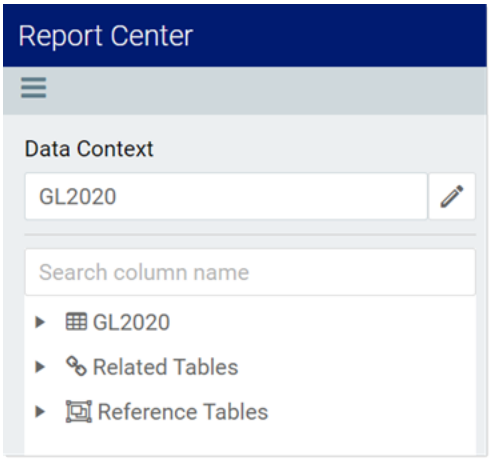


- If you are already in the Report Builder, then you can define or change the primary table using the **Data Context** box at the top of the Data Panel. Click the Edit icon to open the **Select Table** dialog (as shown in the previous screenshot).



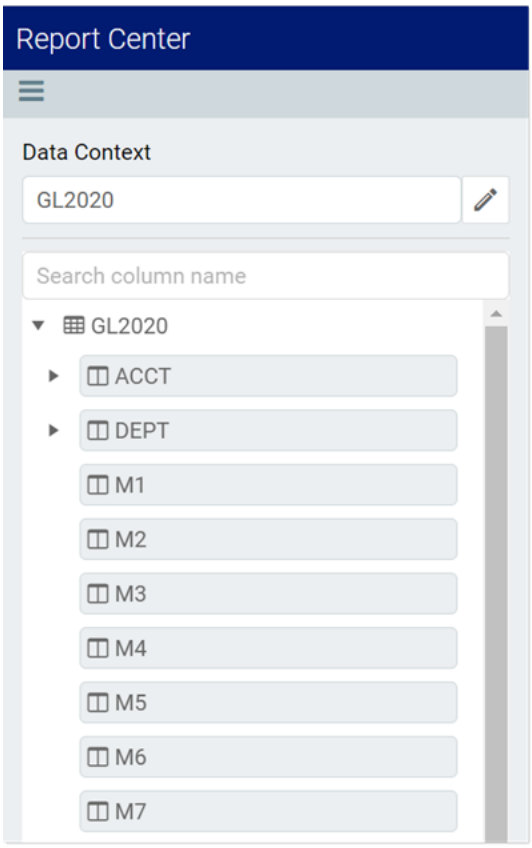
Once you have selected a table, that table name is shown in the **Data Context** box, and the Data Panel populates to show a table tree in three expandable/collapsible sections:

- ***TableName***: The selected table and its columns. This table is the primary table.
- **Dimension Tables**: Reference tables that the primary table looks up to. If the reference tables have lookups to other reference tables, these multi-level reference tables are accessible through the first-level reference tables.
- **Related Tables**: The contents of this section depend on the type of table selected as the primary table.
    - If the primary table is a data table, then this section contains other tables that look up to one or more of the same reference tables as the primary table.
    - If the primary table is a reference table, then this section contains tables that look up to the reference table.



Example Data Panel with a defined data context

You can expand these tables to view the columns, and then drag and drop columns out to the Report Canvas area so that they can be used as row dimensions or data columns.



In this example, we have selected GL2020 as the primary table. GL2020 is a data table that looks up to reference tables Dept and Acct. The table tree is populated as follows:

- **GL2020**: This node contains all columns in GL2020, as well as columns in the lookup tables Dept and Acct.
- **Dimension Tables**: This node contains the lookup reference tables Dept and Acct. If the reference tables look up to other downstream reference tables (multi-level lookups), those downstream reference tables can be used through these tables.
- **Related Tables**: This node contains other tables that also look up to Dept or Acct (or to a multi-level lookup through Dept or Acct). This may include tables such as GL2021, BGT2021, and BGT2020.

When you save the report, the data context is saved for that report and will be reloaded into the Data Panel whenever the report is opened in the Report Builder.

Changing the data context

You can change the data context freely until you have done either of the following:

- Dragged and dropped columns out to the grid setup boxes in the Report Canvas
- Selected a fixed row structure for use with the report (when using the **Use fixed rows** option in the Grid Configuration properties)

You can still change the data context if needed, but any newly selected primary table must be compatible with the table columns you have already added to the grid, and with the fixed row structure you have selected (if applicable). If the newly selected primary table is not compatible, an error will occur when the Report Builder tries to refresh the grid in the Report Canvas. At this point you have the choice of selecting a different primary table that is compatible (which may mean returning to the original primary table), or removing the incompatible columns from the grid, or choosing a different fixed row structure.

Other settings that must be compatible with the primary table include the Data Filter for the grid or for any of the columns, and any columns selected as drilling columns for a Directed drilling configuration. If you change the primary table and any of these settings are incompatible with the new primary table, an error will occur.

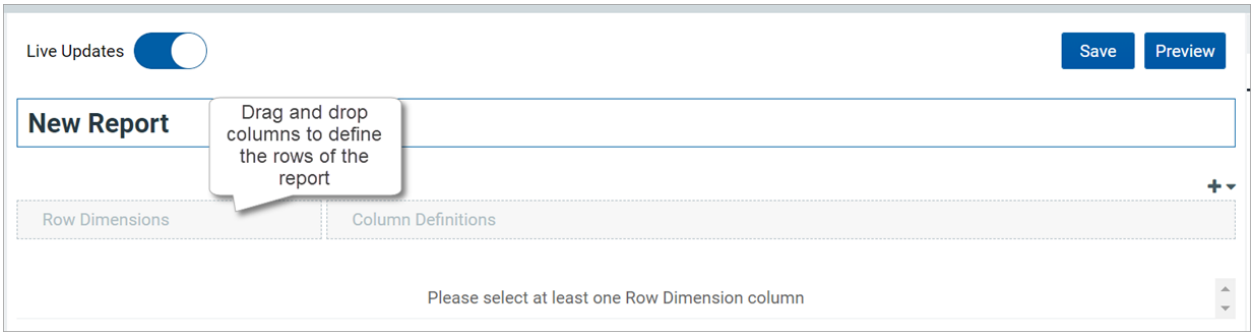
If you change the data context and save the report, the new primary table is now saved for the report and will be reloaded into the Data Panel whenever the report is opened in the Report Builder.

Specifying the row dimension for a web report

The row dimension for a web report defines the summation level for the row data. For example, you may want the rows in your grid to show data by department, region, entity, account, or some combination of dimensions. You specify a table column to use as the row dimension, and then the rows in the grid are dynamically generated based on the unique values in that column.

NOTE: If you want your report to use a static row structure with multiple sections instead of dynamically generating the rows, then use a fixed row structure instead of a row dimension.

The row dimension for the report is placed in the left-hand box at the top of the Report Canvas, known as the **Row Dimensions** box. The report grid cannot render until you specify either a row dimension or a fixed row structure.



Row Dimensions box at the top of the Report Canvas

Web reports can have multiple row dimensions. If two or more row dimensions are specified, then each row in the report represents a unique combination of the dimensions. For example, if the row dimension is just Dept, then each row shows data for a department. If the row dimension is Dept and Acct, then each row shows data by the unique combinations of department and account.

To specify a row dimension for a web report:

1. In the Data Panel of the Report Builder, expand the table tree until you locate the column that you want to use as a row dimension.

   If the Data Panel is empty, this means you must select a primary table first.

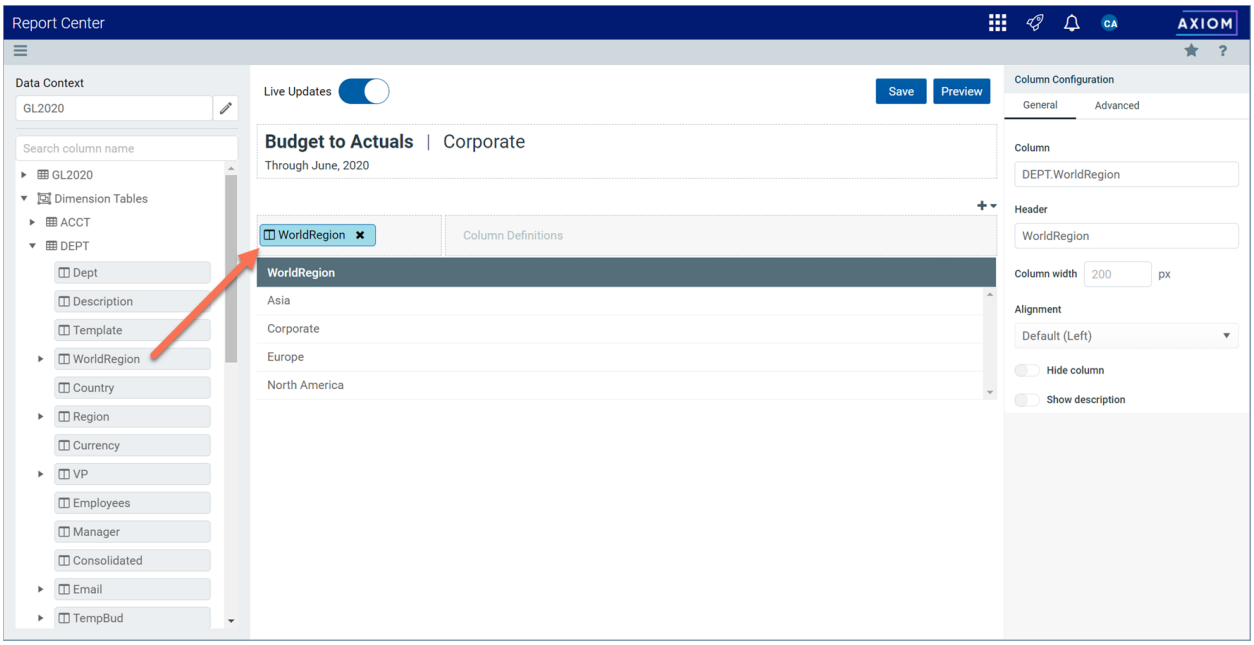
2. Drag and drop the column to the **Row Dimensions** box at the top of the Report Canvas.

   The grid in the canvas updates to show items from the specified row dimension.

3. Select the column name in the Row Dimensions box, and then use the **Column Configuration** panel to configure display properties such as column width, alignment, header text, and formatting. For more information, see Configuring column properties for a web report.

4. If multiple columns are present in the Row Dimensions box, you can drag and drop them within the box so that they display in the desired order within the grid.

Once a row dimension is specified, the grid in the Report Canvas updates to show values from that column. Additionally, the Data Panel updates to remove any tables that are incompatible with the specified row dimension. You can now build out the data columns of the report by dragging and dropping columns from the Data Panel, and by creating calculated columns. For more information, see Adding data columns and calculated columns to a web report.



Defining a row dimension for a web report

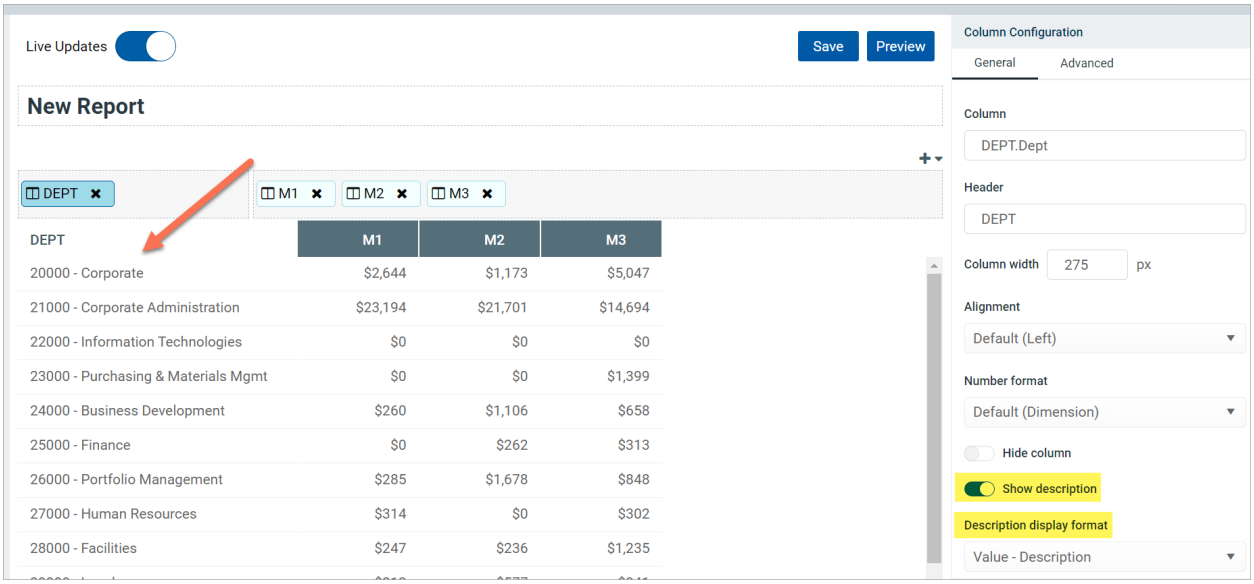
Displaying descriptions for the row dimension

In many cases your row dimension will be a code, such as a department code or an account code, and you want to display the description for the code next to it.

To display descriptions on a dimension column:

1. Select the row dimension column in the **Row Dimensions** box.
2. In the **Column Configuration** settings, on the **General** tab, enable **Show description**.
3. From the **Description display format** list, select the desired display format.

In the following example, the Dept column has been configured to show descriptions using the **Value - Description** format. If you select a format that shows descriptions first, such as **Description (Value)**, then the rows will be sorted by the descriptions instead of the underlying values.



Example row dimension column configured to show descriptions

Although you can add the description column to the grid as a separate column instead of using the **Show description** option, this may not always achieve the desired results. For example:

- If you add the description column as a row dimension, then it will display next to the dimension values but it will cause the data to be additionally grouped by the description values. This is not recommended because the additional grouping is unnecessary, and in some cases may not produce the desired results (for example, if descriptions are not unique).
- If you add the description column as a regular column, then the descriptions will not be frozen next to the dimension codes for scrolling purposes.

Filtering the row dimension

In some cases you want the report to display a subset of values from the row dimension column, instead of all values. To filter the row dimension values, use the Grid Configuration properties to define a **Data Filter** for the grid.

For example, if the row dimension is Dept but you want the report to only display departments that belong to a specific entity, define a grid-level data filter such as `Dept.Entity='Entity 1'`. This will filter the grid so that it only shows data that belongs to Entity 1, including the row dimension values. Department codes that do not belong to Entity 1 will not be included in the data query.

Changing the row dimension

You can change the row dimension at any time by dragging and dropping additional columns to the **Row Dimensions** box, or by removing existing row dimensions.

To remove a row dimension, click the **X** icon to the right side of the column name. If you remove the only row dimension, the grid in the Report Canvas cannot be rendered until you specify a new one.

If you change the row dimension after adding data columns and calculated columns, or if you change the primary table after specifying a row dimension, it is possible that some of the selections may be incompatible with each other. In this case, an error will display when the Report Builder attempts to refresh the data in the Report Canvas. You may have to remove incompatible columns, change the row dimension, or change the primary table in order to restore a valid grid configuration.

If you decide that you want to change the report to use a fixed row structure instead of a row dimension, use the **Grid Configuration** properties to enable fixed rows and then choose a fixed row structure. For more information, see Specifying the fixed row structure for a web report. Any columns currently placed in the Row Dimensions box will be ignored while fixed rows are enabled for the report.

Specifying the fixed row structure for a web report

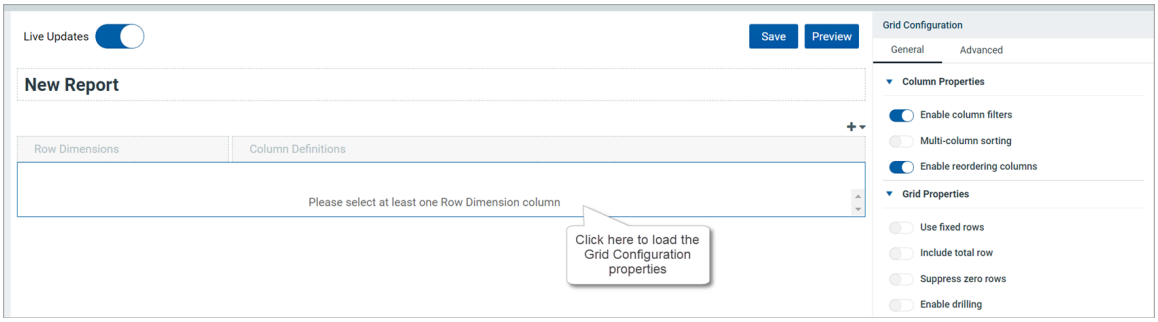
Web reports can optionally use fixed row structures to define the data sections in the report. Instead of dynamically generating the rows based on a table column, fixed row structures individually define each row of data, including section headers, subtotals, and totals.

Fixed row structures are defined separately so that you can reuse them in different web reports, and so that you can update the row structure in one place and have the changes propagate to all reports that reference the fixed row structure. The fixed row structure that you want to use in the web report must already exist—they cannot be created or edited in the Web Report Builder. For more information, see Managing Fixed Row Structures fixed row structures for web reports.

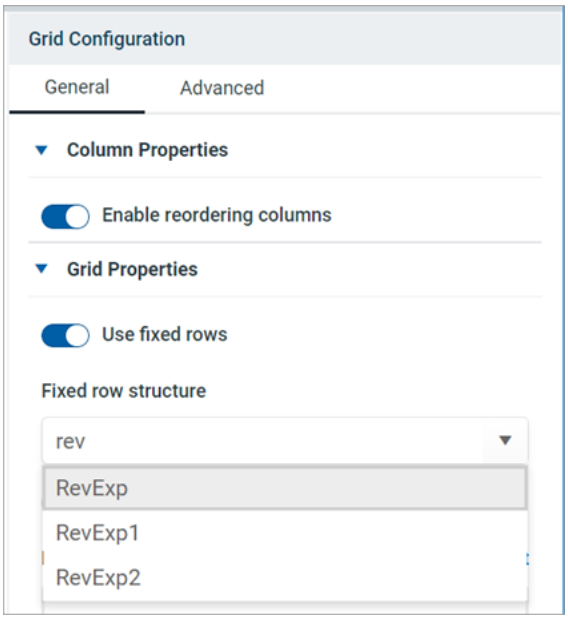
The fixed row structure is specified in the Configuration Panel, using the **Grid Configuration** properties.The grid in the Report Canvas cannot render until you specify either a fixed row structure or a row dimension.

To specify a fixed row structure for a web report:

1. In the Report Canvas of the Report Builder, click the grid area below the column setup boxes. This area displays with placeholder text until either a row dimension or a fixed row structure is specified.

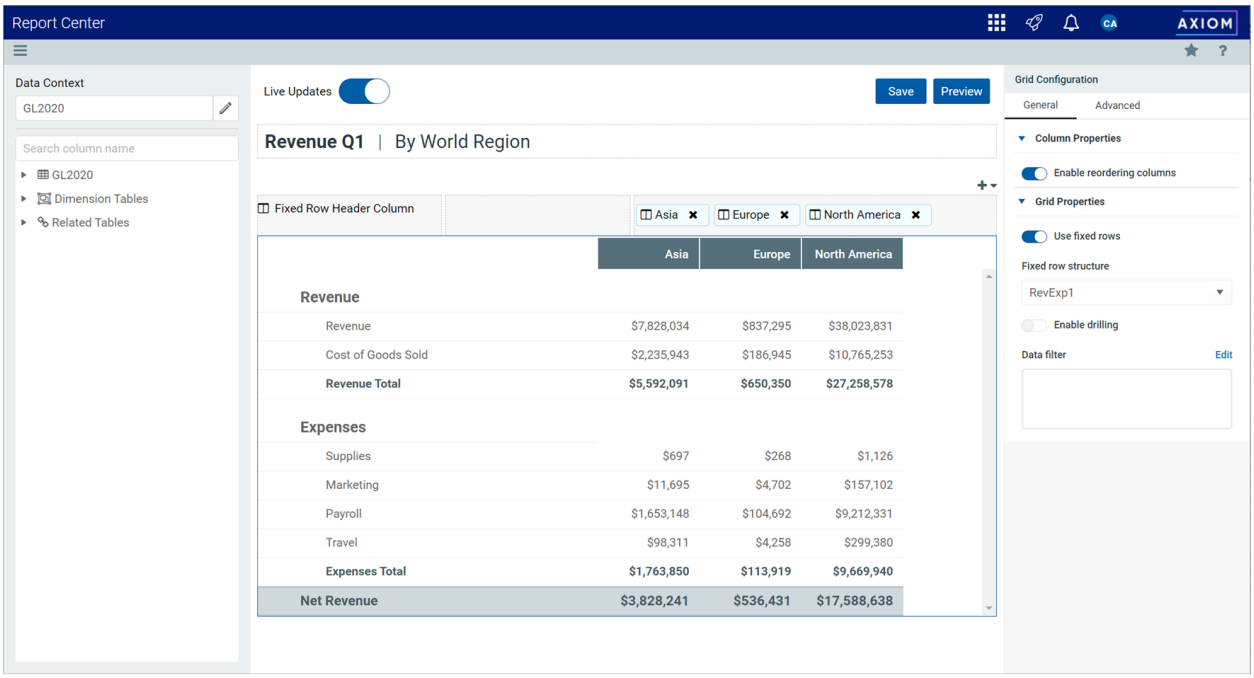


2. In the **Grid Configuration** properties, enable **Use fixed rows**.
3. From the **Fixed row structure** drop-down list, select an existing fixed row structure. You can type into the box to filter the list by name.



After selecting a fixed row structure, the Report Canvas area updates as follows:

- The Row Dimensions box updates to show a placeholder column named **Fixed Row Header Column**. This column is the column that holds the section titles and data row labels as defined in the fixed row structure. You can select this placeholder column in order to configure certain display details about this column within the web report.
- Once you have dragged and dropped at least one data column to the Column Definitions box, the grid updates to show the sections and rows as defined in the fixed row structure.



NOTES:

- If you want to make changes to the fixed row structure, you must edit the structure in the separate fixed row structure editor. Any changes made to the row structure will automatically apply to any web report that uses the fixed row structure.
- If you decide that you want to use dynamically generated rows instead of a fixed row structure, you can simply disable **Use fixed rows** and then drag a column to the Row Dimension setup box. For more information see Specifying the row dimension for a web report.

Impact on Grid Configuration options

When **Use fixed rows** is enabled for the grid, multiple grid configuration options become unavailable because they do not apply to web reports that use fixed row structures. If these options were configured before fixed rows were enabled for the grid, the configuration will be ignored.

- **Enable column filters**: End users cannot filter columns when using fixed rows.
- **Multi-column sorting**: End users cannot sort columns when using fixed rows.
- **Include total row** (and related settings): This option does not apply because fixed row structures have their own defined subtotal and total rows.
- **Suppress zero rows**: This option does not apply to fixed row structures; all configured rows will display regardless of whether they return all zero data.

Configuring the Fixed Row Header Column

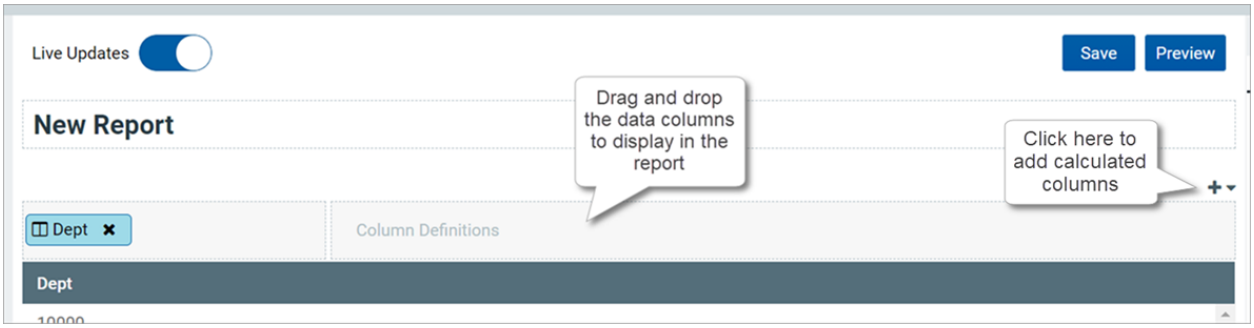
Most of the display details for the Fixed Row Header Column are configured within the fixed row structure and therefore cannot be changed within the web report. However, if you select the **Fixed Row Header Column** item in the Row Dimension setup box, you can configure the following:

Item	Description
Column width	The column width of the column in the grid, in pixels. Enter the desired column width as a whole integer between 20 and 1000. The default width of the Fixed Row Header Column is 200.

Adding data columns and calculated columns to a web report

When creating a web report, you can add as many columns as needed to define the data that you want to display in the report. You can also define calculated columns, such as to show the difference between two columns.

The data columns and calculated columns for the grid are placed in the right-hand box at the top of the Report Canvas, known as the **Column Definitions** box. This box defines the columns to display in the report. Although it is possible to add columns and calculated columns to the Column Definitions box before specifying a row dimension or a fixed row structure, the grid in the Report Canvas will not populate until the rows are defined.



Column Definitions box at the top of the Report Canvas

Adding data columns

To display data in the report, you can drag and drop table columns from the Data Panel to the Column Definitions box in the Report Canvas. The Data Panel displays the tables and columns that are eligible to be included in the report, based on the selected data context (primary table) and the specified row dimension.

To add a data column to a web report:

1. In the Data Panel of the Report Builder, expand the table tree until you locate the column that you want to add to your report. You can also use the search box at the top of the panel to find a particular column by name.

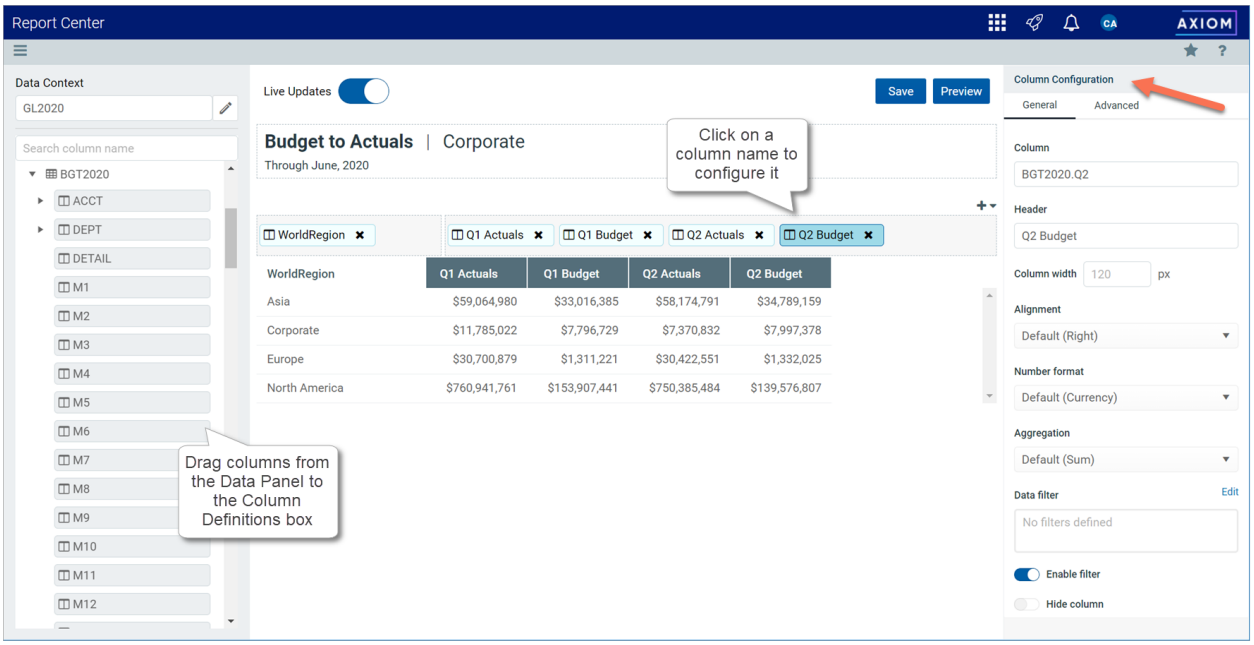
2. Drag and drop the column to the **Column Definitions** box at the top of the Report Canvas.

   The preview grid in the canvas updates to show data from the specified column.

3. If the column is not in the desired location within the grid, drag and drop it within the Column Definitions box to reorder the columns.

4. Use the **Column Settings** in the Configuration Panel to configure display properties for the column, such as column width, alignment, header text, and formatting. For more information, see Configuring column properties for a web report.

   By default, when you drag and drop a column to the grid, that column is selected and its column properties display in the Configuration Panel. You can return to the column properties at any time by clicking the column name in the Column Definitions box.



Example web report after dragging and dropping data columns

As you drag and drop data columns to the grid, the preview grid in the Report Canvas updates to show data for that column, using the specified row dimension or fixed row structure.

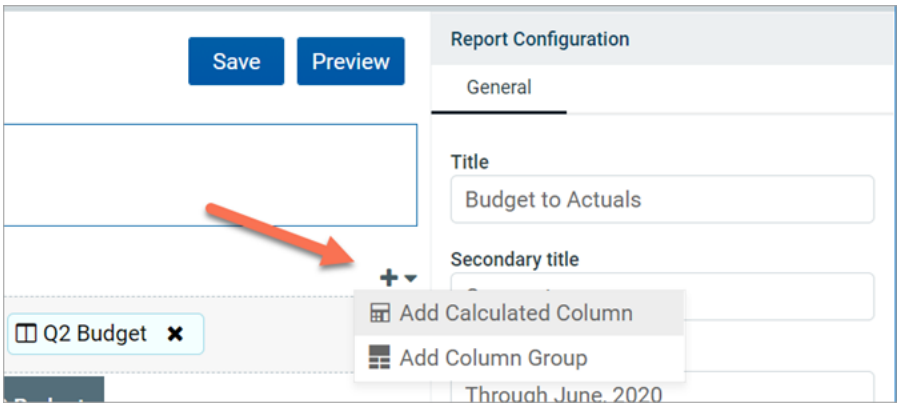
NOTE: If **Use fixed rows** is enabled for the grid, currently the Report Builder does not dynamically update the tables listed in the Data Panel based on the specified fixed row structure. If you drag and drop a column from a table that is not valid in the context of the fixed row structure, a generic error will occur when the Report Builder attempts to populate the grid.

Adding calculated columns

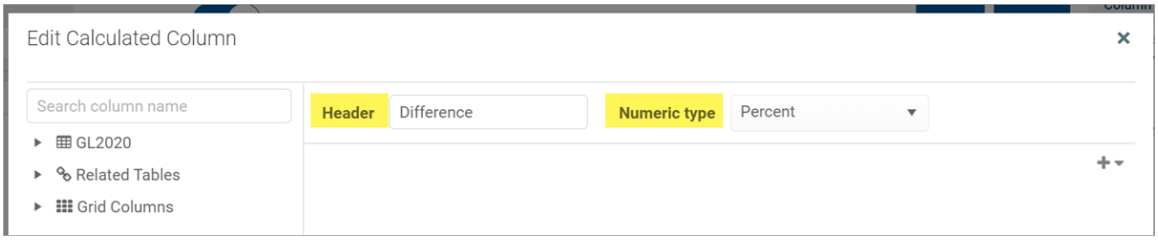
Calculated columns can be used to display totals, differences, percentages, and other calculations within a column of the report. Calculations can be based on columns from related tables that are eligible to be included in the report.

To add a calculated column to a web report:

1. In the Report Canvas of the Report Builder, click the plus sign in the top right corner of the **Column Definitions** box, and then click **Add Calculated Column**.



2. At the top of the **Add Calculated Column** dialog, define the following properties:
   - **Header**: Enter the column header text for the calculated column. This is effectively the name of the calculated column. By default, the header text is "Calculation".
   - **Numeric type**: Select the desired numeric type for the calculated column. If this is left at **Default**, the default numeric type for calculated columns is currency.



   You can change these properties later using the Column Configuration properties in the Configuration Panel.

3. To create the calculation, drag and drop columns from the table tree on the left to the calculation canvas. See Defining calculations for more information.

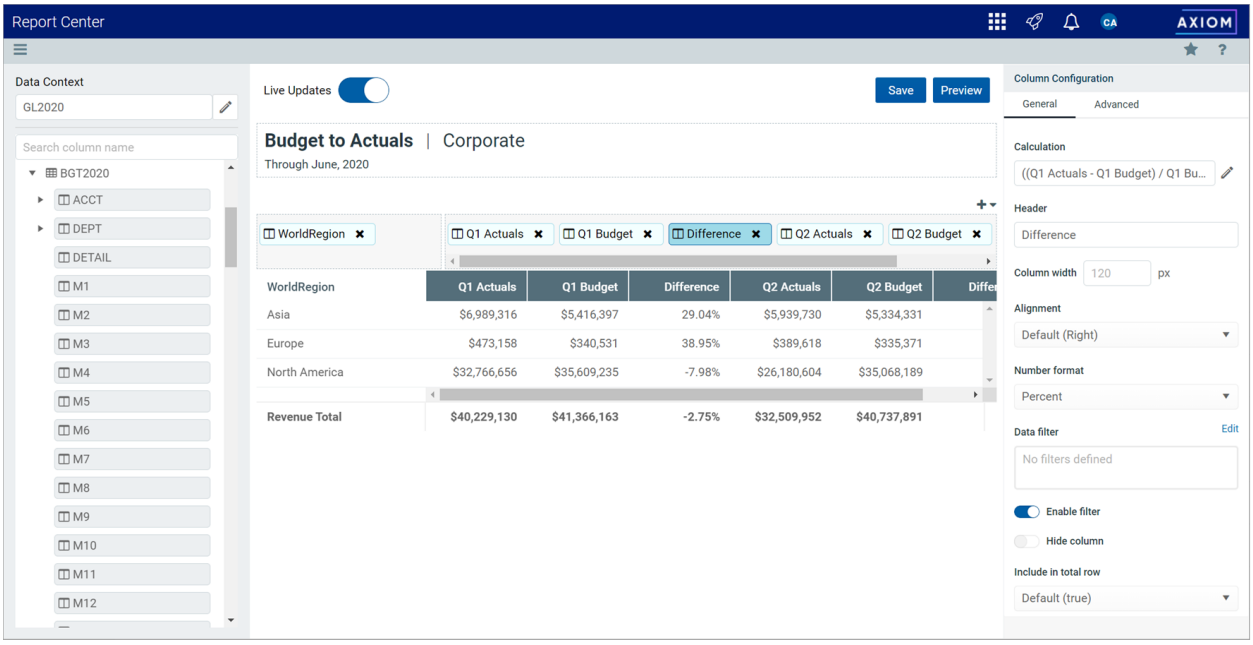
4. When you are finished creating the calculated column, click **OK**.

   The calculated column is added to the Column Definition box, and the preview grid in the canvas updates to show the calculated data.

5. If the calculated column is not in the desired location within the grid, drag and drop it within the Column Definition box to reorder the columns.
6. Use the **Column Configuration** properties in the Configuration Panel to configure display properties for the column, such as column width and alignment. For more information, see Configuring column properties for a web report.

   By default, when you define a calculated column, that column is selected and its column properties display in the Configuration Panel. You can return to the column properties at any time by clicking the column name in the Column Definitions box.

As you add calculated columns to the grid, the grid in the Report Canvas updates to show data for that column, using the specified row dimension or fixed row structure.



Example web report after creating a calculated column

Defining calculations

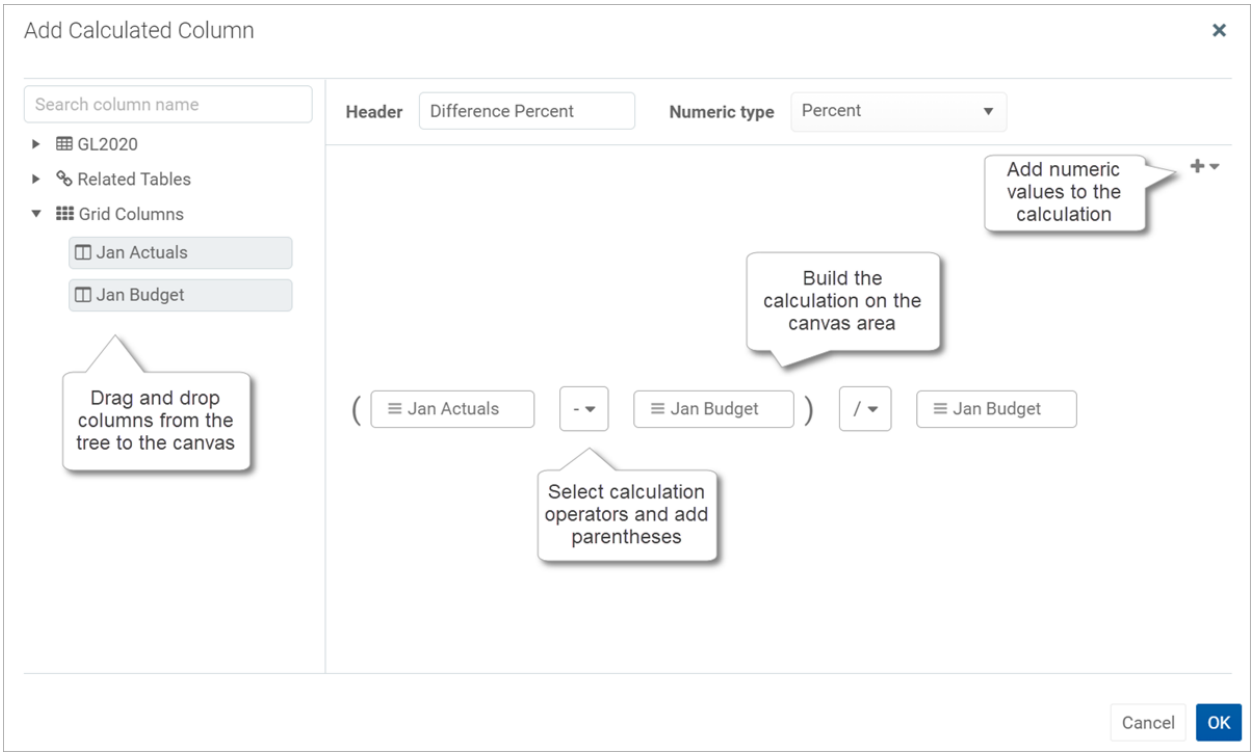
Using the **Add Calculated Column** dialog, you can build a calculation based on columns from related tables that are eligible to be included in the report. The column does not have to be present in the grid in order to be used in a calculation. Numeric values can also be used in the calculation.

The left-hand side of the dialog lists a table tree of available columns, while the right-hand side of the dialog—the calculation "canvas"—is where you build the calculation. To start the calculation:

- Drag and drop two columns out to the canvas. The two columns are separated by an operator selector.
- Select the desired operator.

You can continue building the calculation by dragging and dropping additional columns and selecting the operator. You can also do the following:

- **Numeric values**: To add a numeric value to the calculation, click the plus icon at the top right of the dialog. You can then move, reorder, or delete the numeric value just like columns.
- **Reorder items**: To change the order of columns in the calculation, drag and drop them on the canvas.
- **Parentheses**: To add parentheses to a part of the calculation, select **Add Parentheses** from the operator selector. The two columns affected by the operator will become enclosed in parentheses.
- **Delete items**: To delete an item, hover your cursor over the column and then click the trash can icon.



Example calculation in the calculation editor

Calculations can use the following operators: addition (+), subtraction (-), multiplication (*), and division (/). Use parentheses to determine calculation order, such as: `(GL2021.Q1-BGT2021.Q1)/BGT2021.Q1`.

Calculations can use the following columns:

- Numeric columns from the primary table, whether or not those columns are also in the grid.
- Numeric columns from related tables, whether or not those columns are also in the grid.

- Numeric columns from the grid, including other calculated columns. Grid columns display using the header text defined for the column.

  If you use a table column from the grid instead of from the table itself, then the calculation will use the column as it is configured to display in the grid. For example, if the grid column has a column filter or uses an alternate aggregation, the calculation will be based on that modified version of the column.

NOTES:

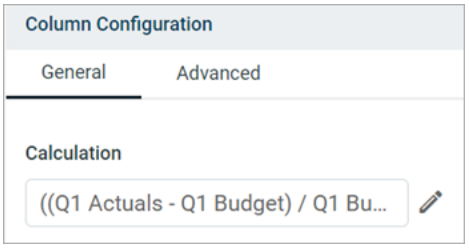
- If you drag and drop a column from the primary table or a related table, it displays on the canvas using the column name only—such as M1. You can hover your cursor over the column box to see a tooltip with the full table.column name—such as GL2021.M1. If you drag and drop the column from the Grid Columns node, then it will display using the defined header text for the column.
- If you use a grid column in the calculation, then the grid column cannot be deleted from the grid because deleting it would cause the calculation to become invalid. An error message will display if you attempt to delete a referenced column from the grid. To resolve the issue, you can do one of the following: edit the calculation to remove the reference, delete the calculated column, or configure the grid column as hidden so that it can still be referenced in the calculation but not display in the report.

Editing calculated columns

You can edit an existing calculated column to change the calculation.

To edit a calculated column in a web report:

1. In the Report Canvas of the Report Builder, click the calculated column in the Column Definitions box.
2. On the **General** tab of the **Column Configuration** properties, click the Edit icon to the right of the **Calculation** box.



3. In the **Edit Calculated Column** dialog, edit the calculation as needed, then click **OK**.

Additional column actions

Once data columns and calculated columns have been added to the grid, you can further adjust them as follows:

- **Reorder columns**: You can reorder the columns in the grid by dragging and dropping them to any location in the Column Definitions box. Note that you cannot drag and drop a column from the Column Definitions box to the Row Definitions box and vice versa. If you accidentally dragged a column to the wrong box, you must remove the column and then drag and drop it again from the Data Panel.
- **Remove columns**: You can remove columns from the grid by clicking the **X** icon to the right of the column name. Use caution before removing a calculated column—if you later decide you want to re-add the column, you will need to re-create the calculation from scratch.
- **Group columns**: If you want a set of columns to display under a group header, you can define a column group and then add the columns to that group. For more information, see Defining column groups for a web report.
- **Configure columns**: To configure display properties for a column, select the column name in the Column Definitions box, then use the **Column Configuration** properties in the Configuration Panel. For more information, see Configuring column properties for a web report.

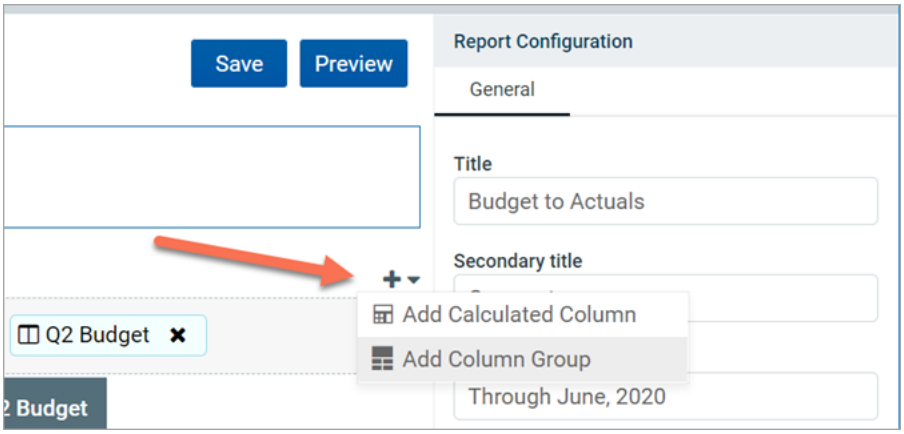
Defining column groups for a web report

You can define column groups in web reports so that certain columns can display together under a group header. For example, your report might have several actuals columns followed by several budget columns, and you want these columns to display under the group headers "Actuals" and "Budget".

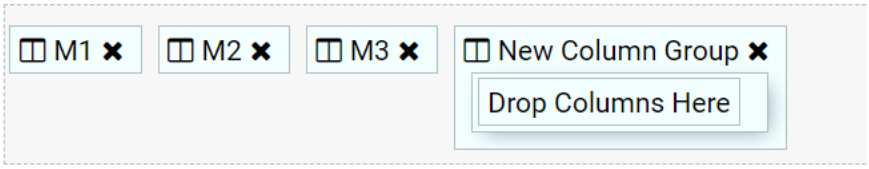
To define a column group, first you add the group "container" to the Column Definitions box of the grid, then you add table columns to the group container.

To define a column group:

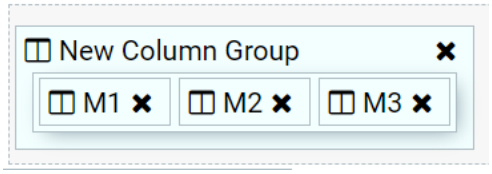
1. In the Report Canvas of the Report Builder, click the plus sign in the top right corner of the Column Definitions box, and then click **Add Column Group**.



A new empty column group is added to the Column Definitions box.

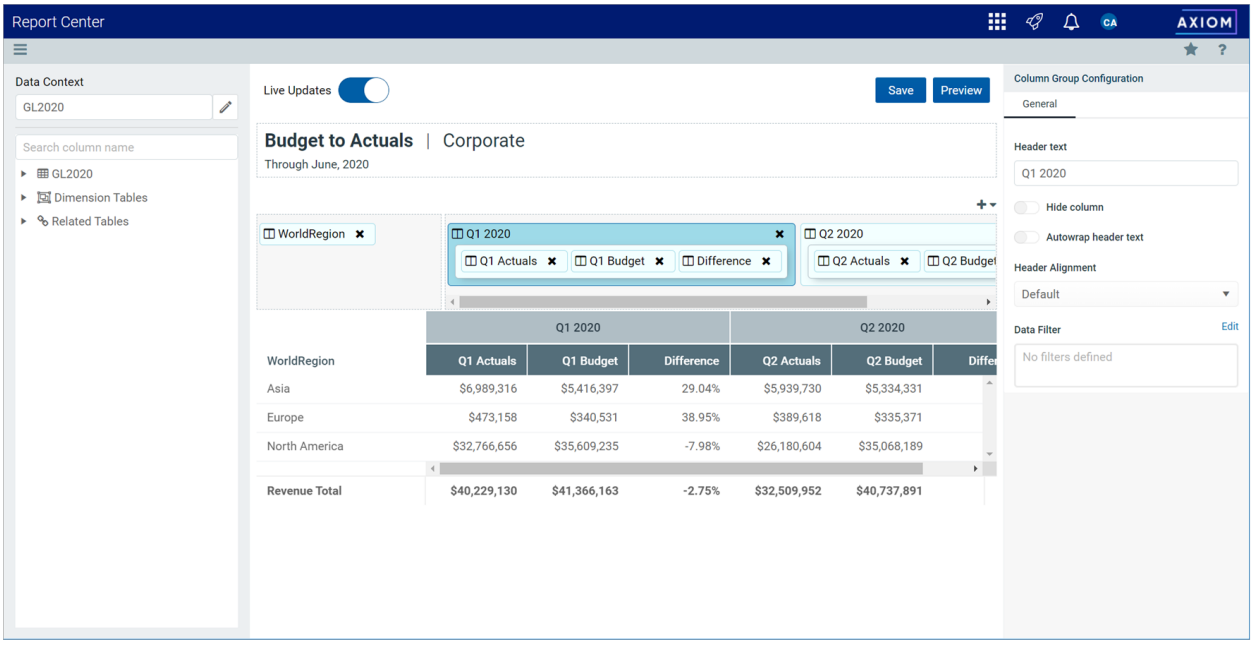


2. Drag and drop the desired columns into the column group. You can drag columns that are already present in the Column Definitions box, or you can drag columns from the table tree in the Data Panel directly. Calculated columns can also be placed in a column group.



3. Select the column group box, and use the **Column Group Configuration** panel to define the header text and other properties. See the following section for more information on the available properties.

The column group displays in the grid with its child columns underneath.



Example web report with column groups

Once a column group has been created, you can work with it as follows:

- **Reordering groups**: You can reorder column groups by dragging and dropping the group to another location within the Column Definitions box.

- **Deleting groups**: You can delete a column group by clicking the **X** icon on the group box. However, if you still want to use the columns in the group, you should drag and drop the columns out of the group before deleting the group. If you delete the group with columns in it, all of the columns will be deleted as well.
- **Configuring groups**: Click the column group box to edit the **Column Group Configuration** properties in the Configuration Panel.
- **Nested groups**: Currently, nested groups are not allowed. You cannot drag and drop a group within another group.

You can work with columns within the group as follows:

- **Adding columns**: You can continue to add columns by dragging and dropping them into the group box.
- **Removing columns**: You can drag and drop columns out of the column group box to remove them from the group. If you don't want the column to be in the report at all, you can use the **X** icon on the column box to remove it.
- **Reordering columns**: You can reorder columns in the group by dragging and dropping them within the group box.
- **Configuring columns**: Columns in a column group can be configured as normal. Select the column box within the group box to bring up the **Column Configuration** properties in the Configuration Panel.

Column group properties

The following column group properties are available for web reports on the **General** tab of the **Column Group Configuration** panel:

Item	Description
Header	The header text to display on the group header. Enter the desired header text.
Hide column	Specifies whether the column group is hidden in the report: • If enabled, then the group is hidden in the report. The group remains visible in the Column Definitions box so that you can continue to configure the group as needed. • If disabled (default), then the group is visible.
Autowrap header text	Specifies whether header text wraps: • If enabled, then header text that exceeds the group width will wrap. • If disabled (default), then header text that exceeds the group width is truncated. The user can resize the group wider to view the full header text.

Item	Description
Header alignment	The alignment of the header text over the columns in the group. Select one of the following: **Default**, **Left**, **Right**, **Center**. Group headers use center alignment by default.
Data filter	Optional. Defines a filter to limit the data shown in the columns within this group. This is equivalent to defining the same data filter at the column level for each column in the group. Click the **Edit** button to open the Filter Wizard and define a filter. Once you have defined a filter, it displays in the **Data filter** box. If you want to change or remove the filter, click the **Edit** link again and change or delete the filter within the Filter Wizard. The **Data filter** box is not directly editable. Data filters defined at the group level are combined with any filters defined at the column level. If the group contains calculated columns, the group filter is applied to all columns referenced in the calculation. If the calculation references grid columns, the group filter is combined with any other filters applied to the grid columns (either at the column level or at the group level, if the column belongs to a different group). Additionally, if a data filter is defined at the grid level, it is also applied. All relevant filters are combined using AND to determine the data that can display in a particular column.

Configuring report properties for a web report

The report properties define the titles and subtitles that display in a web report. You can define a title, subtitle, and secondary title.

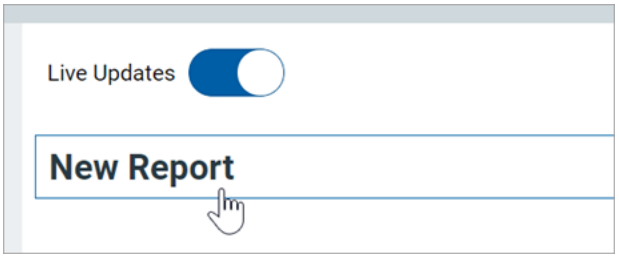
	Q1 2020			Q2 2020		
WorldRegion	Q1 Actuals	Q1 Budget	Difference	Q2 Actuals	Q2 Budget	Difference
Asia	$6,989,316	$5,416,397	29.04%	$5,939,730	$5,334,331	11.35%
Europe	$473,158	$340,531	38.95%	$389,618	$335,371	16.18%
North America	$32,766,656	$35,609,235	-7.98%	$26,180,604	$35,068,189	-25.34%
Revenue Total	**$40,229,130**	**$41,366,163**	**-2.75%**	**$32,509,952**	**$40,737,891**	**-20.20%**

Example titles as they display in a rendered report

In the Report Builder, the Report Configuration properties are defined in the right-hand Configuration Panel.

To configure report properties for a web report:

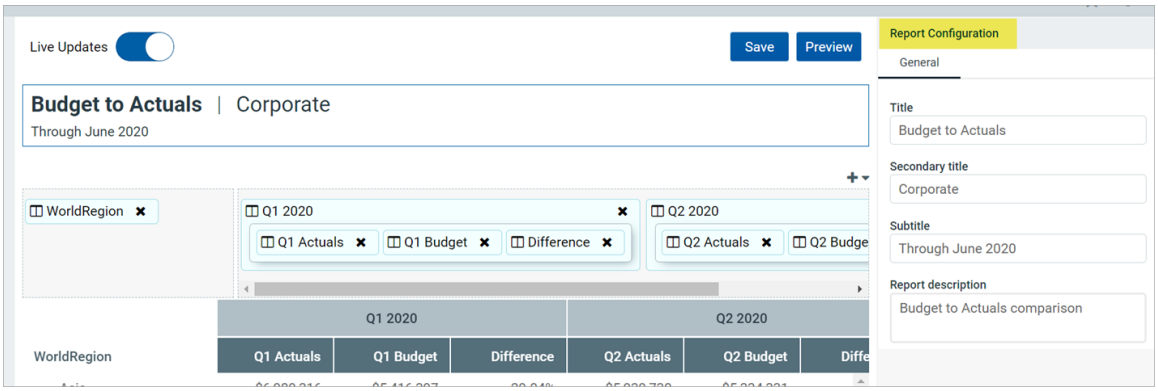
1. In the Report Canvas of the Report Builder, click on the title text to load the Report Configuration properties. For example, if the report currently uses the default name of New Report, click on the New Report text or next to it.



Click on the title text to load the Report Configuration properties

   If you are in a brand new report, the Report Configuration properties display by default when you first enter the Report Builder. However, as soon as you drag and drop a column to the Row Definitions box or the Column Definitions box, the column will be selected which causes the Column Configuration properties to display. In this case you need to click on the report title to return to the Report Configuration properties.

2. Complete the **Report Configuration** properties that display in the Configuration Panel.



Report properties

The following properties are available for web reports in the Report Configuration panel:

Item	Description
Title	The main title for the report. This text displays at the top of the report, over the grid.

Item	Description
Secondary title	Optional. The secondary title for the report. If defined, this text displays in the same line as the main title, separated by a horizontal pipe character. For example: *Title* | *Secondary Title*
Subtitle	Optional. The subtitle for the report. This text displays in smaller font underneath the main title.
Description	Optional. A description for the report.

Frequently asked questions

How do I define a report-level filter to limit the data in the report?

You can set a grid-level data filter to limit the data in the report. Select the data grid on the Report Canvas, then use the Grid Configuration properties to define a **Data Filter**.

Because currently web reports can only contain a single grid, defining a grid-level filter is effectively the same as defining a report-level filter.

Can I use variables in the report titles?

Web reports do not currently support variables. This functionality is likely to be a future enhancement.

Configuring grid properties in a web report

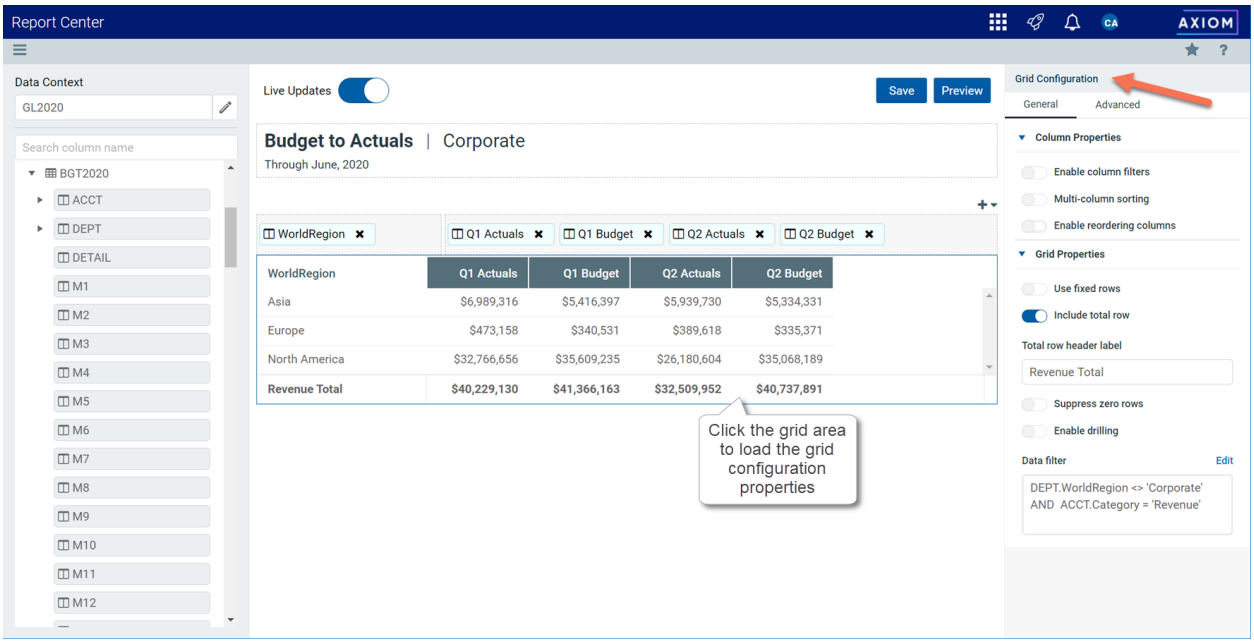
The grid properties define the available features and the overall presentation of data in a web report. Using the grid properties, you can configure:

- User interaction properties such as whether users can filter columns, sort columns, and reorder columns
- Data properties such as a filter to limit data in the grid, and drilling options
- Display properties such as whether the grid has a total row and whether rows with all zero values display

In the Report Builder, the grid properties are defined in the right-hand Configuration Panel.

To configure grid properties for a web report:

1. In the Report Canvas of the Report Builder, click the grid that displays below the column setup boxes.
2. In the right-hand Configuration Panel, complete the **Grid Configuration** properties as needed.



The grid configuration properties are separated into two tabs:

- **General**: Basic grid properties that should be reviewed and configured for all web reports.
- **Advanced**: Advanced grid properties such as default column formats for the grid.

General grid properties

The following grid properties are available for web reports on the **General** tab of the **Grid Configuration** panel:

Column Properties

Item	Description
Enable column filters	Specifies whether users can filter columns in the grid. Only applies to grids with dynamic rows; users cannot filter columns in grids where **Use fixed rows** is enabled. • If enabled (default), then filter icons display on columns where **Enable filter** is enabled in the column configuration properties. Report users can use these icons to filter the data shown in the column. If **Enable filter** is disabled on a column, the filter icon is not available for that column. • If disabled, then filter icons do not display on any columns, regardless of whether **Enable filter** is enabled for the column.

Item	Description
Multi column sorting	Specifies whether users can sort by multiple columns in the grid. Only applies to grids with dynamic rows; users cannot filter columns in grids where **Use fixed rows** is enabled. • If enabled, then users can sort the grid by multiple columns. If the grid is already sorted by a column and a user clicks another column to sort, then the grid is first sorted by the most recent column and then sorted by the original column. Columns will remain sorted until the user toggles the sort disabled for that column. • If disabled (default), then users can sort the grid by a single column. If the grid is already sorted by a column and a user clicks another column to sort, then the sort is disabled on the original column and the grid becomes sorted by the most recent column. Users can sort columns by clicking on the column header. Each click toggles through sort ascending, sort descending, and no sort. **NOTE:** The ability to clear the sort is only available if multi-column sorting is enabled. Otherwise, clicking a column header will toggle between sort ascending and sort descending. You can click a different column header to sort by that column, but you cannot clear the sort.
Enable reordering columns	Specifies whether users can reorder columns in the grid. • If enabled (default), then users can drag and drop columns within the grid to temporarily reorder them. • If disabled, then users cannot reorder columns in the grid.

Grid Properties

Item	Description
Use fixed rows	Specifies whether the grid uses dynamic rows or a fixed row structure. • If enabled, then the grid uses a fixed row structure to define the rows. Select the structure using the **Fixed row structure** field. For more information, see Specifying the fixed row structure for a web report. • If disabled (default), then the grid dynamically generates rows based on a table column specified as the row dimension. The row dimension is specified by dragging and dropping the desired table column into the Row Dimensions box at the top of the Report Canvas. For more information, see Specifying the row dimension for a web report.

Item	Description
Fixed row structure	Specifies the fixed row structure to use in the grid. Only applies when **Use fixed rows** is enabled. Select an existing fixed row structure to define the rows of the grid. You can type into the box to filter the list of fixed row structures by name. Fixed row structures can be created from the Report Center. For more information on creating fixed row structures, see Managing Fixed Row Structures fixed row structures for web reports.
Include total row	Specifies whether a total row is present on the grid. Only applies to grids with dynamic rows; if **Use fixed rows** is enabled then the grid uses subtotal and total rows as defined in the fixed row structure. • If enabled, then a total row displays at the bottom of the grid. If the grid data is paged, the total row shows the total of all rows across all pages. Use the **Total row header label** field to define label text for the total row, such as "Total". This text displays in the last row dimension column. Columns displaying numeric, non-dimensional data are included in the total row by default. If desired, you can exclude a numeric column from the total row using the column configuration properties. • If disabled (default), then the grid does not have a total row.
Suppress zero rows	Optional. Specifies whether data rows with all zeros are suppressed from showing in the grid. Only applies to grids with dynamic rows; all zero rows cannot be suppressed in grids where **Use fixed rows** is enabled. Non-key columns that meet both of the following criteria are evaluated to determine whether a row should be hidden: • The column data type is Integer (all types) or Numeric. • The column is from the primary table or an additional data table. If the primary table is a data table, Integer and Numeric columns on lookup reference tables are ignored—meaning these columns may have values, but the row is still suppressed if all applicable data table columns have zero values. There is one exception: reference table columns are considered if the column classification is Values and the numeric type is Currency. Calculated columns defined in the grid are not evaluated for this purpose and do not prevent a row from being suppressed.

Item	Description
Enable drilling	Specifies whether users can drill down rows in the grid to view the underlying data. • If enabled, then users can drill rows in the grid. Use the **Drilling type** property to specify what type of drilling options are present: ◦ **Key columns** (default): Users can drill down to the key column level of the data. These drilling options are automatically generated based on the validated key columns of the primary table. No additional setup is required. ◦ **Directed**: Users can drill down predefined drilling paths. Use the **View/Edit Configuration** link underneath the **Directed** option to configure the drilling paths. For more information, see Configuring drilling for web reports. • If disabled (default), then users cannot drill rows in the grid.
Data filter	Optional. Defines a filter to limit the data shown in the grid. The grid-level data filter should be used instead of column-level data filters when you want the filter to impact the entire grid. Click the **Edit** button to open the Filter Wizard and define a filter. Once you have defined a filter, it displays in the **Data filter** box. If you want to change or remove the filter, click the **Edit** link again and change or delete the filter within the Filter Wizard. The **Data filter** box is not directly editable.

▶ Advanced grid properties

The following grid configuration properties are available for web reports on the **Advanced** tab of the **Grid Configuration** panel:

Default column formats

Use this section to view and define default column formats for the grid based on column data type. All columns added to the grid will inherit the settings defined here. By default, columns will continue to inherit any changes made to the default column formats unless the format has been overridden at the column level.

For example, the default alignment for String columns is Left. When String columns are added to the grid, they are configured to use the Default alignment, meaning Left. If desired, you can change the default alignment for String columns to Center, and all String columns in the grid that are using the Default alignment will now update to use Center alignment. However, if you have manually configured a particular String column to use Right alignment instead of the Default alignment, that column will continue to use its configured alignment of Right.

Item	Description
Data type	Select a column data type to view and edit the default column formats for that type. The following data types are available: • **String**: Columns containing text or alphanumeric values. Includes table columns using the String data type. • **Date**: Columns containing dates. Includes table columns using Date or DateTime data types. • **Boolean**: Columns containing True or False values. Includes table columns using the Boolean data type. • **Dimension**: Columns containing numeric dimension codes. Includes table columns using Numeric, Integer, or Identity data types, where the Column Classification is Dimension. • **Decimal**: Columns containing decimal numeric values. Includes table columns using the Numeric data type, where the column has a Numeric Type of Number. • **Number**: Columns containing whole integer numeric values. Includes table columns using Integer or Identity data types, where the Column Classification is Value. • **Currency**: Columns containing currency numeric values. Includes table columns using the Numeric or Integer data types, where the column has a Numeric Type of Currency. • **Percent**: Columns containing percent numeric values. Includes table columns using the Numeric or Integer data types, where the column has a Numeric Type of Percent. Additionally, when you create a calculated column, you can specify its data type as one of the numeric data types. The column will then use the default column formats for that data type. The default data type for calculated columns is Currency. **NOTE:** Columns that would normally be treated as Number data type are treated as Dimension data type if they are used as row dimension columns or drill columns.
Column width	The default column width for the selected **Data Type**, in pixels. Enter the desired column width as a whole integer between 20 and 1000. The default width for each data type is as follows: • Currency, Decimal, Percent, Date, Boolean: 120 • Number: 150 • String, Dimension: 200

Item	Description
Alignment	The default alignment of the column values for the selected **Data Type**. If you want to change the default alignment for a data type, select one of the following: **Left**, **Right**, **Center**. The default alignment for each data type is as follows: • String, Date, Boolean, Dimension: Left • Decimal, Number, Currency, Percent: Right

Numeric properties

Use this section to view and define default number formats for the grid based on column data type. All columns added to the grid will inherit the settings defined here. By default, columns will continue to inherit any changes made to the default number formats unless the column has been configured to use a custom format.

For example, the default number format for the Currency data type uses 0 decimal places, with a thousands separator, and a negative number format of red parentheses. When a Currency column is added to the grid, the contents automatically display using this number format. If desired, you can update the default number format for Currency so that it uses 2 decimal places, and all columns using the Currency number format will now update to show 2 decimal places. This applies to columns that use the Currency number format by default, as well as columns that you have manually configured to use the Currency format. However, if you have changed a column so that it now uses a Custom number format instead of the Currency number format, then it will continue to use its custom configuration.

This section only applies to numeric data types. It does not display for data types such as String or Date.

Item	Description
Decimal places	The number of decimal places used by the selected **Data Type**. Enter any whole number from 0 to 10. You can also use the arrow keys to move the number up or down. The default number of decimal places for each numeric data type is as follows: • Currency: 0 • Decimal, Percent: 2 The Number data type does not use decimals.
Use 1000's separator	Specifies whether the selected **Data Type** uses a thousands separator: • If enabled (default), numbers show with a thousands separator, such as 1,000. • If disabled, numbers do not use a thousands separator, such as 1000.

Item	Description
Negative number format	The format used by the selected **Data Type** to display negative numbers. Select the desired format from the drop-down list. Available formats use the minus sign, or parentheses, or red text (or a combination of these formats). The default negative number format for each numeric data type is as follows: • Decimal, Number, Percent: Minus sign • Currency: Red text in parentheses

Frequently asked questions

Can I disable paging for a dynamic row grid?

Currently, if the grid uses dynamic rows then the grid is automatically paged if it exceeds 25 rows. This paging cannot be disabled. However, keep in mind that when the grid is exported to PDF or Excel, the paging is automatically disabled and the export file will show all rows.

Configuring column properties for a web report

The column properties define the presentation of each column in the grid. Using the column properties, you can configure:

- Display properties such as header text, column width, alignment, and number formatting
- Data properties such as column filters, alternate aggregation, and display formats for data
- Grid behavior properties such as inclusion in the total row, and whether end users can sort and filter using the column

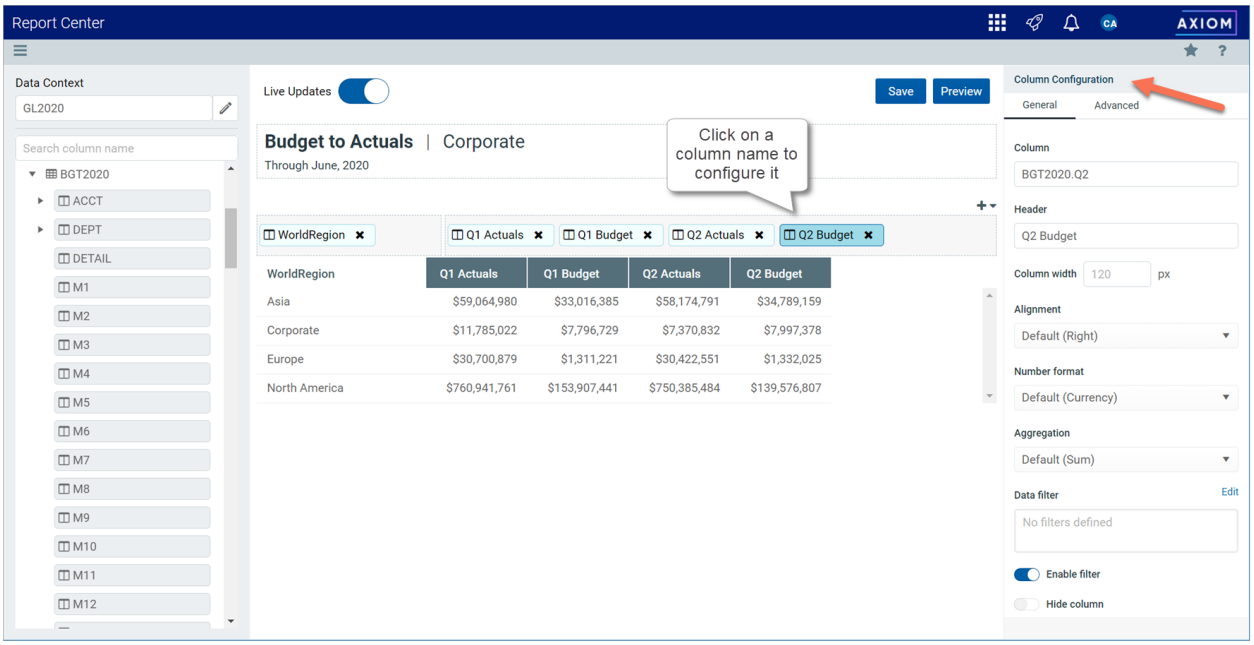
In the Report Builder, the column properties are defined in the right-hand Configuration Panel.

To configure column properties for a column in a web report:

1. In the Report Canvas of the Report Builder, click a column name in either the Row Dimensions box or the Column Definitions box to select that column.

   You must select the column name in the setup boxes and not the column name in the grid below. Selecting a column name in the preview grid causes the Grid Configuration to display instead of the Column Configuration.

2. Complete the **Column Configuration** properties that display in the Configuration Panel.

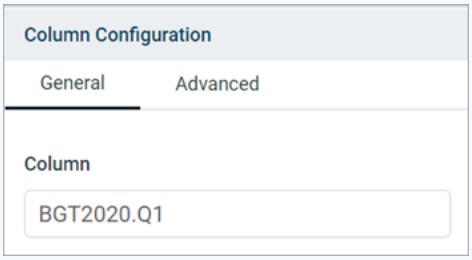
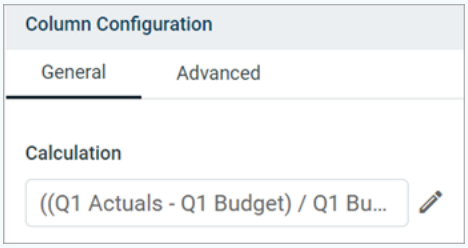


The column configuration properties are separated into two tabs:

- **General**: Basic column properties that should be reviewed and configured for all columns in the grid.
- **Advanced**: Advanced column properties to be configured as needed.

General column properties

The following column properties are available for web reports on the **General** tab of the **Column Configuration** panel. These properties apply to table columns and to calculated columns.

Item	Description
Column or Calculation	The following information displays at the top of the panel to identify the column: • **Column**: If the column is a table column, the full Table.Column path displays for your reference.  • **Calculation**: If the column is a calculated column, a text representation of the calculation displays for your reference. You can click the Edit icon to the right of the box to open the **Edit Calculated Column** dialog and edit the calculation as needed. 
Header	The header text to display on the column header. Enter the desired header text. • If the column is a table column, the column name is used as the header text by default. • If the column is a calculated column, the text "Calculation" is used as the header text by default.
Column width	The width of the column in the grid, in pixels. Enter the desired column width as a whole integer between 20 and 1000. The default width depends on the column data type, and is configured at the grid level. If you do not enter a custom width, then the default width displays in the **Column width** box in gray text. If you leave this default width and the grid-level defaults are changed, then column will update to use the new default width. For more information, see Default column formats.

Item	Description
Alignment	The alignment of the column values. Select one of the following: **Default**, **Left**, **Right**, **Center**. The default alignment depends on the column data type, and is configured at the grid level. If a column is set to use Default and the grid-level defaults are changed, the column will update to use the new default alignment. For more information, see Default column formats.
Number Format	The number format used by the column. Only applies to columns that hold numeric data. Select one of the following: • **Default**: The column uses the default number format as defined for the column's data type at the grid level. If a column is set to use **Default** and the grid-level defaults are changed, the column will update to use the new default number format. For more information, see Numeric properties. • **Currency**, **Decimal**, **Number**, **Percent**, or **Dimension**: The column uses the default number format as defined for the selected data type. For example, you may have a column that is natively a Decimal column, but you want it to display using Currency format in a particular report. If a column is assigned to a different number format, it will also inherit the default column width and alignment set for the associated data type, if the column is using the default column with and alignment. • **Custom**: The column uses a custom number format as defined in the column properties. If Custom is selected, then several additional properties become available to configure the number format. In this case, the column is no longer tied to any particular default number format. ◦ **Decimal places**: Specify the number of decimal places to display, from 0 to 10. ◦ **Use 1000's separator**: Specify whether the number uses a thousands separator or not. ◦ **Negative number format**: Specify the format to use for negative numbers.
Aggregation	The aggregation type used to aggregate data queried from the database column. Does not apply to calculated columns or to columns used as row dimensions. If you want to override the default aggregation type for a database column, select an aggregation type.

Item	Description
Data filter	Optional. Defines a filter to limit the data shown in this column. The column-level data filter should be used instead of a grid-level data filter when you want the filter to impact just this column. Click the **Edit** button to open the Filter Wizard and define a filter. Once you have defined a filter, it displays in the **Data filter** box. If you want to change or remove the filter, click the **Edit** link again and change or delete the filter within the Filter Wizard. The **Data filter** box is not directly editable. Data filters defined at the column level are combined with any filters defined at the column group level and at the grid level. All relevant filters are combined using AND to determine the data that can display in a particular column. **NOTES:** • If a data filter is defined for a calculated column, the filter is applied to the columns referenced in the calculation. • Column-level data filters cannot be defined for columns used as row dimensions. To limit the rows shown in the grid, use the grid-level filter in the Grid Configuration properties.
Enable filter	Specifies whether end users can filter based on the column contents. • If enabled (default), and if **Enable Column Filters** is enabled in the Grid Configuration properties, then a filter icon is available on the column in the rendered report. Users can use this column to filter the grid based on the column contents. • If disabled, then the filter icon is not available on the column. This property does not apply to columns used as row dimensions. It also does not apply to the entire grid if **Use fixed rows** is enabled in the Grid Configuration properties. Fixed row reports do not support end-user column filtering.
Hide column	Specifies whether the column is hidden in the report: • If enabled, then the column is hidden. The column remains visible in the Report Builder so that you can continue to configure the column as needed. • If disabled (default), then the column is visible.

Item	Description
Show description	Specifies whether you want descriptions to display for dimension values. This option only applies to key columns and validated columns that have an associated description column. • If enabled (default), then descriptions display alongside the dimension values or instead of the dimension values. For example, if the column is Acct then you likely want the account descriptions to display along with the account codes. When this option is enabled, the **Description display format** field becomes available. Select the desired display format from this list. By default, the format **Description (Value)** is used. • If disabled, then only the dimension values display. For example, if the column is Acct then only the account codes will display. **NOTE:** If the dimension table has multiple description columns (meaning columns where **Describes Key** is **True**), then the first description column is used.
Include in total row	Specifies whether the column is included in the total row, if a total row is enabled in the Grid Configuration properties. Select one of the following: • **Default**: The column is included or not based on its data type. All numeric columns are included by default unless they are the Dimension data type. All other non-numeric columns are not included by default, unless you change the aggregation so that the column returns a number (such as using Count aggregation on a String column). • **Include**: Override the default behavior and include the column in the total row. • **Exclude**: Override the default behavior and exclude the column from the total row. This option does not apply if **Use fixed rows** is enabled in the Grid Configuration properties. Columns will be included or excluded in subtotal or total rows using the default behavior.

▶ Advanced column properties

The following column configuration properties are available for web reports on the **Advanced** tab of the **Column Configuration** panel:

Header Properties

Item	Description
Header text (row 1)	The header text to display on the column header. Enter the desired header text. **NOTES:** • This is the same property that displays on the **General** tab as **Header**. The header text can be edited from either tab. • The **(row 1)** label only displays if **Multi-row header** has been enabled. In this case, the property defines the header text for the top row of the multi-row header.
Header text (row 2)	The header text to display on the second row of the column header. Enter the desired header text. This property is only available if if **Multi-row header** has been enabled.
Multi-row header	Specifies whether the column header has multiple rows: • If enabled, then the header text property updates so that there are two properties: **Header text (row 1)** and **Header text (row 2)**. The default header text populates row 1. You can define additional text to display on row 2. • If disabled (default), then only one row of header text can be defined. Keep in mind that enabling a multi-row header is different than wrapping header text. If you enable multi-row headers, then you can define two separate rows of header text. A line break separates each row. If autowrap is enabled, then each row of header text wraps individually. If you just want a single row of header text that wraps, you can leave this option disabled and then enable **Autowrap header text**.
Autowrap header text	Specifies whether header text wraps: • If enabled, then header text that exceeds the column width will wrap. If **Multi-row header** is enabled, both rows of header text will wrap individually. • If disabled (default), then header text that exceeds the column width is truncated. The user can resize the column wider to view the full header text.

Item	Description
Header alignment	The alignment of the header text. Select one of the following: **Default**, **Left**, **Right**, **Center**. All column headers use **Default** alignment by default. By default, the header text uses the same alignment as the column contents (as determined by the **Alignment** property on the **General** tab). If you leave the header alignment set to Default, then the header alignment will adjust to match the column alignment. If, however, you want the header alignment to be different than the column alignment, you can configure this property.

Frequently asked questions

I defined a column filter but it isn't impacting the grid data as I expected—why do I still see rows that don't match the column filter?

A column filter only filters the data coming into that specific column. If you want to define a filter that impacts the entire report, including the row data, then you should define a filter at the grid level. Select the grid and then use the Grid Configuration properties to define a **Data Filter**.

To illustrate the difference, imagine the following uses of a filter to only show data from the West region:

- **Grid**: When the filter `Dept.Region='West'` is defined for the grid, the entire grid is filtered to only show data from the West region. Row dimension values (such as departments) will only display if they belong to the West region, and column data is limited to only show data for the West region.
- **Column**: When the filter `Dept.Region='West'` is defined on a column, that single column is filtered to only show data from the West region. Other columns and row dimension values are not limited by this filter. You might do this if you want to create a report that shows the different region data in different columns, such as to compare data from the West, East, North, and South regions side-by-side.

Configuring drilling for web reports

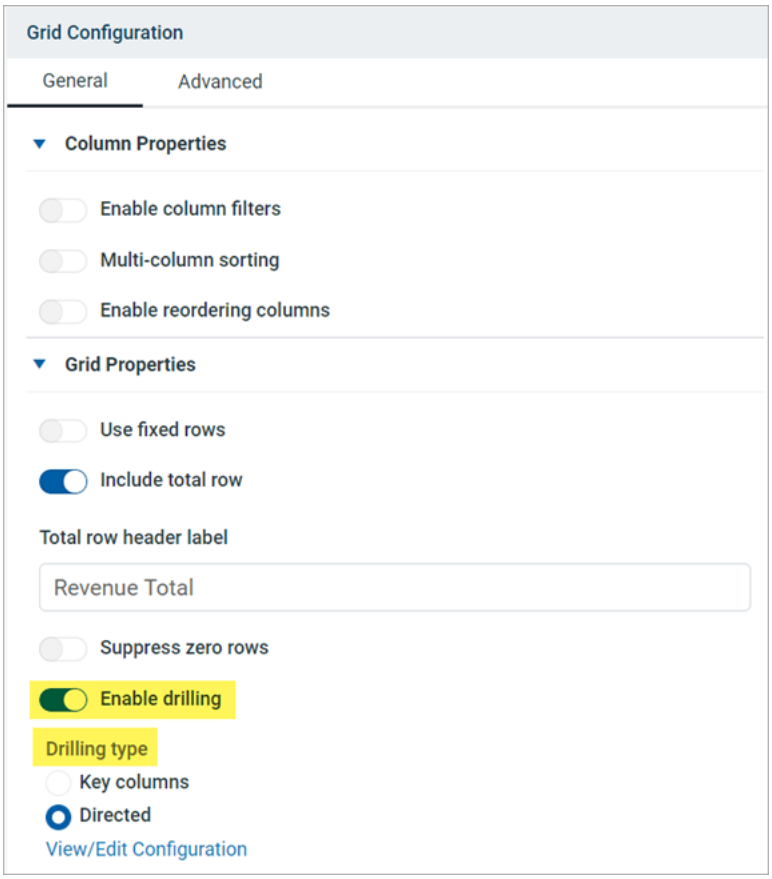
You can enable two types of drilling for web reports:

- **Key columns**: Users can drill to view the underlying data based on the key columns of the table specified as the **Data Context**. This option provides limited "out-of-the-box" drilling functionality that does not require any further setup.
- **Directed**: Users can drill to view the underlying data based on predefined drilling paths. The report designer defines the available drilling paths and can configure certain display attributes for the drill.

To enable either drilling option:

1. In the Report Builder, select the grid so that the **Grid Configuration** properties display in the Configuration Panel.

2. On the **General** tab of the **Grid Configuration** properties, enable **Enable Drilling**.
3. For **Drilling type**, select either **Key columns** or **Directed**.
4. If you selected **Directed**, click the **View/Edit Configuration** link to define the directed drilling paths.



Example drill options enabled for the grid

Configuring directed drilling paths

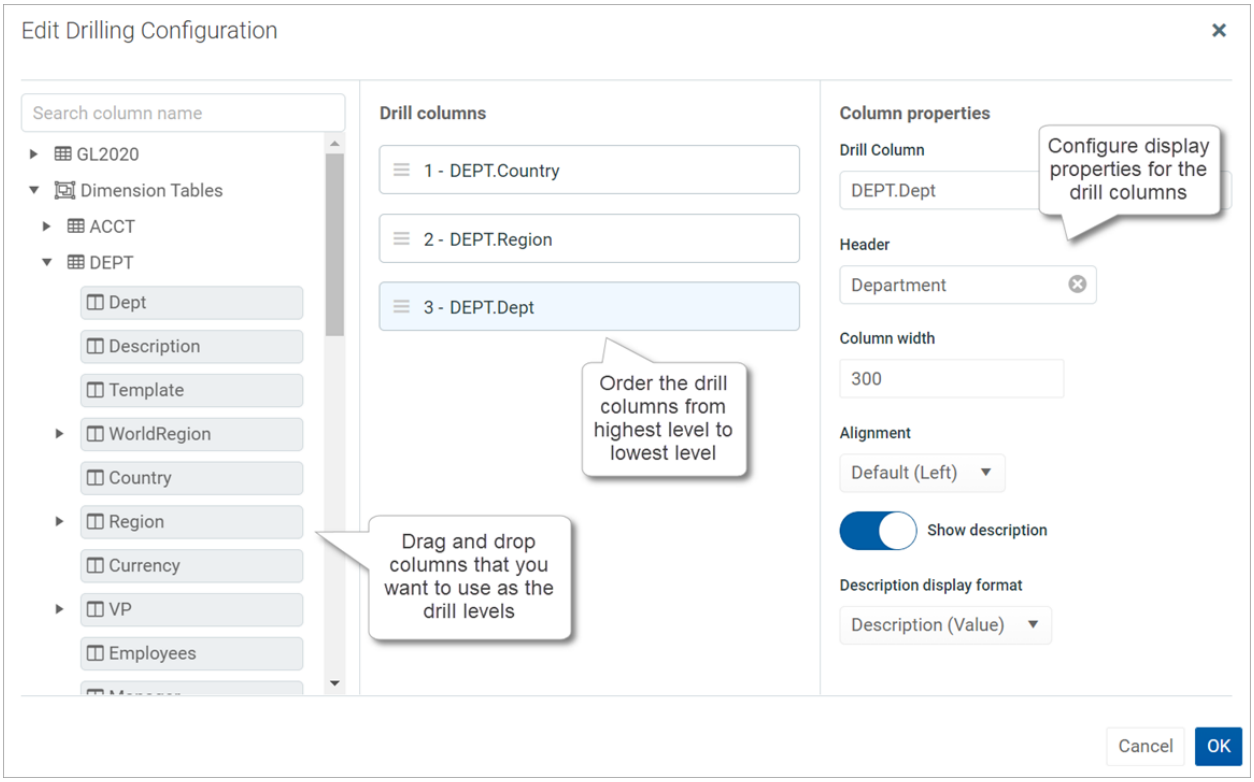
Use the **Edit Drilling Configuration** dialog to define the drilling paths for directed drilling.

To define drilling paths:

1. In the **Grid Configuration** properties, click the **View/Edit Configuration** link under the **Directed** drilling option.
2. Drag and drop columns from the table tree to the **Drill Columns** area in the middle of the dialog. The available columns for drilling depend on the table specified as the primary table for the data context:
    - If the primary table is a data table, then you can use any column on the primary table or on a lookup reference table (the Dimension Tables).

- If the primary table is a reference table, then you can only use column paths that originate from the primary table. The Dimension Tables node is not present, but you can still use columns from those tables by expanding the primary table and selecting the desired columns through the primary table.

3. Place the drill columns in the desired order for the directed drilling. Users can drill from the column at the top of the list down to the column at the bottom of the list. Generally speaking, the lowest level of detail should be at the bottom—for example: VP > Director > Manager > Dept.
    - To reorder columns, click the handle on the left side of the column box to drag and drop the column to a new position.
    - To remove a column, hover your cursor over the column and then click the **X** on the right side of the column box.
4. Select each drill column and configure the drill properties in the right side of the dialog. See the following table for information on these properties.
5. Click **OK** to complete the drill configuration and return to the Report Builder.



Example drilling configuration dialog

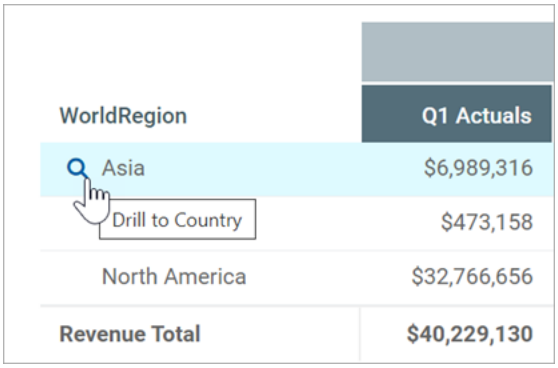
Drill Column Properties

Item	Description
Drill column	The full Table.Column path of the drill column displays for your reference, so that you know which column you are configuring.
Header	Header text for the column in the drill results. Enter the desired text. The column name is used by default.
Column width	The width of the column in the drill results, in pixels. Enter the desired column width as a whole integer between 20 and 1000. By default, the width is 300 for all drill columns, regardless of data type.
Alignment	The alignment of the column values. Select one of the following: **Default**, **Left**, **Right**, **Center**. The default alignment depends on the column data type. If a column is set to use Default and the grid-level defaults are changed, the column will update to use the new default alignment. For more information, see Default column formats.
Show description	Specifies whether you want descriptions to display for dimension values. This option only applies to key columns and validated columns that have an associated description column. • If enabled (default), then descriptions display alongside the dimension values or instead of the dimension values. For example, if the column is Acct then you likely want the account descriptions to display along with the account codes. When this option is enabled, the **Description display format** field becomes available. Select the desired display format from this list. By default, the format **Description (Value)** is used. • If disabled, then only the dimension values display. For example, if the column is Acct then only the account codes will display. **NOTE:** If the dimension table has multiple description columns (meaning columns where **Describes Key** is **True**), then the first description column is used.

Using directed drilling

If directed drilling is enabled and configured, you can drill down the predefined drilling paths to view the underlying data. Directed drilling works as follows:

- When you view the report, you can hover your cursor over a row to show the magnifying glass icon on the left side of the row.



- Click the magnifying glass to drill to the first level of the drill. This is the column positioned at the top of the **Drill Columns** list in the **Edit Drilling Configuration** dialog.The drill results open in a new browser tab.
- From here, you can continue to drill by hovering over a row and clicking the magnifying glass to go to the next level of the drill. All subsequent drills are performed in the same browser tab.
- Once you reach the final level of the drill, no more drilling options are available and the magnifying glass no longer displays.

Using key column drilling

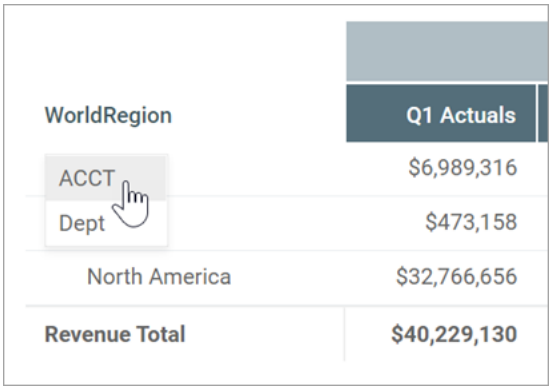
If key column drilling is enabled, you can automatically drill to the key column level to view the underlying data. The available key columns are determined as follows:

- If the primary table used as the data context is a data table, you can drill to the validated key columns on the table. However, any key column used as a row dimension will not be available for drilling, since the report already shows data at that level.
- If the primary table used as the data context is a reference table, you can drill to the key of the reference table, unless the key is used as the row dimension.

When you view the report, you can hover your cursor over a row to show the magnifying glass icon on the left side of the row. From here you can drill as follows:

- If there is only one available key for drilling, click the magnifying glass to drill.

- If multiple keys are available for drilling, click the magnifying glass to show a list of the available keys, then click on the key you want to drill.



The drill results open in a new browser tab. If multiple keys were available for drilling, you can optionally drill the drill results to view the other key(s).

If no keys are available for drilling, then the magnifying glass does not display when you hover your cursor over the row.

Presentation of drill results

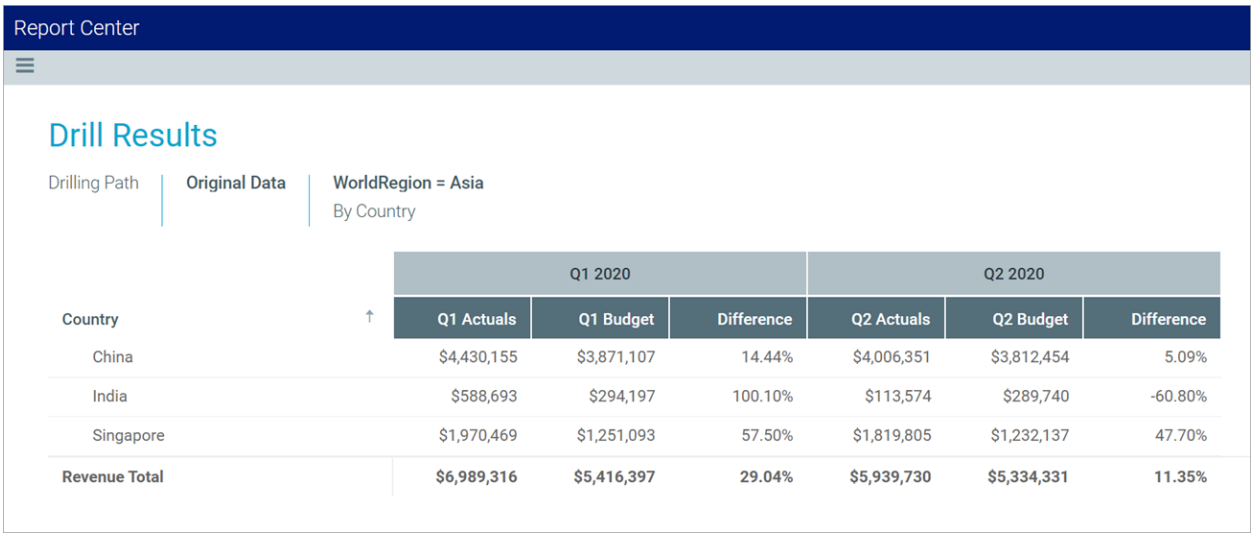
When you drill, the drill results display in a new browser tab. The data contents of the drill results are as follows:

- The row dimension(s) of the original report are removed from the grid and replaced with the current drill column. The drill column is either the current column of a directed drilling path, or the selected key column.
- All other columns of the report are included in the drill results and show data for the current drill level.
- If the drill results contain multiple rows of data, the grid includes a total row. If the drill results contain a single row of data, the total row is omitted.
- Drill results are paged if the results contain many rows.

The current drill path displays along the top of the page. The drill path identifies the row that was drilled and the current drill level. If you have drilled the drill results, the previous drill levels also display in the drill path. You can click a previous drill level to return to that level.

The drill column displays as follows:

- For key column drilling, the column alignment and width are determined by the column data type. The header text is the key column name. Key column values are presented as Description (Value).
- For directed drilling, the column alignment, width, and header text are as configured in the **Edit Drilling Configuration** dialog.

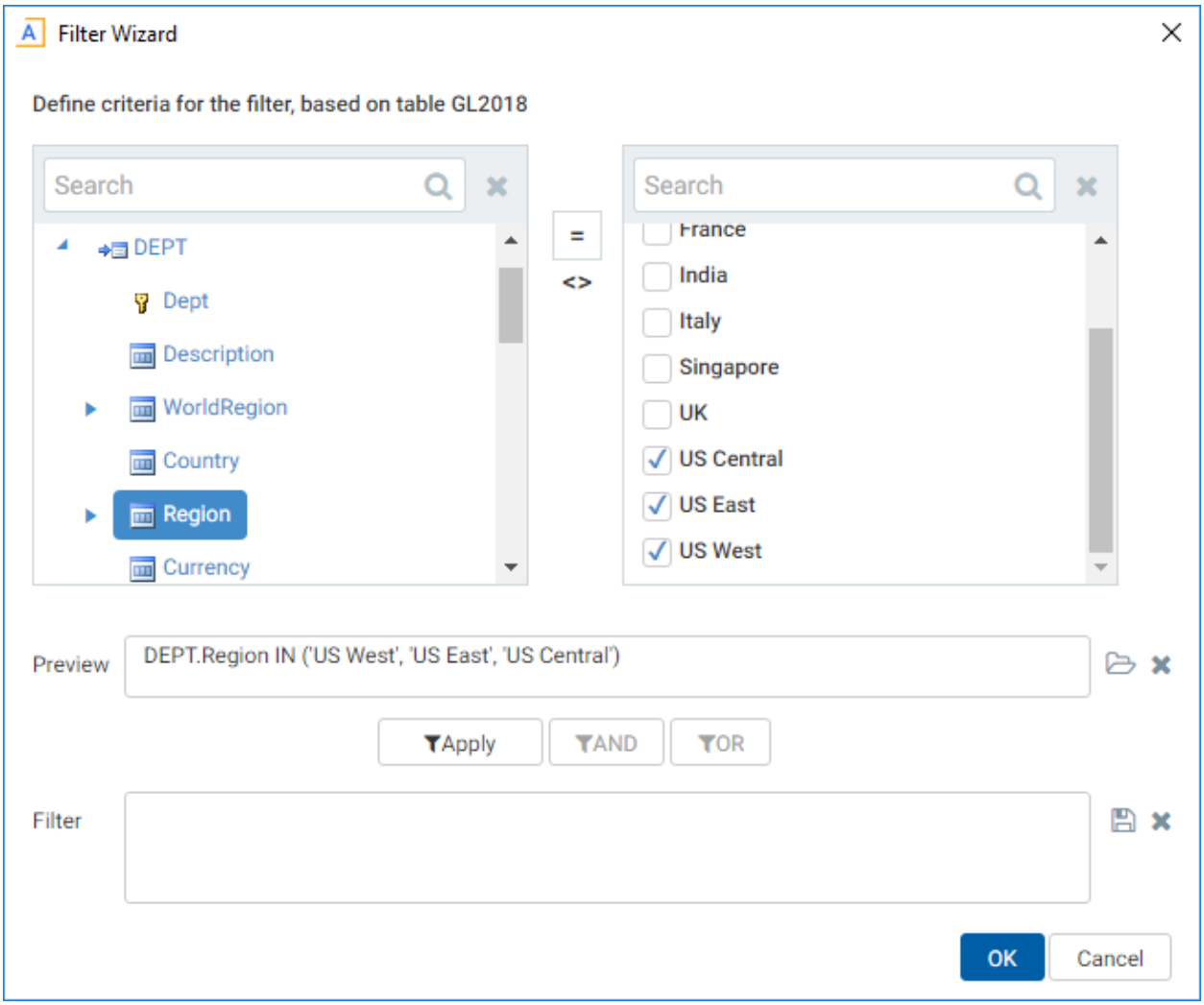


Country	Q1 2020			Q2 2020		
	Q1 Actuals	Q1 Budget	Difference	Q2 Actuals	Q2 Budget	Difference
China	$4,430,155	$3,871,107	14.44%	$4,006,351	$3,812,454	5.09%
India	$588,693	$294,197	100.10%	$113,574	$289,740	-60.80%
Singapore	$1,970,469	$1,251,093	57.50%	$1,819,805	$1,232,137	47.70%
Revenue Total	**$6,989,316**	**$5,416,397**	**29.04%**	**$5,939,730**	**$5,334,331**	**11.35%**

Example drill results with drilling path displayed at the top

Using the Filter Wizard

The Filter Wizard is available in various locations to assist you in building a valid filter criteria statement.



Example Filter Wizard

The tables available in the wizard depend on the current context. For example, if you are creating a data filter for a web report, the wizard only shows valid tables in relation to the specified primary table. In other areas, the tables in the wizard may be limited based on other factors.

To create a filter:

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

   For example, if you want 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, you can filter the list by typing into the Search box. The filter matches based on table and column names.

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

TIP: Alternatively, you can use the folder icon to the right of the **Preview** box to load a previously saved filter from the Filters Library. If you do this, your selected filter is placed in the Preview box, overwriting any current content in the preview. Skip to step 4.

2. In the right-hand side of the dialog, select the value(s) on which you want to base the filter.

   You can type into the filter box below the list of values to filter the list. Your current typed value is always placed at the top of the list. You can select this typed value regardless of whether it currently matches an actual value in the column. This behavior is to allow you to create a filter for empty tables, or for tables where the value you want to filter on is not yet present in the column. This is why you may see the "no matches" message but still have one value in the list—your typed value.

3. In the space between the two selection boxes, select the operator to use for the filter criteria statement, such as equals, not equals, greater than, or less than. 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.
   - 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.
   - The LIKE operator is supported, but is not available for selection in the Filter Wizard. You must manually edit the filter criteria statement if you want to use it. Only advanced users with knowledge of valid SQL LIKE syntax should do this.

4. Review the filter criteria statement in the **Preview** box to ensure that it is as intended. If you need to make changes, you can manually edit the statement, or you can start again with a new statement. If you want to clear the statement, click the **X** icon to the right of the Preview box.

5. If no filter is currently present in the **Filter** box, click **Apply** to move the filter down to the Filter box. If a filter is currently present in the Filter box, you can do one of the following:

   - Click **Replace** to overwrite the current filter with the preview filter.
   - Click **AND** or **OR** to add the preview filter to the current filter. This creates a compound criteria statement.

   You can repeat the filter creation process as many times as necessary to create the desired statement. You can also manually modify the filter in the Filter box as needed, such as to add parentheses to group statements.

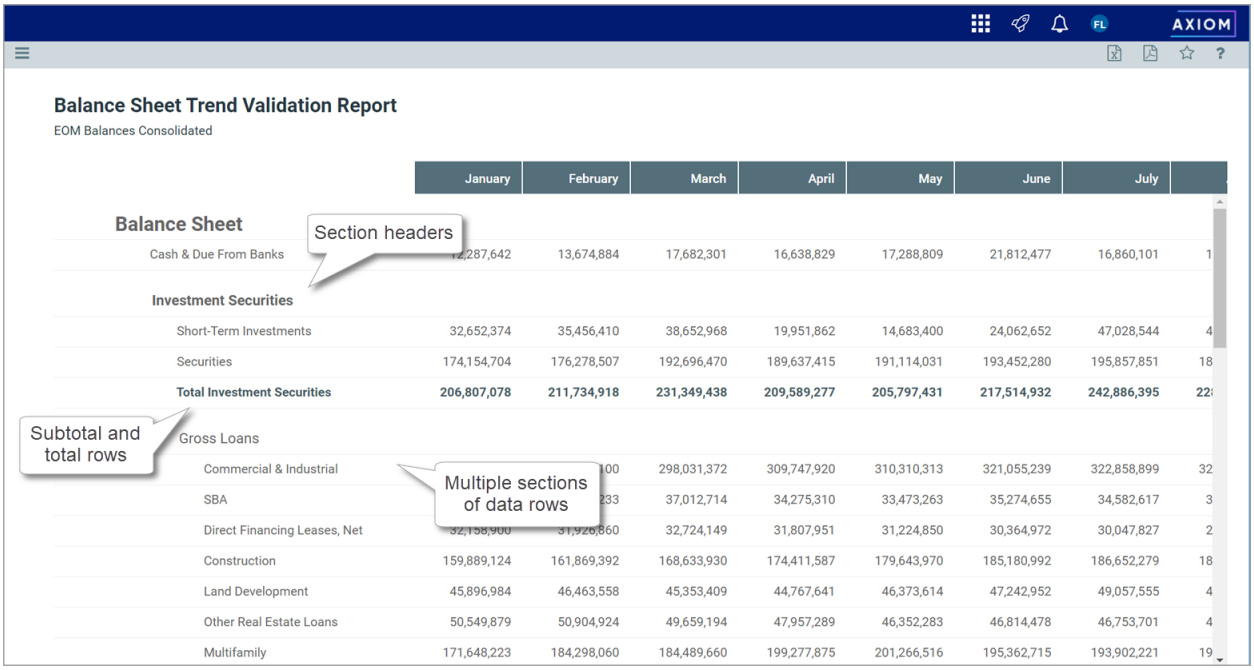
6. When the filter in the Filter box is complete, click **OK**.

TIP: If you want to save the filter you have created for future use, click the save icon to the right of the Filter box. You can select a folder location in the Filters Library (or My Documents if applicable), and specify a name for the filter. This option is only available if you have read/write access to at least one location where filters can be stored.

Managing Fixed Row Structures fixed row structures for web reports

Fixed row structures can be used to define data sections for a web report, including section headers, data rows, subtotals, and totals. Fixed row structures are defined separately so that you can reuse them with different web reports, and so that you can update the row structure in one place and have the changes propagate to all reports that reference the structure.

Fixed row structures can be used with "custom" web reports created in the Report Builder, and with web report templates provided by installed Axiom Capital Planning products. The fixed row structure defines the data sections in the report, while the web report defines other report properties such as the data columns, filters, and drilling options.



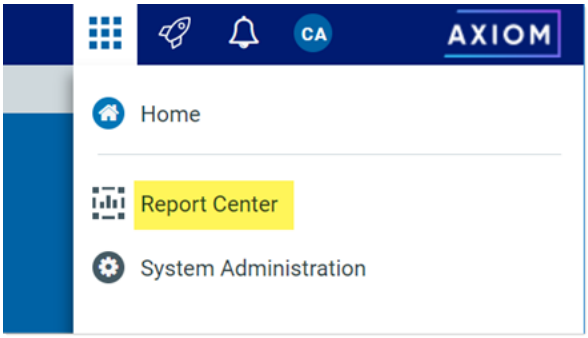
	January	February	March	April	May	June	July
Balance Sheet							
Cash & Due From Banks	12,287,642	13,674,884	17,682,301	16,638,829	17,288,809	21,812,477	16,860,101
Investment Securities							
Short-Term Investments	32,652,374	35,456,410	38,652,968	19,951,862	14,683,400	24,062,652	47,028,544
Securities	174,154,704	176,278,507	192,696,470	189,637,415	191,114,031	193,452,280	195,857,851
Total Investment Securities	**206,807,078**	**211,734,918**	**231,349,438**	**209,589,277**	**205,797,431**	**217,514,932**	**242,886,395**
Gross Loans							
Commercial & Industrial			298,031,372	309,747,920	310,310,313	321,055,239	322,858,899
SBA			37,012,714	34,275,310	33,473,263	35,274,655	34,582,617
Direct Financing Leases, Net			32,724,149	31,807,951	31,224,850	30,364,972	30,047,827
Construction	159,889,124	161,869,392	168,633,930	174,411,587	179,643,970	185,180,992	186,652,279
Land Development	45,896,984	46,463,558	45,353,409	44,767,641	46,373,614	47,242,952	49,057,555
Other Real Estate Loans	50,549,879	50,904,924	49,659,194	47,957,289	46,352,283	46,814,478	46,753,701
Multifamily	171,648,223	184,298,060	184,489,660	199,277,875	201,266,516	195,362,715	193,902,221

Example report using a fixed row structure

You can define as many different fixed row structures as you need. A row structure can be used with any web report where the structure's row dimensions are compatible with the report's columns, filters, drilling options, and any other report property that impacts queried data. Row structures can be created, edited, and deleted using the Report Center.

To access the Report Center:

- Click the menu icon in the Global Navigation Bar. From the Area menu, select **Report Center**.



NOTE: Fixed row structures are not file-based—they are stored directly in the database. There is no file type or library folder for fixed row structures, and you cannot see them in Axiom Explorer. The only place to view and manage fixed row structures is using the Report Center.

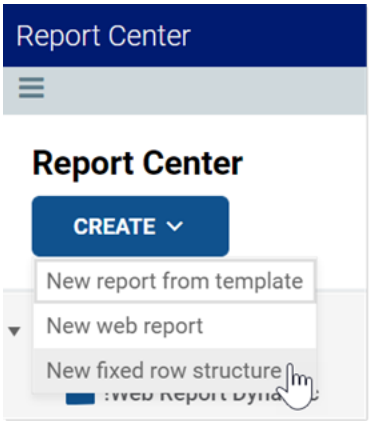
Creating fixed row structures

You can create new row structures as needed for use in web reports.

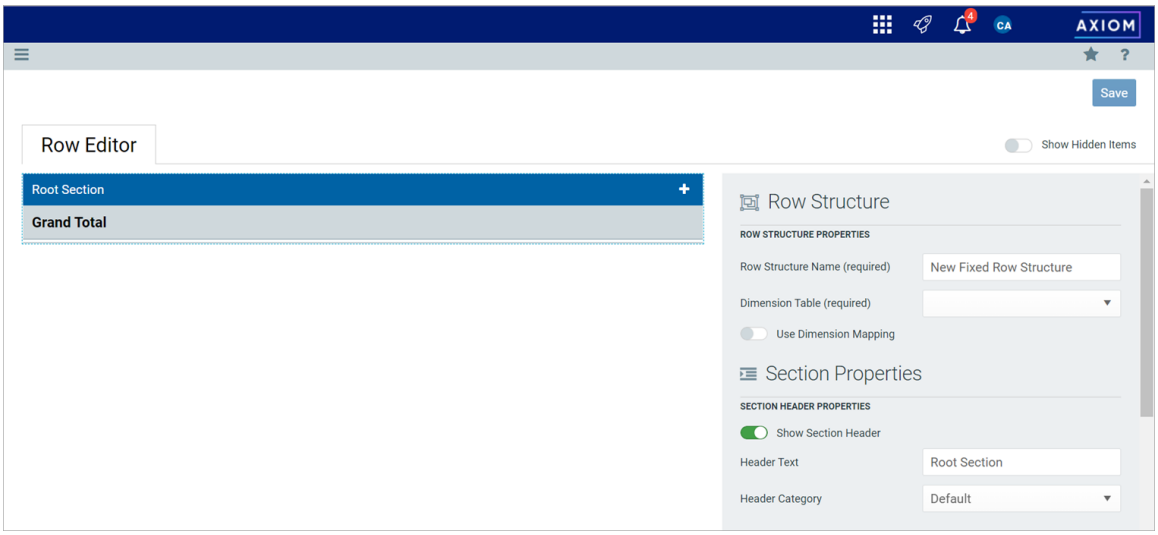
In order to create a fixed row structure, you must be an administrator or have the **Create Web Reports** security permission. If you do not have permission to create web reports, then the option to create a new fixed row structure will not be available from the **Create** button in the Report Center. If you do not have access to any report creation options, then the **Create** button is hidden entirely.

To create a new row structure:

1. In the Report Center, click **Create > New fixed row structure**.



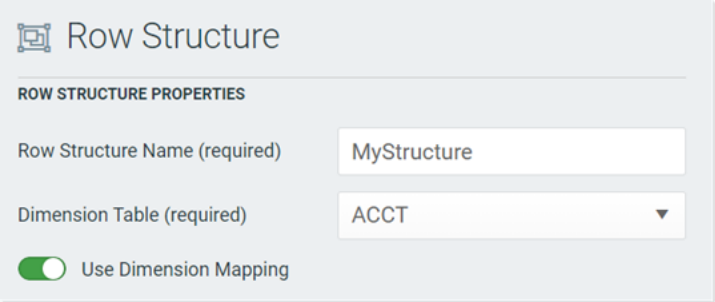
The row structure editor opens in a new browser tab, showing a new blank row structure. The row structure starts with just a top-level section header and a grand total row.



Example new blank row structure

2. In the top of the right-hand panel, complete the following required properties for the row structure:

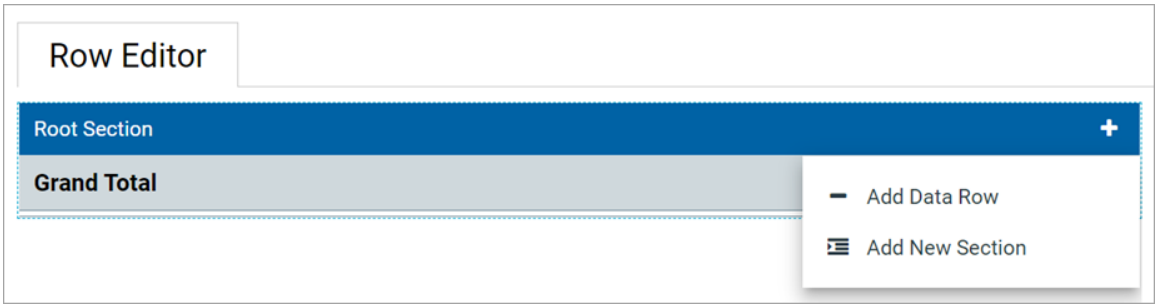
Item	Description
Row Structure Name	Enter the name of the row structure. The name identifies the row structure so that users can select it when creating a new fixed report.
Dimension Table	Specify the dimension table to use for the Filter Wizard when defining row data. For example, if rows will be defined using accounts or account groupings, select the ACCT table.
Use Dimension Mapping	Enable this toggle switch if you want to map specific items in the dimension table to specific rows in the structure. When using dimension mapping, all row data is defined at the key column level of the dimension table, and each dimension item can only be assigned to a single row. The toggle switch shows as green when enabled and as gray when disabled. If this option is not enabled, then row data is determined by defining filter criteria statements at the row and section level. For more information, see Using dimension mapping versus row filters in a fixed row structure.



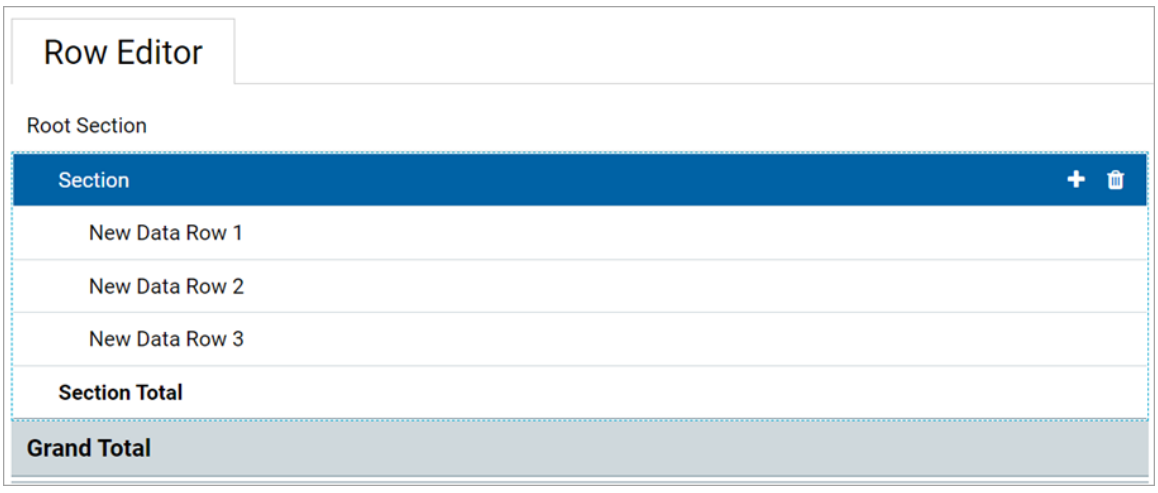
Example required properties with dimension mapping enabled

Once these items are completed, you can use the **Save** button to save the row structure.

3. In the left-hand row editor, add sections and data rows as desired to create the overall row structure. Think of the Root Section as the overall "wrapper" in which all row sections are placed. To create the first row section, click the plus icon on the **Root Section** header and then select **Add New Section**.



Your row structure will now look like this:



You can then continue to add data rows or additional sections:

- **To add a section**, select the section header where you want to add the section, then click the plus icon > **Add New Section**. The new section is added as a subsection to the current section. By default, all new sections contain a section header row, three data rows, and a total row. You can add or remove data rows as needed.
- **To add a data row within a section**, select the section header where you want to add the data row, then click the plus icon > **Add Data Row**. The new data row is added to the current section.

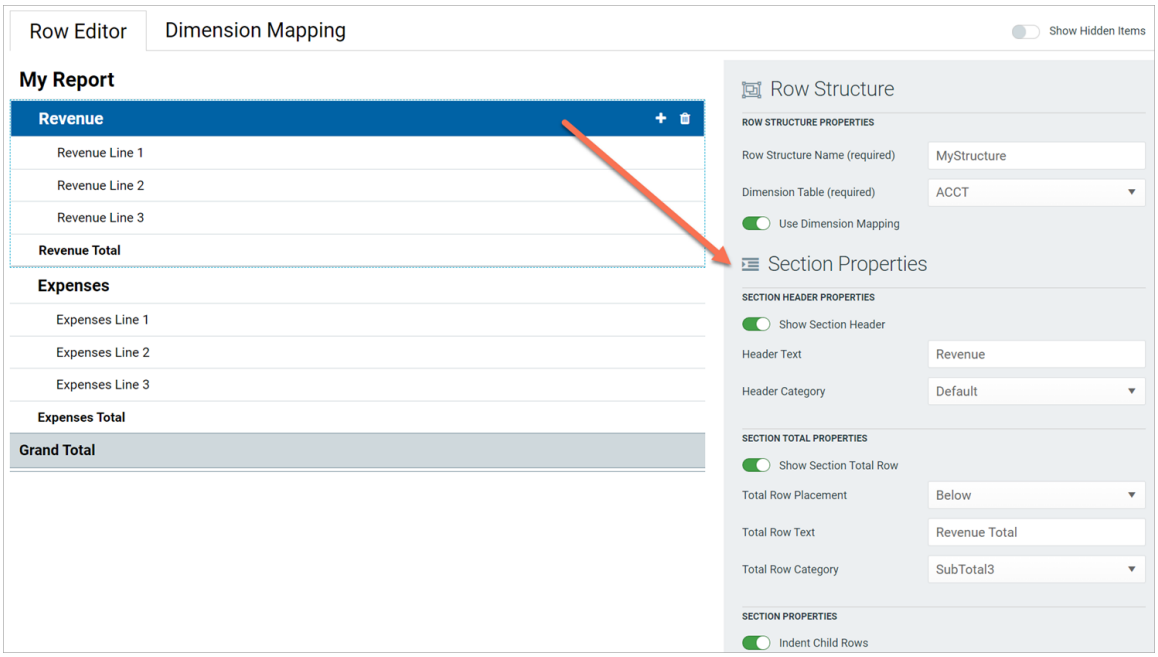
When you add a new data row or section, it is always added at the bottom of the current section. You can drag and drop the row or section to a different location within the section as needed (but not to a different section).

If a data row or a section is not needed, select the row or section header and then click the trash can icon. The row or section is deleted from the row structure.

NOTE: Header rows and total rows cannot be deleted from a section. The trash can icon on a section header row is used to delete the entire section, not the header row. If you do not want a particular section to display a header row or a total row, you can hide these rows on a per section basis using the Section Properties.

4. For each section in the report—including the Root Section—configure the properties for that section. To configure a section, select the section header and then complete the **Section Properties** in the right-hand panel. The section properties control the following:
   - Visibility, text, and style of the section header row
   - Visibility, text, placement, and style of the section total row
   - Whether data rows are indented from the parent section
   - Whether section data is added or subtracted when calculating the parent total
   - An optional data filter to apply to all data rows in the section (only available if the structure does not use dimension mapping)

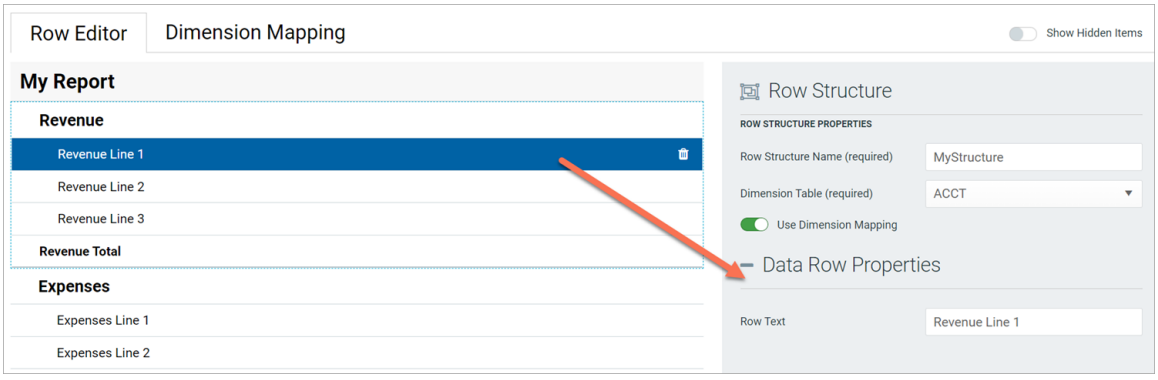
   For more information on all of the section properties, see Section properties.



In most cases, the row structure immediately updates to reflect section properties that affect the display. For example, if you define header text, that text is immediately shown on the row structure. However, if you hide the section header row, the row will continue to display in the row structure unless you disable the option **Show Hidden Items**. This option is located at the top right of the row editor, under the Save button. By default, the row editor continues to show hidden section headers so that you can use the Add Data Row and Add New Section actions on the header row.

5. For each data row in the report, configure the properties for that row. To configure a row, select the row and then complete the **Row Properties** in the right-hand panel.

   At minimum, the row properties define the label text for the row. If the structure does not use dimension mapping, then the row properties also define a data filter to determine the data to be shown on the row. For more information on defining the row properties, see Row properties.



6. If **Use Dimension Mapping** is enabled for the row structure, click the **Dimension Mapping** tab to map dimension elements to each row. This mapping determines the data to be shown on each row, instead of defining a filter. For more information on mapping dimension elements, see Using the Dimension Mapping editor.
7. Click **Save** to save the row structure.

When you are finished creating the row structure, you can close the browser tab and then return to the original Report Center tab.The new row structure can now be used when creating or editing web reports.

NOTE: If you go to the Fixed Row Structure node in the Report Center, you may not see your newly created row structure listed here until you refresh the page.

Copying fixed row structures

You can copy existing fixed row structures as needed to create additional fixed row structures.

In order to copy a fixed row structure, you must be an administrator or have the **Create Web Reports** security permission. If you do not have permission to create web reports, then the Copy icon on fixed row structures is disabled.

To copy a fixed row structure:

1. In the Report Center, select the **Fixed Row Structure** node and then locate the structure that you want to copy.
2. Hover your cursor over the row with the structure, then in the **Actions** column, click the Copy icon .
3. In the **Copy Fixed Row Structure** dialog, enter a **Name** for the new fixed row structure, then click **OK**. By default, the name is **Copy of *OriginalName***.

The fixed row structure is copied with the specified name. You can now open this fixed row structure for editing.

Editing fixed row structures

Any user can edit a fixed row structure. The **Create Web Reports** permission is not required.

Keep in mind that when a row structure is assigned to a report, that report always uses the most current version of the row structure. Any edits that you make to a row structure are immediately available in any reports that use the row structure.

To edit a fixed row structure:

1. In the Report Center, select the **Fixed Row Structure** node and then locate the structure that you want to edit.
2. Click on the row structure name to open it.

TIP: You can also click the Edit icon in the **Actions** column to edit the fixed row structure.

The row structure opens in the row structure editor, in a new browser tab.

3. Using the row structure editor, make changes to the row structure as needed.
4. Click **Save** to save your changes.

When you are finished editing the row structure, you can close the browser tab and then return to the original Report Center tab.

Deleting fixed row structures

Any user can delete a fixed row structure. The **Create Web Reports** permission is not required. If the fixed row structure was used by any web reports, those reports will no longer function correctly until they are edited to use a different fixed row structure.

IMPORTANT: If the deleted fixed row structure was used by a web report built from a template, that report will no longer work. Currently, there is no way to edit the row structure assignment for template-based reports. If the report is still needed, it must be re-created from template with a different fixed row structure.

To delete a fixed row structure:

1. In the Report Center, select the **Fixed Row Structure** node and then locate the structure that you want to delete.
2. Hover your cursor over the row with the structure, then in the **Actions** column, click the Delete icon .
3. When you are prompted to confirm that you want to delete the structure, click **OK**.

The structure is deleted from the system and no longer displays in the Report Center.

Using the Row Editor

Using the Row Editor, you can define fixed row structures for use in web reports. Fixed row structures define the following:

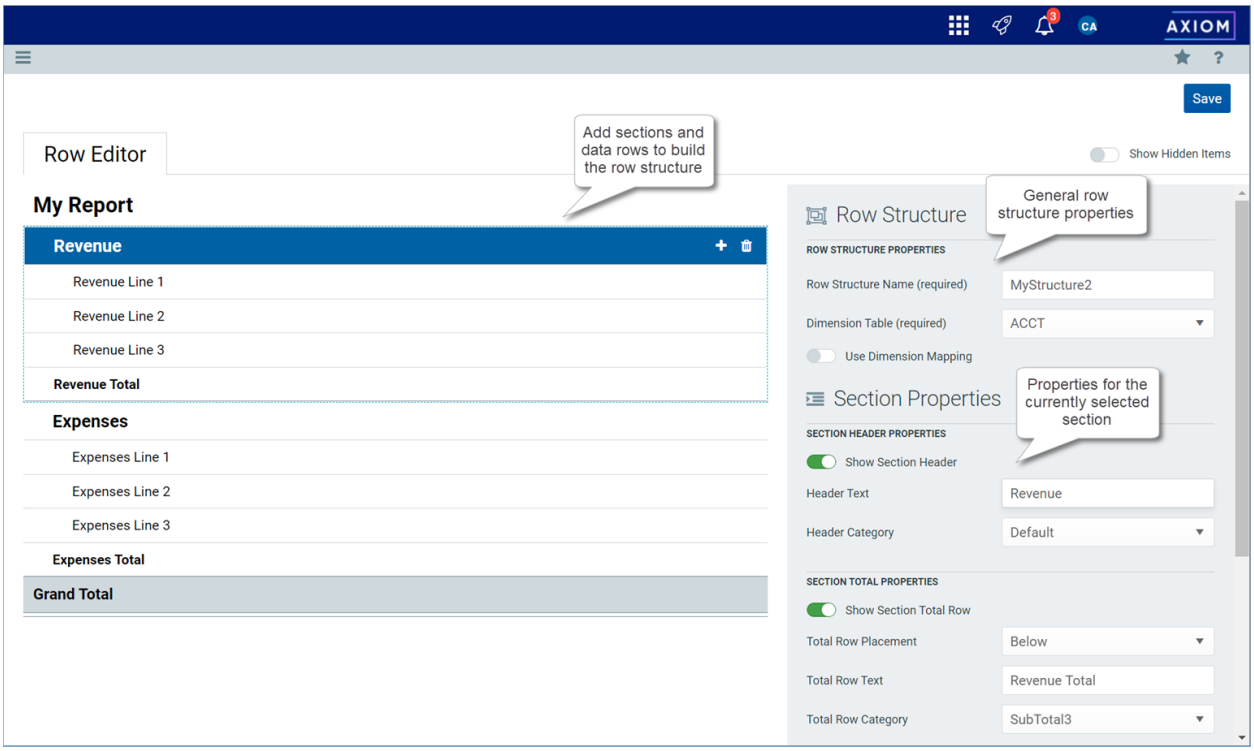
- The sections to be displayed in the report, including section titles and subtotal rows
- The data rows to be displayed within each section

When you use the Report Center to create a new fixed row structure or to edit an existing fixed row structure, it opens in the fixed row structure editor.

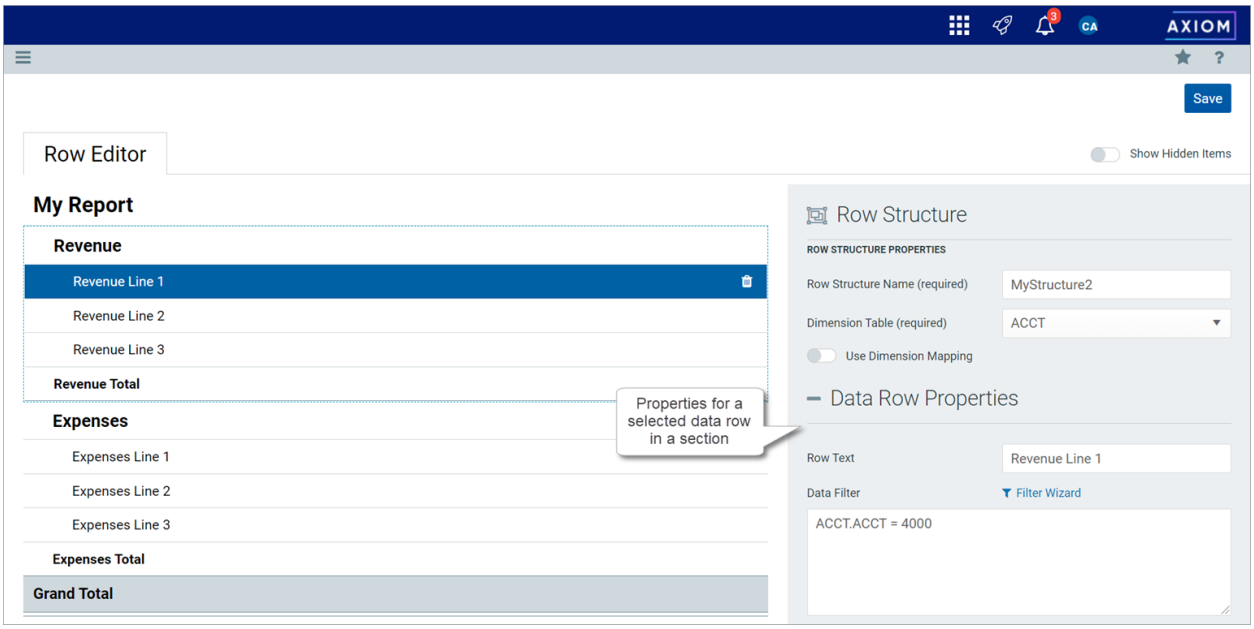
Overview

By default, the Row Editor consists of two primary areas:

- The section editor on the left-hand side, where you can add, reorder, and remove sections and data rows
- The property editor on the right-hand side, where you can define properties for the overall row structure, the selected section, or the selected row

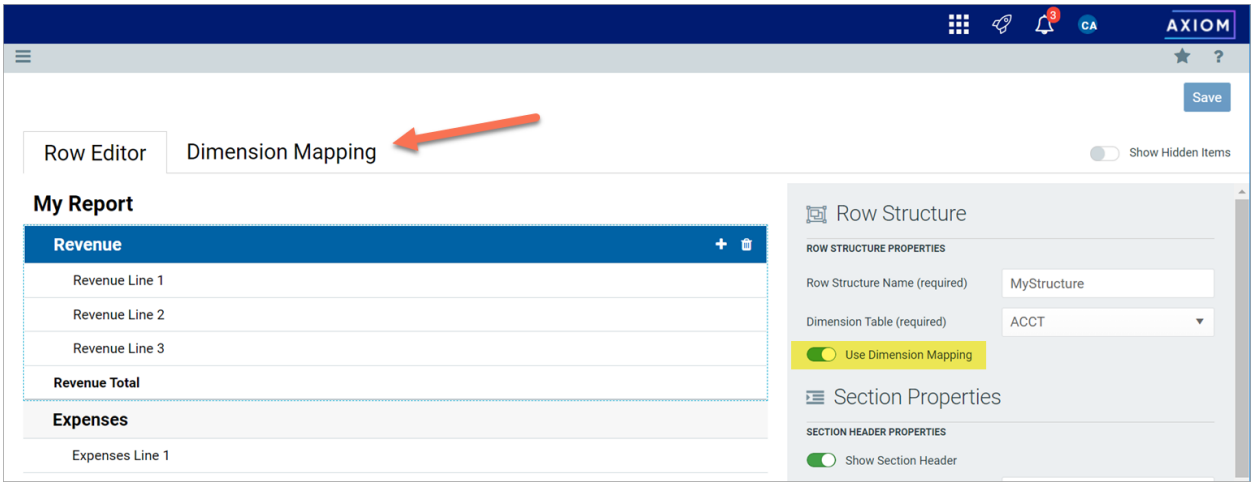


Row structure editor with a selected section



Row structure editor with a selected data row

If the row structure is configured to **Use Dimension Mapping** to define the row data, then another area is available via the **Dimension Mapping** tab. You can use the Dimension Mapping area to map dimension items to individual data rows. For more information on using dimension mapping, see Using the Dimension Mapping editor.



Row structure editor with Dimension Mapping tab

To save the row structure after making changes, use the **Save** button located at the top right of the editor.

Certain parts of the row structure can be configured as hidden, such as section header rows or total rows. By default, these hidden items no longer display in the editor. If you need to view these items so that you can work with them and configure them, you can toggle the option **Show Hidden items** at the top right of the editor.

Using dimension mapping versus row filters in a fixed row structure

When you build a fixed row structure, there are two different ways to define the data to be shown each in row:

- **Filters**: Each row can have a filter criteria statement that defines the data for that row. For example, `Acct.Acct=4100` or `Acct.Category='Revenue'`.
- **Dimension mapping**: Each row can be assigned one or more items in a specified dimension. For example, if Acct is the specified row dimension, then you can view the list of accounts and map them to specific rows in the report as needed.

The filter option is the most flexible way to build a fixed row structure, because:

- You can use any valid filter criteria statement to define the data in each row, including compound statements using AND or OR, and referencing any table (not just the specified dimension table).
- You can define filters at the section level, which then combine with all row-level filters in the section.
- You can repeat dimension elements within the row structure—for example, to create multiple sections that show revenue for different regions or lines of business.

However, because the filter option is more flexible, it also requires a more advanced level of knowledge about your data structures. You must take care not to create invalid or conflicting filters, and make sure that your filters result in the data that you want to display in the report.

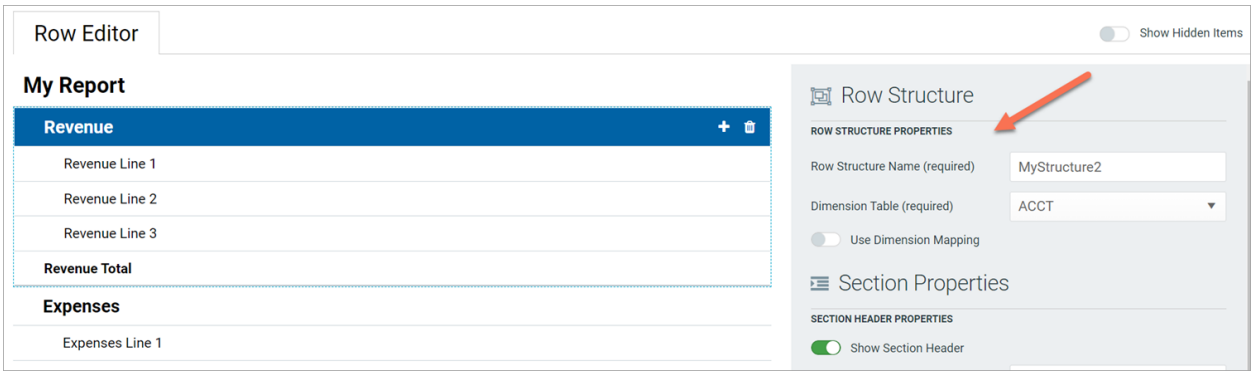
In contrast, the dimension mapping option is the easiest to set up, because:

- You are presented with a full list of all items in the specified dimension, which you can search and filter as needed.
- To assign an item to a row in the report, you simply select the item and then click the arrow button to move it over to the row. Each row can be assigned as many items in the dimension as needed.
- It is very easy to see exactly which dimension items will display on each row, and to see which items have not yet been assigned to rows.

However, the dimension mapping option is less flexible. Rows can only display data from the specified row dimension, and each item in the dimension can only be assigned to a single row.

Row structure properties

The following required properties at the top of the right-hand pane apply to the entire row structure.



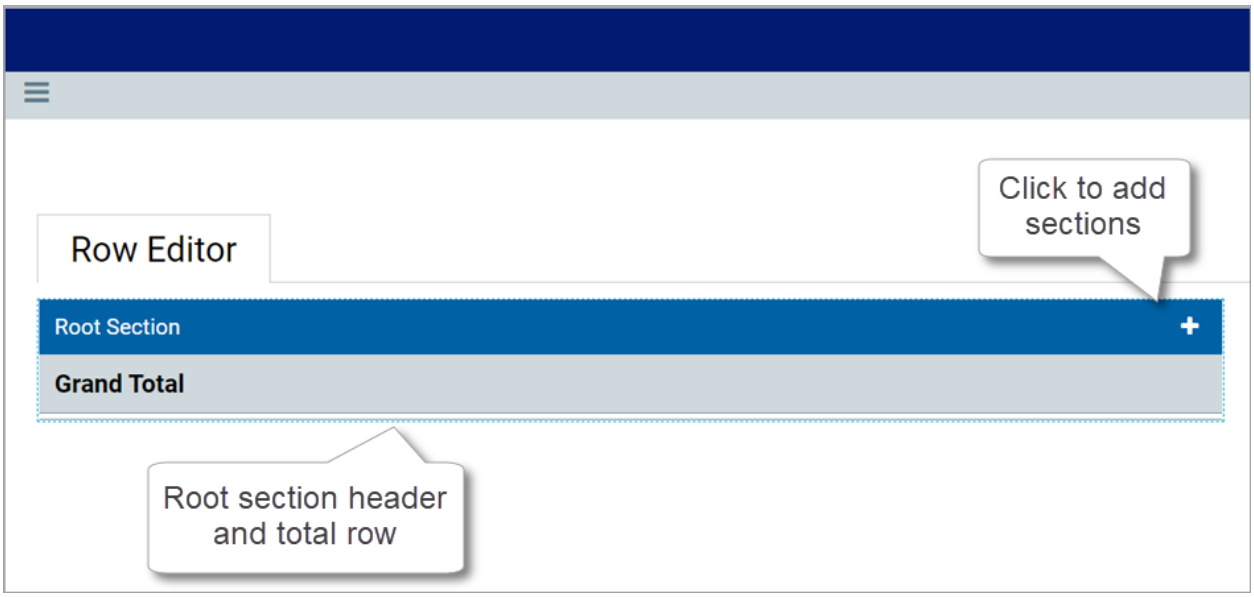
Example Row Structure properties area

Item	Description
Row Structure Name	The name of the row structure. The name identifies the row structure so that it can be selected when creating or editing a web report.
Dimension Table	The primary dimension table to be used on the data rows. You can select any reference table in your system. This selection is used as follows: • By default, it determines the table available to the Filter Wizard when defining filters for sections and data rows. For example, if the dimension table is Acct, then you can use the Filter Wizard to build filters based on Acct. **NOTE:** When using filters to define the data in sections and rows, the dimension table is simply a default table. If you want to define a filter using a different dimension, then you can manually enter a filter criteria statement using that dimension. • If **Use Dimension Mapping** is enabled, then it determines the dimension table for the row mappings. For example, if the dimension table is Acct, then you can map one or more accounts to each data row. In this case, data rows can only use the dimension table.

Item	Description
Use Dimension Mapping	Specifies whether the data in data rows is defined by using filters or by using dimension mapping. By default, this is disabled, so data is defined using filters. If instead you want to use dimension mapping for the rows, click the toggle switch to enable this option. The toggle switch shows as green when enabled and as gray when disabled. If **Use Dimension Mapping** is enabled, the row structure editor updates as follows: • A new tab named **Dimension Mapping** becomes available next to the **Row Editor** tab. You can use this tab to define dimension mappings for the rows. Typically, you should define the sections and rows in the structure first, then go to the **Dimension Mapping** tab to assign mappings to each row. • The **Filter** fields in the **Section Properties** and the **Row Properties** become hidden, because they do not apply when using dimension mapping. If a filter is defined for a section or a row before dimension mapping is enabled, the filter is retained in the properties (assuming it was saved) but it will be ignored in reports. For more information on the differences between using filters or dimension mapping to define data rows, see Using dimension mapping versus row filters in a fixed row structure.

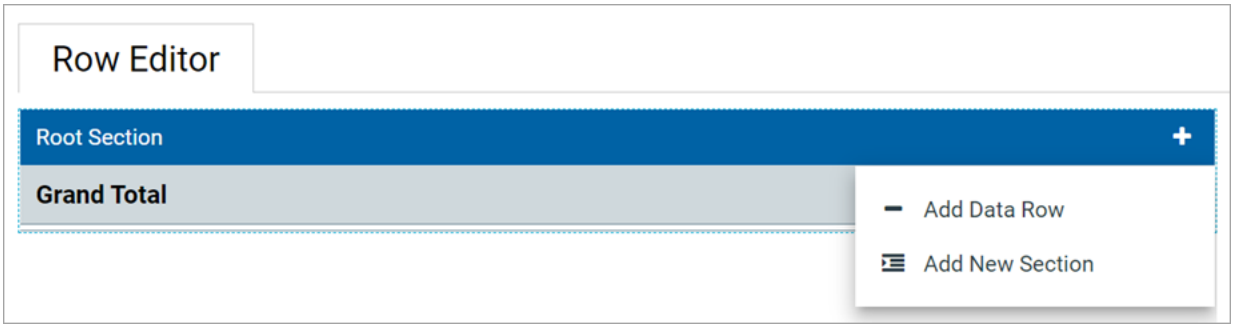
▶ Adding, removing, and reordering sections

Using the **Row Editor** tab, you can build your row structure by adding, removing, or reordering sections. Each row structure starts with a top-level root section that includes an optional header and an optional grand total.



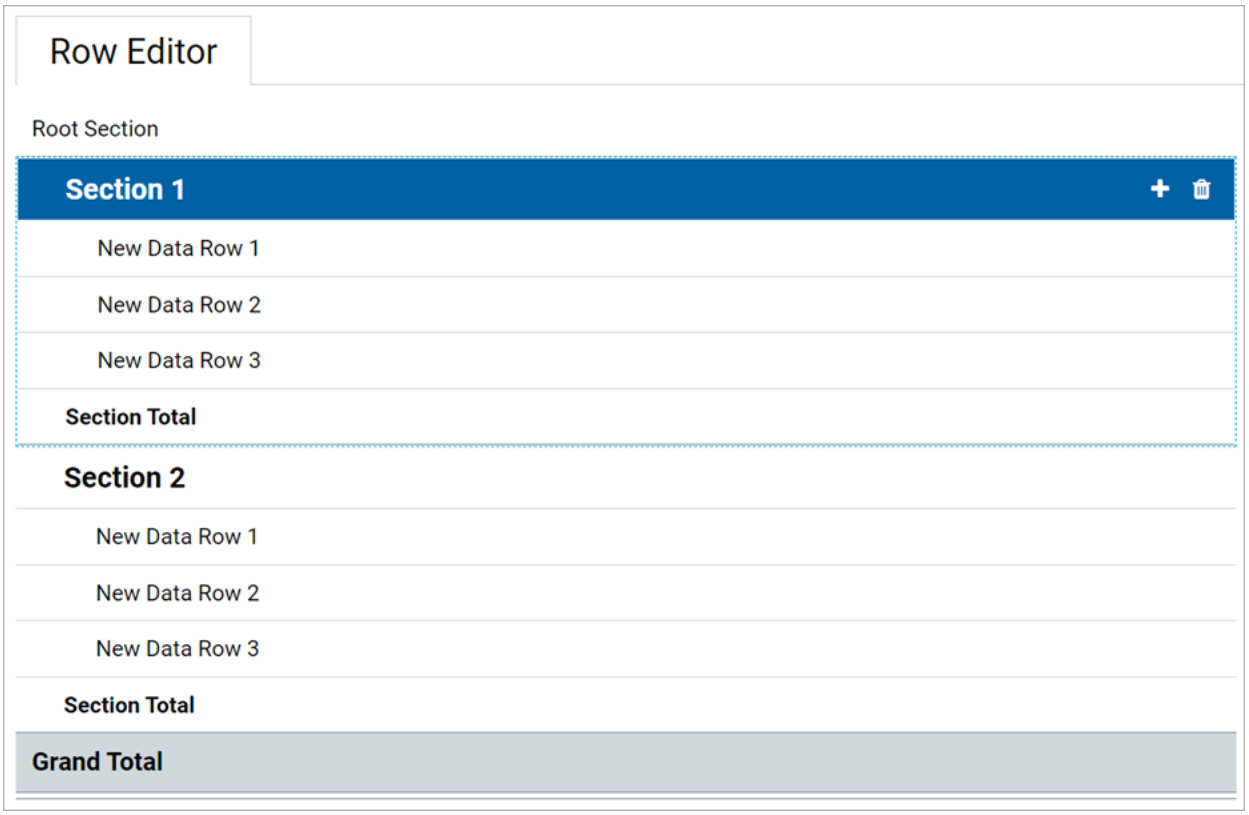
Row editor with starting root section

To add new sections to the row structure, select the section header row—the **Root Section** row—and then click the plus sign and select **Add New Section**.



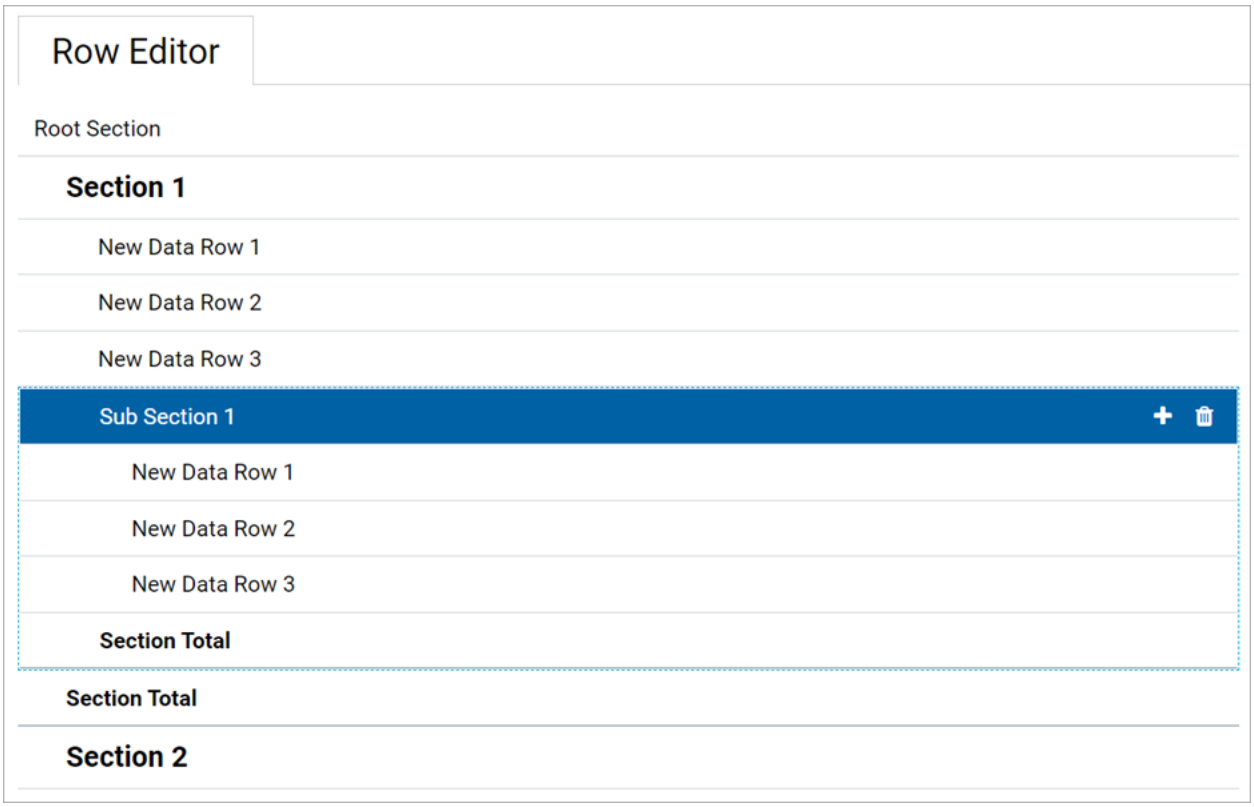
Option to add a new section

The new section is added within the root section. You can continue to add as many sections as needed at this level.



Row editor with two newly added sections

To add subsections within a section, select the section header row for any section, and then click the plus sign and select **Add New Section**. The new subsection is added to the current section. You can nest as many section levels as you need by adding subsections to sections.



Row editor with newly added subsection

Newly added sections use default text and styling, which can be configured for each section. Each newly added section consists of the following by default:

- A **header row** to display optional header text for the section. If you do not want a header row to display for a particular section (including the root section), you can hide it by disabling **Show Section Header** when configuring the section properties.
- Three **data rows** to display queried data in the section. You can add or remove data rows as needed.
- A **total row** to display the totaled data for the section. If you do not want a total row for this section (including the root section), you can hide it by disabling **Show Section Total Row** when configuring the section properties.

Once you have added sections, you can make further section changes as follows:

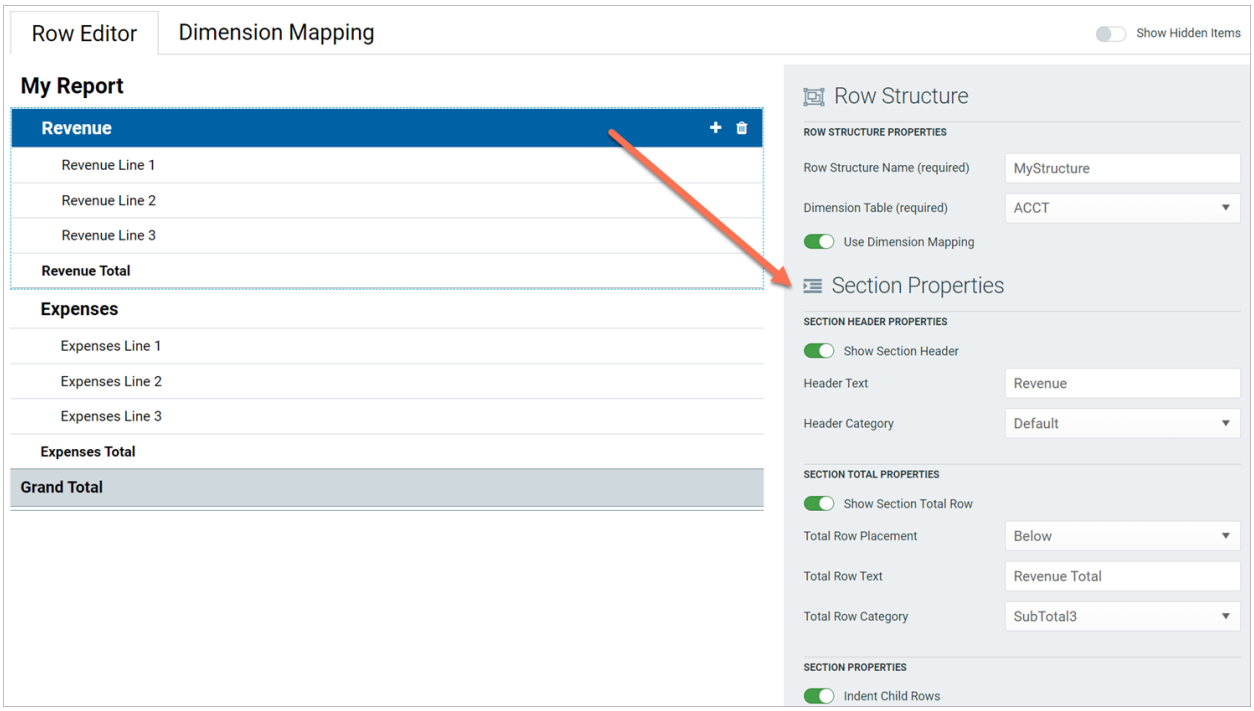
- **To reorder sections**: Select the header row of a section and then drag and drop it to a new location within the same level of the structure. For example, if you have three sections at the same level, you can drag and drop these three sections to change their order. But you cannot drag and drop one of these three sections to a lower level or a higher level.

- **To delete a section**: Select the header row of the section and then click the delete icon (trash can). The section and all of its subsections are deleted. Note that the root section is required and cannot be deleted.

  IMPORTANT: Make sure you no longer need the section before clicking the delete icon. The section will be deleted immediately with no confirmation prompt. If you deleted a section by accident, then you can exit the row structure editor without saving, but you will also lose any other unsaved changes that you have made during the current session.

Section properties

To configure the properties for a section, select the section header and then complete the **Section Properties** in the right-hand pane.



Example Section Properties area

Section Header Properties

Item	Description
Show Section Header	Specifies whether the section header row is visible when the row structure is used in a report. By default, this option is enabled, so the section header row is visible. If you do not want this section to have a header row, disable this option. The toggle switch shows as green when enabled and as gray when disabled. If this option is disabled, then the remaining section header properties become hidden because they do not apply. Note that you may want to define header text before disabling the option, to make it easier to identify the section when working within the row structure editor. **NOTE:** If you hide the section header, then you will no longer be able to select the header row in the editor for purposes of adding rows or subsections, configuring the section, reordering the section, or removing the section. If you need to work with the section header row, you can enable the option **Show Hidden Items**, located at the top right of the editor. This will cause all hidden items to show in the row structure, so that they can be selected and configured.
Header Text	The text to display on the section header row. By default, this is set to "Root Section" for the root section header and "Section" for all other newly added sections. The header text should be edited to reflect the data shown in this section.
Header Category	The style to use on the section header row. The style determines display attributes such as font size and font weight. Select one of the following: • **Header1** through **Header6**: These styles apply specific formatting to the header row. Although Header1 is designed to be used as the top-level section header, followed by Header2, and so on, you can assign these styles to any section header row as needed. • **Default**: Axiom Capital Planning automatically applies the appropriate header style depending on the section's placement in the row structure hierarchy. The header row for the root section uses Header1, sections in the next level use Header2, and so on. By default, the header category is set to **Header1** for the root section header, and **Default** for all newly added sections.

Section Total Properties

Item	Description
Show Section Total Row	Specifies whether the section total row is visible when the row structure is used in a report. By default, this option is enabled, so the section total row is visible. If you do not want this section to have a total row, disable this option. The toggle switch shows as green when enabled and as gray when disabled. If this option is disabled, then the remaining section total properties become hidden because they do not apply.
Total Row Placement	The location of the total row in the section, either **Below** the data rows or **Above** the data rows. The total row is located below the data rows by default.
Total Row Text	The text to display on the section total row. By default, this is set to "Grand Total" for the root section total and "Section Total" for all other newly added sections.
Total Row Category	The style to use on the section total row. The style determines display attributes such as font size, font weight, shading, and borders. Select one of the following: • **Grand Total** or **Total**: These styles are intended to be used for "final" total rows. Both styles use shading and top and bottom borders. The bottom border of the Grand Total is a double border. • **SubTotal1** through **SubTotal4**: These styles are intended to be used for subtotal rows. These options provide varying combinations of bold and regular text, shading or no shading, and border or no border. By default, the total row category is set to **Grand Total** for the root section total row, and **Subtotal3** for all newly added sections.

Section Properties

Item	Description
Indent Child Rows	Specifies whether the rows in this section are aligned with the section header row or indented. By default, this is enabled, so the rows are indented. If instead you want the rows to be aligned with the section header row, disable this option. The toggle switch shows as green when enabled and as gray when disabled.

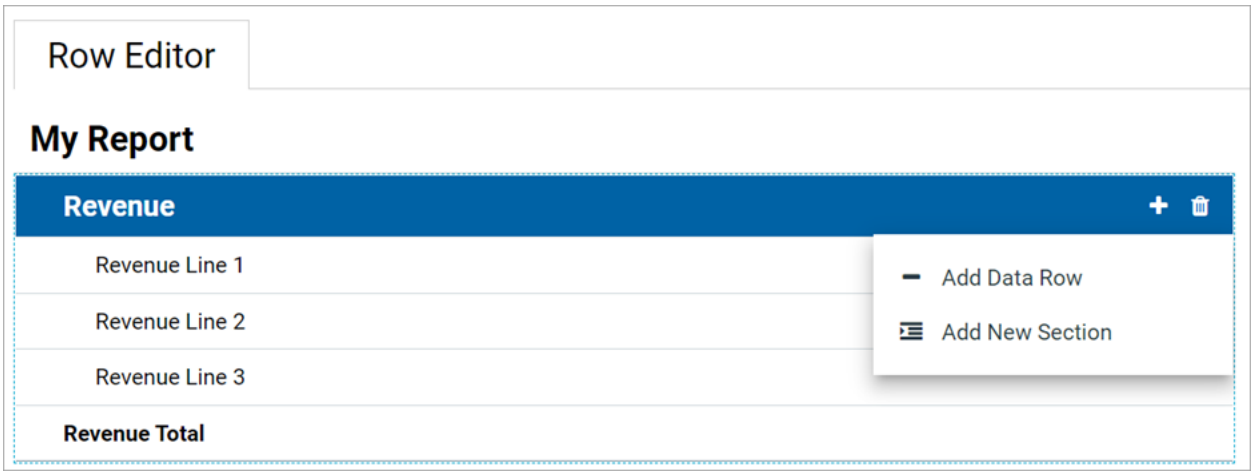
Item	Description
Parent Total Row Behavior	Specifies how the data in this section is treated when computing the total row of the parent section. Select one of the following: • **Add**: The data in this section is added when computing the parent total. This is the default behavior. • **Subtract**: The data in this section is subtracted when computing the parent total. • **Ignored**: The data in this section is ignored when computing the parent total. You might do this if the rows in this section contain supporting detail that should not impact the overall totals. Although this option displays on the root section, it does not apply because the root section does not have a parent section. For example, imagine that you have a parent section with two subsections. Subsection A totals 5000, and Subsection B totals 1000. • If both subsections are set to add, then the total of the parent section is 6000. • If Subsection A is set to add but Subsection B is set to subtract, then the total of the parent section is 4000. • If Subsection A is set to add but Subsection B is set to ignore, then the total of the parent section is 5000.
Section Data Filter	Optional. A data filter to apply to all of the data rows in this section, including any subsections. This is intended to be used when all rows in the section need to be filtered by a particular dimension or grouping, so that you do not need to repeat that dimension grouping on each individual data row. Only applies when **Use Dimension Mapping** is disabled. Enter the filter criteria statement to apply to the data rows in this section. Section data filters use normal filter syntax for Axiom Capital Planning. Although you can use the Filter Wizard to create the filter criteria statement, it is limited to creating filters based on the specified dimension table for the row structure. In many cases the section data filter needs to use a different dimension, so you must manually create the filter criteria statement. For example, imagine that you want to show revenue accounts in the rows of your report, but you want to split the data into two sections reflecting two different sales regions. You can create two sections and define section filters for each, such as `Dept.Region='East'` and `Dept.Region='West'`. All of the data rows in those sections will be filtered by the specified region in addition to the specific account filters listed on each row.

Adding, removing, and reordering data rows

Using the **Row Editor** area, you can add data rows to a section, remove unneeded rows, and reorder rows. Each data row represents a record of data that you want to query from the database and display within the report.

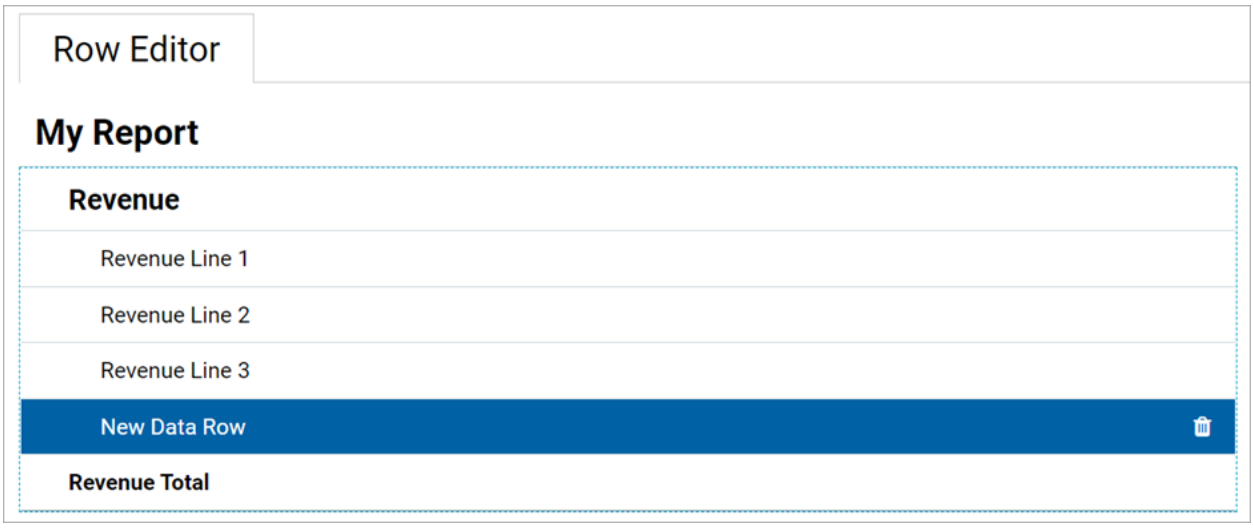
To add new data rows to a section:

- Select the section header row, then click the plus sign and select **Add Data Row**.



Option to add a new data row

The new row is added to the bottom of the section. You can continue to add as many new rows to the section as needed.



Section with a newly added data row

Once you have added data rows, you can make further row changes as follows:

- **To reorder rows**: Select the data row that you want to move, and then drag and drop it to a new location within the same section. For example, if you want a newly added row to be at the top of the section instead of the bottom, then you can drag and drop it to that location. But you cannot drag and drop the row to a different section, not even to subsections of the current section.
- **To delete a row**: Select the data row that you want to delete and then click the delete icon (trash can). The row is deleted.

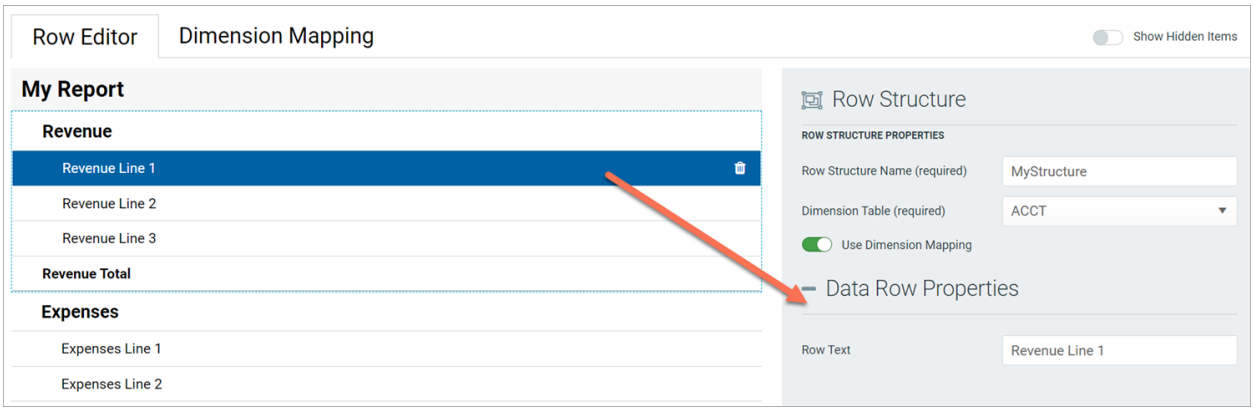
  IMPORTANT: Make sure you no longer need the row before clicking the delete icon. The row will be deleted immediately with no confirmation prompt. If you deleted a row by accident, then you can exit the row structure editor without saving, but you will also lose any other unsaved changes that you have made during the current session.

Only data rows can be individually added, deleted, and reordered. Section header rows and section total rows are not considered to be data rows and are managed as part of the section. Note the following:

- The delete icon on section header rows does not delete the header row; it deletes the entire section. If you do not want a particular section to have a header row, you can configure the section to hide the header row.
- Section total rows do not have delete icons. If you do not want a particular section to have a total row, you can configure the section to hide the total row.
- Section header rows are always located at the top of the section. When you drag and drop a section header row you are moving the entire section, not just the header row. It is not possible to move just the header row.
- Section total rows can be located at either the top or bottom of the section, but not by dragging and dropping. When you configure the section, you can specify the location of the total row.

Row properties

To configure the properties for a data row, select the row and then complete the **Row Properties** in the right-hand pane.



Example Row Properties area

Item	Description
Row Text	The text to display on the data row. By default, this is set to "New Data Row". The row text should be edited to reflect the data shown on this row. For example, if this row is going to display data for the Travel account, the row text should be something like "Travel" or "Account 5000 - Travel".
Data Filter	A filter criteria statement to define the data to query into this row. Only applies when **Use Dimension Mapping** is disabled. If dimension mapping is enabled, then use the Dimension Mapping tab to map the data for this row. Row filters use normal filter syntax for Axiom Capital Planning. You can type the filter, or you can use the **Filter Wizard** to create a filter based on the specified Dimension Table for the row structure. For example, if the data filter is `Acct.Category='Revenue'`, then this row will display data for all revenue accounts when this row structure is used in a report. The specific data returned will depend on the data columns used in the report, and any other filters applied to the report. Each row's data filter is independent from any other row, and does not need to use the same grouping level or even the same dimension as other rows. For example, one row can be `Acct.Acct=4000`, while another row is `Acct.Category='Marketing'`, and a third row is `Fcst.Acct=670`. However, keep in mind the following: • If you use the Filter Wizard to make the filter, it is limited to the table selected as the **Dimension Table** for the row structure. If you want to use a different table for a particular row, you must manually write the filter. • Although there are no restrictions on the individual row filters, all of the filters used must be compatible with the eventual primary table selected for the report, when the fixed row structure is used in a report.

If the row uses a data filter, then the row's data filter will be combined with any upstream section data filters (using AND). For example, imagine the row structure has sections and rows configured as follows:

Parent Section Filter	`Dept.Company='Company A'`
Current Section Filter	`Dept.Region='US West'`
Row Filter	`Acct.Acct=4000`

Then the data for this row is determined as follows:

```
Dept.Company='Company A' AND Dept.Region='US West' AND Acct.Acct=4000
```

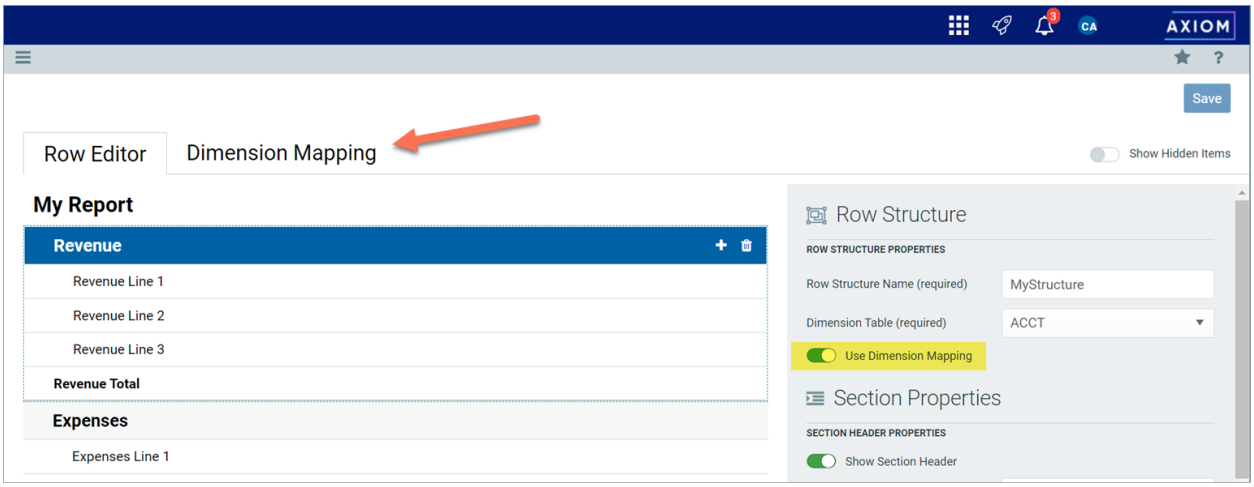
Using the Dimension Mapping editor

Using the Dimension Mapping editor, you can assign dimension items to specific rows of a fixed row structure. When the row structure is used in a web report, the rows will display data for the assigned dimension items.

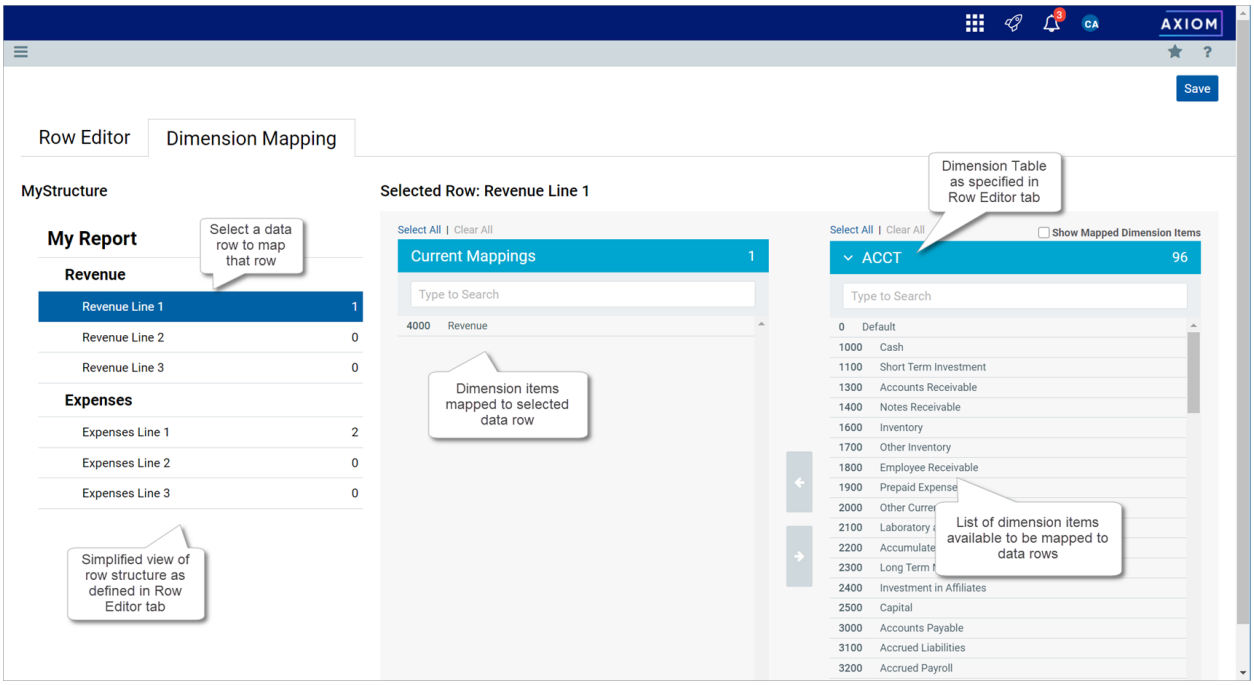
For example, if the row dimension is Acct, you can assign one or more accounts to each row in the row structure. If a row is assigned Acct 4000, then that row will display data for Acct 4000, for each of the columns used in the report.

Dimension Mapping editor overview

The Dimension Mapping editor is only accessible when creating or editing a row structure. If **Use Dimension Mapping** is enabled for the row structure, then a **Dimension Mapping** tab displays next to the **Row Editor** tab. You can click this tab to open the Dimension Mapping editor and assign dimension items to each row.



Dimension Mapping tab available in row structure when Use Dimension Mapping is enabled



Example Dimension Mapping editor

- The left side of the Dimension Mapping editor displays a simplified view of the row structure defined on the **Row Editor** tab. You can select a data row in the row structure in order to map dimension items to that row.
    - Each data row must be assigned at least one dimension item when using dimension mapping. It is not possible to mix use of data filters and dimension mappings.
    - The number to the left of the row label shows how many dimension items have been assigned to that row.
- The two columns on the right side of the Dimension Mapping editor are used to map dimension items.
    - The **Current Mappings** column in the middle of the page shows the dimension items mapped to the currently selected data row.
    - The dimension column on the right side of the page shows the remaining unmapped dimension items. The dimension used for the mappings is determined by the specified **Dimension Table** in the **Row Editor** tab. In this example, the dimension table is **Acct** and the column shows the list of accounts defined in that table.
    - You can use the arrow buttons between the columns to move dimension items from the dimension column to the Current Mappings column and vice versa.

Each dimension item can only be assigned to a single row in the row structure. Once a dimension item is moved to the Current Mappings column, it is removed from the list of unmapped dimension items and cannot be assigned to another row.

Assigning dimension items to data rows

Each data row in the row structure must be assigned at least one dimension item. When the row structure is used in a report, the dimension mappings determine what data displays in each row.

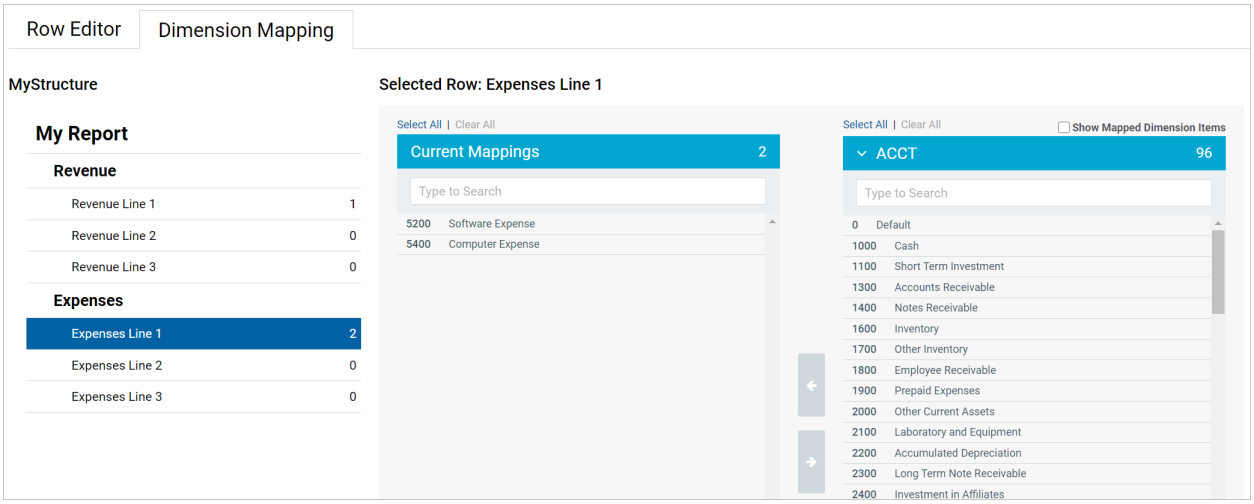
To assign one or more dimension items to a data row:

1. In the row structure on the left side of the page, select the data row that you want to map. If any dimension items are already mapped to this row, those dimension items display in the **Current Mappings** column.
2. In the dimension column on the right side of the page, select the dimension item or items that you want to map to the data row.
   - Click a dimension item once to select it. If you select a dimension item by accident, click it again to de-select it.
   - Note that using the Shift key or the CTRL key to select multiple dimension items at once does *not* work here. You must individually click on each dimension item that you want to assign.

   You can search and filter the dimension list to help find the desired dimension items.
3. Once all of the dimension items that you want to assign are highlighted, click the left arrow to move the selected dimension items to the **Current Mappings** column.

If you want to remove a mapped dimension item from a data row, you can select the item in the Current Mappings column and then click the right arrow to move it back to the dimension column.

In the following example, two accounts have been mapped to the Expenses Line 1 data row. When this row structure is used in a report, this row will display summed data for the Software Expense and Computer Expense accounts. (In a real report, the label text for this data row would likely be defined as "Software and Computer Expenses" or something similar.)



Example data row with mapped dimension items

The two accounts that are mapped to this data row no longer display in the dimension column and cannot be mapped to any other row. You can optionally enable **Show Mapped Dimension Items** to see all items in the dimension column, but mapped items will display as grayed out and cannot be selected.

Searching and filtering the dimension column

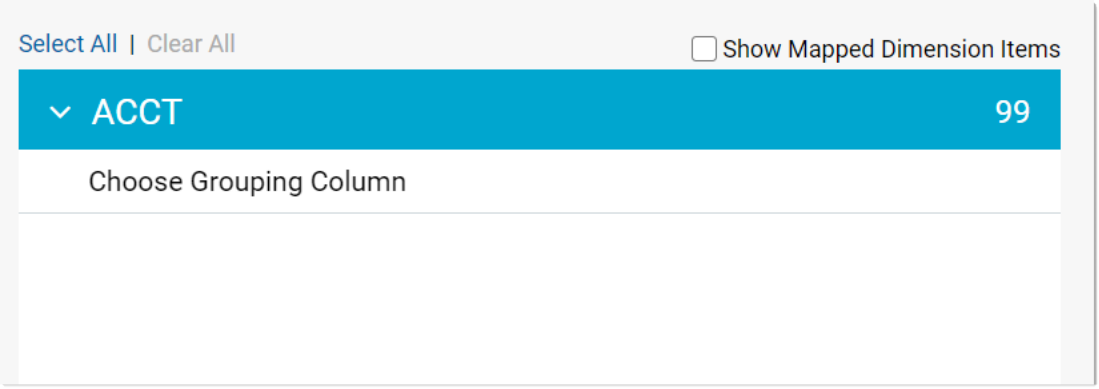
You can search and filter the dimension column to more easily find the dimension items that you want to map.

- You can type into the search box at the top of the column to find items by dimension value. The search matches any dimension value that contains the search text. Currently, the description text is not included in the search.
- You can select a grouping column so that the dimension column is filtered to only show values for a particular grouping. For example, you may have a grouping column of Category, which you can use to show accounts within a particular category—such as Revenue, Capital, or Marketing.

If you use **Select All** when the list is filtered by a search or by a grouping value, then only the currently visible items are selected. This can be a convenient way to find, select, and map multiple dimension items at a time.

To filter the dimension column by a grouping value:

1. Click the down arrow icon in the column header, and then click **Choose Grouping Column**.

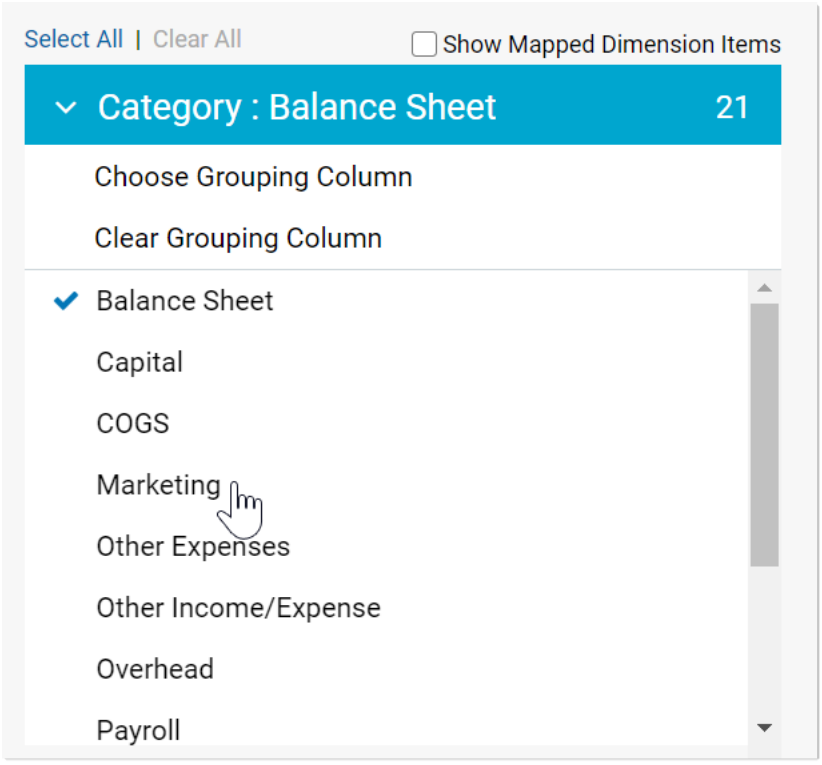


2. In the **Choose a Grouping Column** dialog, select the grouping column that you want to use, and then click **OK**.

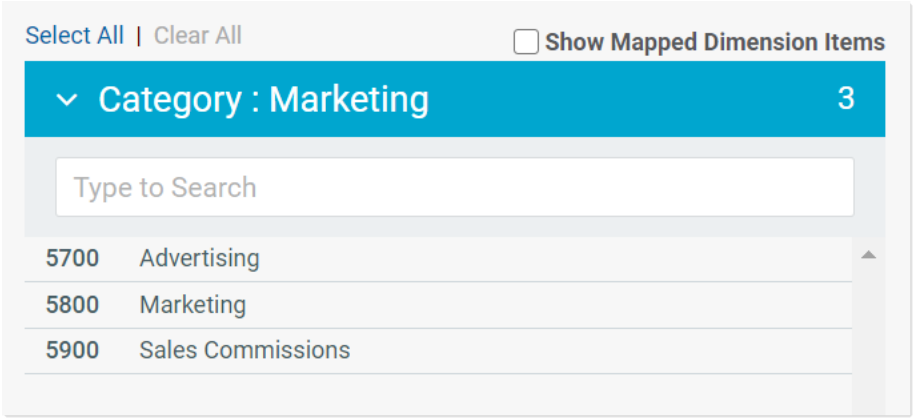
   The dimension column becomes filtered by the first value in the selected grouping column. This value displays in the column header.

3. To filter the dimension column by a different value in the grouping column, click the down arrow icon in the column header, and select the desired value.

   In the following example, "Balance Sheet" was the automatically-selected value from the grouping column, and we are now going to select "Marketing" instead.



The dimension column is now filtered to only show accounts that belong to the Marketing category.



If you want to clear the grouping column filter, click the down arrow icon in the column header, and select **Clear Grouping Column**.

Opening web reports

Web reports are browser-based reports. You can browse all of the web reports that are available to you and open them to view the report data. In order to open a web report, you must have at least read-only access to the report, as defined in Axiom Capital Planning security. Web reports can be opened from

either the Web Client or the Desktop Client.

This topic discusses the default ways to access and view web reports. Your system may be designed so that you can open web reports in other ways, such as:

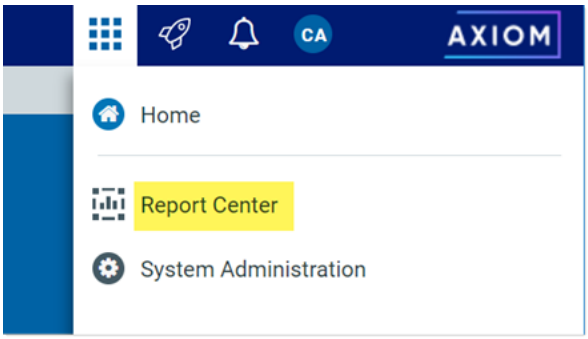
- Using the Navigation panel in the Web Client
- Using links within your home page or product pages
- Using links within a task pane or ribbon tab in the Desktop Client

Opening web reports from the Report Center

The Report Center in the Web Client is a hub where you can access all of your available reports, regardless of the report type. The Report Center is automatically filtered to show only the reports that you have access to.

To open a web report from the Report Center:

1. Click the menu icon in the Global Navigation Bar. From the Area menu, select **Report Center**.



2. Do one of the following to locate the report that you want to open:
   - Use the folder tree to navigate to the folder where the report is located.

     OR

   - Use the Search box at the top of the page to search for the report by name.

   For more information on how to search, filter, and sort the Report Center, see Report Center overview.
3. Once the report displays in the Report Center grid, click on the report name to open it.

The report opens in a new browser tab. You can now view and explore the data using various features. For more information, see Viewing and exploring data in web reports.

Opening web reports from the Desktop Client

You can open a web report from the Reports Library in the Desktop Client (Excel Client or Windows Client). You can differentiate web reports from other types of Axiom Capital Planning reports using the following icons:

Web report

Axiom Intelligence report

Axiom form

Spreadsheet Axiom file

To open a web report from the Desktop Client:

1. On the **Axiom** tab, in the **Reports** group, click **Reports** to bring up the Reports menu.

   NOTE: In systems with installed products, this feature may be present on a different ribbon tab, such as the **Main** tab.

   TIP: You can also open reports from the Explorer task pane or Axiom Explorer.

2. Use the Reports Library folders at the bottom of the menu to navigate to the specific web report that you want to open, and then click on it.

The web report opens in the Web Client using your default browser. You can now view and explore the data using various features. For more information, see Viewing and exploring data in web reports.

Viewing and exploring data in web reports

Once a web report is opened, you may have access to a variety of features to view and explore the data in the report, including filtering, sorting, and drilling.

▶ Drilling data

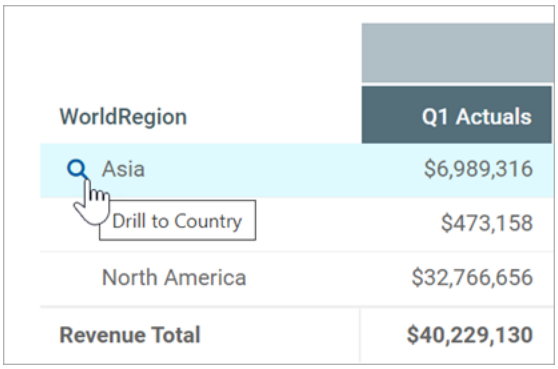
If the web report has been configured to enable drilling, you can drill any data row in the report. Total rows, subtotal rows, and section header rows are not drillable.

To drill a data row:

1. Hover your cursor over the far left column in the report so that a magnifying glass icon appears on the row.

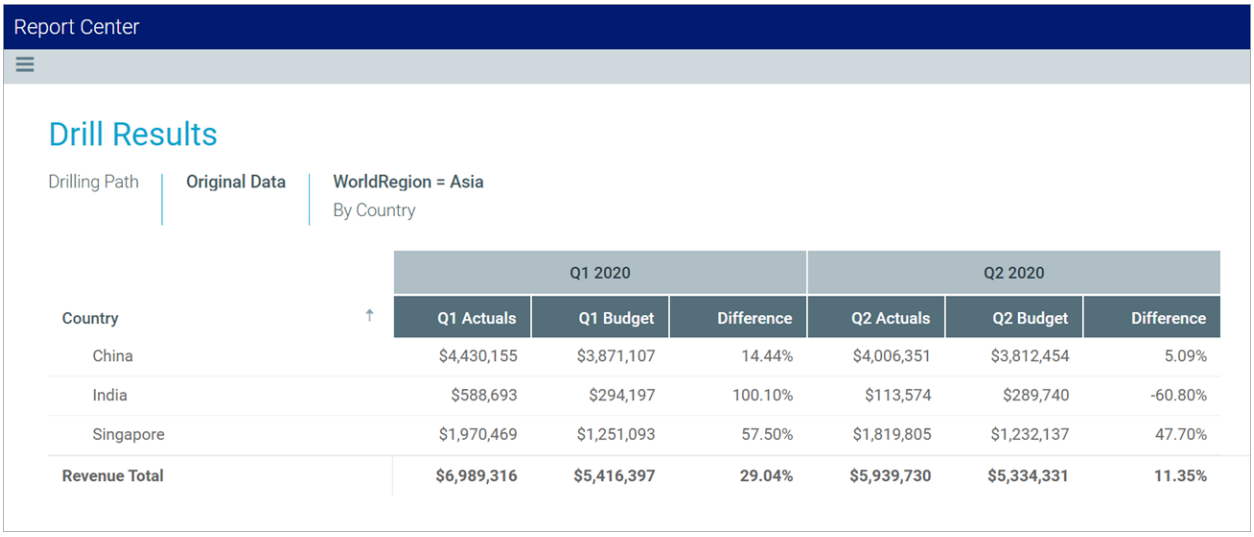
   The tooltip for the magnifying glass will be either "Drill" (if multiple drill paths are available) or "Drill to <path>" (if a single drill path is available). For example, the tooltip will say "Drill to Acct" if the Acct drill path is the only available drill path.

2. Click the icon to drill the row.
   - If multiple drill paths are available, these paths display in a menu when you click the icon. Select the drilling path that you want to view, and that path opens in a new browser tab.
   - If a single drill path is available, that path automatically opens in a new browser tab.



Hover and click to drill

The current row being drilled and the current drill level display at the top of the drill results. You can continue drilling the drill results if additional drill paths are available. Any additional drill results display in the same browser tab instead of opening a new tab. When you are finished viewing the drill results, you can close the browser tab and return to the original report.



Example drill results with drilling path displayed at the top

Adjusting column width and order

You can make minor adjustments to the column display as follows:

- To change the column width, hover your cursor along the right edge of the column header, then drag to make the column thinner or wider.
- To reorder columns, click on a column header and then drag it to a new location. Note that columns cannot be moved in or out of a column group (meaning a set of columns grouped under header text). If a column belongs to a column group, you can change its order within the group but you cannot drag it out of the group. Additionally, row dimension columns cannot be reordered within data columns and vice versa.

Sorting data

If the web report uses a data grid with dynamic rows, then you can sort the data by any column in the grid. To sort the grid by a column, click on the column header. Each click toggles between ascending sort, descending sort, and no sort. If the grid is currently sorted by a column, the sort direction is indicated by an arrow on the column header (up for ascending, down for descending).

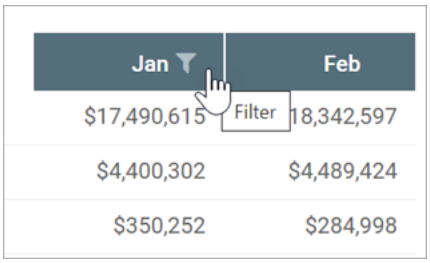
The web report may only allow sorting by a single column, or it may allow sorting by multiple columns. This is configured by the report designer. If the grid uses single-column sorting, then it is not possible to clear the sort on a column. Instead you must click on a different column to change the sort to use that column.

If the web report uses a fixed row structure, then the row values are fixed in position and may not be sorted.

Filtering by column data

If the web report uses a data grid with dynamic rows, you may be able to filter the report by the column data. For example, you might want to filter a column to hide zero-value records, or to show all records above or below a certain value. You might want to filter a dimension column to hide or show certain dimensions (such as departments, accounts, and so on). The report designer determines whether a column is enabled for filtering.

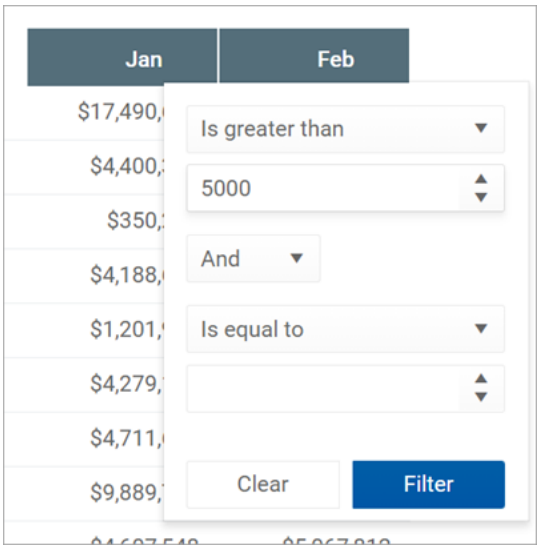
If a column allows filtering, the filter icon displays in the column header when you hover your cursor over the column header.



Filter icon for a column with filtering enabled

To filter the report based on a column:

1. Click the filter icon in the column header to show the filter options.
2. Set the filter options as desired. You can set up to two filter options, combined with either AND or OR.



Example filtering options

3. Click **Filter**.

The report updates to only show records that meet the filter. Additionally, the filter icon in the column header remains visible to indicate that the grid is filtered by this column.

The filter is retained until you clear it, or until the report is refreshed with new data.

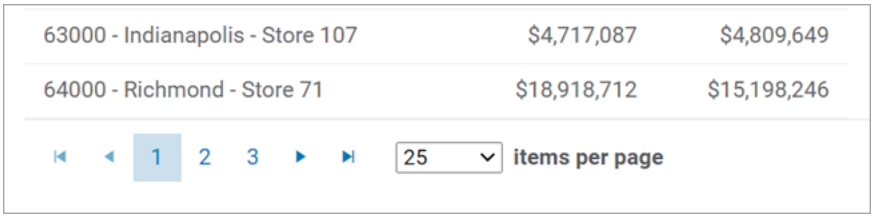
To clear a filter:

1. Click the filter icon in the column header to show the filter options.
2. Click **Clear**.

The grid updates to clear the filter. The filter icon is now only visible when hovering over the column header.

Viewing paged data

If the web report uses dynamic rows, the data is paged to show a specified number of records per page. If the data in the grid exceeds the page limit, you can move between pages using the page controls at the bottom left of the grid.



Page controls for data grids

- Click a page number to move directly to that page.

- Click the single arrow buttons to move one page back or forward.
- Click the double arrow buttons to move to the first page or the last page.

By default, the data grid shows 25 records per page. You can use the drop-down list next to the page controls to change this to 50, 100, or 500 as needed.

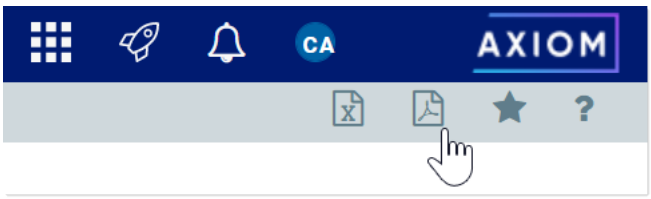
Saving a PDF copy of a web report

You can save a PDF copy of a web report locally, or save it to the Axiom Capital Planning repository.

Any user who can view the report can save a PDF copy to a local folder location. In order to save a PDF copy to the Axiom Capital Planning repository, you must have read/write access to at least one folder in the Reports Library.

To save a PDF copy of a web report:

1. In the Report Center, locate the report in the folder tree and click on the report name to open it.
2. Click the PDF button located in the top right of the gray task bar.



3. In the **Export to PDF** dialog, enter a file name into the **File name** field. By default, the file name is the same as the web report file name.
4. Select the export destination from the **Export to** drop-down:
   - **My computer**: Save the PDF to your computer.
   - **Axiom repository**: Save the PDF to a folder in the Axiom Capital Planning Reports Library.

   NOTES:
   - If you save the PDF to a folder in the Axiom repository, any user with at least read-only access to that folder will be able to view the PDF. You should be sure that it is acceptable for users with permission to the target folder to view the data in the PDF.
   - If you do not have read/write access to any folders in the Reports Library, then the **Export to** option is not available and does not display in the dialog. The PDF will be automatically saved to your computer.
5. If you are saving to the Axiom repository, select an **Output folder**:
   - Click the folder icon to the right of the field.

- In the **Choose output folder** dialog, select a folder in the Reports Library. The dialog only shows folders where you have read/write access to that folder or a child folder.
- Click **OK** to choose the folder and return to the **Export to PDF** dialog.

The path to your selected folder now displays in the **Output folder** field.

6. In the **Configuration Settings** section, select the following:
   - **Layout**: Select the layout for the PDF, meaning the page size. You can choose from the following standard page sizes: **A3**, **A4**, **A5**, **Legal**, **Letter**, or **Tabloid**. Letter is the default layout.
   - **Orientation**: Select the orientation for the PDF, either **Portrait** or **Landscape**. Portrait is the default orientation.
7. Click **Export** to create the PDF.
   - If you are saving to the Axiom repository, and you used a file name that already exists in the target folder, you are prompted to choose whether or not to overwrite the existing file. If you choose not to overwrite, you are returned to the Export to PDF dialog so that you can use a different name and/or output folder.
   - If you are saving to your computer, the exact behavior is determined by your browser settings, but in most cases the file is saved directly to the **Downloads** folder on your computer.
   - In either case, a notification message displays at the top of the page to indicate whether the PDF creation succeeded or failed.

Export behavior

When you create the PDF, the web report contents are handled as follows:

- If the grid in the web report has paged data, the grid is expanded so that all rows display in the PDF. Column headers do not repeat on multiple pages.
- If you have sorted, filtered, or otherwise changed the data displayed in the report, these changes are not reflected in the PDF. The PDF shows the data in the same state as when the report is initially opened.

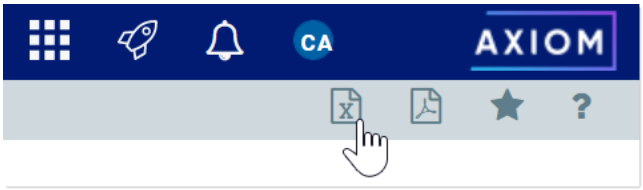
Exporting grid data in a web report to Excel

You can export grid data in a web report to a spreadsheet, so that you can further examine the data using spreadsheet features. You can save the spreadsheet locally, or save it to the Axiom Capital Planning repository.

Any user who can view the report can save the spreadsheet export locally. In order to save the spreadsheet export to the Axiom Capital Planning repository, you must have read/write access to at least one folder in the Reports Library.

To export grid data to an Excel spreadsheet:

1. In the Report Center, locate the report in the folder tree and click on the report name to open it.
2. Click the Excel icon located in the top right of the gray task bar.



3. In the **Export to Excel** dialog, enter a file name into the **File name** field. By default, the file name is the same as the web report file name.
4. Select the export destination from the **Export to** drop-down:
   - **My computer**: Save the spreadsheet to your computer.
   - **Axiom repository**: Save the spreadsheet to a folder in the Axiom Capital Planning Reports Library.

   NOTES:
   - If you save the spreadsheet to a folder in the Axiom repository, any user with at least read-only access to that folder will be able to view the spreadsheet. You should be sure that it is acceptable for users with permission to the target folder to view the data in the spreadsheet.
   - If you do not have read/write access to any folders in the Reports Library, then the **Export to** option is not available and does not display in the dialog. The spreadsheet will be automatically saved to your computer.
5. If you are saving to the Axiom repository, select an **Output folder**:
   - Click the folder icon to the right of the field.
   - In the **Choose output folder** dialog, select a folder in the Reports Library. The dialog only shows folders where you have read/write access to that folder or a child folder.
   - Click **OK** to choose the folder and return to the **Export to Excel** dialog.

   The path to your selected folder now displays in the **Output folder** field.
6. Click **Export** to create the spreadsheet.
   - If you are saving to the Axiom repository, and you used a file name that already exists in the target folder, you are prompted to choose whether or not to overwrite the existing file. If you choose not to overwrite, you are returned to the Export to Excel dialog so that you can use a different name and/or output folder.

- If you are saving to your computer, the exact behavior is determined by your browser settings, but in most cases the file is saved directly to the **Downloads** folder on your computer.
- In either case, a notification message displays at the top of the page to indicate whether the spreadsheet creation succeeded or failed.

Export behavior

When the grid data is exported, the behavior is as follows:

- The full data contents of the grid are exported (all rows). Column group headers are omitted from the export.
- By default, the basic number format applied to the column is preserved in the export. The exception is negative numbers, which will always be shown using a minus sign regardless of the configured format. Other formatting (such as background colors and borders) is not applied to the exported data.
- User changes to the grid—such as changing the sort order or filtering a column—are not preserved.
- The export is not supported for use on tablets.

9

Rolling Forward to a new capital budget year

To roll forward from one year to the next, complete the following steps:

Step 1: Create a new file group

Step 2: Configure the new file group for next year's planning cycle

Step 3: Confirm configuration of Axiom Capital Tracking for next year's planning cycle

Step 4: Configure security for the new file group

Step 5: Run the CP Annual Rollforward utility

▶ Video instructions

Step 1: Create new file group

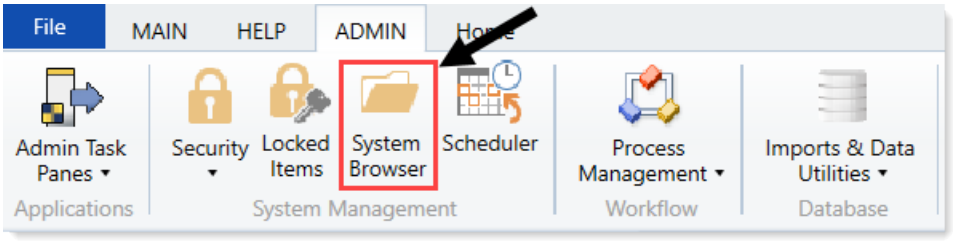
Complete the steps for creating a new file group, and then proceed to Step 2: Configure the new file group for next year's planning cycle.

Step 2: Configure the new file group for next year's planning cycle

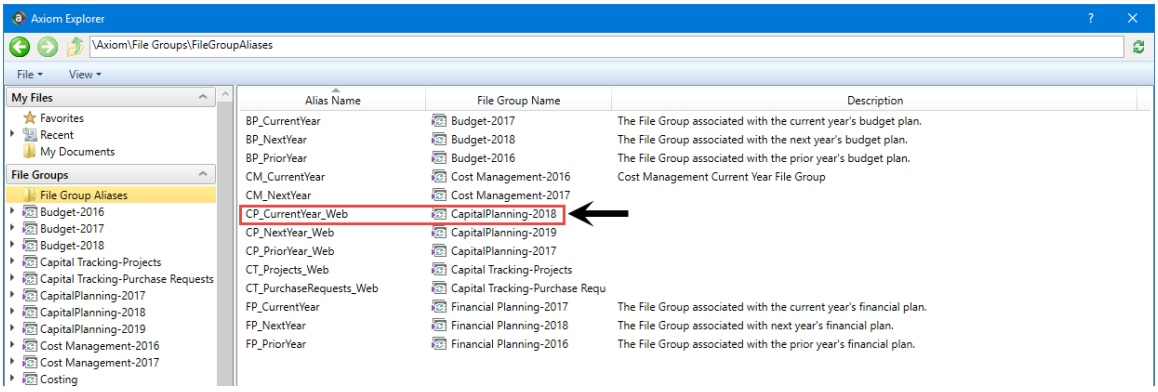
After the Axiom Capital Planning update is installed, complete the following steps to set up the new file group for the next year's capital planning cycle.

To configure the new file group for next year's planning cycle:

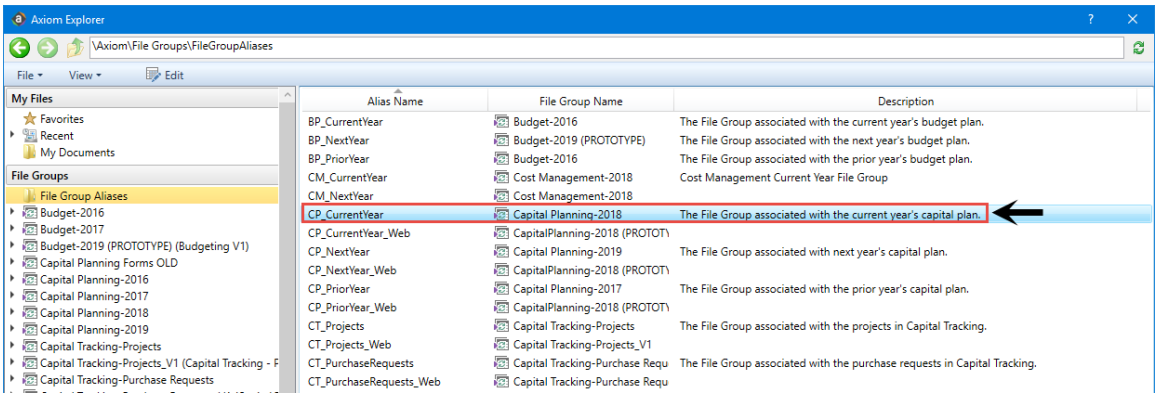
1. In the **Admin** ribbon tab, in the **System Management** group, click **System Browser**.



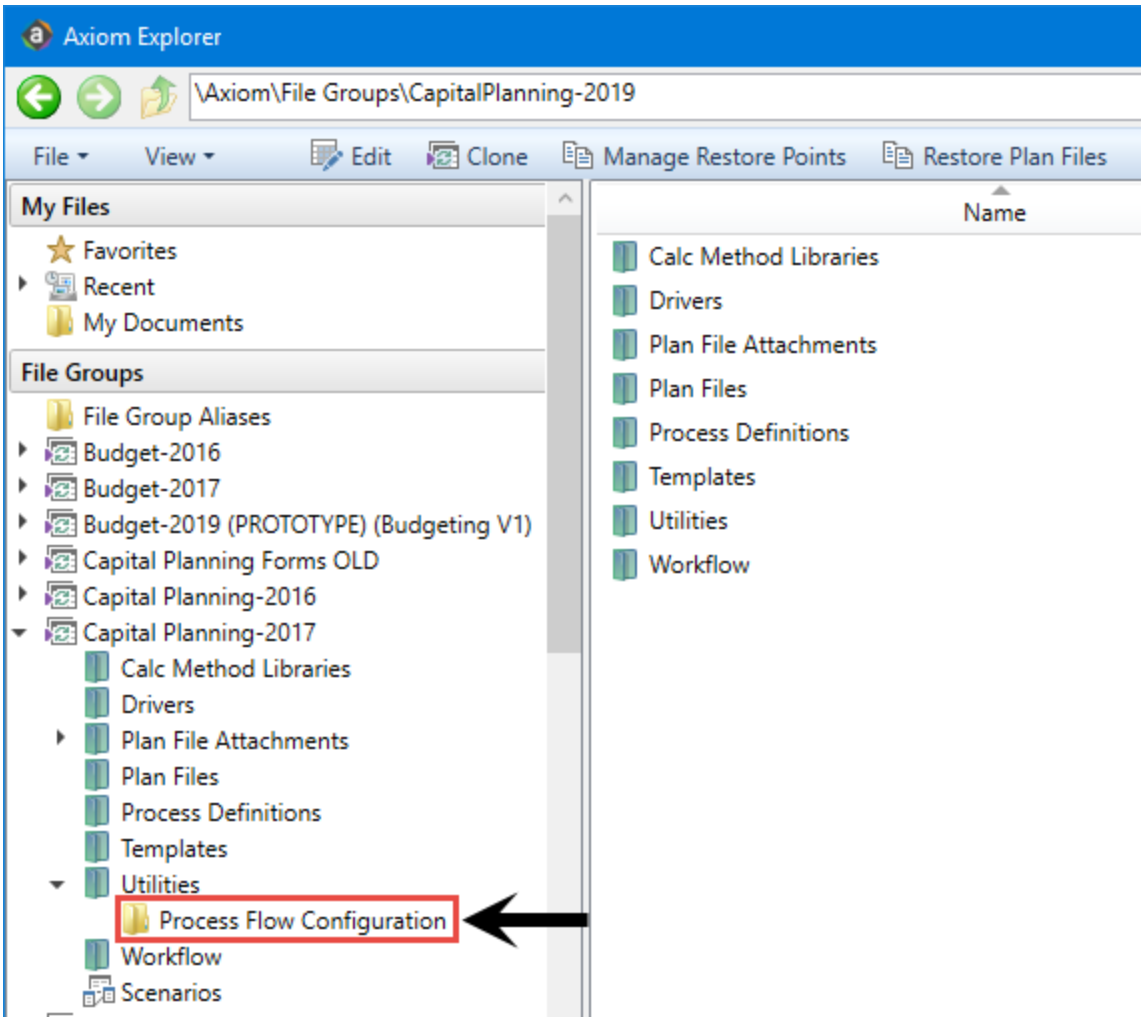
2. In Axiom Explorer, select the **File Group Aliases** folder, and double-click **CP_CurrentYear_Web**.



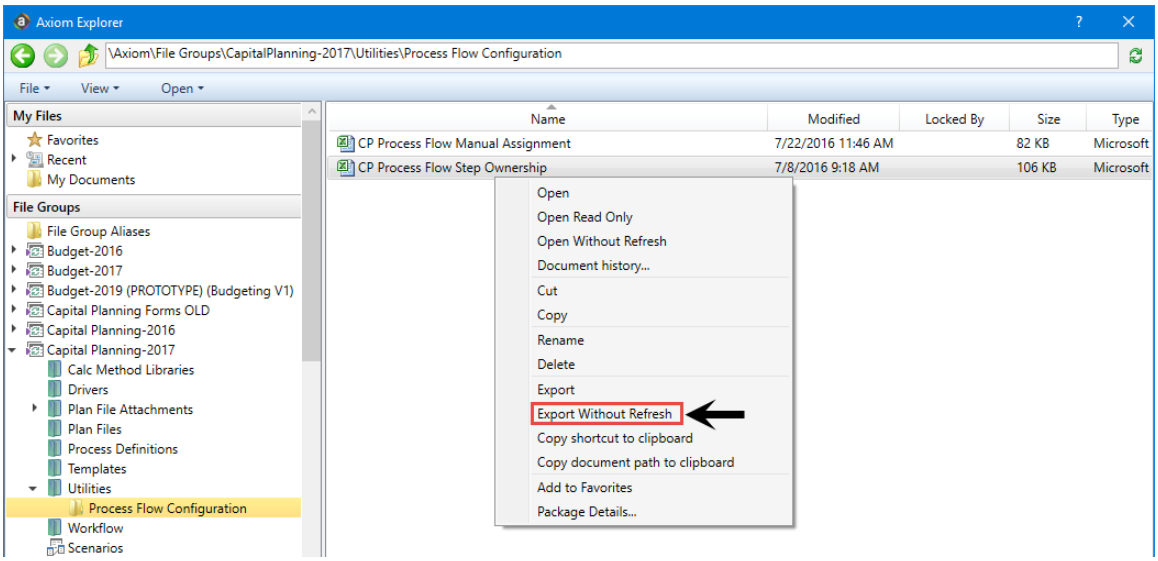
3. In Axiom Explorer, select the **File Group Aliases** folder, and double-click **CP_CurrentYear**.



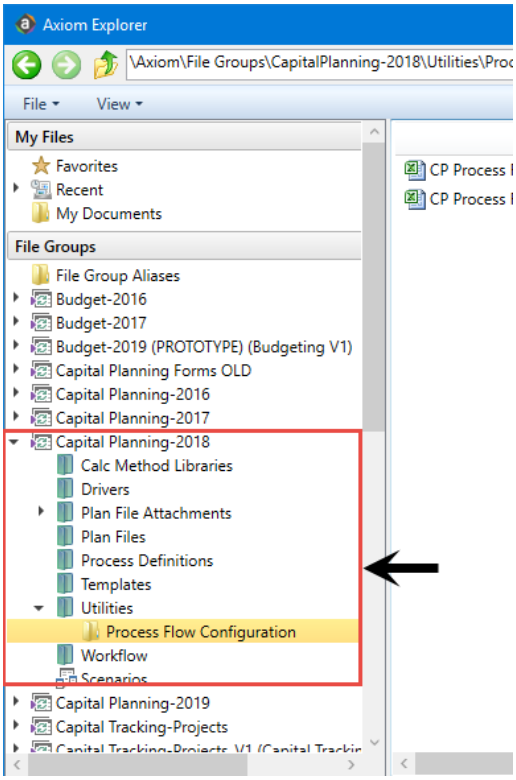
4. In the **Edit File Group Alias** dialog, next to the **File Group** field, click the folder icon.
5. In the **Choose File Group**, select the new file group to use for next year, and click **OK**.
6. Repeat Steps 2-5 for the following:
    - **CP_PriorYear_Web** – Select the file group alias to use for the prior year's planning cycle.
    - **CP_NextYear_Web** – Select the file group alias to use for the next year's planning cycle.
    - **CP_PriorYear** – Select the file group alias to use for the prior year's planning cycle.
    - **CP_NextYear** – Select the file group alias to use for the next year's planning cycle.
7. In Axiom Explorer, expand the selection for the most recent file group used, and click **Utilities > Process Flow Configuration**.



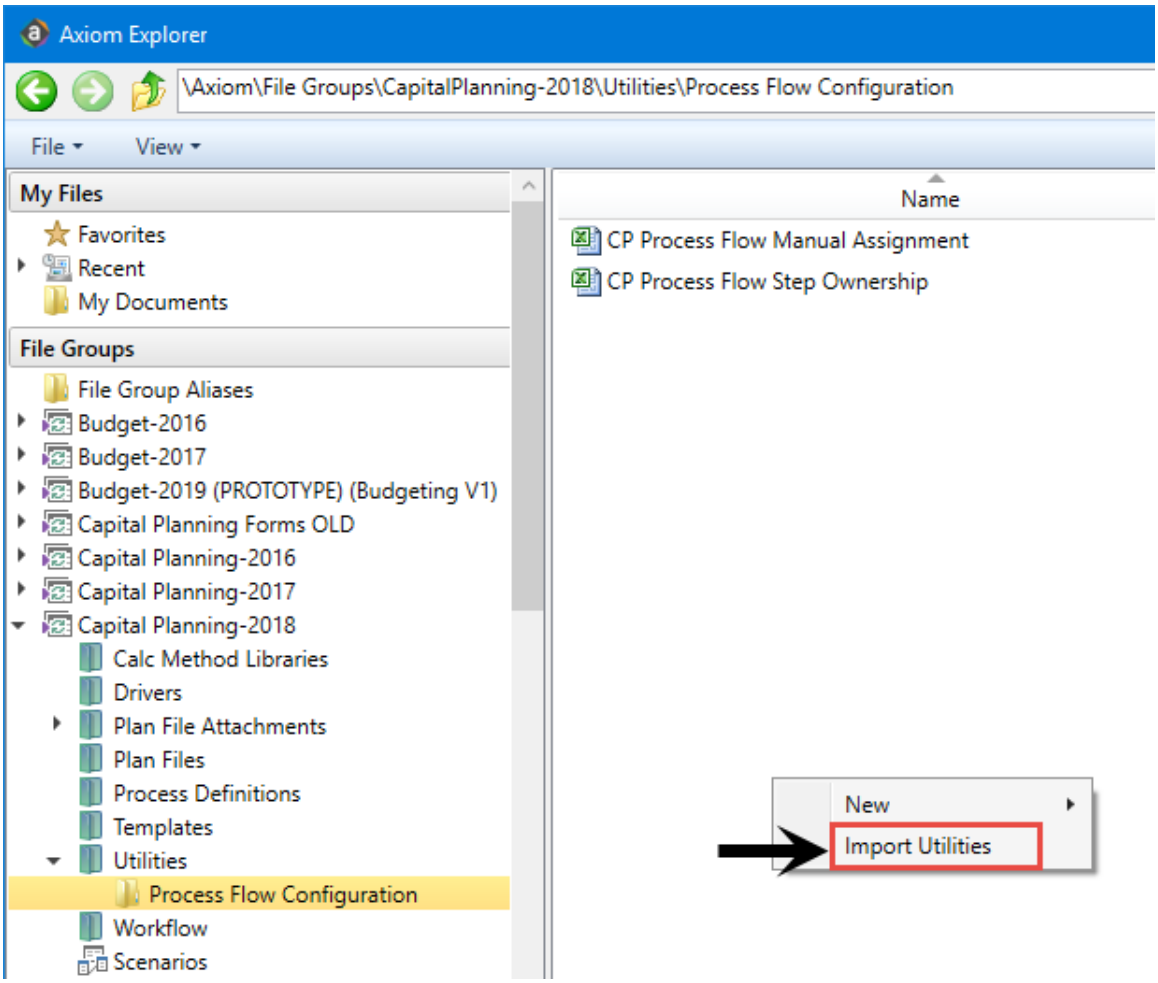
8. Right-click the Process Flow Step Ownership workbook, and click **Export Without Refresh**.



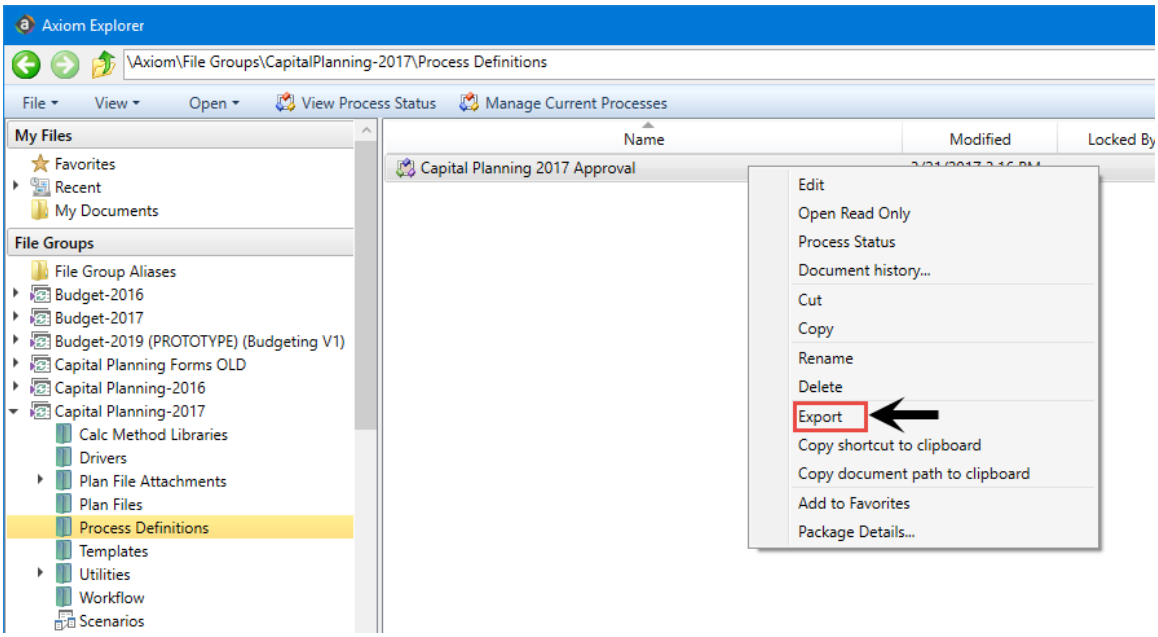
9. Save the CP Process Flow Step Ownership workbook to your computer or any network folder.
10. In Axiom Explorer, expand the selection for the next year's file group, and select the **Utilities > Process Flow Configuration** folder.



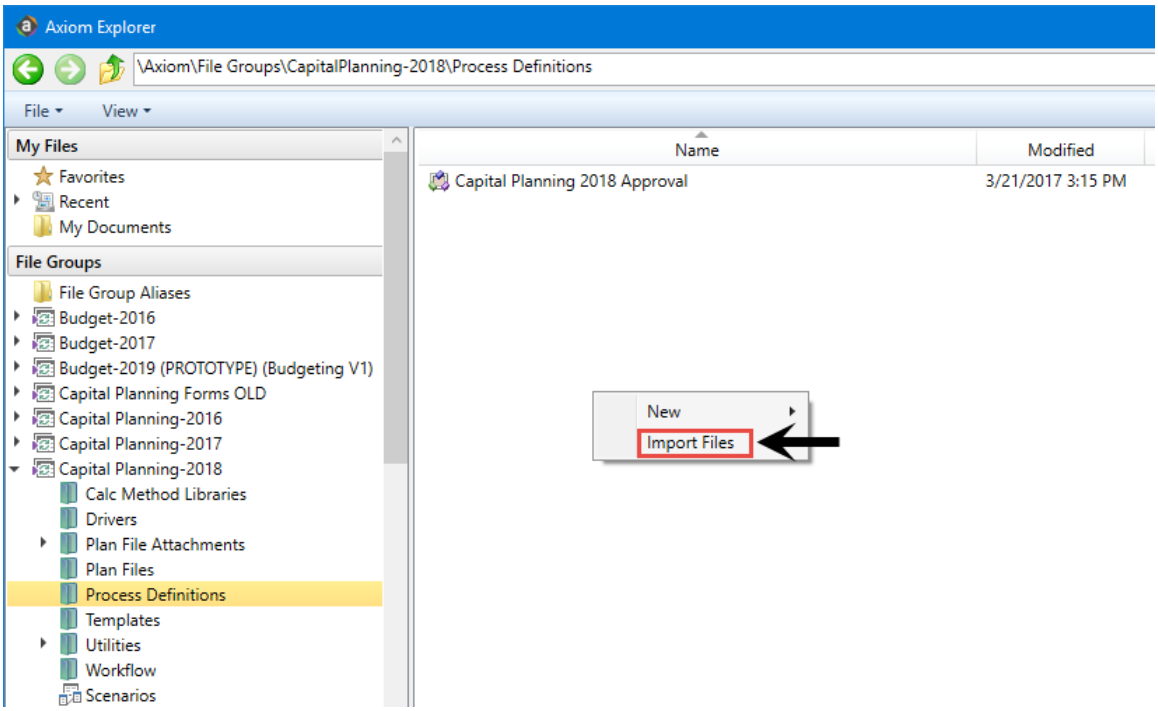
11. Right-click on any blank white space, and select **Import Utilities**.



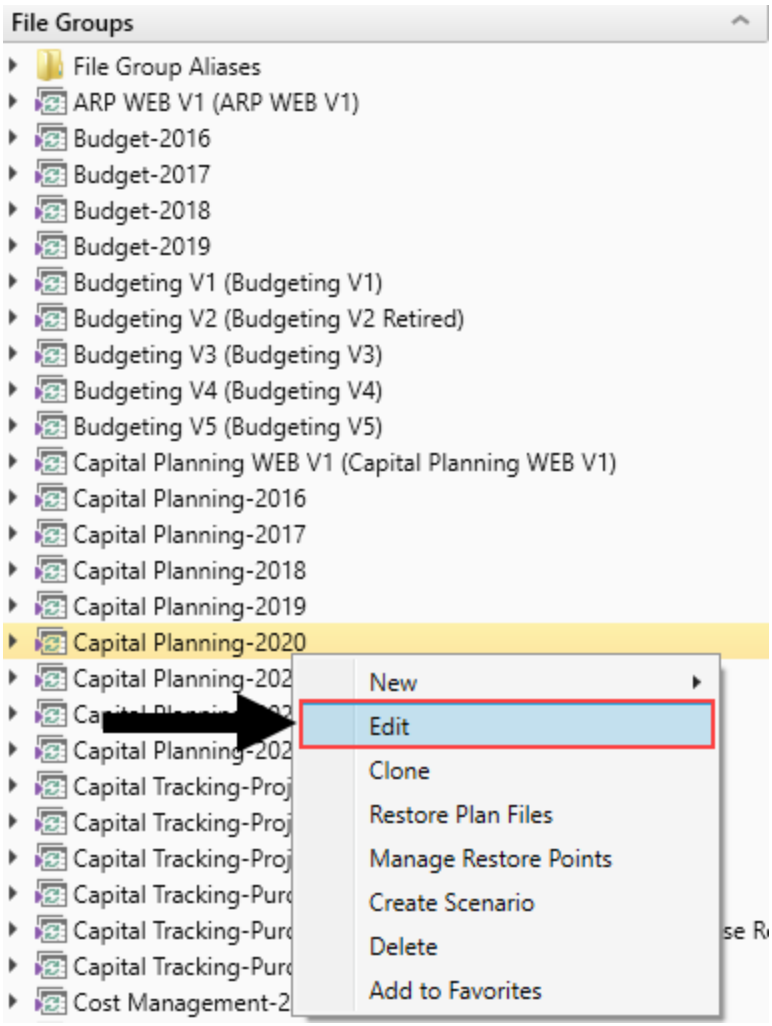
12. Browse your computer, and select the CP Process Flow Step Ownership workbook that you recently exported.
13. At the Confirmation prompt, click **Yes**.
14. In Axiom Explorer, expand the selection for the most recent file group used, and click **Process Definitions > Process Flow Configuration**.
15. Right-click the Capital Planning 20XX Approval definition, and select **Export**.



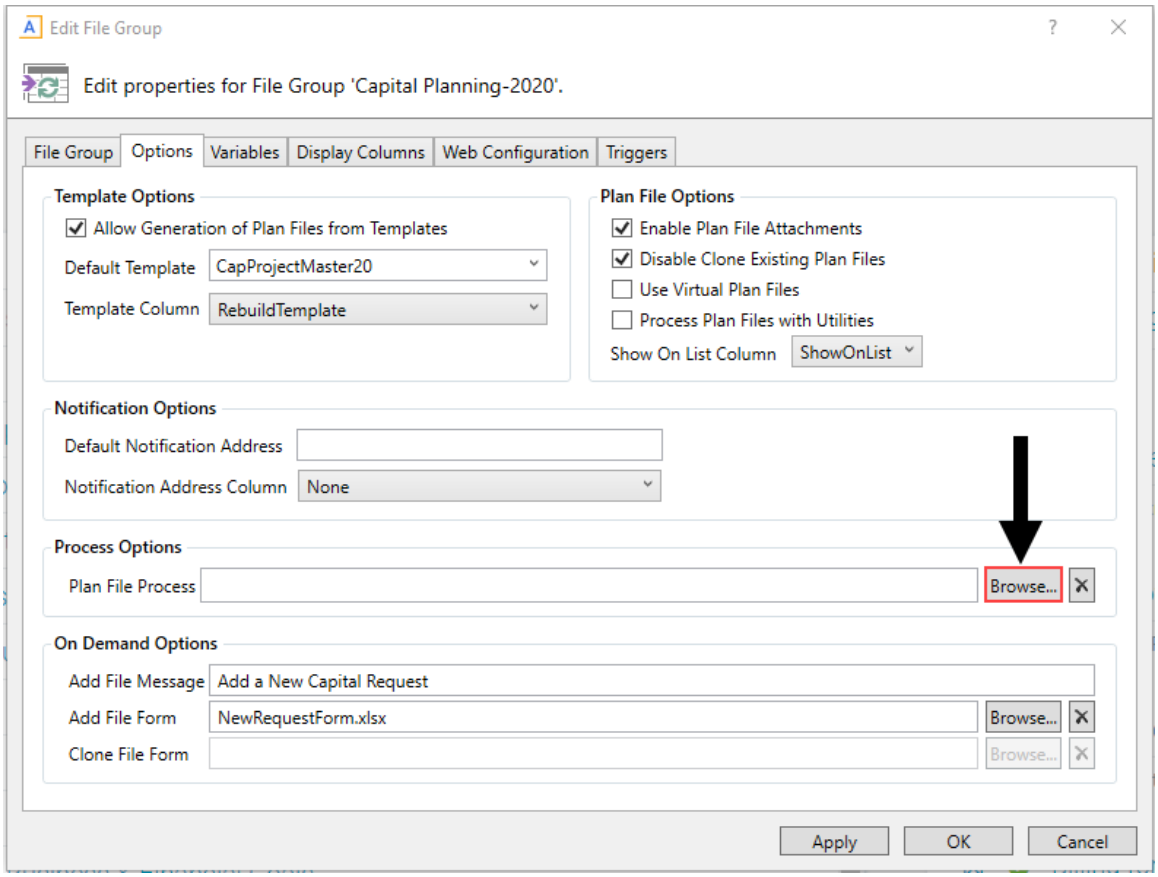
16. Save the Capital Planning 20XX Approval Process to your computer or any network folder.
17. Go to the file that was exported on your computer/network, and change the name of the file to increase the year by one. For example, change Capital Planning 2017 Approval to Capital Planning 2018 Approval.
18. In Axiom Explorer, expand the selection for the next year's file group, and select the **Process Definitions** folder.
19. Right-click on any blank white space, and select **Import Files**.



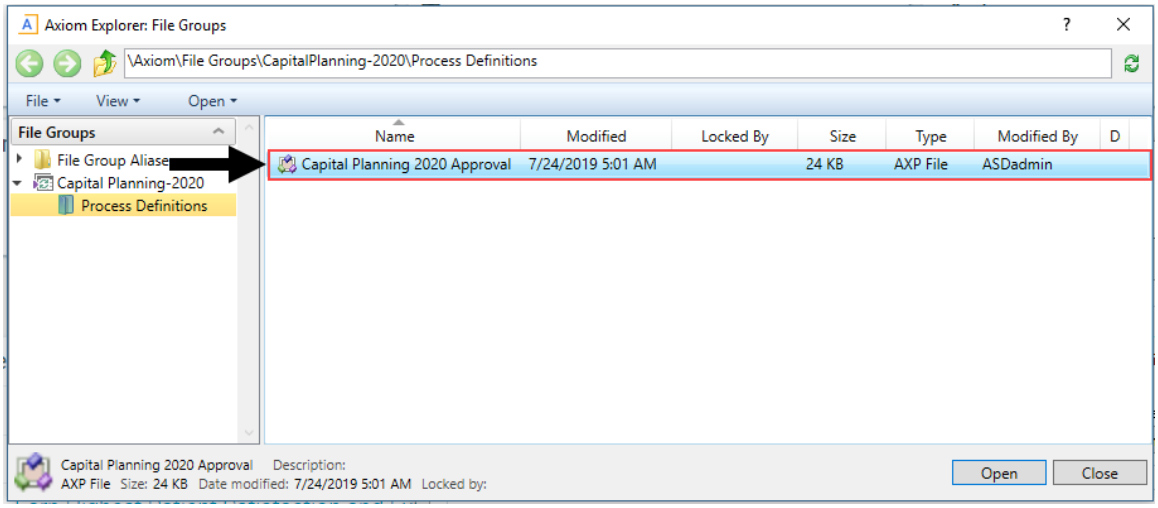
20. Browse your computer, and select the Capital Planning 20XX Approval Process that you recently exported and renamed.
21. At the Confirmation prompt, click **Yes**.
22. In Axiom Explorer, right-click the new file group, and click **Edit**.



23. In the **Edit File Group** dialog, in the **Process Options > Plan File Process** field, click **Browse** .

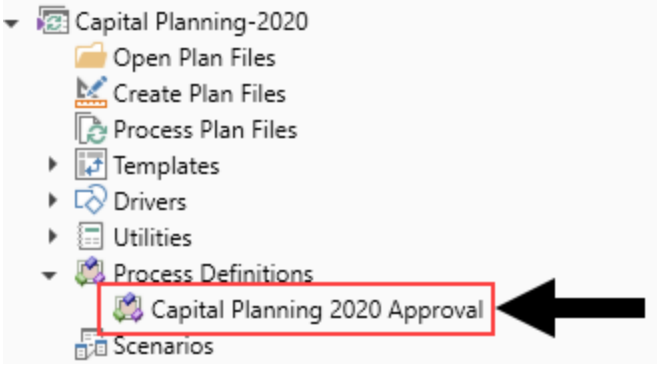


24. In the **Axiom Explorer: File Groups** dialog, select the newly imported process, and click **Open**.

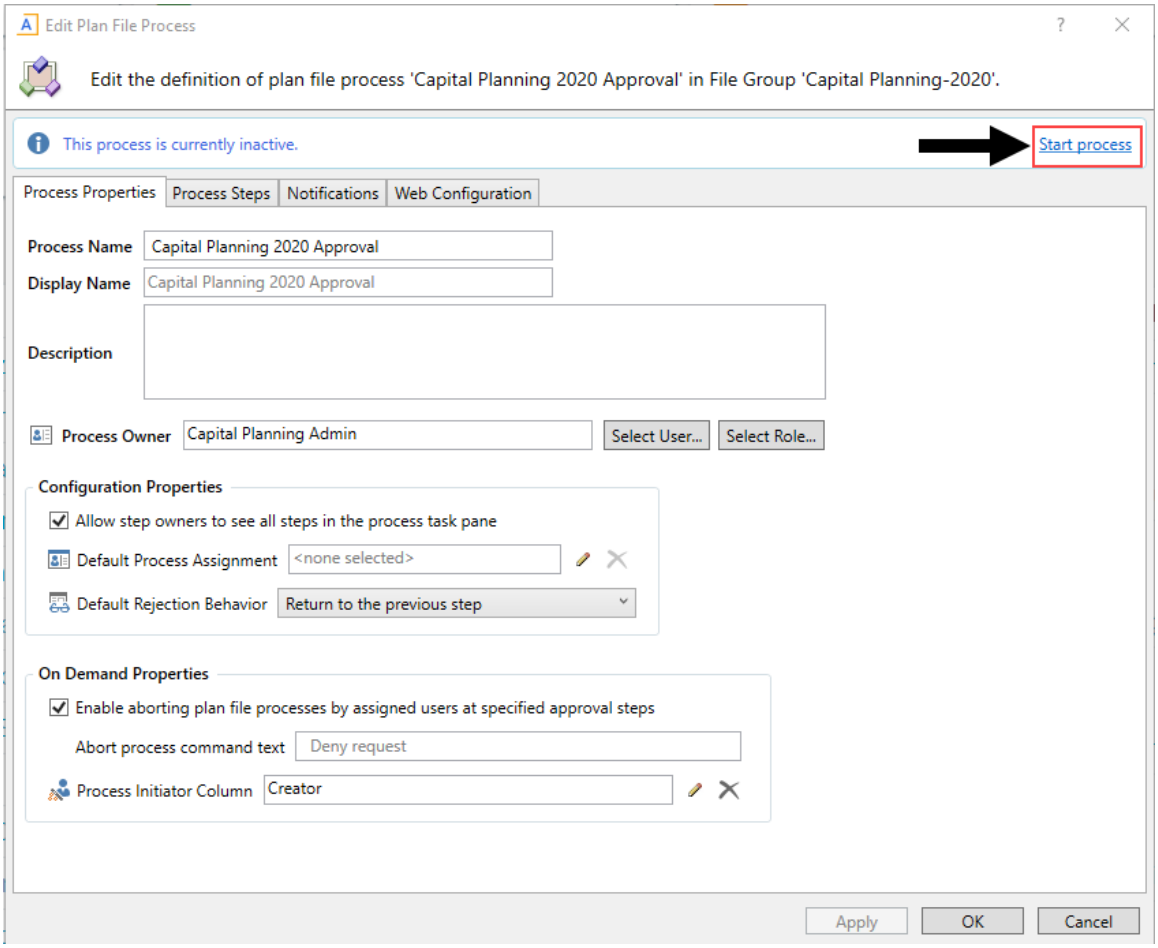


25. In the **Edit File Group** dialog, click **OK**.

26. In Axiom Explorer, navigate to the file group that includes the new Capital Planning 20XX Approval Process you just imported, and double-click it.



27. On the right side of the dialog, click **Start Process** to enable the workflow in the system.



28. At the Confirmation prompt, click **OK**.

Proceed to Step 3: Confirm configuration of Axiom Capital Tracking for next year's planning cycle.

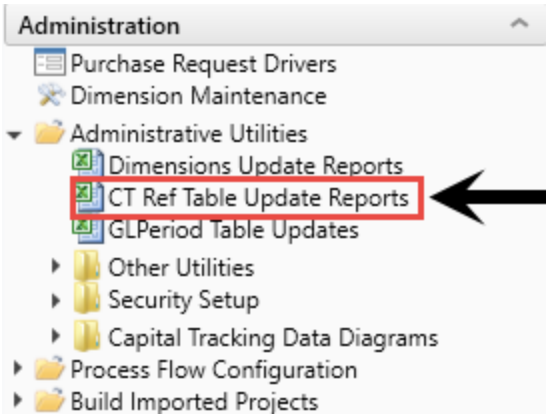
Step 3: Confirm configuration of Axiom Capital Tracking for next year's planning cycle

There are two worksheets in the CT Ref Table Update Reports workbook that - while not drivers themselves - are functionally similar. Each of these worksheets allow you to select the fields that a user is required to complete to submit a purchase request.

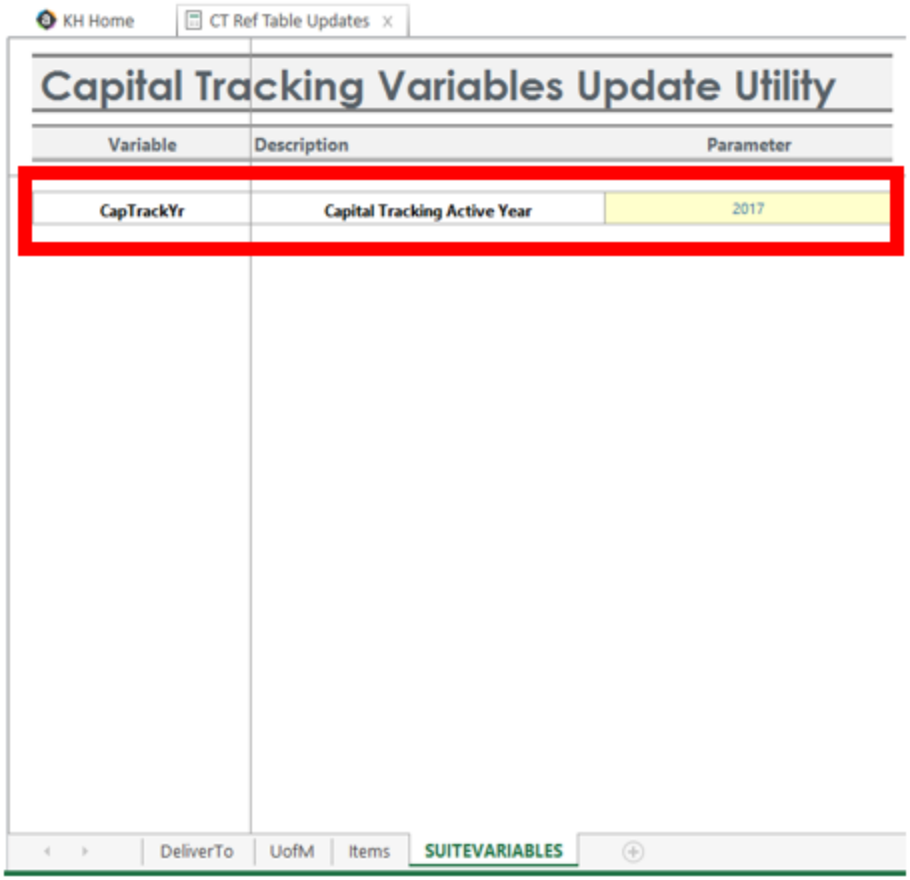
NOTE: Your organization normally updates this table at the beginning of each fiscal year.

To configure capital tracking for next year's planning cycle:

1. In the Cap Track Admin **Cap Track Admin** task pane, in the **Administration** section, click **Administrative Utilities**, and double-click **CT Ref Table Update Reports**.



2. Select the SUITEVARIABLES worksheet, and update the **CapTrackYr** to the current fiscal year. You should only make this update after the new fiscal year begins.



3. To update the Capital Tracking Active Year in the system, click **Save**.

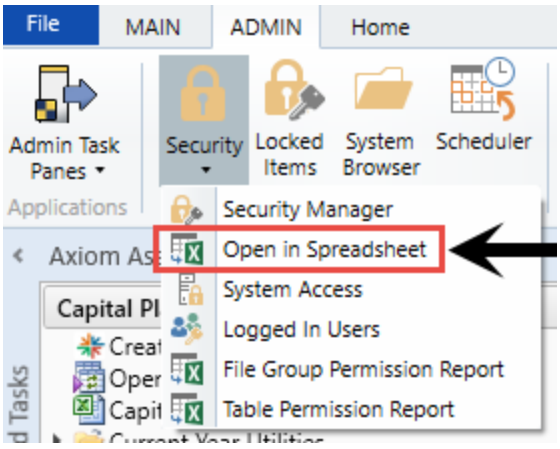
Proceed to Step 4: Configure security for the new file group.

Step 4: Configure security for the new file group

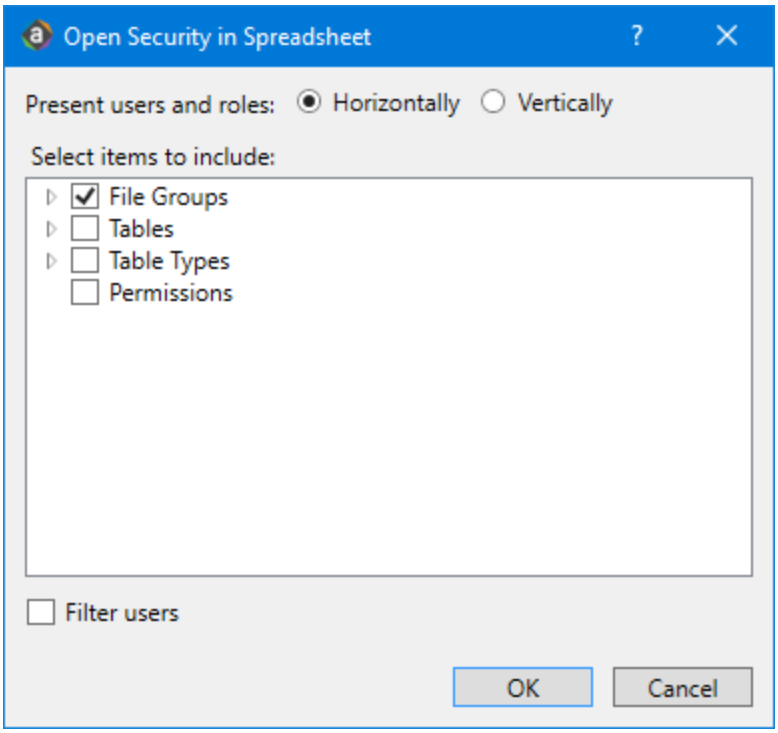
You do not need to update the security for the user filters, but you do need to update the security for the new file group added with the installation.

To configure security for the new file group:

1. In the **Admin** ribbon tab, in the **System Management** group, click **Security > Open in Spreadsheet**.



2. In the **Open Security in Spreadsheet** dialog, select the **File Groups** check box, and unselect all other check boxes, and then click **OK**.



3. Set up the new file group security with the same settings and user filters used for the previous file group. Copy the entire row from the previous file group, and paste to the same row for the new file group.

   [file access level] = Read

   [calc method permission] = Insert

   [interacts with process management] = TRUE

[access filter, ignored if all plan files] = should be the same as previous File Group

CapitalPlanning-2018 [modify file group]	FALSE
CapitalPlanning-2018 [create plan files]	FALSE
CapitalPlanning-2018 [create new records]	FALSE
CapitalPlanning-2018 [process plan files]	FALSE
CapitalPlanning-2018 [run Axiom Queries]	FALSE
CapitalPlanning-2018 [manage calc methods]	FALSE
CapitalPlanning-2018 [file access level]	Read
CapitalPlanning-2018 [save data]	FALSE
CapitalPlanning-2018 [unprotect]	FALSE
CapitalPlanning-2018 [calc method permission]	Insert
CapitalPlanning-2018 [sheet assistant]	FALSE
CapitalPlanning-2018 [file processing assistant]	FALSE
CapitalPlanning-2018 [interacts with process management]	TRUE
CapitalPlanning-2018 [all plan files]	FALSE
CapitalPlanning-2018 [access filter, ignored if all plan files]	
CapitalPlanning-2018 [role inheritance mode]	Independent
CapitalPlanning-2018 [inherit role, blank means all]	

4. After you are done making changes, in the **Main** ribbon tab, click **Save**.

Proceed to Step 5: Run the CP Annual Rollforward utility.

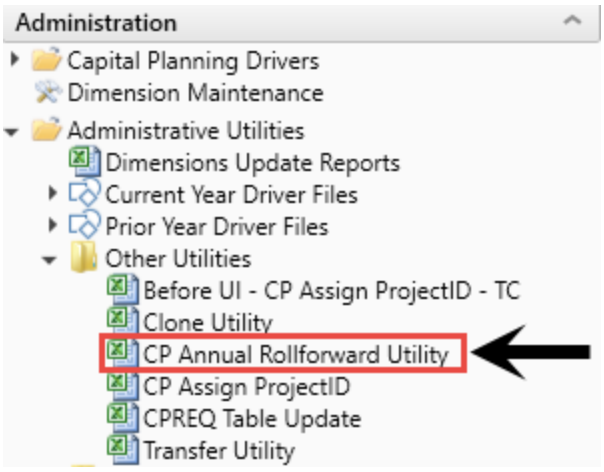
Step 5: Run the CP Annual Rollforward utility

Use this utility to copy all driver file settings and configurations to the next planning year.

IMPORTANT: Saving the data after you run this utility will overwrite existing data in the CP_Next Year file group drivers. Be sure that you have performed the previous roll forward instructions before saving this report.

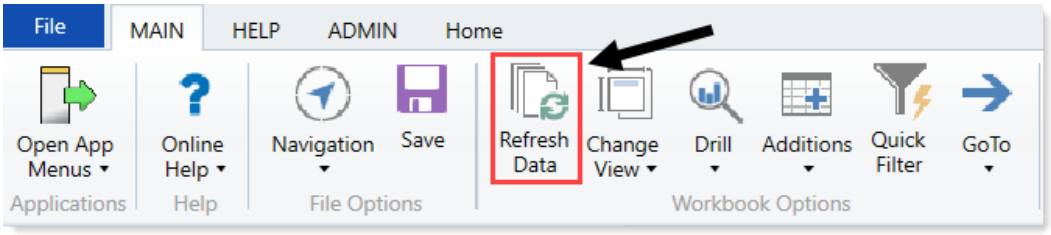
To run the CP Annual Rollforward utility:

1. In the task pane, in the **Administration** section, click **Administrative Utilities > Other Utilities**, and double-click **CP Annual Rollforward Utility**.



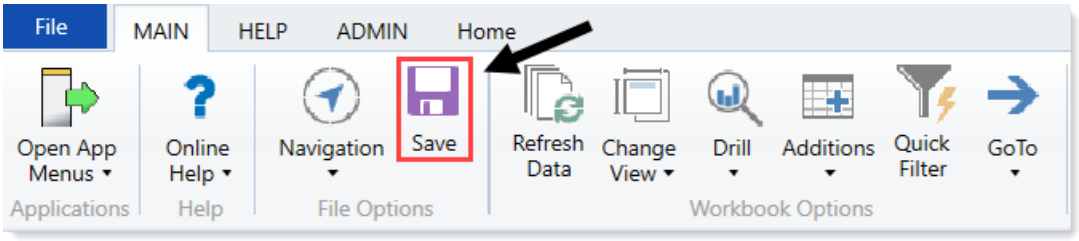
2. Refresh the data by doing one of the following:

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



- Press **F9**.

3. Verify that the data loaded correctly.
4. When you are ready to save the data to the database, in the **Main** ribbon tab, click **Save**.



10

Managing System Administration

This section includes topics related to system administration tasks for Axiom Capital Planning.

Transferring capital project data to Axiom Budgeting

If your organization is licensed for Axiom Capital Planning and Axiom Budgeting, you can transfer capital project data to Axiom Budgeting using the Transfer Capital Projects to Budget utility.

NOTE: You must have both Capital Planning Administrator and Budgeting Administrator privileges to access this utility.

The system transfers the following information with the project:

- Capital request number (CAPREQ) and project ID
- Description of the project
- Total requested for the project
- Entity and department for the project
- Project type
- Project start year
- Project requestor

NOTE: If you adjust capital project data or delete a project, you can transfer the project again, and the system will update or remove the data in Axiom Budgeting. However, you will need to save the budget plan file in Axiom Budgeting to propagate the changes. For more information, see Managing transferred projects.

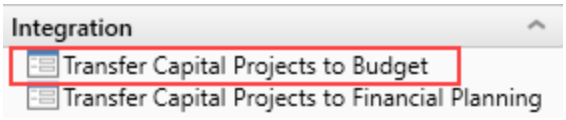
Mapping capital category codes to Axiom Budgeting accounts

The first step in transferring capital projects to Axiom Budgeting is to map the capital category codes to specific accounts.

TIP: You only need to map those categories in which you are transferring projects to Axiom Budgeting.

To map capital category codes to Axiom Budgeting accounts:

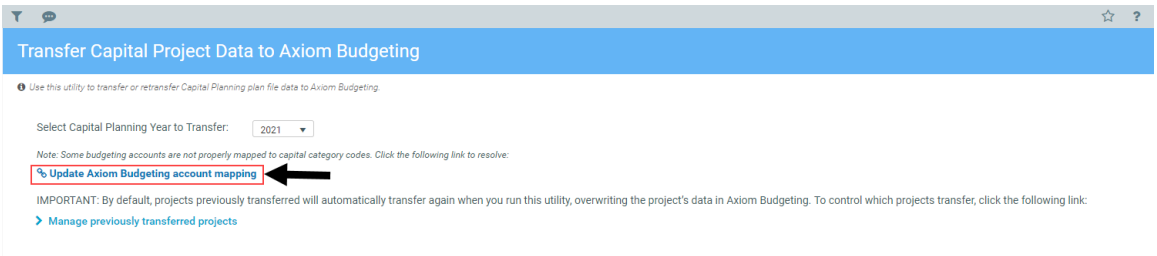
1. In the Cap Plan Admin task pane, in the **Integration** section, double-click **Transfer Capital Projects to Budget**.



2. In the first page of the utility, click **Update Budget Account Mapping Here**.

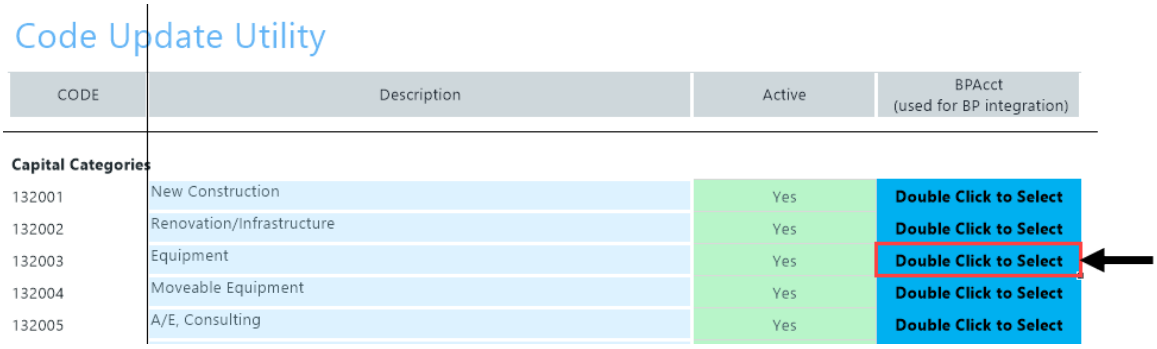
> **TIP:** You can also access this same report in the **Administration** section, click **Administrative Utilities**, and double-click **Dimension Update Reports**.

> **NOTE:** When you click the link, the mapping worksheet opens in a separate tab.



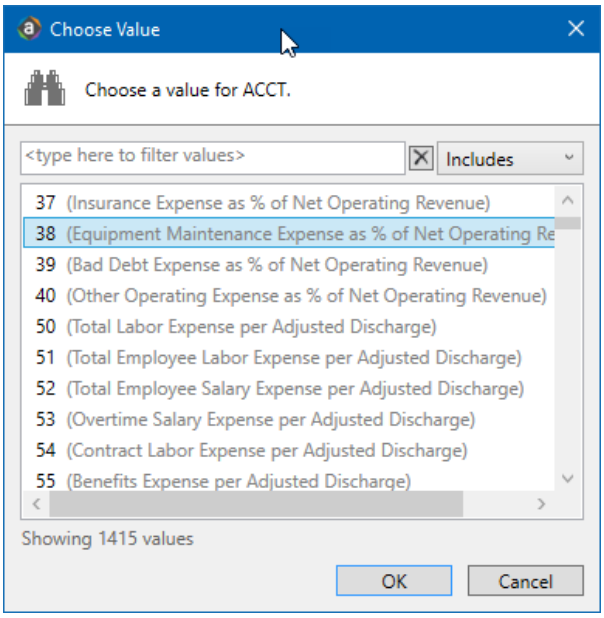
Click image to view full size

3. At the bottom of the worksheet, click the **CODE** tab (if it not already selected).
4. For each category, in the **BPAcct** column, double-click the cell.



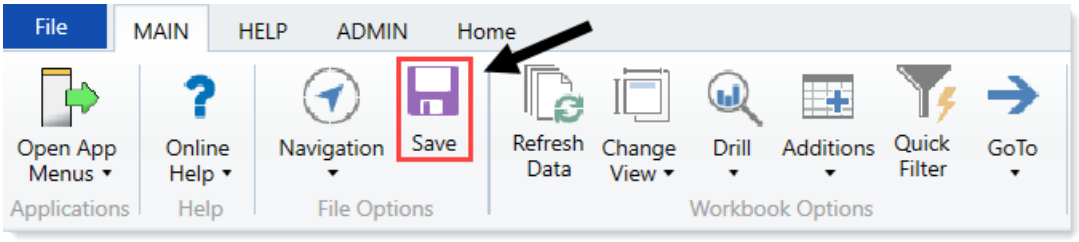
Click image to view full size

5. In the **Choose Value** dialog, select the Axiom Budgeting account to map to, and click **OK**.



Click image to view full size

6. At the bottom of the sheet, map the codes in the **Additional Codes for Mapping to BP** section.
7. After you finish mapping the appropriate categories, click **Save**.



Click image to view full size

8. At the **Save to Database** Status dialog, click **OK**.
9. Return to the Transfer Capital Projects to Budget utility to complete the transfer of projects.

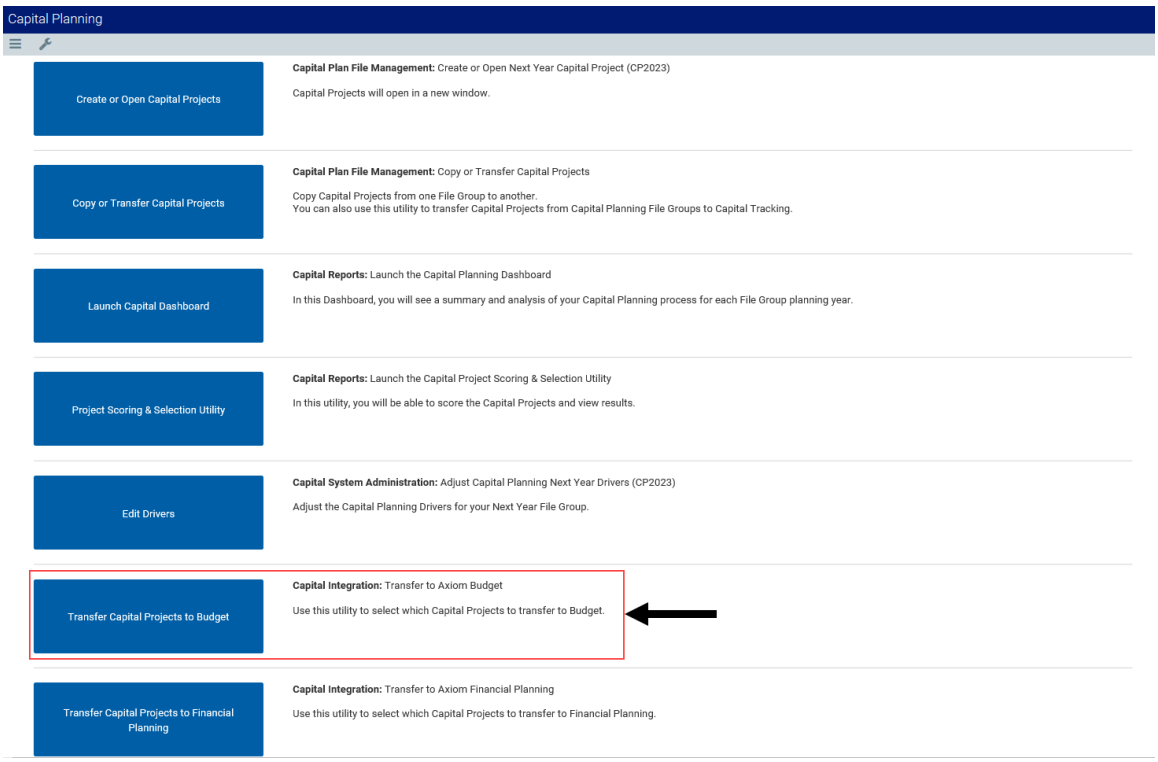
Selecting and transferring projects

NOTE: By default, any previously transferred projects will transfer again unless you select them not to. For instructions on, see Managing transferred projects.

To select and transfer projects:

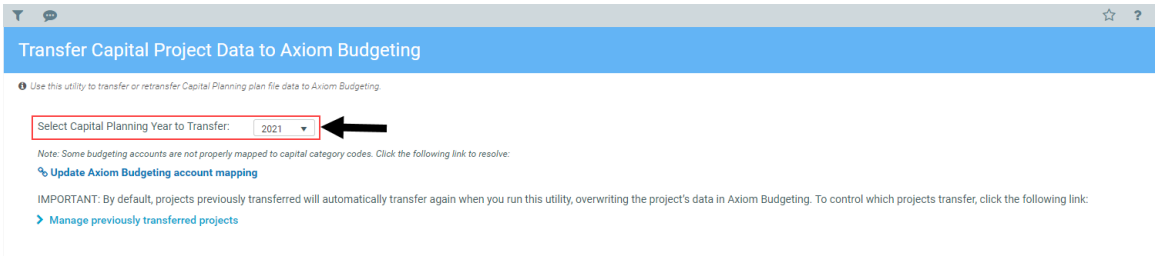
1. From the Axiom Capital Planning home page, click **Transfer Capital Projects to Budget**.

NOTE: To access this location from the Cap Plan Admin task pane, in the **Integration** section, double-click **Transfer Capital Projects to Budget**.



Click image to view full size

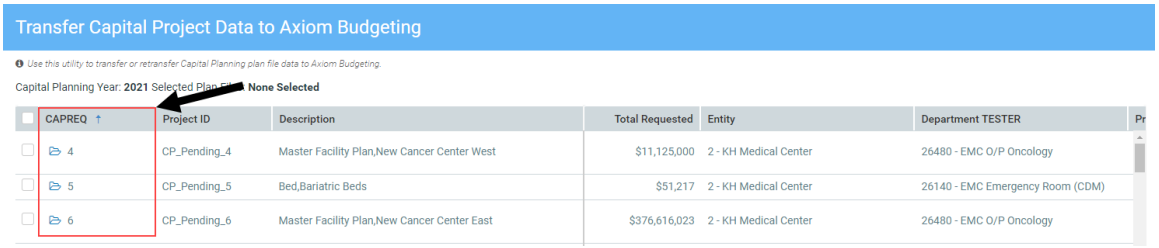
2. From the **Select Capital Planning Year to Transfer** drop-down, select the file group planning year in which to transfer projects to Axiom Budgeting.



Click image to view full size

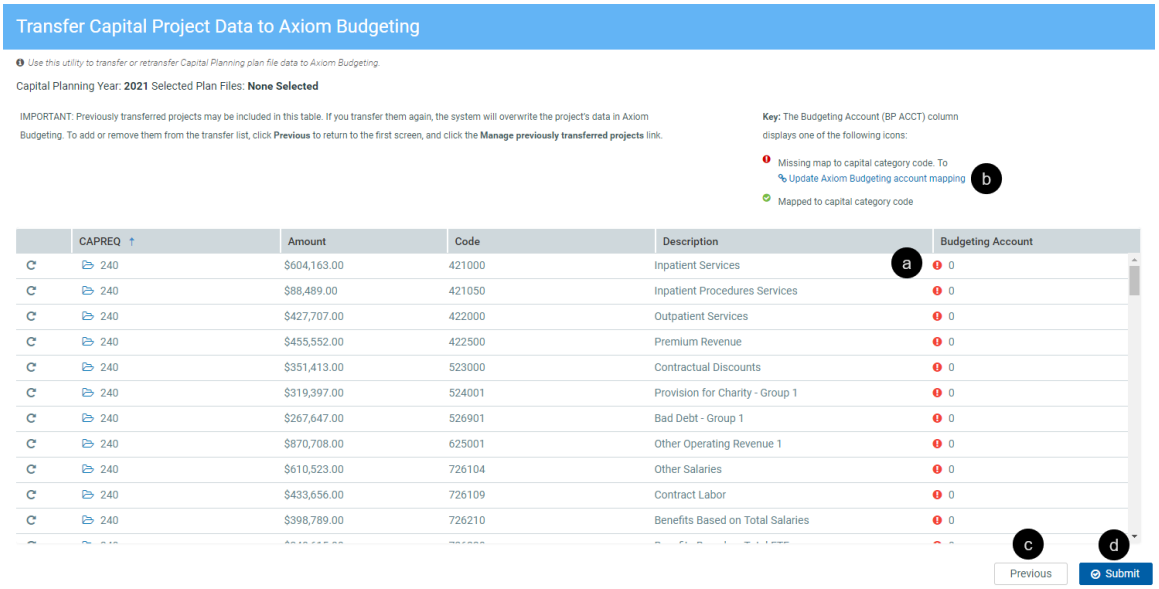
3. In the lower right corner of the page, click **Next**.
4. Next to the **CAPREQ** column, click the check box to select the project(s) to transfer.

TIP: To view the plan file for a project, click the folder icon next to the CAPREQ number. The plan file opens in a separate tab. From here, you can make any necessary changes to the project. However, to propagate the changes in the Transfer Capital Projects to Budget utility, you will need to refresh the utility.



Click image to view full size

5. In the lower right corner of the page, click **Next**.
6. This page displays a list of all the capital project requests to be transferred to Axiom Budgeting. Do any of the following, as needed:
    a. If the Axiom Budgeting account is not properly mapped, an exclamation point icon displays in the Budgeting Account column. Properly mapped accounts display a green check mark.
    b. Click the **Update Axiom Budgeting account mapping** link to open the mapping utility to map to the correct account code in the Code tab.
    c. To return to the list of projects, for example, if you incorrectly selected a project or forgot to include a project, click **Previous**.
    d. To submit the projects to transfer to Axiom Budgeting, click **Submit**.



Click image to view full size

7. After clicking the **Submit** button, review the confirmation prompt, and click **OK**.

The summary screen displays the number of plan files transferred.

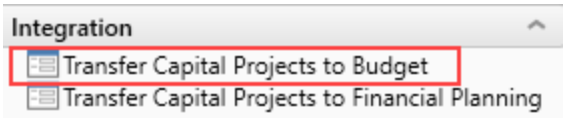
For information on how to work with transferred projects in Axiom Budgeting, see Working with capital projects in Axiom Budgeting in plan files.

Managing transferred projects

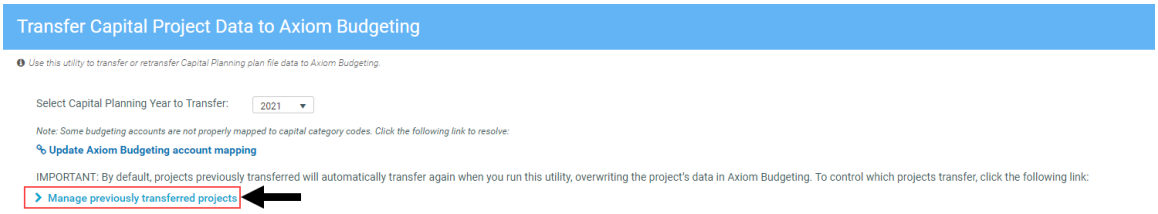
By default, projects previously transferred automatically transfer again when you run the utility. However, you can control this action by enabling or disabling these projects from transferring again.

To manage transferred projects:

1. In the Cap Plan Admin task pane, in the **Integration** section, double-click **Transfer Capital Projects to Budget**.

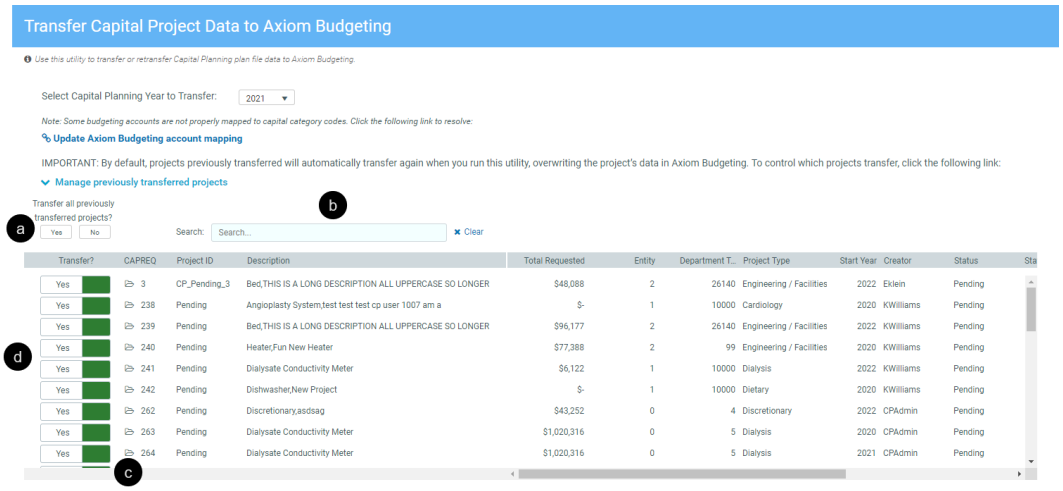


2. Click **Manage previously transferred projects**.



Click image to view full size

3. Do any of the following:
    a. To transfer all projects in the list, click **Yes**. To disable the transfer of all projects, click **No**.
    b. To search for a specific project, type project information in the Search box such as the CAPREQ number, the project ID, or description.
    c. To view the plan file for a project, click the folder icon next to the CAPREQ number. The plan file opens in a separate tab. From here, you can make any necessary changes to the project. However, to propagate the changes in the Transfer Capital Projects to Budget utility, you will need to close it and open it again.
    d. For individual projects, click the toggle to **Yes** to transfer the project. Click the toggle to **No** to disable the transfer.



Click image to view full size

4. Click **Next** to continue the transfer process as described in step 4 in the "Selecting and transferring projects" section above.

> **NOTE:** The projects you disable from transferring will not display in the list.

Working with capital projects in Axiom Budgeting plan files

After you transfer projects into Axiom Budgeting, they display in the Expense and Stats & Revenue tabs as dark gray cells. The system also adds "From CP Integration" in the Comments and Budget Method columns.

From this point, you can enter or update budget data for each month in the blue-shaded cells, just like any other budget item. If a project is updated or deleted, you need to re-transfer the project. The data is then updated in Axiom Budgeting and the inputs are set to 0.

The number in the Total Budget column in the Expenses tab always ties out to the amount coming in from Axiom Capital Planning. The system allows you to change the spread, but you cannot change the total value. If you need to transfer a project again and the Total Budget changes, the system automatically self-balances the amounts.

▶ Video instructions

Transferring capital project data to Axiom Financial Planning

If your organization is licensed for Axiom Capital Planning and Axiom Financial Planning, you can transfer capital project data to Axiom Financial Planning using the Transfer Capital Projects to Financial Planning utility.

NOTE: You must have both Capital Planning Administrator and Financial Planning Administrator privileges to access this utility.

The system transfers the following information with the project:

- Capital request number (CAPREQ) and project ID
- Description of the project
- Total requested for the project
- Project type
- Project start year
- Project requestor

NOTE: If you adjust capital project data, you can transfer the project again to update it in Axiom Financial Planning. However, you will need to open and save or rebuild the Financial Planning plan file in Axiom Financial Planning to propagate the changes. If you delete a project in Axiom Capital Planning, you must also delete it in Axiom Financial Planning. For more information on transferring previously-transferred projects, see Managing transferred projects.

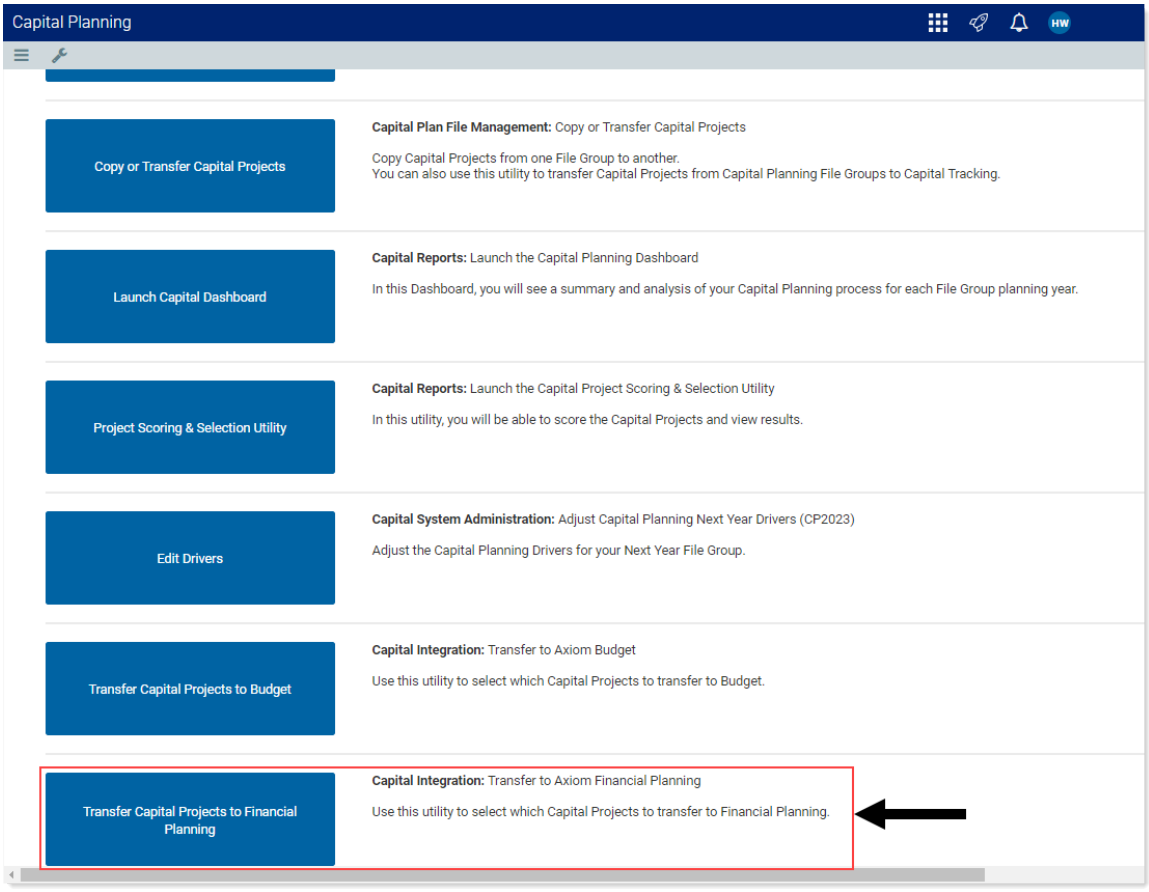
Selecting and transferring projects

NOTE: By default, any previously transferred projects will transfer again unless you select them not to. For instructions, see Managing transferred projects.

To select and transfer projects:

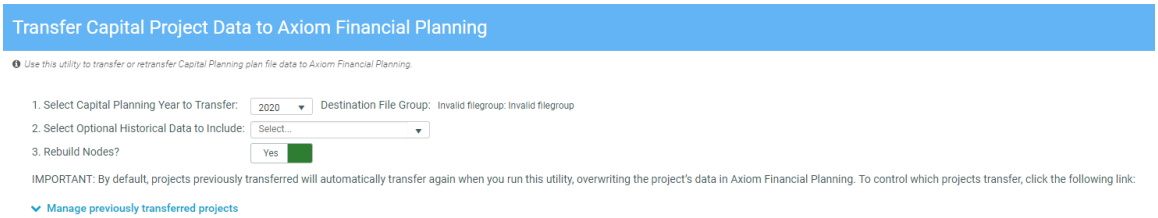
1. From the Axiom Capital Planning home page, click **Transfer Capital Projects to Financial Planning**.

   NOTE: To access this location from the Cap Plan Admin task pane, in the **Integration** section, double-click **Transfer Capital Projects to Financial Planning**.



Click image to view full size

2. From the **Select Capital Planning Year to Transfer** drop-down, select the file group planning year in which to transfer projects to Axiom Financial Planning.



Click image to view full size

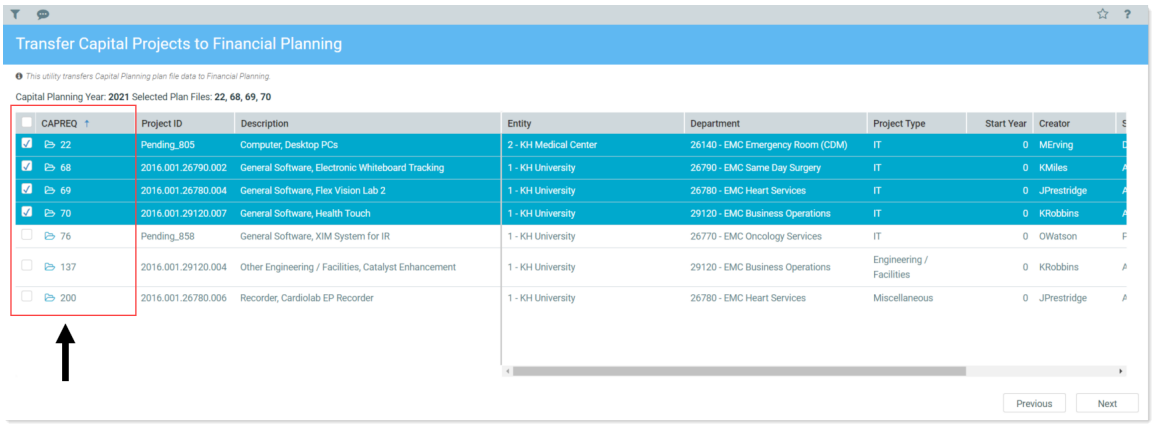
> **NOTE:** The Destination File Group is preselected as Next Year and cannot be changed.

3. (Optional) From the **Select Optional Historical Data to Include** drop-down, select the desired years to include, and then click **OK**.

> **IMPORTANT:** Including historical data may create variances in your historical reconciliations.

4. For **Rebuild Nodes?**, do one of the following:
   - To automatically build or rebuild nodes in Axiom Financial Planning after transferring the Capital Planning project data, leave the option set to **Yes** (the default).
   - If you do not want to automatically rebuild nodes, click the toggle to **No**. If you select No and later change your mind, you can always rebuild the nodes using the Node Rebuild Utility. A link to this utility is presented on the Transfer Summary page when you select No.
5. (Optional) If desired, manage previously transferred projects. If this is the first time you have transferred project data using this using this utility, there will not be any projects listed here.
6. In the lower part of the page, click **Next**.
7. On the next page, select the desired projects to transfer to Axiom Financial Planning. Next to the **CAPREQ** column, click the check box to select the project(s) to transfer.

> **TIP:** If the list of projects is long, click the filter icon ( ) on the left in the gray header, and then use the options to filter the list.



Click image to view full size

> **TIP:** To view the plan file for a project, click the folder icon next to the CAPREQ number. The plan file opens in a separate tab. From here, you can make any necessary changes to the project. However, to propagate the changes in the Transfer Capital Projects to Financial Planning utility, you will need to refresh the utility.

8. In the lower right corner of the page, click **Next**.
9. In the **Model** column, from the drop-down, select the Model to associate each listed Axiom Capital Planning project to. If desired, in the **Node description** field, type a new name for each node.

   > **NOTE:** To return to the list of projects, for example, if you incorrectly selected a project or forgot to include a project, click **Previous**.

10. In the lower right corner of the page, click **Submit**, then review the confirmation prompt, and click **OK**.
11. The Transfer Summary page displays the Source File Group you selected and the plan file number of each transferred plan file, including any that were previously transferred. Do any of the following:
    - To transfer another project, click the link **Click here to transfer another plan file**.
    - If, on the first page of the utility, you did not select to build nodes, click the link **Click here to build/rebuild nodes** to go to the Node Rebuild Utility in Axiom Financial Planning and build nodes from your imported project data.
    - If you are finished, close the utility.

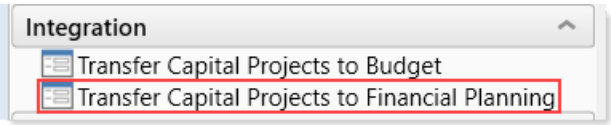
For information on how to work with transferred projects in Axiom Financial Planning, see Working with capital projects in Axiom Financial Planning plan files.

Managing transferred projects

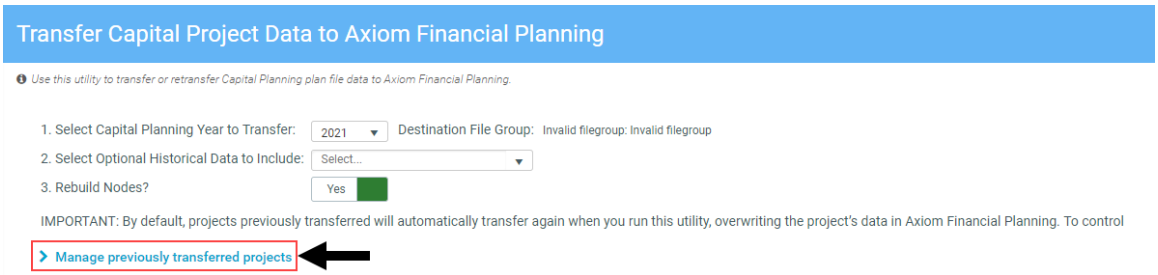
By default, projects previously transferred automatically transfer again when you run the Transfer Capital Projects to Financial Planning utility. However, you can control this action by enabling or disabling these projects from transferring again.

To manage transferred projects:

1. Do one of the following:
   - If you are already on the first page of the Transfer Capital Projects to Financial Planning utility, skip to step 2.
   - In the Cap Plan Admin task pane, in the **Integration** section, double-click **Transfer Capital Projects to Financial Planning**.

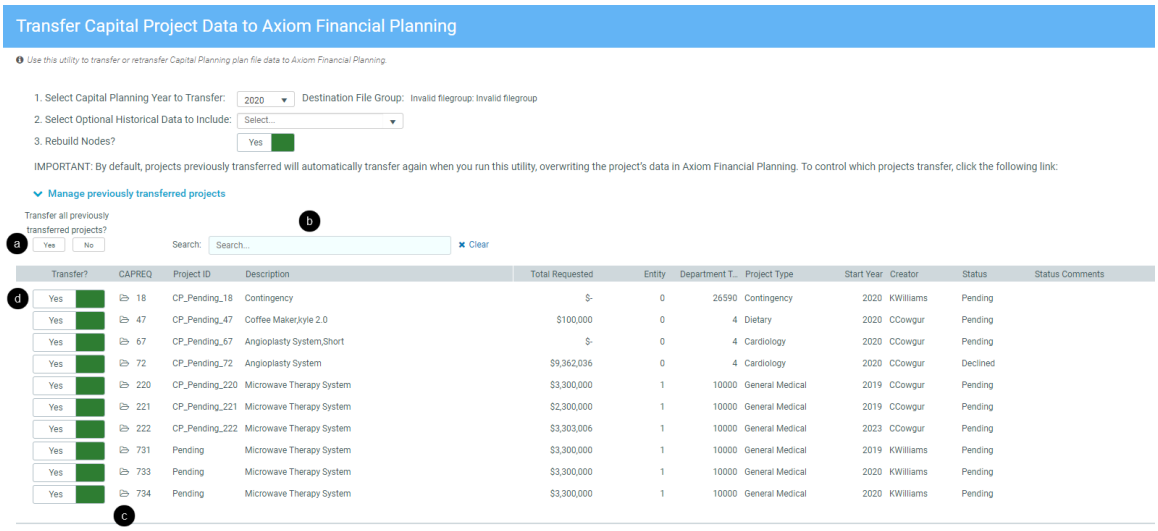


2. Click **Manage previously transferred projects**.



Click image to view full size

3. Do any of the following:
   a. To transfer all projects in the list, click **Yes**. To disable the transfer of all projects, click **No**.
   b. To search for a specific project, type project information in the Search box such as the CAPREQ number, the project ID, or description.
   c. To view the plan file for a project, click the folder icon next to the CAPREQ number. The plan file opens in a separate tab. From here, you can make any necessary changes to the project. However, to propagate the changes in the Transfer Capital Projects to Financial Planning utility, you will need to close it and open it again.
   d. For individual projects, click the toggle to **Yes** to transfer the project. Click the toggle to **No** to disable the transfer.



Click image to view full size

4. Click **Next** to continue the transfer process as described in step 7 in the "Selecting and transferring projects" section above.

NOTE: The projects you disable from transferring will not display in the list.

Working with capital projects in Axiom Financial Planning plan files

After you transfer capital project data to Axiom Financial Planning and the projects are created as nodes, they display in Open Plan Files dialog where you can select and open them. The new nodes can be used in models, scenarios, and reports. For more information, see the following in the Axiom Financial Planning online help:

- "Working with Financial Analysis reports" – Run reports on nodes, scenarios, financial statements, summary reports, and more.
- "Add an initiative node" – Use initiative nodes to track the volume, revenue, expense, and capital associated with a new project.
- "Working with Scenarios" – Use scenarios to generate and compare forecasts based on different sets of assumptions to get a sense of your organization's finances in various possible future scenarios.

If an Axiom Capital Planning project that you have imported is later updated, you need to re-transfer the project and rebuild the node. For information, see "Rebuilding a node" in the Axiom Financial Planning online help.

▶ Video instructions

Working with Dimensions

Dimensions represent the key index fields for the Axiom Software database. All data in the system is associated with one or more dimensions. When first implementing Axiom Capital Planning, a Kaufman Hall Implementation Consultant helps you configure the dimension tables to reflect the structure and processes of your organization.

A few examples of dimension tables include:

- **DEPT** – Similar to Entity, the DEPT dimension table contains records for each department within an organization (For example, radiology, emergency, finance, and so on).
- **CAPACCT** – The CAPACCT dimension table contains records for capital GL accounts used in capital planning calculations.
- **PAYOR** – The PAYOR dimension table includes records for records to be used in capital planning pro forma templates.
- **CODE** – The CODES dimension table contains records for storing back input fields in both pro forma and summary plan files.
- **VENDOR** – The VENDOR dimension table contains vendor records to be used in both Capital Planning and Capital Tracking for both purchasing and reporting. While this table is not truly a dimensions table, it is heavily utilized in Capital Tracking and therefore warrants a specific call out as tables that must be maintained.

Working with the Dimension Maintenance Utility

Your organization may use multiple distinct Entity Management branches within your structure to help manage your Axiom products. It might be the responsibility of each local product administrator to maintain their own elements within dimensions for each Axiom 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:

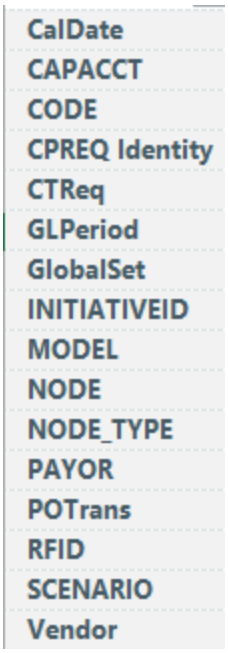
- In the Edit Data Structure mode, administrators can manage grouping columns using datasets.
- In the Dimension Maintenance Utility, depending on their roles, users can select the products and dimensions to maintain.
- Using the security feature in the Dimension Maintenance Utility, for each product, 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.

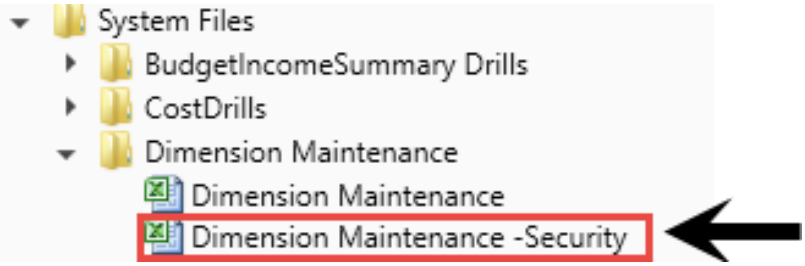
With Dimension Maintenance - Security, you can set in bulk the security rights for all users assigned a product administrator role for all dimensions for a specific dataset (product).

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.

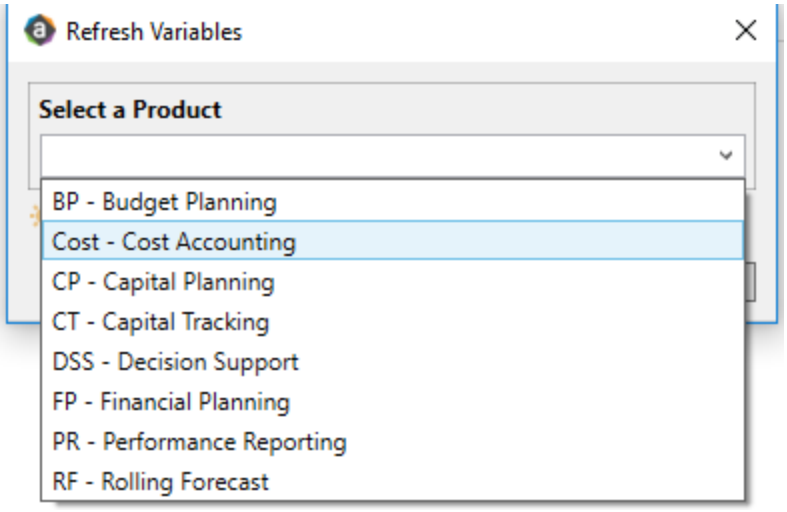
IMPORTANT: For a user (with a product administrator role) to edit a dimension, you must first assign them security rights using this utility.

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**.

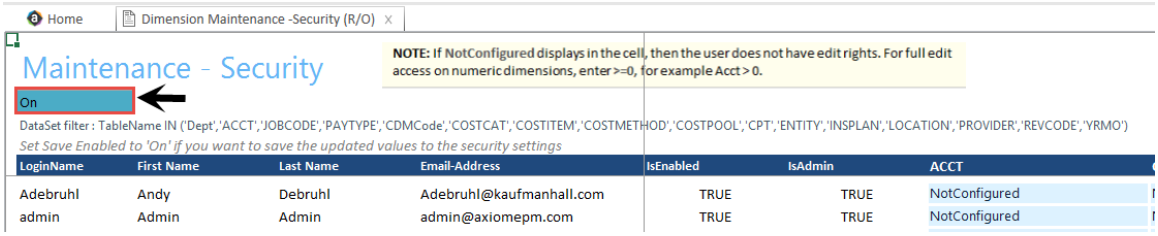


3. Select a user, and do one of the following:

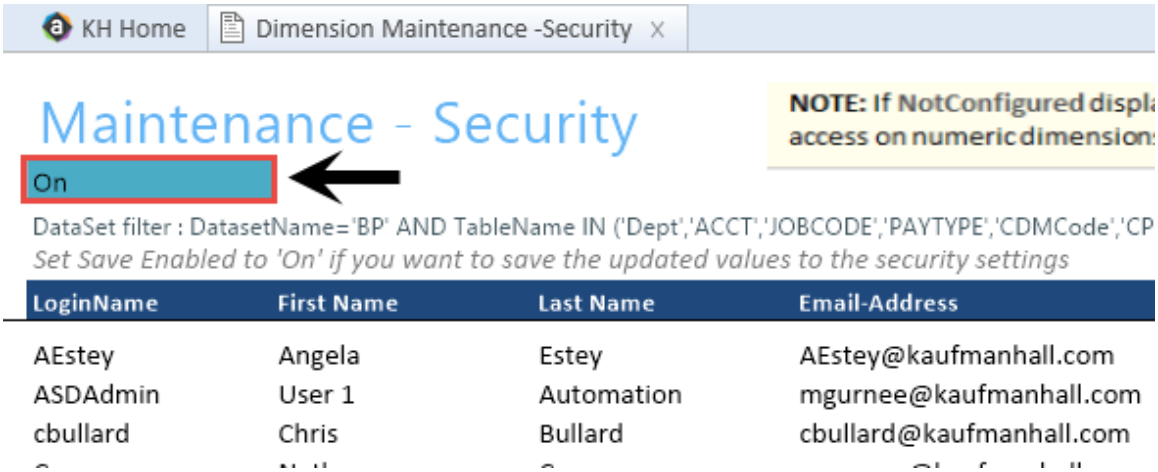
IMPORTANT: If **NotConfigured** displays in the cell, then the user does not have edit rights. For full edit access on numeric dimensions, enter **>= 0**, for example Acct > 0.

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.

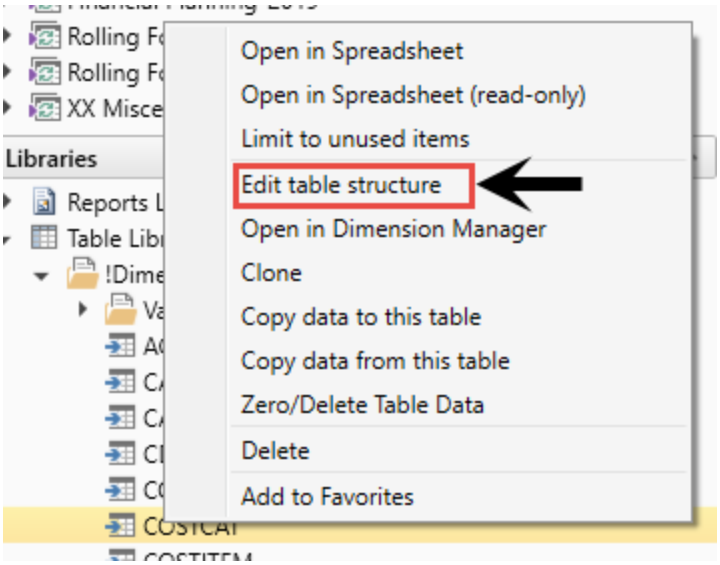
NOTE: You can only perform assignments for custom columns that your organization has added. We recommend that you do not change the assignments of any standard columns included with the product.

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

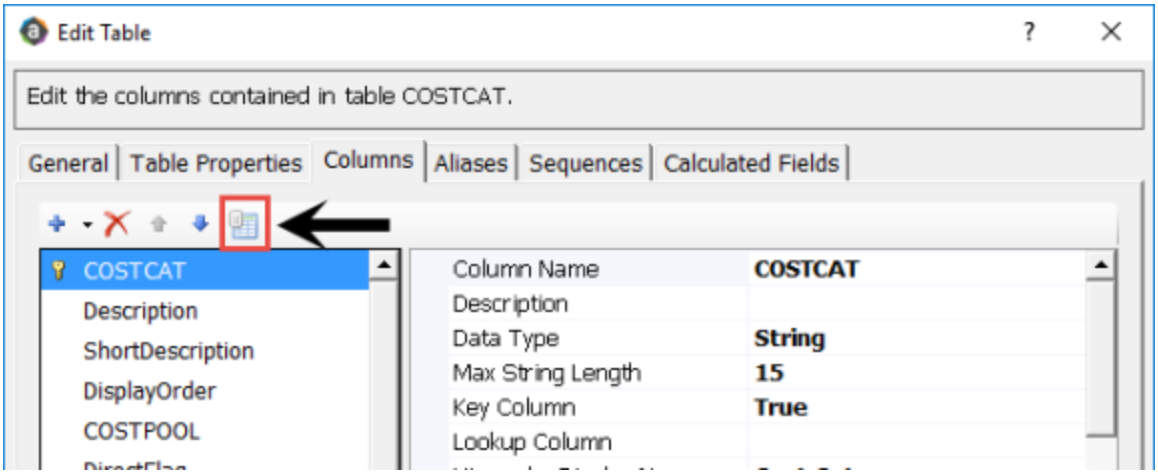
To assign an existing dimension grouping column to a dataset (product):

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

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

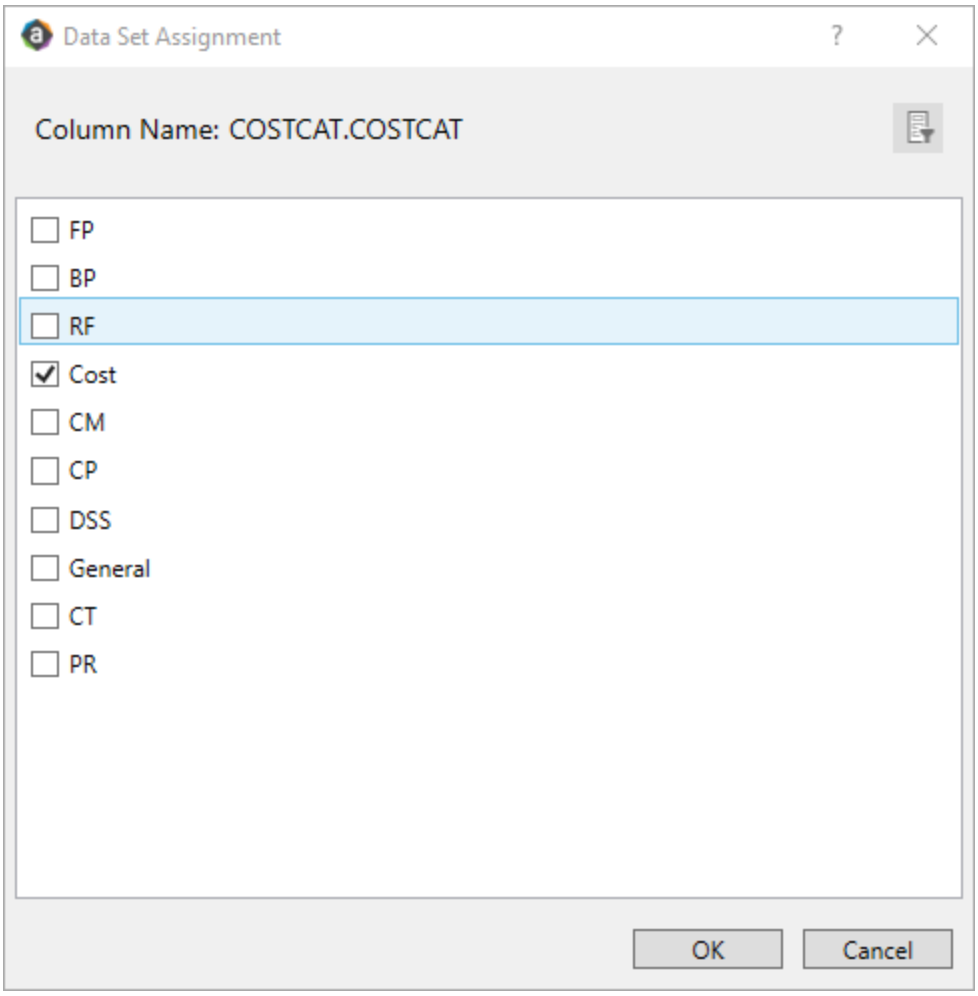


3. In the **Edit Table** dialog, click the **Columns** tab.
4. In the list of columns, select a column to assign, and click the **Assign Column to Data Sets** button.



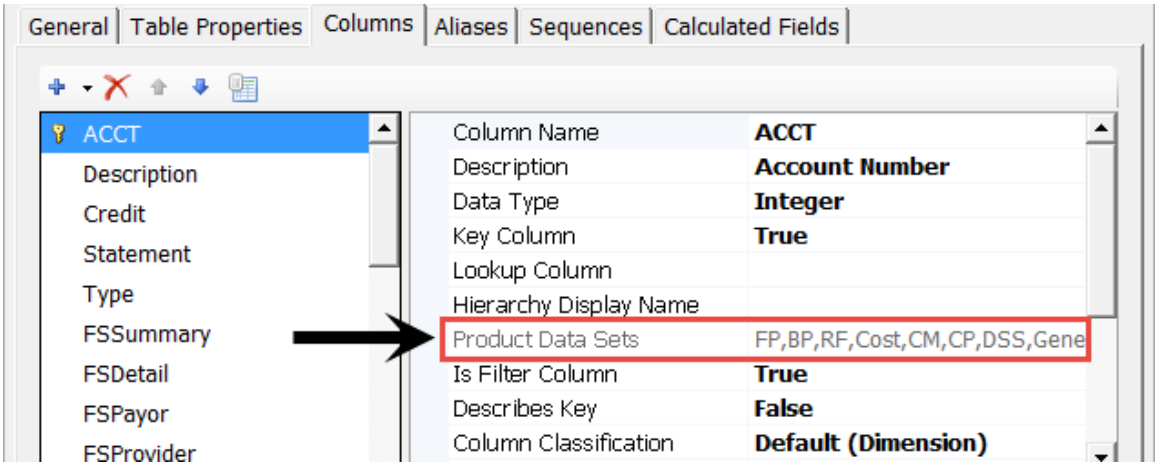
5. In the **Data Set Assignment** dialog, in the list of data sets (products) that have predefined for you, select the checkbox next to the products to assign this grouping column to, and click **OK**.

> **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
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.

Many dimensions are shared across multiple Axiom Healthcare products, which you can edit using the Dimensions Maintenance Utility (as long as you have the proper permissions). However, some dimensions that are specific to Axiom Capital Planning can only be modified using the Dimension Update Reports utility. These dimensions include the following:

- CAPACCT
- CODE
- PAYOR
- SUITEVARIABLES
- VENDOR

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 Capital Planning 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.

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.

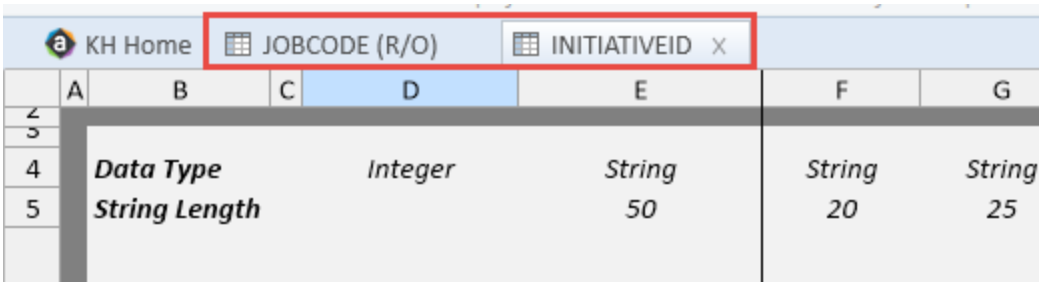
TIP: You never edit database tables directly in the database. Instead, data is pulled into spreadsheets, where you can edit the data and then subsequently save it back to the database.

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

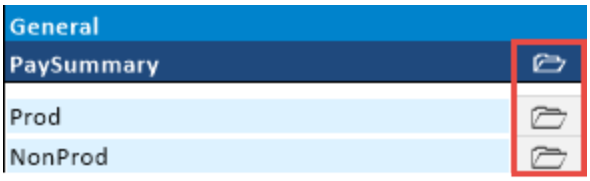
DataSet filter : (DataSetname IN ('General','BP') OR DataSetName = '')

(*) 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:

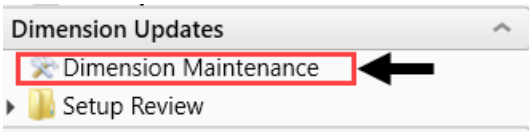
- **RFCODE.RFStdLine** – Used during the reporting process to identify the standard financial statement categories to use for each RFCode category. (Same as Acct.FSDetail in Axiom Management Reporting.)

- **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.)

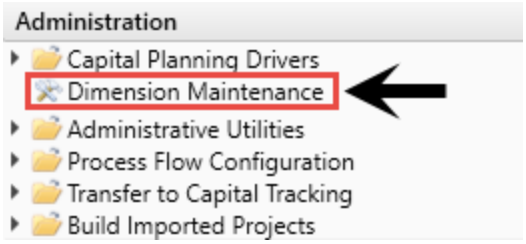
For more information, see Adding validations.

To edit a dimension:

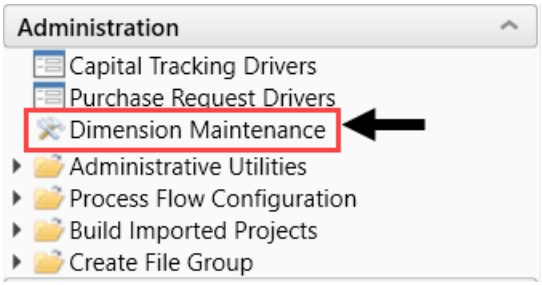
1. Launch the Dimension Maintenance Utility.
2. In the RF Admin task pane, in the **Dimension Update** section, double-click **Dimension Maintenance**.



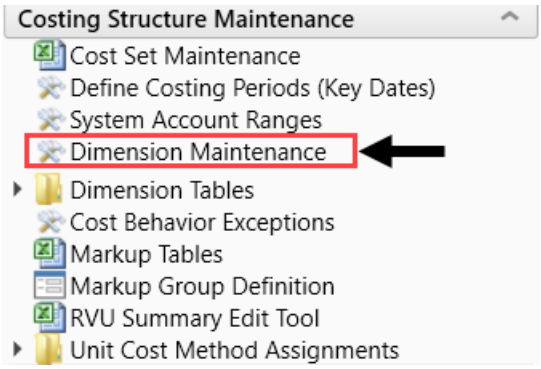
3. In the Cap Plan Admin task pane, in the **Administration** section, double-click **Dimension Maintenance**.



4. In the Cap Track Admin task pane, in the **Administration** section, double-click **Dimension Maintenance**.



5. In the Cost Accounting Admin task pane, in the **Costing Structure Maintenance** section, double-click **Dimension Maintenance**.



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

    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.

    c. In the **Optional Data Filter** field, do one of the following:

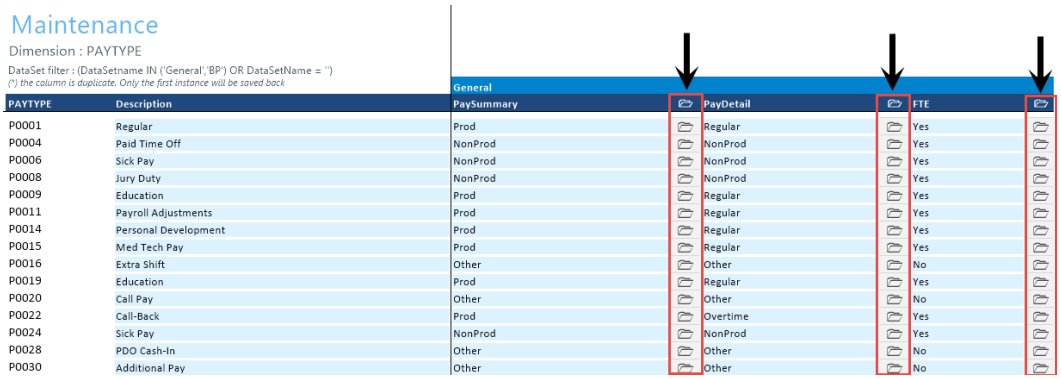
    - Type a filter syntax.
    - To select an existing filter or create a filter that you can save for later use, click **Select Filter**.

7. To retrieve a smaller subset of data, you can use the **Quick Filter** in the **Workbook Options** of the **Main** ribbon tab.

    For detailed instructions on how to use the feature, see Applying a Quick Filter to a report.

8. 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**.



- 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).

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

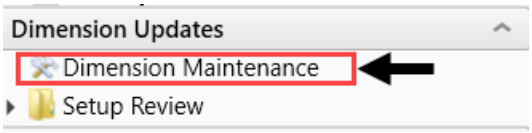
NOTE: If a column is missing, then it is assigned to a different dimension or not assigned. For more information, see Assigning an existing grouping column to a dataset (product).

Adding a dimension record

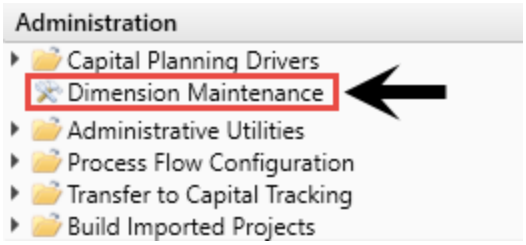
When you save the new dimension record, it displays in the existing table on the next utility refresh.

To add a dimension record:

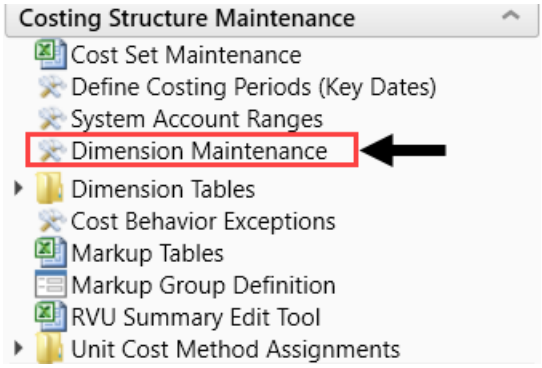
1. Launch the Dimension Maintenance Utility.
2. In the RF Admin task pane, in the **Dimension Update** section, double-click **Dimension Maintenance**.



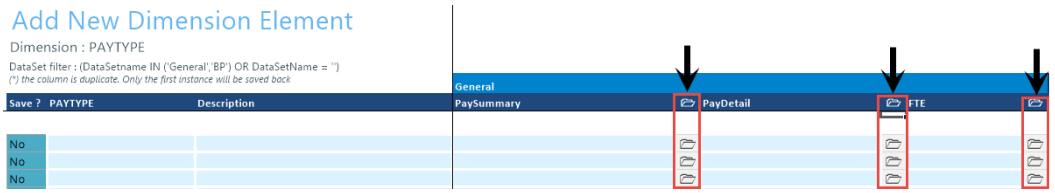
3. In the Cap Plan Admin task pane, in the **Administration** section, double-click **Dimension Maintenance**.



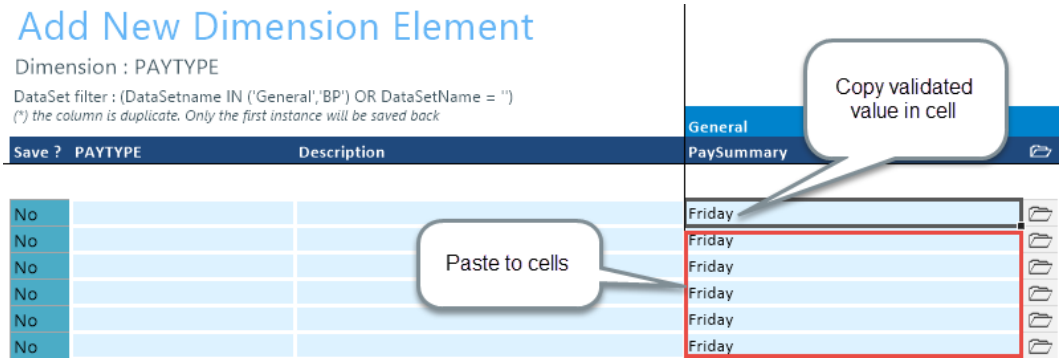
4. In the Cost Accounting Admin task pane, in the **Costing Structure Maintenance** section, double-click **Dimension Maintenance**.



5. 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**.
6. At the bottom of the workbook, click the **Add_New_Dimension** tab.
7. 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**.

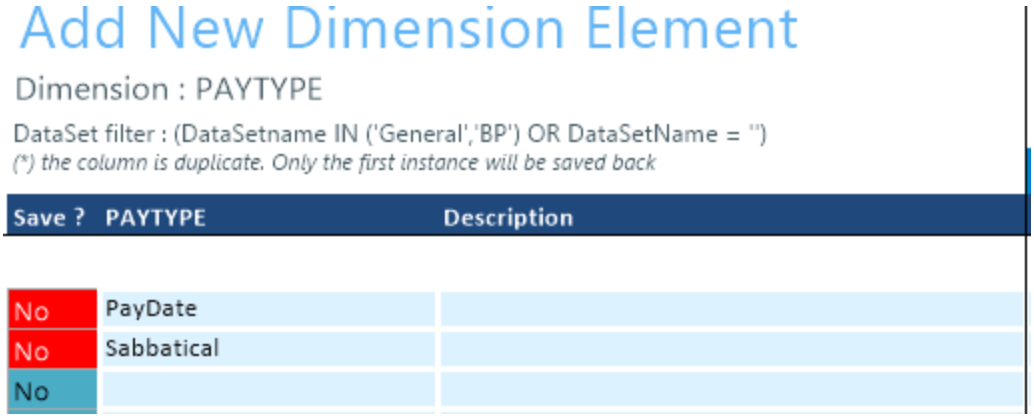


- If you have a large number of entries to make, instead of opening each folder, you can copy and paste the validated value to other cells in the same column.



8. 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.



9. 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.

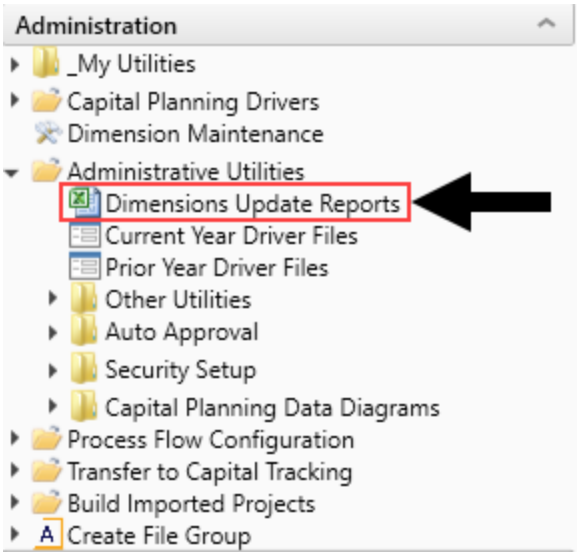
Updating the CAPACCT dimension

While the Dimension Maintenance Utility allows you to modify many of the dimensions shared across Axiom Healthcare Products, many of the dimensions specific to Axiom Capital Planningcan only be modified using the Dimensions Update Reports utility. One of these dimensions is CAPACCT.

The CAPACCT dimension table contains all of the available capital and operating accounts used in the Axiom Capital Planning and Capital Tracking systems.

To update the CAPACCT dimension:

1. In the Cap Plan Admin task pane, in the **Administration** section, click **Administrative Utilities**.

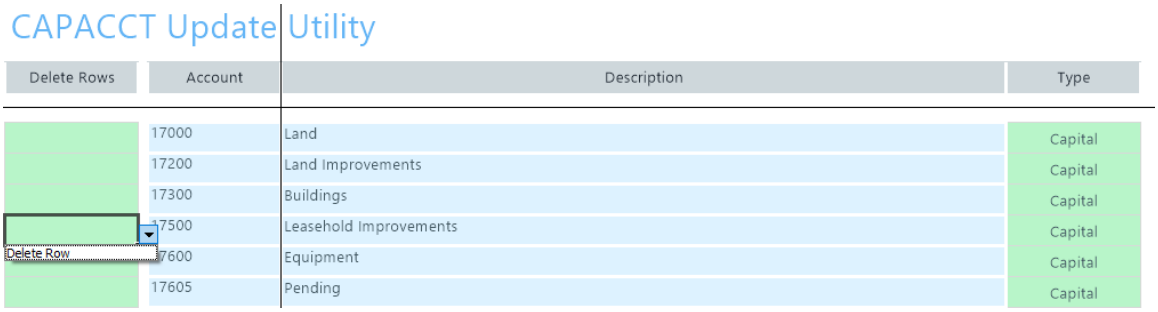


2. Double-click **Dimensions Update Reports**.
3. Edit the following columns, as needed:
    - **Account** - The Axiom Software account number used for the Axiom Capital Planning and Capital Tracking systems. This can be the combination of the prime account and sub account, if that is how your GL system is set up. This number is set up by your Implementation Consultant and cannot be edited.
    - **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

().

- **Type** - From the drop-down, select **Capital** or **Operating** to differentiate between the two types of accounts used in the Axiom Capital Planning and Tracking systems.

4. To delete a row, click the **Delete Rows** cell for the row to delete, and from the drop-down select **Delete Row**. The system will delete the row after you save the utility.



5. After making your changes, in the **Main** ribbon tab, click **Save**.

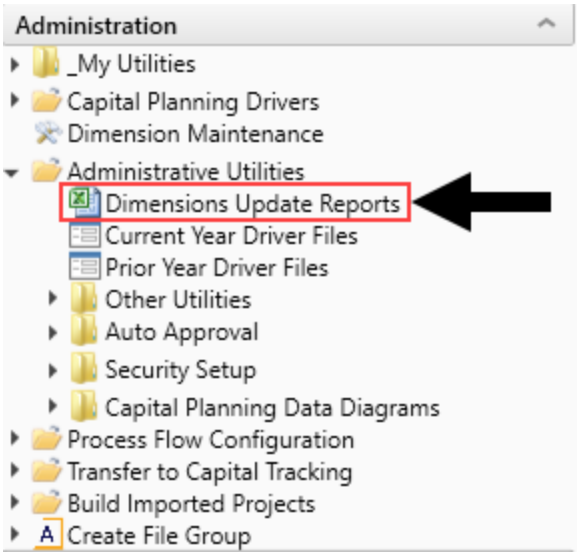
Updating the CODE dimension

While the Dimension Maintenance Utility allows you to modify many of the dimensions shared across Axiom Healthcare Products, some of the dimensions specific to Axiom Capital Planningcan only be modified using the Dimensions Update Reports utility. One of these dimensions is CODE.

The CODE dimension table contains all of the valid CODE items used in the Axiom Capital Planning, Axiom Capital Tracking, and Axiom Financial Planning systems.

To update the CODE dimension:

1. In the Cap Plan Admin task pane, in the **Administration** section, click **Administrative Utilities**.



2. Double-click **Dimensions Update Reports**.

3. Edit the following columns, as needed:
    - **Capital Categories** - The code numbers are system generated and cannot be edited.
    - **Description** - A description for the code.
    - **Active** - From the drop-down, select to activate (**Yes**) or disable (**No**) the code.

      NOTE: Codes cannot be deleted. They must be disabled if you not longer want to use them.

    - **BPAcct** - Use to transfer capital projects to Axiom Budgeting by mapping the capital category codes to specific accounts. For more information, see Transferring capital project data to Axiom Budgeting.
4. After making your changes, in the **Main** ribbon tab, click **Save**.

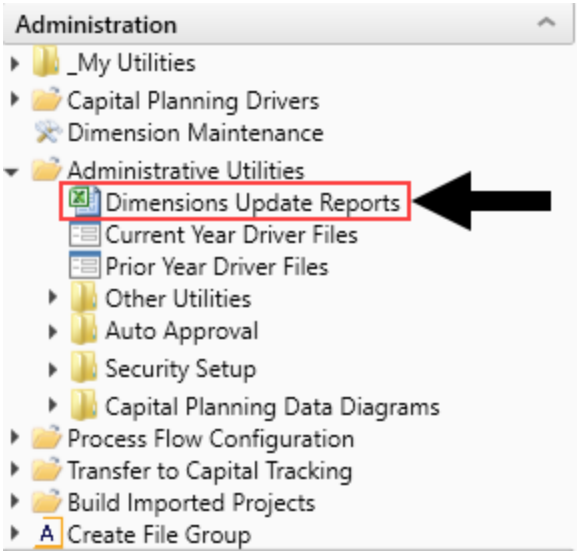
Updating the PAYOR dimension

While the Dimension Maintenance Utility allows you to modify many of the dimensions shared across Axiom Healthcare Products, many of the dimensions specific to Axiom Capital Planningcan only be modified using the Dimensions Update Reports utility. One of these dimensions is PAYOR.

The PAYOR dimension lists all of the defined payors used in Axiom Capital Planning, Axiom Capital Tracking, and Axiom Financial Planning systems.

To update the PAYOR dimension:

1. In the Cap Plan Admin task pane, in the **Administration** section, click **Administrative Utilities**.



2. Double-click **Dimensions Update Reports**.
3. Edit the following columns, as needed:
    - **PAYOR** - The preset number associated with the payor. This number cannot be edited.

- **Description** - A description for the payor.
- **Capitated** - Select whether the provider is capitated (**Yes**) or not (**No**).

> **TIP:** Capitation is a payment arrangement for health care service providers. It pays a set amount for each enrolled person assigned to them, per period of time, whether or not that person seeks care.

4. After making your changes, in the **Main** ribbon tab, click **Save**.

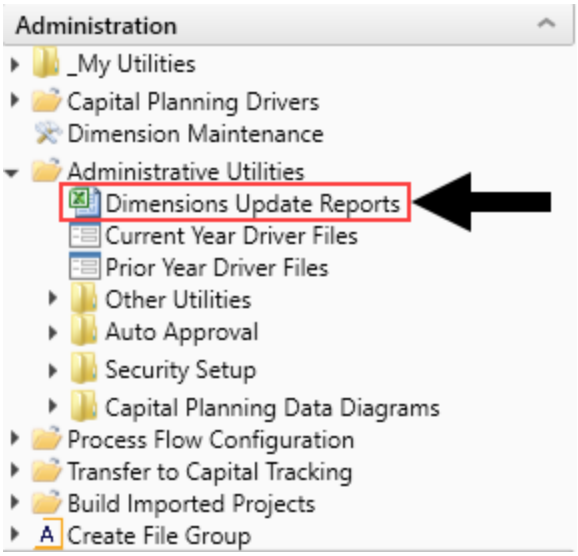
Updating the SUITEVARIABLES dimension

While the Dimension Maintenance Utility allows you to modify many of the dimensions shared across Axiom Healthcare Products, many of the dimensions specific to Axiom Capital Planningcan only be modified using the Dimensions Update Reports utility. One of these dimensions is SUITEVARIABLES.

The SUITEVARIABLES dimension includes a central table that each product can access to assist in mapping to the correct file group and/or table.

To update the SUITEVARIABLES dimension:

1. In the Cap Plan Admin task pane, in the **Administration** section, click **Administrative Utilities**.



2. Double-click **Dimensions Update Reports**.
3. Edit the following columns, as needed:
   - **Variable** - The component name for the variable to be accessed by product and used as the lookup for the Variables page in reports and plan files.
   - **Description** - A description for the variable.
   - **Parameter** - The value to be accessed by a product to associate with a particular file group or table.

4. After making your changes, in the **Main** ribbon tab, click **Save**.

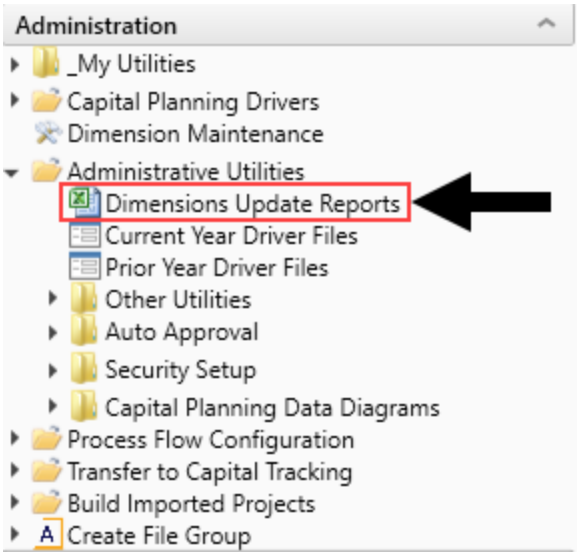
Updating the VENDOR dimension

While the Dimension Maintenance Utility allows you to modify many of the dimensions shared across Axiom Healthcare Products, some of the dimensions specific to Axiom Capital Planningcan only be modified using the Dimensions Update Reports utility. One of these dimensions is VENDOR.

The VENDOR dimension contains the list of the vendors used in the Axiom Capital Planning and Axiom Capital Tracking systems. Using the Dimensions Update Reports utility, you can not only configure the list of vendors but also determine if and how to display the list to users.

To run the Dimension Update Reports:

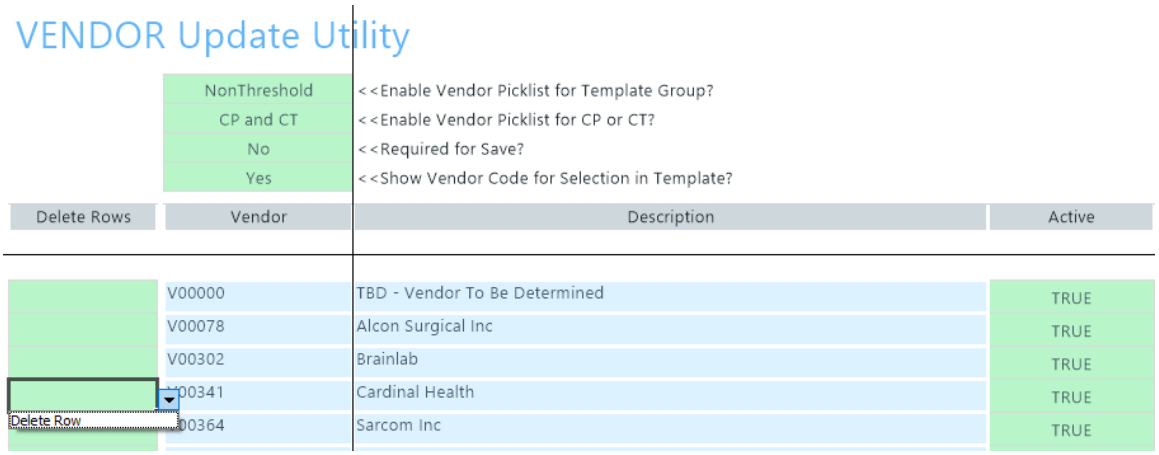
1. In the Cap Plan Admin task pane, in the **Administration** section, click **Administrative Utilities**.



2. Double-click **Dimensions Update Reports**.
3. Edit the following cells and/or columns, as needed:
    - **Enable Vendor Picklist for Template Group?** - From the drop-down, select the template in which to use the vendor picklist.
    - **Enable Vendor Picklist for CP or CT?** - From the drop-down, select whether to use the vendor picklist in Capital Planning (**CP**), Capital Tracking (**CT**), or both (**CP and CT**).
    - **Required for Save?** - To require the user to select a vendor before saving the plan file, select **Yes**; otherwise, click **No**.
    - **Show Vendor Code for Selection in Template?** - To display the vendor code to the user, select **Yes**; otherwise, click **No**.
    - **Vendor** - The code used for the vendor.
    - **Description** - The name of the vendor.
    - **Active** - To include the vendor from the picklist that displays to users, from the drop-down,

select **TRUE**. To exclude the vendor, select **FALSE**.

4. To delete a row, click the **Delete Rows** cell for the row to delete, and from the drop-down select **Delete Row**. The system will delete the row after you save the utility.



5. After making your changes, in the **Main** ribbon tab, click **Save**.

Dimension Tables

This section includes a description of all the dimensions used in Axiom Capital Planning.

CAPACCT

The CAPACCT dimension table contains all of the available capital and operating accounts used in the Axiom Capital Planning and Capital Tracking systems. This table should only be updated using the Dimensions Update Utility in the Capital Planning Admin or Capital Tracking Admin task pane.

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

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, depending on the Axiom products in which your organization is licensed.

Column	Description
Acct	The Axiom Software account number used for the Axiom Capital Planning and Capital Tracking systems. 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().
Type	The Capital or Operating to differentiate between the two types of accounts used in the Axiom Capital Planning and Tracking systems.

CODE

The CODE dimension table contains all of the valid CODE items used in the Axiom Financial Planning, Capital Planning, and Capital Tracking systems. This table should only be updated using the Dimensions Update Utility in the Capital Planning Admin, the Capital Tracking Admin task pane, or the Financial Planning Admin task pane.

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

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, depending on the Axiom products in which your organization is licensed.

Column	Description
Code	The preset code used in Axiom Financial Planning.
Description	Identifies the Code description. Try to be as explicit as possible, avoid abbreviations, and use layman's terms. Descriptions should not be in all capital letters. To remove the all-caps format in the spreadsheet, use the Proper formula =Proper().
CodeUpdate	The mapping to code structure used in Hospital Advisor XI.
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.
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.
Type	Used to identify the major Financial Statement category.
Category	Used to identify the detailed Financial Statement category.
SummaryCode	Identifies the code that each code summarizes to.
InterfaceCode	Reserved for future use.
Credit	Reserved for future use.
ActiveCode	Designates whether a CODE is active (**Yes**) or inactive (**No**) and can be added into a node.
Picklist	Used to determine which codes are available in each category within a node.
CalcMethod	Designates the associated calc method with the code, when applicable.
Allocation	Identifies codes designated as allocation specific.

Column	Description
AcuteCM	Designates if a CODE item is used as a calc method in Axiom Financial Planning.
CapitalCM	Designates if a CODE item is used as a calc method in Axiom Capital Planning and Axiom Capital Tracking.
BPAcct	Used to identify Axiom Budgeting accounts from the ACCT dimension.

CPREQ

The CPREQ dimension table lists all of the attributes for a capital project in the Axiom Capital Planning.

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

Column	Description
CAPREQ	The unique Identity number assigned to each capital project.
Description	The capital project description.
SOURCE	CP for Axiom Capital Planning, CT for Axiom Capital Tracking
Entity	The entity assigned to the capital project from the ENTITY table.
Dept	The department assigned to the capital project from the DEPT table.
ShortDescription	The short project description.
ProjType	The project type.
ProjTypeDetail	The project-type detail.
ProjID	The unique project identification number for the project.
Creator	The username for project creator.
Template	The template selected for the project.
Class	The class selected for the project from the Class picklist.
Reason	The reason selected for the project from the Reason picklist.
Priority	The priority selected for the project from the Priority picklist.
Category	The category selected for the project from the Category picklist.
SubCategory	Not used.
Justification	The project justification entered for the project.
StartYear	The capital planning year from the file group where the project is created.
PurchasePeriod	The purchase period selected for the project from the Purchase Period picklist.
RankExec	The executive rank entered from the Project Ranking report.

Column	Description
RankMgr	The manager rank entered from the Project Ranking report.
StatusComment	The Approval Status Comments entered from the Project Approval report.
Complete	The designation for the project completion. Valid entries include the following: • **Yes** • **No**
UnitCost	The unit cost for first year of capital project.
UnitQty	The Unit Quantity for first year of capital project.
S_UnitQty	The Unit Quantity for first year of capital project from the Project Selection report.
Vendor	The vendor selected for the project from the Vendor picklist.
Matrix	The matrix score calculated from the Decision Matrix selections.
ProjectGroup	The project group selected for the project from the Project Group picklist.
TaxRate	The tax rate entered for the capital project.
PickList01 - PickList16	The Picklist01-16 selected for the project from the Picklist01-16 picklists.
TextField01 - TextField10	The text entries for the TextField01-10 fields.
MatrixValue01 - MatrixValue05	The Matrix Values01-05 selected for the Decision Matrix fields.
MatrixDriver01 - MatrixDriver05	The Matrix Driver Values01-05 selected for the Decision Matrix fields.
AddCapResponse01 - AddCapResponse20	The Yes or No selections for each of the Additional Capital Questions 01-20.
LongDescription	The long description for the capital project.
Include_Commit	Designates if the capital project is included in the Project Selection report for the Actual results.
NonDisc_Commit	Designates if the capital project is non-discretionary in the Project Selection report for the Actual results.
NonDisc_NoCommit	Designates if the capital project is non-discretionary in the Project Selection report for the Scenario results.
Lock_NoCommit	Designates if the capital project is locked in the Project Selection report for the Scenario results.
Selection	Used to identify the selection.

Column	Description
PresentOrder	The presentation order for the Evaluator Scoring report.
AdjBudgetAvailable	Designates if the Adjusted Budget Available is greater than zero and the capital project has been marked as Approved.
ShowOnList	Designates if the project is shown in the workflow and the Open Capital Project window.
SaveTagDocID	Not used.
RebuildTemplate	Designates which template to use if the project was created using the Capital Project Import utility.
OrigBudget2014 - OrigBudget2040	The Original Budget 2014-2040 used in Axiom Capital Tracking.
CP_PM_Routing01 - CP_PM_Routing30	Used for the Manual Process Flow Assignment utility.
FPNode	The node mapping for the integration to Axiom Financial Planning.
FPMode	The model mapping for the integration to Axiom Financial Planning.
FPXfer	Designates whether the project is available for transfer to Axiom Financial Planning.
BPXfer	Designates whether the project is available for transfer to Axiom Budgeting and Performance Reporting.

CTREQ

The CTREQ dimension table lists all of the attributes for a capital project in Axiom Capital Tracking.

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

Column	Description
CAPREQ	The unique identity number assigned to each capital project.
ProjectID	The unique project identification number for the project.
Description	The capital project description.
SOURCE	CP for Axiom Capital Planning, CT for Axiom Capital Tracking.
CPCAPREQ	The CAPREQ identity from Axiom Capital Planning.
Entity	The entity assigned to the capital project from the ENTITY table.
Dept	The department assigned to the capital project from the DEPT table.
ShortDescription	The short project description.
ProjType	The project type.

Column	Description
ProTypeDetail	The project-type Detail.
Creator	The username for project creator.
Template	The template selected for the project.
Class	The class selected for the project from the Class picklist.
Reason	The reason selected for the project from the Reason picklist.
Priority	The priority selected for the project from the Priority picklist.
Category	The category selected for the project from the Category picklist.
SubCategory	Reserved for future use.
Justification	The justification for the capital project.
StartYear	The capital planning year from the file group where the project is created.
PurchasePeriod	The purchase period selected for the project from the Purchase Period picklist.
RankExec	The executive rank entered from the Project Ranking report.
RankMgr	The manager rank entered from the Project Ranking report.
CTRankMgr	The executive rank entered from the Project Ranking report in Axiom Capital Tracking.
CTRankExec	The manager rank entered from the Project Ranking report in Axiom Capital Tracking.
Status	The status of the request.
CTStatus	The approval status in Axiom Capital Tracking.
StatusComments	The approval status comments entered from the Project Approval report.
CTStatusComments	The approval status comments in Axiom Capital Tracking.
Complete	The designation for the project completion. Valid entries include the following: • Yes • No
UnitCost	The unit cost for first year of capital project.
UnitQty	The unit quantity.
S_UnitQty	The unit quantity for first year of capital project from the Project Selection report.
Vendor	The vendor selected for the project from the Vendor picklist.
Matrix	The matrix score calculated from the Decision Matrix selections.

Column	Description
ProjectGroup	The project group selected for the project from the Project Group picklist.
TaxRate	The tax rate entered for the capital project.
PickList01 - PickList16	The Picklist01-16 selected for the project from the Picklist01-16 picklists.
TextField01 - TextField10	The text entries for the TextField01-10 fields.
MatrixValue01 - MatrixValue05	The Matrix Values01-05 selected for the Decision Matrix fields.
MatrixDriver01 - MatrixDriver05	The Matrix Driver Values01-05 selected for the Decision Matrix fields.
AddCapResponse01 - AddCapResponse20	The **Yes** or **No** selections for each of the Additional Capital Questions 01-20.
LongDescription	Long description of the project.
IncludeCommit	Designates if the capital project is included in the Project Selection report for the Actual results.
NonDisc_Commit	Designates if the capital project is non-discretionary in the Project Selection report for the Actual results.
Lock_Commit	Designates if the capital project is Locked in the Project Selection report for the Scenario results.
Include_NoCommit	Designates if the capital project is not included in the Project Selection report for the Actual results.
NonDisc_NoCommit	Designates if the capital project is non-discretionary in the Project Selection report for the Scenario results.
Lock_NoCommit	Designates if the capital project is locked in the Project Selection report for the Scenario results.
Selection	Used in project selection; value is passed from Capital Planning when project is transferred.
PresentOrder	The Presentation Order for the Evaluator Scoring report.
AdjBudgetAvailable	Designates if the Adjusted Budget Available is greater than zero and the capital project has been marked as Approved.
SaveTagDocID	Reserved for future use.
RebuildTemplate	Designates which template to use if the project was created using the Capital Project Import utility.
OrigBudget2012 - OrigBudget2040	The Original Budget 2012-2040 used in Axiom Capital Tracking.

Column	Description
CT_PM_Routing01 - CT_PM_Routing30	Used for the Manual Process Flow Assignment utility.
Archive	Designates if the capital project is set as Archived in Axiom Capital Tracking.
ShowOnList	Designates if the project is shown in the workflow and the Open Capital Project window.
SentStatus	The sent status for the capital request.
RFXfer	Determines if the project is to be transferred to Axiom Rolling Forecasting.

GLPERIOD

Use the GLPERIOD dimension to define a time period when loading GL transaction-level detail (JE, AP, MM, AR) to the data tables. Each time a record is loaded, it is tagged with the appropriate GLPeriod.

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

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, depending on the Axiom products in which your organization is licensed.

Column	Description
GLPERIOD	The GLPeriod used in Axiom Capital Planning and Capital Tracking when importing monthly transaction data. This is a numeric field, and the syntax is YYYYMM.
Description	Identifies the GLPeriod description to use for reporting.
FiscalYear	Identifies the Fiscal Year for each GLPeriod. Must be a numeric field.
FiscalMonth	Identifies the Fiscal Month for each GLPeriod. Must be a numerical field.
GLMonthName	Identifies the month name for each GLPeriod.
CalYear	Defines the calendar year, which may be different than the fiscal year.
CalQtr	Defines the calendar quarter, which may be different than the fiscal quarter.
CalPeriod	Defines the calendar period, which may be different than the fiscal period.
DaysInMth	Defines the number of days in the month, which will be different from month to month.
LongName	Defines the long name of the month and year (ex. December, 2019).
ShortName	Defines the short name of the month and year (ex. Dec-2019).

PAYOR

The PAYOR dimension lists all of the defined payors used in Axiom Financial Planning, Axiom Capital Planning, and Axiom Capital Tracking systems. This table should only be updated using the Dimensions Update Utility in the Capital Planning Admin or Capital Tracking Admin task pane or the Fin Plan Admin task pane.

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

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, depending on the Axiom products in which your organization is licensed.

Column	Description
Payor	The preset payor number used in Axiom Financial Planning.
Description	The description of each payor.
ENUFF	Reserved for future use.
Type	Identifies type of payor. Gov is used in third-party payables calculation.
Revenue	Identifies the revenue type for each payor.
Bad_Debt_Grp	Allows grouping of bad debt to up to five groups of specific payors.
Charity_Grp	Allows grouping of charity to up to five groups of specific payors.
Capitated	Identifies capitated payors.
Picklist	Utilized to select available payors to be added in a node.
HlthPlan_RX	Allows grouping of covered lives to up to two groups of specific health plan payors.
HlthPlan_Other	Allows second grouping of covered lives to up to two groups of specific health plan payors.

POTRANS

The POTRANS dimension table lists all of the attributes for a purchase request in Axiom Capital Tracking.

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

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, depending on the Axiom products in which your organization is licensed.

Column	Description
POTRANS	The unique Identity number assigned to each purchase requisition.
Description	The purchase request description.
CAPREQ	The unique identity number for the capital project assigned to each purchase requisition.
PurchReqID	The unique purchase request identification number linked to the ProjectID.
GLPERIOD	The GLPERIOD assigned to the purchase request.
Creator	The username for purchase request creator.
Status	The approval status for the purchase request.
StatusComment	The approval status comments for the purchase request.
ApprovalDate	The approval date for the purchase request.
PO	The PO number assigned for the purchase request.
Vendor	The vendor selected for the purchase request from the Vendor picklist.
RequestNotes	The purchase request notes (same as Description).
DeliverTo	The Deliver To location selected for the purchase request from the Deliver To picklist.
ReqDate	The creation date for the purchase request.
NeedDate	The need-by date for the purchase request.
AttachNotes	The attachment notes for the purchase request.
SentStatus	The sent status for the purchase request. Designates if the purchase request has been sent to the purchasing system when using the integration.
POPicklist01 - POPicklist10	The Picklist01-10 selected for the purchase request from the Picklist01-10 picklists.
POTextField01 - POTextField10	The purchase request header text entries for the TextField01-10 fields.
PR_PM_Routing01 - PR_PM_Routing30	Used for the Manual Process Flow Assignment utility.
Archive	Designates if the purchase request is set as Archived in Axiom Capital Tracking.
ImportRebuild	Designates if the purchase request should be rebuilt if the data was imported into the system from an external data source.
ShowOnListCT	Designates if the purchase request is shown in the workflow and the Open Purchase Request window.

SUITEVARIABLES

The SUITEVARIABLES dimension includes a central table that each product can access to assist in mapping to the correct file group and/or table.

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

Column	Description
Suite_INFO	The name of the variable.
Description	The description for the different variables.
Parameter	The value to be accessed by a product to associate with a particular file group or table.
Product	The Axiom product that uses the variable.
Default	The default value used for the variable.

Scheduler Overview

Using Scheduler, you can schedule certain Axiom Capital Planning 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.

Most Scheduler setup activities can only be performed in the Desktop Client (Excel or Windows Client). Therefore, the Desktop Client Scheduler is the primary focus of this document. However, some job management activities can be performed in the Web Client, such as monitoring the job schedule, viewing job results, and running jobs manually on demand. For more information, see Web Scheduler.

About Scheduler

This section contains conceptual information about the Scheduler feature in Axiom Capital Planning.

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 tasksTask 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 Capital Planning 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 Axiom Cloud 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 Capital Planning 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 Capital Planning 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.

  Axiom Cloud 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:

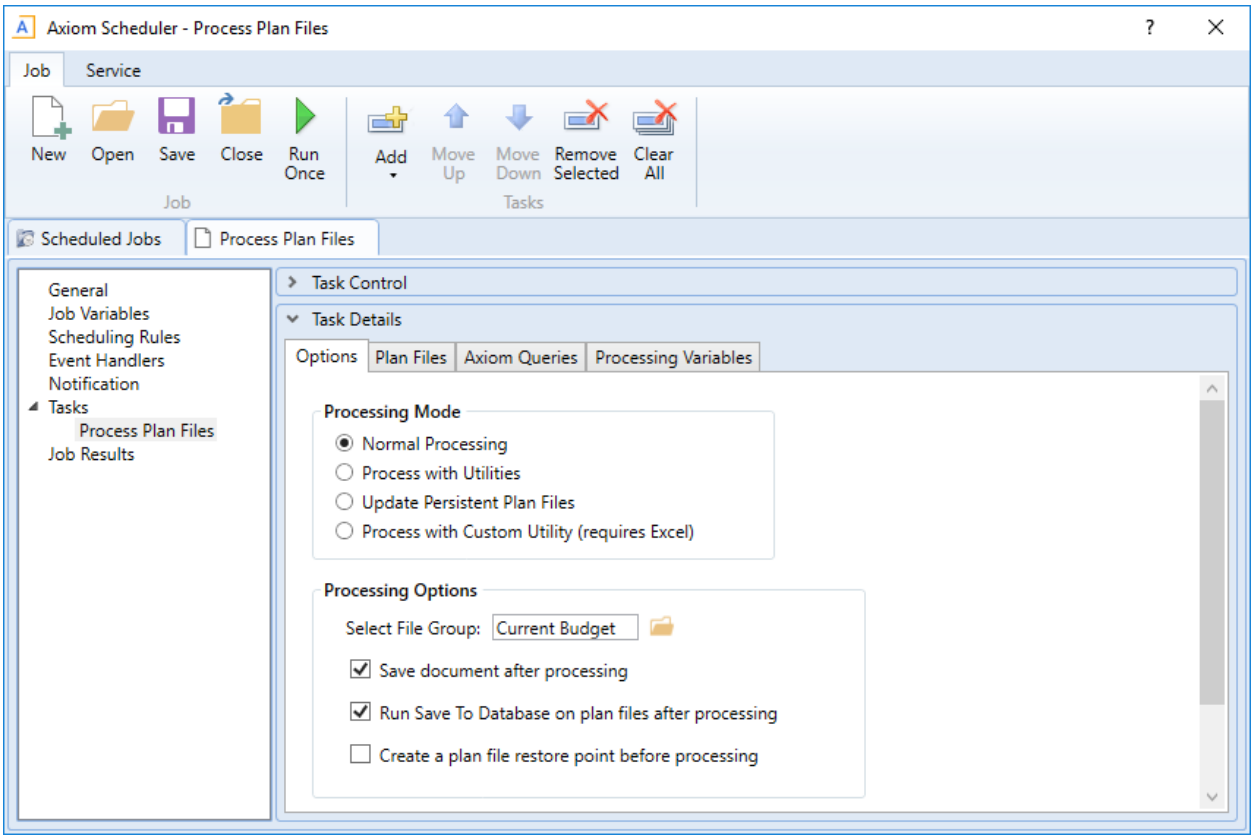
- On the **Axiom** tab, in the **Administration** group, click **Manage > Scheduler**.

  NOTE: In systems with installed products, this feature may be located on the **Admin** tab. In the **System Management** group, click **Scheduler**.

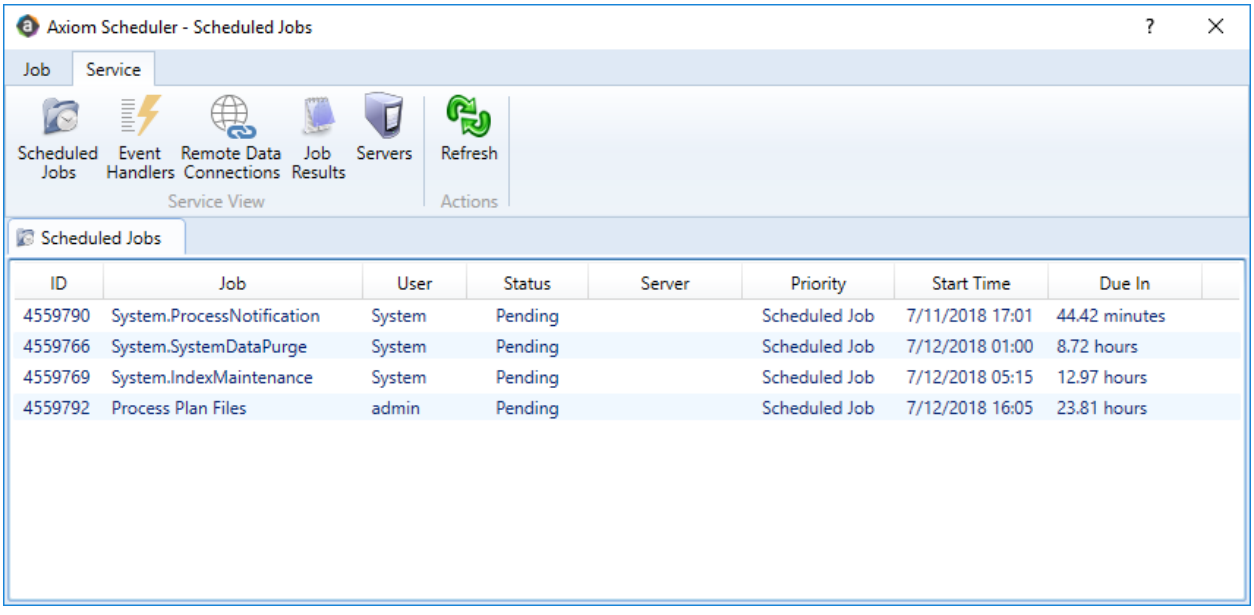
The top section of the **Scheduler** dialog contains a ribbon-style toolbar with two tabs: **Job** and **Service**.

- On the **Job** tab, you can create, run, and edit jobs.
- On the **Service** tab, you can manage scheduled jobs, view job results, and perform other Scheduler management activities.

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 Capital Planning file system.

The **Scheduler Jobs Library** is also accessible via Axiom Explorer.

11

Scheduler job setupJob Setup

To perform Axiom Capital Planning 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 Capital Planning 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 notifications 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 Capital Planning 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 Capital Planning 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 Capital Planning evaluates all of the rules and schedules a single instance of the job, for the earliest time allowed by the rules. Multiple scheduling rules do not result in multiple scheduled instances of the job.

NOTE: If a time zone is listed on the Scheduling Rules section of the job, then the defined rules will be evaluated in the context of that listed time zone. Otherwise, scheduling rules are evaluated in the context of the local time zone for the Scheduler Server. If necessary, the system configuration setting **SchedulingBehaviorTimezone** can be used to specify a particular time zone for evaluating scheduling rules.

Adding a Scheduling rule

You can add a scheduling rule to a job to schedule it for future execution, either one time or on a recurring basis.

If you only plan to run the job manually on demand, then you do not need to create a scheduling rule.

To add a scheduling rule to a job:

1. In the **Scheduler** dialog, open a job to edit or create a new job.
2. In the left-hand side of the job, select **Scheduling Rules**.

   By default, this area is empty. You must add a rule in order to define scheduling for the job.
3. On the **Job** tab of the Scheduler ribbon, in the **Scheduling Rules** section, click **Add**.

   A new row appears in the right-hand side of the job. By default, the new row is active, but does not have start / end dates or any specific recurrence settings.
4. Complete the following settings within the row as needed:

Item	Description
Active	If you want the job to be placed on the schedule as soon as you save the job with the new scheduling rule, then you should leave this option checked. However, if you just want to save your schedule settings but you are not ready to begin scheduling the job, then you can clear the **Active** check box for the rule. The job will not be scheduled until it is saved with an active scheduling rule.
Starting On Ending On	Optional. These dates specify the time frame for the scheduling rule. The starting date defines the earliest point in time that the job can be scheduled, and the ending date defines the latest point in time that the job can be scheduled. If these dates are not defined (left blank), then the job will be perpetually scheduled according to the rule settings, as long as the rule is active. If you want to schedule a one-time job, then set the starting / ending dates to the same date and time. **NOTE:** Your system locale determines the format of dates.
Day of Week	Specify the day(s) of the week that you want the job to be run: • `*` (Default): The job will be run on all days within the start / end range. • `0-6`: The job will be run on the specified day or days, where 0 is Sunday and 6 is Saturday. Use a comma or a hyphen to separate multiple days (hyphen if the days are contiguous, commas if not). For example, you can enter `1,3,5` for Monday, Wednesday, and Friday, or enter `1-5` for Monday through Friday.
Hours	Specify the time of day (hours) that you want the job to be run, in relation to the specified days: • `*` (Default): The job will be run on all hours. • `0-23`: The job will be run on the specified hour or hours, where 0 is midnight and 23 is 11:00 PM. Use a comma or a hyphen to separate multiple hours (hyphen if the hours are contiguous, commas if not). For example, you can enter `0,12` to run at midnight and noon, or enter `0-12` to run every hour from midnight to noon.

Item	Description
Minutes	Specify the time of day (minutes) that you want the job to be run, in relation to the specified hours: • `*` (Default): The job will be run on all minutes (essentially the job is run continuously, once per minute). • `0-59`: The job will be run on the specified minute or minutes of the hour, where 0 is the first minute of the hour and 59 is the last minute of the hour. Use a comma or a hyphen to separate multiple minutes (hyphen if the hours are contiguous, commas if not). For example, you can enter `0,30` to run at the top of the hour and the half hour, or enter `0-30` to run every minute from the top of the hour to the half hour. **NOTE:** If you specify an hour, then in most cases you should also specify a minute (such as 0 to run the job at the top of the specified hour). If you enter an hour but leave the minutes at the default asterisk, then the job will run every minute in that hour.

If the Active check box for the rule is selected when the job is saved, then Axiom Capital Planning 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**.

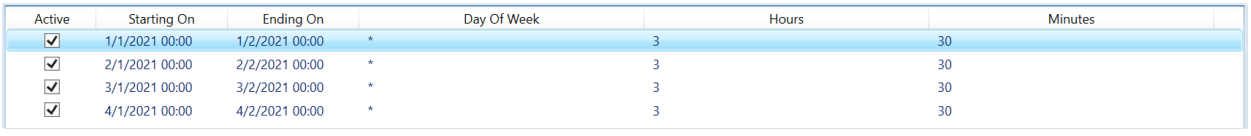
Any jobs in the scheduled jobs queue that were related to the deleted rule(s) are also deleted.

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 (6/30/2021) at 1:30 PM (Option 1)	Start: 06/30/2021 00:00 End: 07/01/2021 00:00	*	13	30
One time (6/30/2021) at 1:30 PM (Option 2)	Start: 06/30/2021 13:30 End: 06/30/2021 13:30	*	*	*
Every Wednesday in July at noon	Start: 07/01/2021 00:00 End: 08/01/2021 00:00	3	12	0
Continuous	<optional>	*	*	*

To schedule a job to execute monthly, create twelve active scheduling rules, one for each month. This is necessary because scheduling rules do not have a property for day of month, so it is not possible to use a single scheduling rule to create a monthly schedule. In the following example, the job will be executed on the first day of each month, at 3:30 AM:



Active	Starting On	Ending On	Day Of Week	Hours	Minutes
☑	1/1/2021 00:00	1/2/2021 00:00	*	3	30
☑	2/1/2021 00:00	2/2/2021 00:00	*	3	30
☑	3/1/2021 00:00	3/2/2021 00:00	*	3	30
☑	4/1/2021 00:00	4/2/2021 00:00	*	3	30

Example scheduling rules to execute a job monthly

When you save the job, the rules will be evaluated and the first scheduled execution will be placed on the schedule—in this example, the January 1 execution. Once that scheduled execution is complete, the rules will be evaluated again, which will cause the next scheduled execution (Feb 1) to be placed on the schedule, and so on.

Setting up notifications 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 notification 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. For more information, see Scheduler setup.

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.

NOTES:

- By default, all new Scheduler jobs are configured to send an email notification on completion, to the user who created the job. You only need to edit the notification settings if you want the job to use different notification behavior.
- Currently, it is not possible to configure a Scheduler job to send notifications within the application only, instead of by email. However, when a job is run manually, the user who ran the job may receive an in-application notification of the job status in addition to any configured email notifications. See Application notifications for Scheduler jobs that are run manually.

To configure a job to send email notifications:

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 **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 view 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. For example: • To send the email to two recipients, enter the addresses such as: `jdoe@company.com;dsmith@company.com` • To use a Scheduler job variable to define a notification recipient, enter the variable name with curly brackets. You can combine regular email addresses and variables, such as: `{JobOwner.EmailAddress};jdoe@company.com` By default, the notification is configured to be sent to the user who executed the job, using the variable `{CurrentUser.EmailAddress}`. The entries in the To field must be valid email addresses, or Scheduler job variables that will resolve to valid email addresses. Currently, it is not supported to list user or role names, or to look up email addresses from Axiom Security. **NOTE:** 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.
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."

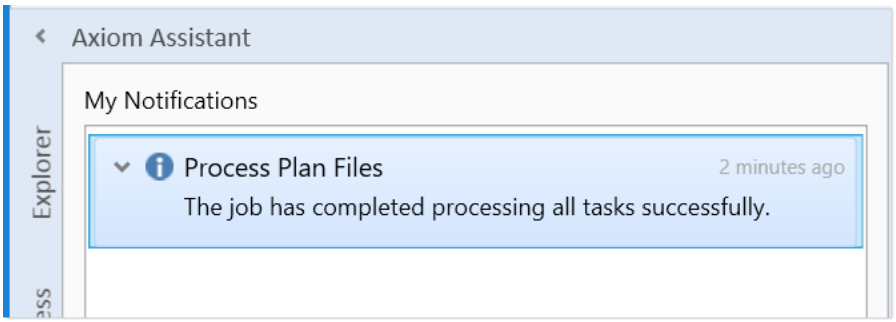
Job variables can be used in all notification settings.

Application notifications for Scheduler jobs that are run manually

If you run a Scheduler job manually, you can receive a notification within the application to let you know the status of the job. This notification will display in the Notifications task pane of the Desktop Client, and in the Notifications panel of the Web Client. This notification works as follows:

- The in-application notification is only sent if the Scheduler job is run manually using the **Run Now** option in Scheduler (or by using an equivalent "run now" action within a product-specific web page). In-application notifications are *not* sent if the job is run via a scheduling rule or an event handler.
- The in-application notification honors the Notification settings defined for the job to determine whether the notification is sent. For example, if the job is set to **None**, then the in-application notification is not sent. If the job is set to **Send all email notifications**, then both an email notification and an in-application notification will be sent when the job completes.
- The in-application notification only reports the status of the job—success, failure, or partial success. It does not contain any error or success details, and does not include any messaging as defined in the Notification settings for the job. For more information, view the job results within the Scheduler dialog in the Desktop Client, or the Scheduler page of the Web Client.
- The in-application notification is always sent to the user who ran the job manually.

NOTE: If the job is configured to **Send email notification to different email addresses when the job has errors or succeeds**, this is treated as **Send all email notifications** for purposes of sending the in-application notification. The user who ran the job will be notified when the job is completed, regardless of the job status.



Example success notification

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.

Item	Description
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.
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.

Item	Description
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.
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.

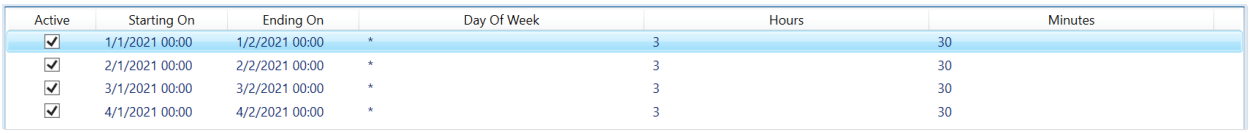
Item	Description
Active	Specifies whether the scheduling rule is active. If this check box is not selected, then the rule is ignored for purposes of scheduling the job.
Starting On	Optional. Specifies the earliest date and time for the scheduling rule to take effect. If you want the job to run one time 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).

Item	Description
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).

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 (6/30/2021) at 1:30 PM (Option 1)	Start: 06/30/2021 00:00 End: 07/01/2021 00:00	*	13	30
One time (6/30/2021) at 1:30 PM (Option 2)	Start: 06/30/2021 13:30 End: 06/30/2021 13:30	*	*	*
Every Wednesday in July at noon	Start: 07/01/2021 00:00 End: 08/01/2021 00:00	3	12	0
Continuous	<optional>	*	*	*

To schedule a job to execute monthly, create twelve active scheduling rules, one for each month. This is necessary because scheduling rules do not have a property for day of month, so it is not possible to use a single scheduling rule to create a monthly schedule. In the following example, the job will be executed on the first day of each month, at 3:30 AM:



Active	Starting On	Ending On	Day Of Week	Hours	Minutes
☑	1/1/2021 00:00	1/2/2021 00:00	*	3	30
☑	2/1/2021 00:00	2/2/2021 00:00	*	3	30
☑	3/1/2021 00:00	3/2/2021 00:00	*	3	30
☑	4/1/2021 00:00	4/2/2021 00:00	*	3	30

Example scheduling rules to execute a job monthly

When you save the job, the rules will be evaluated and the first scheduled execution will be placed on the schedule—in this example, the January 1 execution. Once that scheduled execution is complete, the rules will be evaluated again, which will cause the next scheduled execution (Feb 1) to be placed on the schedule, and so on.

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. See Managing event handlers.
- 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 notifications 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.
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 tasksTask 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 Capital Planning 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.

Associating an event handler with a file group

If a Scheduler job with an active event handler is stored in a file group Utilities folder, then the event handler is associated with that file group. When using RunEvent to trigger jobs for execution, you can optionally specify a file group context so that only event handlers associated with that file group (or no file group) are considered.

In order to store a Scheduler job within a file group, you must first create and save the job within the Scheduler Jobs Library. Then, you can use Axiom Explorer to move the job from the Scheduler Jobs Library to the file group Utilities folder. If the file group and its utilities are later cloned using any process—such as regular file group cloning, scenario creation, or file group rollover—then the event handler is also cloned and will be associated with the new file group.

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.

User-defined event handlers display along with the system event handlers in the **Event Handlers** tab (**Service > Event Handlers**). If you right-click a user-defined event handler in this location and select **Remove event handler**, it does not delete the event handler from any jobs that use it, but it does set the event handler to inactive.

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 Capital Planning provides a number of system variables that can be used within relevant job and task settings. For example, instead of specifying a "hard-coded" email address for the job notification, you can use a system variable to specify that whoever ran the job should receive the notification.

In all cases, to use a variable within a job or task, enter the variable name into the desired setting, enclosed in curly brackets. For example: {variable}

TIP: If you want to use a variable in a job, you can right-click the variable and then select **Copy variable name to clipboard**. Navigate to the setting where you want to use the variable, and then paste it into the setting (the curly brackets are added automatically).

At the job level, variables can be used in any of the **Notification Message Content** settings in the **Notification** tab. At the task level, in general, variables can be used in any task field that accepts typed user input.

When the job is run, the variable values used for the job display in the job results under **Job Values**, and also in the email notification (if applicable).

User-defined variables

User-defined variables are created in the **Job Variables** tab. You define the name of the variable (without brackets), and if desired, define a default value for the variable.

When the job is run, the user-defined variable will be replaced with a value as follows:

- If the job was scheduled using RunEvent (function or command), and RunEvent sent a name / value pair that matches the name of the job variable, that value is used.
- If the job was scheduled as a result of a file group trigger, and the trigger has a defined variable that matches the name of the job variable, that value is used. Multiple values are returned as a comma-separated list.
- If the job contains a Process Document List task or a Process Plan Files task with a defined post-processing variable that matches the name of a job variable, that value is used after that task has been processed.
- Otherwise, the default value defined in the Job Variables tab is used.

If the value is blank, then the job or task setting using the variable will be evaluated as blank. If the setting cannot be blank, then an error will result when the job is executed.

System variables

The available system variables are listed at the bottom of the **Job Variables** tab. Most of these variables relate to user names and addresses, for use within the job notification settings.

When the job is run, the system variable is replaced with the applicable system value.

The following values are available:

Variable	Description

`{CurrentUser.EmailAddress}`
`{CurrentUser.LoginName}`
`{CurrentUser.FullName}`
	Returns the current user's email address, login name, or full name.
	The current user is the user identity under which the job is currently being run. Generally, this is the user who executed the job. If the job was executed via an event handler and the event handler is set to owner, then the current user will be the job owner.

`{JobOwner.EmailAddress}`
`{JobOwner.LoginName}`
`{JobOwner.FullName}`
	Returns the job owner's email address, login name, or full name.
	The job owner is the user who last saved the job.

`{Scheduler.ConfiguredFromEmailAddress}`	Returns the system's default "from" address, as defined in the system configuration settings.

Variable	Description
{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.
{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.

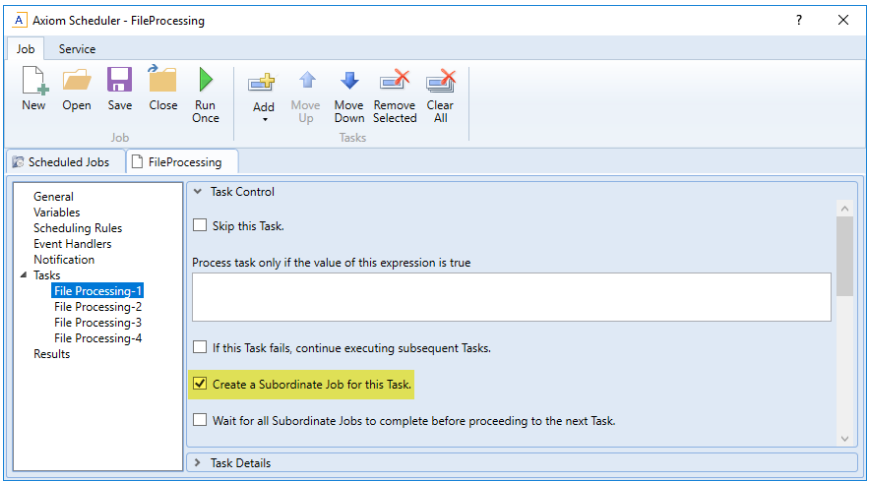
If desired, you can configure tasks so that they are processed concurrently (in parallel) instead of sequentially. If appropriate, this may speed up the processing of the job.

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

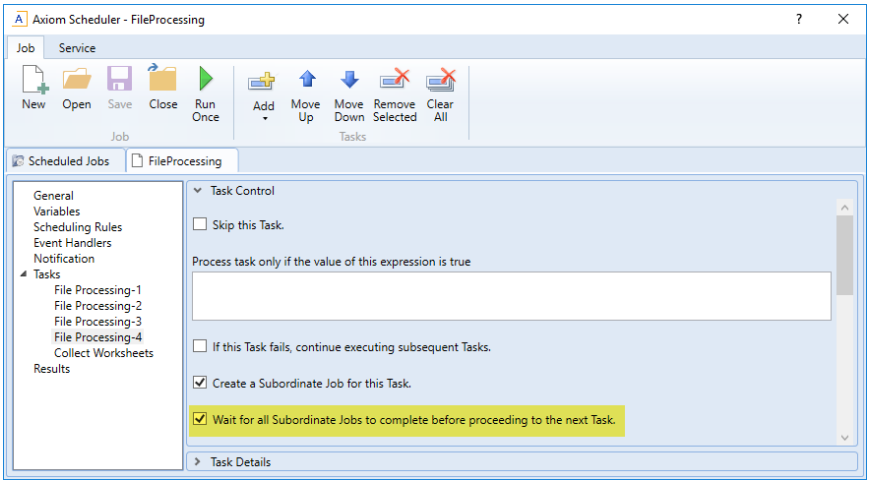
When a task is configured to execute as a subordinate job, then it is not processed within the "parent" job. Instead, a sub-job is created for the task. The sub-job joins the Scheduler queue and is eligible for processing according to the normal Scheduler processing rules. For more information, see Processing 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.

Item	Description
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.

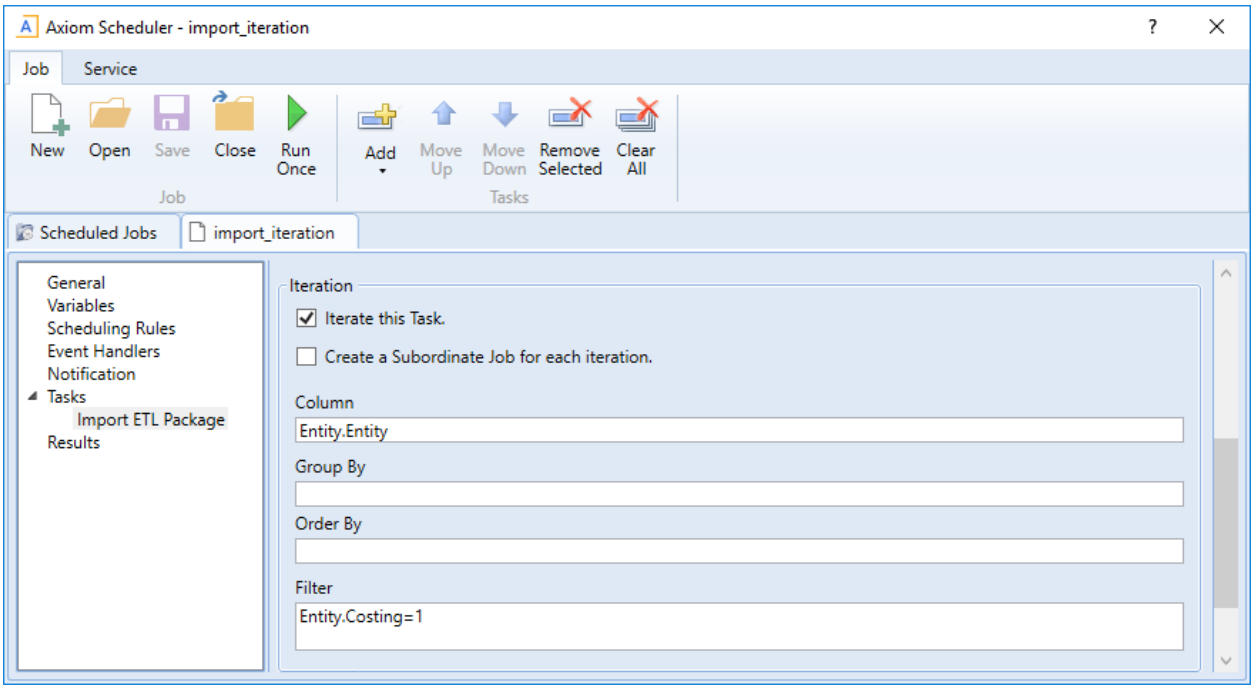
If your job has multiple tasks, and you want the tasks after the iterative task to wait for all iterations to complete before executing, then you must enable the following Task Control option for the iterative task: **Wait for all Subordinate Jobs to complete before proceeding to the next Task**.

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:

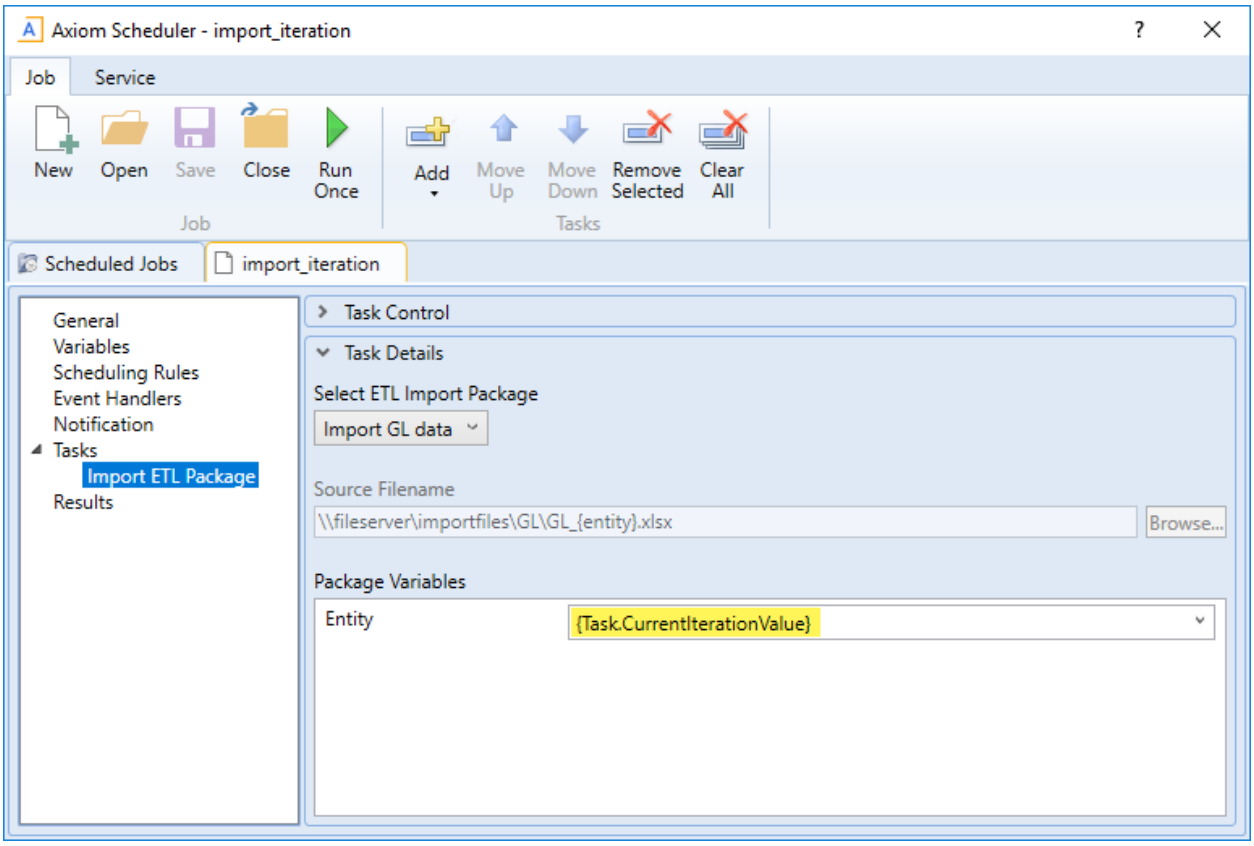
Variable	Description
`{Task.CurrentIterationValue}`	Returns the current value from the iteration list.
`{Task.IterationNumber}`	Returns the number of the current iteration.

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:

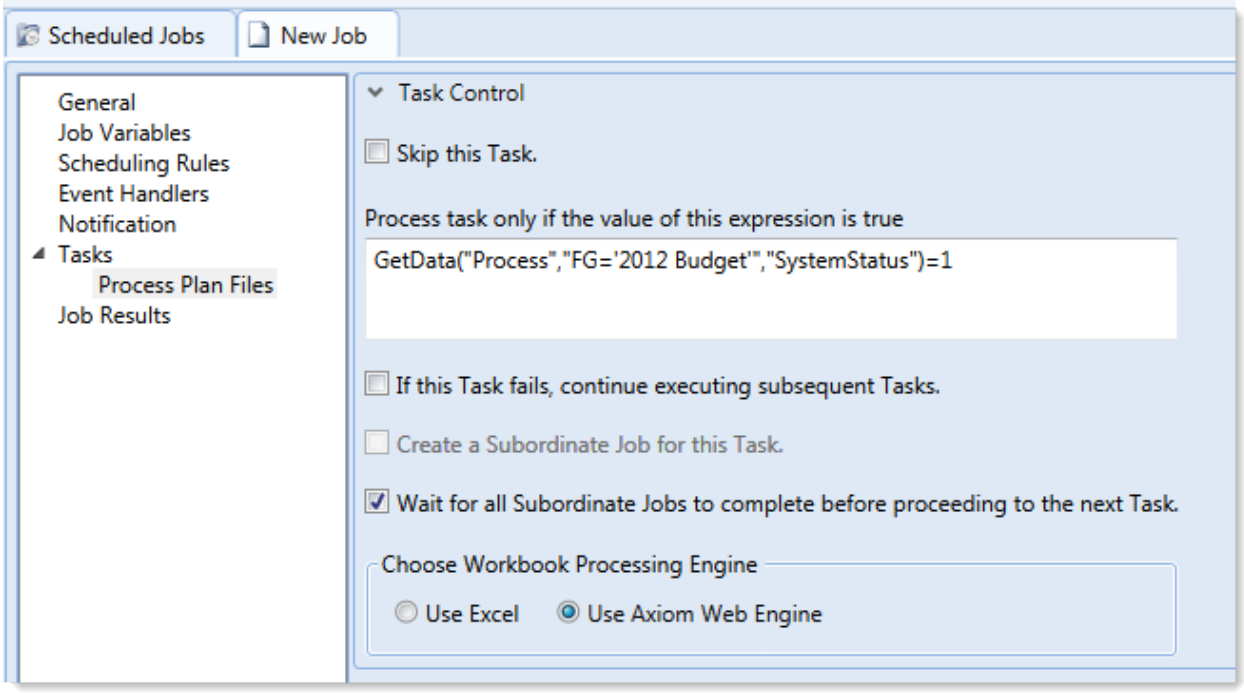


When the first iteration is performed, the `{Task.CurrentIterationValue}` will be resolved as Entity_1, so the import will be processed using Entity_1 as the value for the `{Entity}` import variable. For the second iteration, the value Entity_2 will be used, and so on. Using this approach, the import 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 Scheduler task: 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 use similar parameters. Some limitations apply depending on the context where RunEvent is being used. 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).

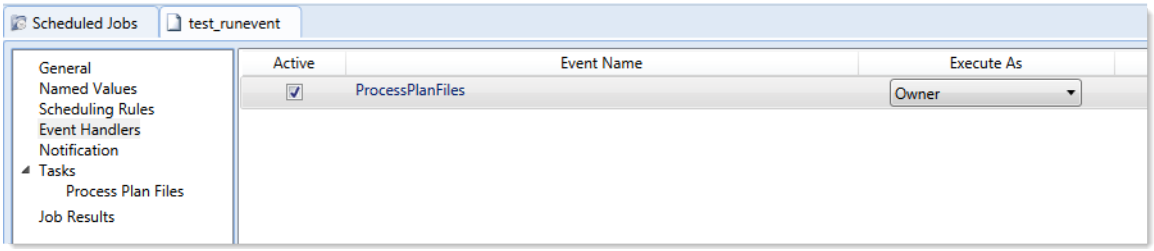
NOTE: You can also use the Raise Event Scheduler task to trigger the execution of a Scheduler job from a different Scheduler job. This works in a similar manner as the RunEvent features.

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

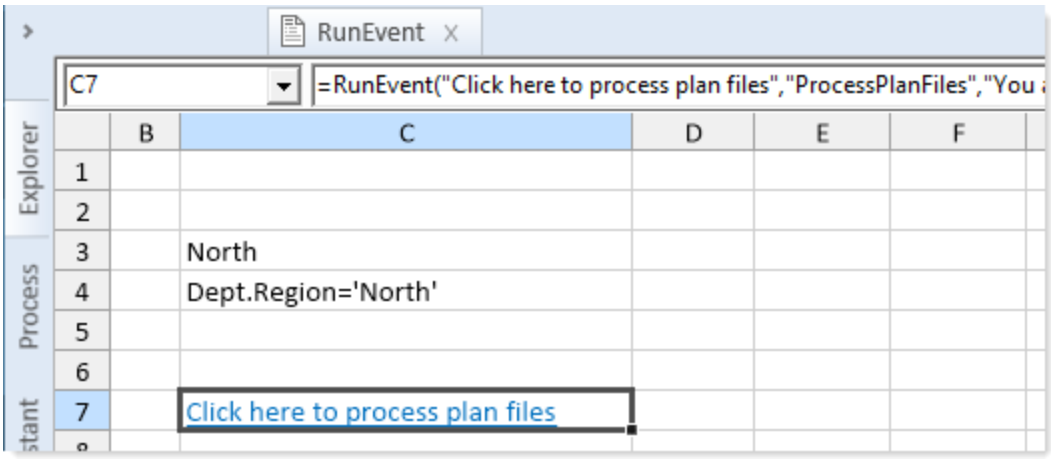
RunEvent uses the following properties to trigger Scheduler jobs:

- 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.
- An optional file group context to target the job execution to only event handlers that are associated with a particular file group (or no file group). For the RunEvent command, this is an optional parameter. For the RunEvent function, the current file group context is automatically applied if the file with the function belongs to a file group.
- 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.

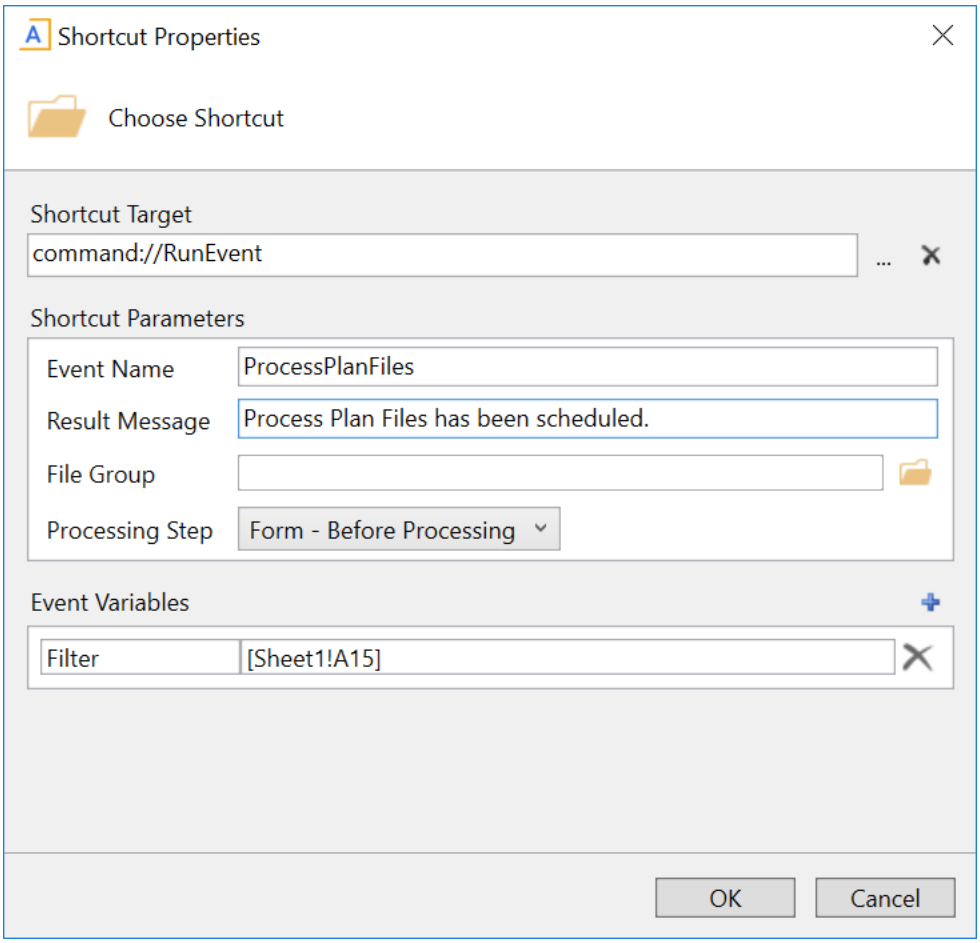
The following shows an example RunEvent function for use in an Axiom file:

```
=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:



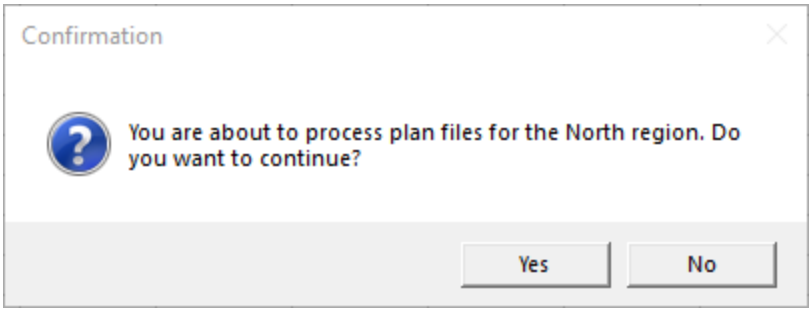
The next screenshot shows a RunEvent command set up on a Button component for an Axiom form. You can see the same event name and the filter variable also being read from a sheet location.



RunEvent behavior and user experience

The behavior and 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 Capital Planning checks the list of event handlers in Scheduler to see if any match the specified event handler name in RunEvent. This check works as follows:
  - If RunEvent has a file group context, then Axiom Capital Planning only tries to match with event handlers that are associated with the same file group, or with no file group. Any event handlers associated with a different file group are ignored. The RunEvent command has a file group context if a file group is specified in the shortcut parameters, whereas the RunEvent function automatically has a file group context if the file with the function belongs to a file group.
  - If RunEvent does not have a file group context, then all event handlers are eligible to match.

  If any matching event handler names are found, then all Scheduler jobs that reference the event handler are triggered for execution. If multiple jobs reference the matching event handler, then all of those jobs will be executed.

  If variable values are defined in the RunEvent properties, those values are passed to the job and are used when the job is executed.

- 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.

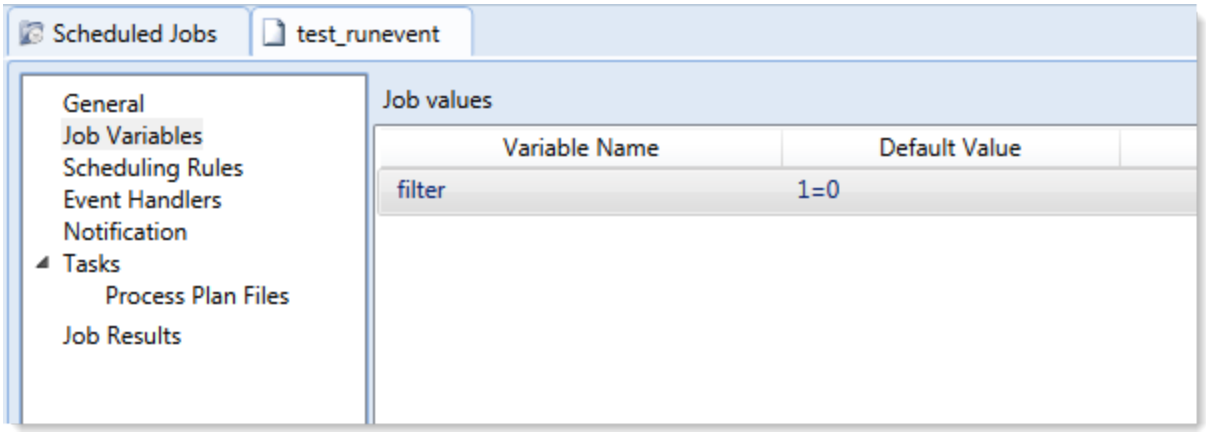
When the job is finished processing, email notifications are sent according to the settings in the job.

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.

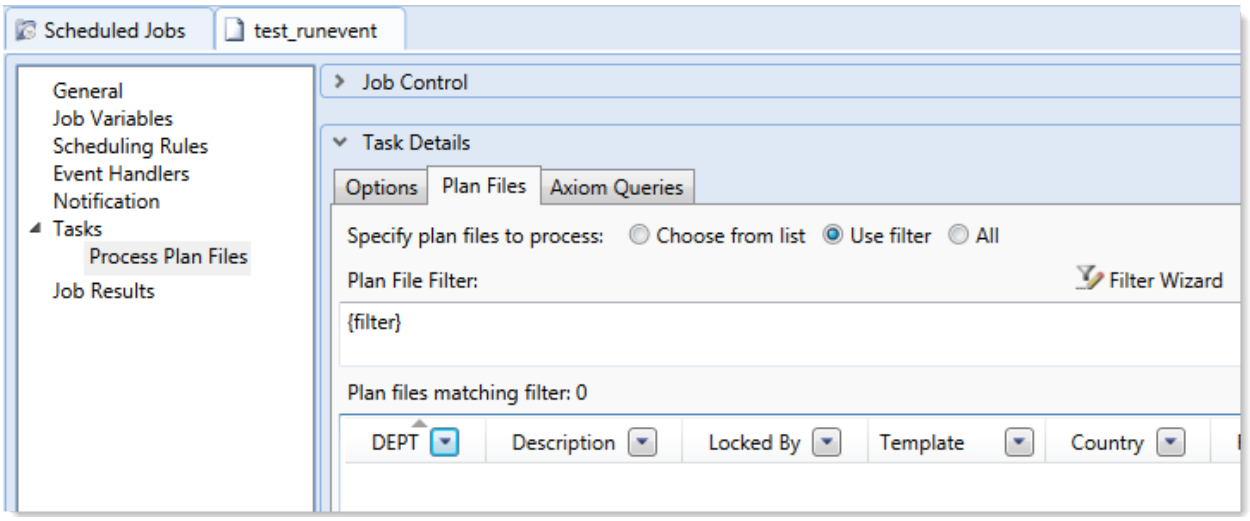
Step 1: Set up the variable in the job

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'")
```

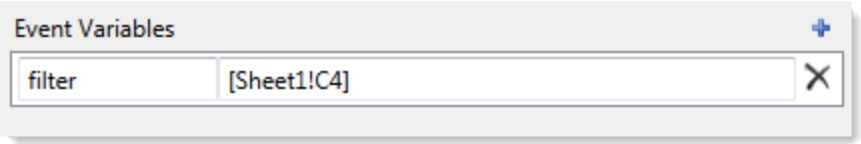
More likely, you would be reading the variable value from another place in the sheet, so the function would look something like:

```
=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 if you want the parent job to stop processing tasks if the target job fails, then **Wait for all Subordinate Jobs to complete before proceeding to the next Task** must be enabled for the task and **If this Task fails, continue executing subsequent Tasks** must be disabled for the task. This is the default configuration.

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).

You can also run jobs manually using the Scheduler area of the Web Client. For more information, see Running a job manually in the Web Client.

Scheduler tasksTask 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 Capital Planning. 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 Capital Planning, 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 Excel Macro	Run a macro against an Axiom file.
Run Scheduler Job	Run another Scheduler job as a subordinate job.
SMTP Message Delivery	Deliver email notifications resulting from Scheduler jobs.
Start Process	Start a process definition for Process Management.
Update Indexes and Constraints	Update the indexes and constraints in your Axiom Capital Planning 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.
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.

Item	Description
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.
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).

Item	Description
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).

Scheduler task: Active Directory Import task

This task imports users from Active Directory groups into Axiom Capital Planning security. For more information on using Active Directory integration with Axiom Capital Planning, 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 Axiom Cloud 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 Capital Planning 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 (Axiom Cloud 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.
Groups to import	The Active Directory groups for which members will be imported into Axiom Capital Planning 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 Capital Planning 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 Capital Planning 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 Capital Planning 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 Capital Planning, 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 Capital Planning 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 Axiom Cloud systems. The remote data connection to the Cloud Integration Service is only used when the task is executed by Scheduler.

Scheduler task: 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. **NOTE:** 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 specified folder does not already exist, Axiom Capital Planning attempts to create it. Job variables can be used in this setting.
Output File Name	The name of the target workbook. Job variables can be used in this setting.
File Type	The file type of the target workbook. Select **XLS**, **XLSX**, or **XLSM**. **NOTE:** PDF displays as an option, but it is not supported in this context.

Email Settings

This section only applies if you are emailing the target workbook. The "From" address is always the Scheduler default From address (as defined in the system configuration settings).

Item	Description
To	Enter the email addresses to receive the target workbook via email. Separate multiple addresses with a semicolon.
Subject Line	The subject line for the email.
Body Text	The body text for the email.

Source Workbooks

In this section, you specify one or more source workbooks from which to collect worksheets. Workbooks are identified by folder location. Within a folder location, you can specify one or more workbooks by name, or by using wildcards, or by using *.* to collect all workbooks at the location.

All sheets in each source workbook will be collected. Ideally, you will be collecting from workbooks that only contain relevant sheets (for example, no blank "Sheet2," etc.), and where the sheets have unique names. If multiple workbooks have sheets with the same name, the sheets will be incremented by number in the target workbook.

- To add a workbook, click the Add button. In the **Edit Workbooks Source** dialog, complete the settings as described below, then click **OK** to add the workbook to the list.
- To remove a workbook, select the workbook in the list and then click the Remove button. Only one workbook can be selected at a time.
- To change the order of workbooks, select the workbook in the list and then click the arrow buttons to move the workbook up or down. Source workbooks are processed in the order they are listed in the grid.

Item	Description
Folder Path	The folder location of the source workbook(s). Click the folder icon to select a folder location. **NOTE:** The **Folder Path** location must be accessible by the Scheduler service user account. If you specify a network folder location using the Browse button, the location is automatically entered as a UNC path. If you specify a C: drive location, that will be evaluated as the C: drive of the Scheduler server. Job variables can be used in this setting.
Workbooks	The workbooks from which you want to collect worksheets, within the specified folder path. • Specify *.* if you want to collect all files in the folder path. • Specify individual file names to collect from specific files. Separate multiple file names with semicolons. You can use wildcards (* or ?) to specify groups of files that share naming conventions. For example: `North*.xls` to collect all XLS files where the file name starts with "North". Only files with the following file types are valid to be collected: XLS, XLSX, XLSM. If you are using wildcards, the matches must be valid file types, or else the task will fail with an error. Job variables can be used in this setting.

Once you have saved a source workbook location, you can edit it by double-clicking the row.

Scheduler task: Copy On Demand Plan Files task

This task copies on demand plan files from one file group to another. It performs the same actions as the **Copy On Demand Plan Files** command in the Command Library.

This is an advanced feature and should only be used if it is the only way to achieve the desired population of plan files between two related file groups. It is the responsibility of the solution designer to ensure that the copied plan files will behave as expected in the target file group. For example, the plan file must be designed to dynamically save to the appropriate tables and columns within the context of the new file group.

The Copy On Demand Plan Files task uses two tabs to define the properties of the task.

- **Options**: Defines the options to be used for the copy operation
- **Plan Files**: Specifies the plan files to copy

Options tab

The following options are available on the Options tab. Note that all of these options can be changed dynamically by using system variables.

Item	Description
Source File Group	The file group to copy plan files from. Click the folder icon to select a file group. You can select any on-demand file group, or any file group alias that currently points to an on-demand file group.
Destination File Group	The file group to copy plan files to. Click the folder icon to select a file group. You can select any on-demand file group, or any file group alias that currently points to an on-demand file group.
Keep original plan file creator	Specifies whether the plan file creator for the copied plan files is set to the same creator as the original plan files. By default, this option is enabled. If this option is disabled, then the plan file creator for the copied plan files is set to the user identity used by the Scheduler job when it is run.

Item	Description
Use default template	Specifies whether the copied plan files have the option to adopt the default template of the new file group. This is primarily intended to be used when copying plan files to a file group that uses virtual, form-enabled plan files, so that the copied plan files can be converted to virtual files and use the new template. • If disabled (default), then the target file group must contain copies of the original templates that were used to create the plan files from the source file group. If these templates are not present, then the copy process will fail. • If enabled, then the copied plan files will be assigned a template as follows: ◦ If the target file group contains copies of the original templates that were used to create the plan files from the source file group, the copied plan files use those templates. ◦ If the target file group does not contain copies of the original templates, the copied plan files use the default template specified for the target file group in the file group properties. If the target file group does not contain copies of the original templates and does not have a designated default template, then the copy process will fail.
Copy plan file attachments	Specifies whether plan file attachments are copied to the target file group when a plan file is copied. By default, this option is enabled. If this option is disabled, then plan file attachments will not be copied to the target file group.

Item	Description
Save plan files after copy	Specifies whether the new plan files are processed and saved in the target file group after the copy is performed. This is intended to perform a save-to-database within the context of the new file group. By default, this option is disabled. If you enable this option, then after the plan files are copied to the new file group, they are opened, refreshed, and saved (including a save-to-database). The refresh includes all active Axiom queries where **Refresh during document processing** is enabled. Regardless of whether this option is enabled, if it is ever intended to save the copied plan files in the target file group, then they must be designed so that they save data to the appropriate tables after being copied. **NOTES:** • If **Process with Utilities** is enabled for the target file group, then utility processing is performed instead of normal processing. The default data source is used. • If you enable this option but also specify a **Copy data utility**, then the new plan files are not processed and saved. Instead, the designated utility file is processed for each new plan file.
Copy data utility	Optional. Specifies a utility file to process for each copied plan file. You can select any file in the Utilities folder of the target file group, or a file in the Reports Library. The primary purpose of this option is to handle copying virtual plan files between file groups. Because the plan files are virtual, no data exists in the file itself and therefore saving the new plan file will not populate data for the new file group. Instead, you should create a utility file that queries in the necessary data for the original plan file, then saves the necessary data for the new plan file to the appropriate tables for the new file group. Reserved document variables are available to return information in the utility file such as the old plan file code and the new plan file code. For more information, see Copy data utility. **NOTE:** **Save plan files after copy** must be enabled in order to specify a copy data utility. If a utility is specified, then the new plan files are not saved and instead the utility file is processed for each new plan file.
Default Values	Optional. This section can be used to apply default values to any columns in the target plan code table, when the new record is created in the target file group. For more information, see Defining default values.

Plan Files tab

On the **Plan Files** tab, specify the plan files from the source file group that you want to copy to the target file group. There are three different options that you can use to specify the plan files: **Choose from list**, **Use filter**, and **All**.

The most common option when copying plan files using Scheduler is to define a filter. You can dynamically copy a subset of designated plan files using the filter. If the Scheduler task is triggered by using RunEvent, you can pass in the filter from the source of the RunEvent (such as an Axiom form).

Copy a filtered set of plan files

To use a filter to copy a subset of plan files, select **Use Filter**. When the Scheduler task is executed, Axiom Capital Planning 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: `CapReq2020.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 `CapReq2020.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 Capital Planning 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 Capital Planning 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 Capital Planning 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

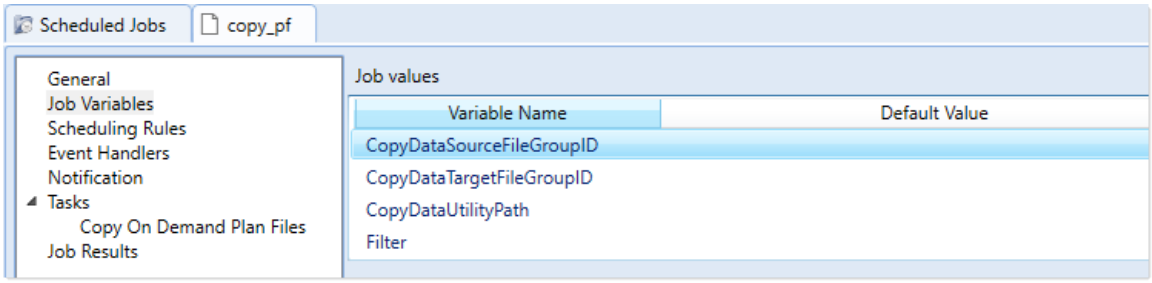
All of the settings for the Copy On Demand Plan Files task can be overridden using system variables. This is intended for use when the task is being triggered by RunEvent (such as from within an Axiom form), and you want to pass in variable values to determine how the task is run.

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 Capital Planning.
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.

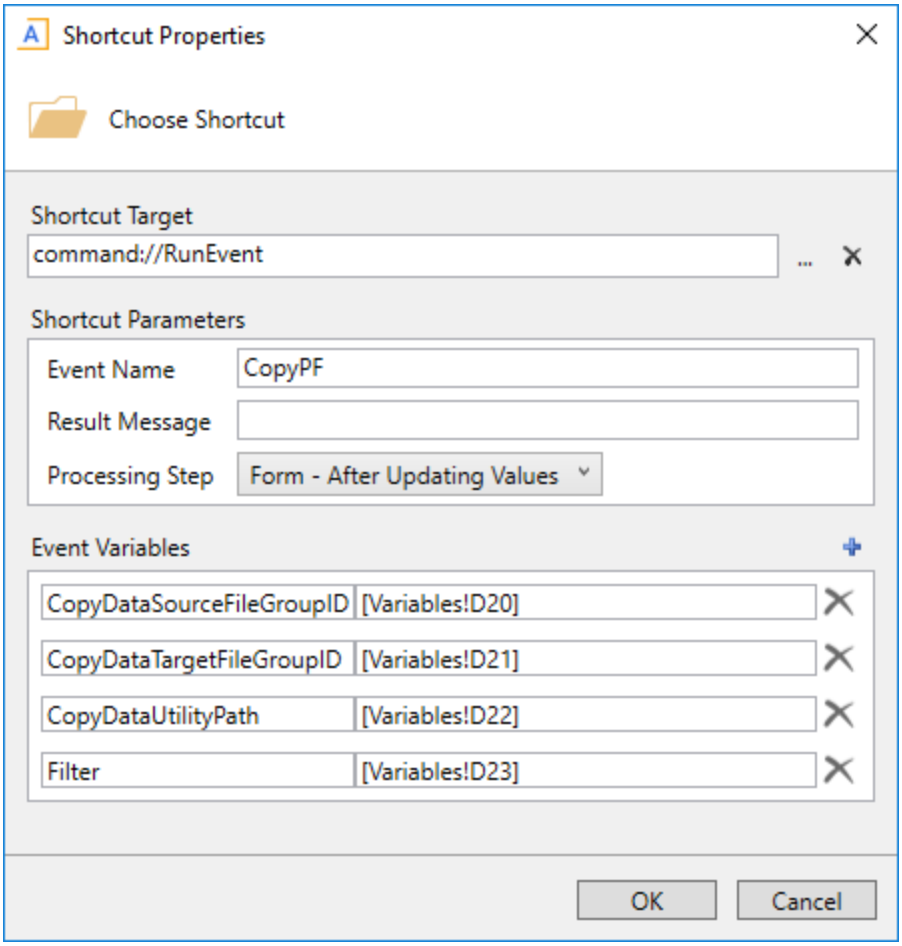


Example Job Variables tab to override certain settings for the copy task

  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.

Scheduler task: 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. If the Scheduler job is stored in a file group Utilities folder, then you can select **Use Current File Group** to automatically use the file group that the Scheduler job belongs to. This is the recommended approach when the Scheduler job belongs to a file group, so that it will automatically update to point to the current file group when the file group is cloned. **NOTE:** If the task uses an alias, then you cannot select individual plan files on the **Plan Files** tab. Only the **Use Filter** and **All** options are available.
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 if the file group for the task is an alias. This is because the list of plan files could change when the alias target changes.

- **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.

Scheduler task: 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.

Scheduler task: 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**.

Supported commands

Only certain commands are available for execution in this context. The following commands are available:

- File Group Rollover
- Create File Group Scenario

- File Group Rollover
- Create File Group Scenario

Systems with installed products may have Scheduler jobs that use the following additional commands:

- Create File Group From Prototype
- Upgrade File Group To Prototype Version

These commands can only be configured by product developers. Clients looking for more information on how to use a particular product-delivered Scheduler job should consult their product documentation. Syntellis employees should consult internal resources for more information on this feature as needed.

Scheduler task: 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 Capital Planning 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.

Scheduler task: Export ETL Package task

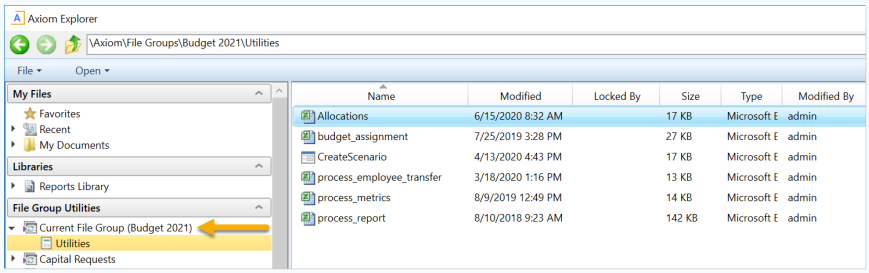
This task exports data from Axiom Capital Planning to an external database (same as executing an export from the **Exports Library**).

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.

Scheduler task: 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. You can select any report that you have access to within the Reports Library or a file group Utilities folder. 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. If this Scheduler job is stored in a file group Utilities folder, then you can optionally navigate to the report through the **Current File Group** node at the top of the file groups list. When you do this, the path to the file is stored relative to the current file group, which means that it will automatically update when the file group is cloned. This is the recommended method of referencing the report to process when both the Scheduler job and the report belong to the file group. 

Item	Description
Override file to process	Optional. Specifies a Scheduler job variable to override the file to process. The override file will then be used for processing instead of the original file. This feature allows you to pass in an alternate file to process, when using Run Event or Raise Event to trigger the Scheduler job for processing. To use a job variable, enter the variable name in curly brackets, such as `{MyFile}`. When the job is executed, this variable must resolve to a valid file path in the Axiom Capital Planning file repository. Note that it is not valid to leave the variable value blank (the task will *not* use the original file to process). **NOTES:** • The override feature is only exposed to product developers. It is only visible in client systems if the job is delivered as part of a product package and an override variable is specified in that job. • The **File to Process** field must point to a valid file for file processing when the override feature is used, even though that file will never actually be processed by the task. If the file to process is missing or invalid, then the task validation will fail.
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 Capital Planning 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 detailed help topics for the File Processing feature.

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.

Scheduler task: Import ETL Package task

This task imports data into Axiom Capital Planning (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.

Item	Description
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.

Scheduler task: 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, including file group scenarios (click **Show Scenarios** in the **Choose File Group** dialog to show scenarios in the file group list). If the Scheduler job is stored in a file group Utilities folder, then you can select **Use Current File Group** to automatically use the file group that the Scheduler job belongs to. This is the recommended approach when the Scheduler job belongs to a file group, so that it will automatically update to point to the current file group when the file group is cloned. **NOTE:** If the task uses an alias, then you cannot select individual plan files on the **Plan Files** tab. Only the **Use Filter** and **All** options are available.
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 Capital Planning 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 Capital Planning 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 Capital Planning 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 if the file group for the task is an alias. This is because the list of plan files could change when the alias target changes.

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 Capital Planning 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.

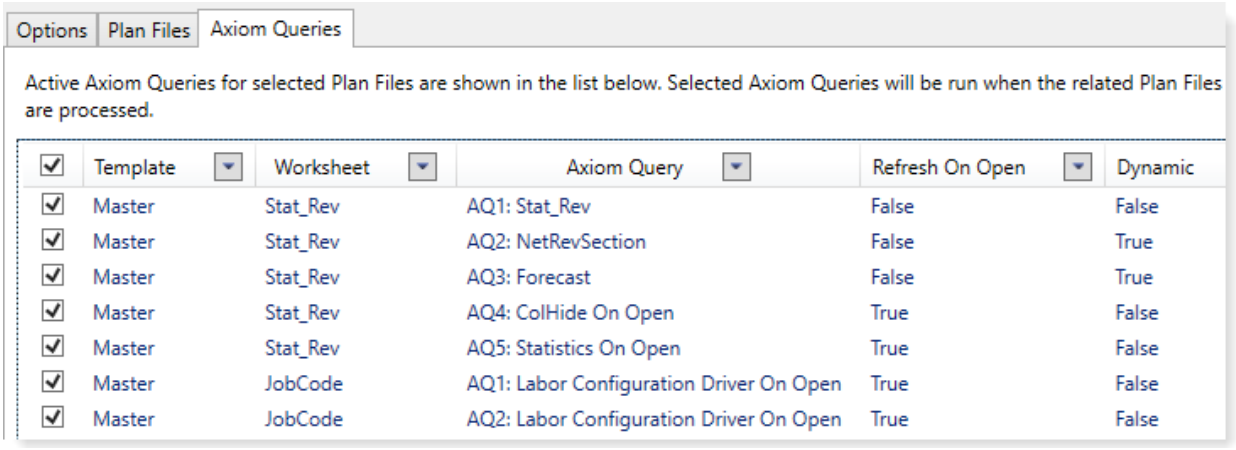
You can also use a job variable for the filter. For example, you can define a job variable named "filter" and then place the text `{filter}` in the filter box. This is intended for use when running Scheduler jobs via RunEvent. If a variable value is specified when the event is triggered, such as the 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.

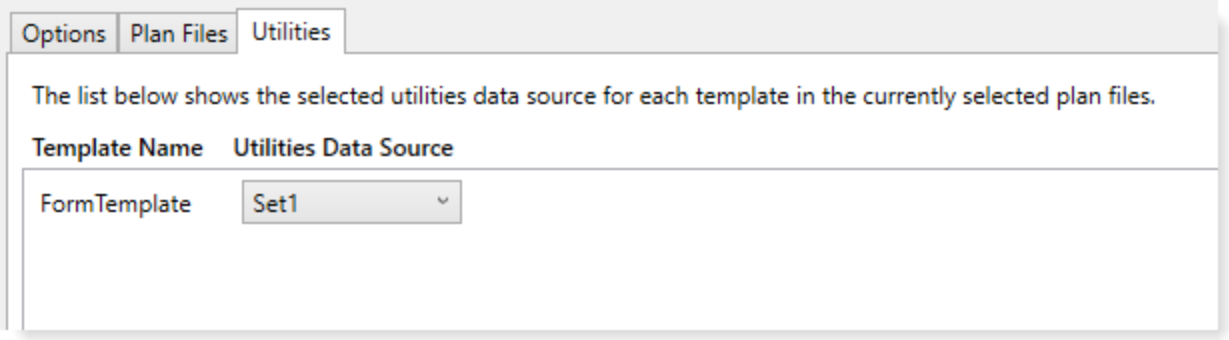
The listed queries are identified by template, worksheet, and query name. The following additional properties are also listed for each query:

- **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 Capital Planning 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.

Scheduler task: 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.

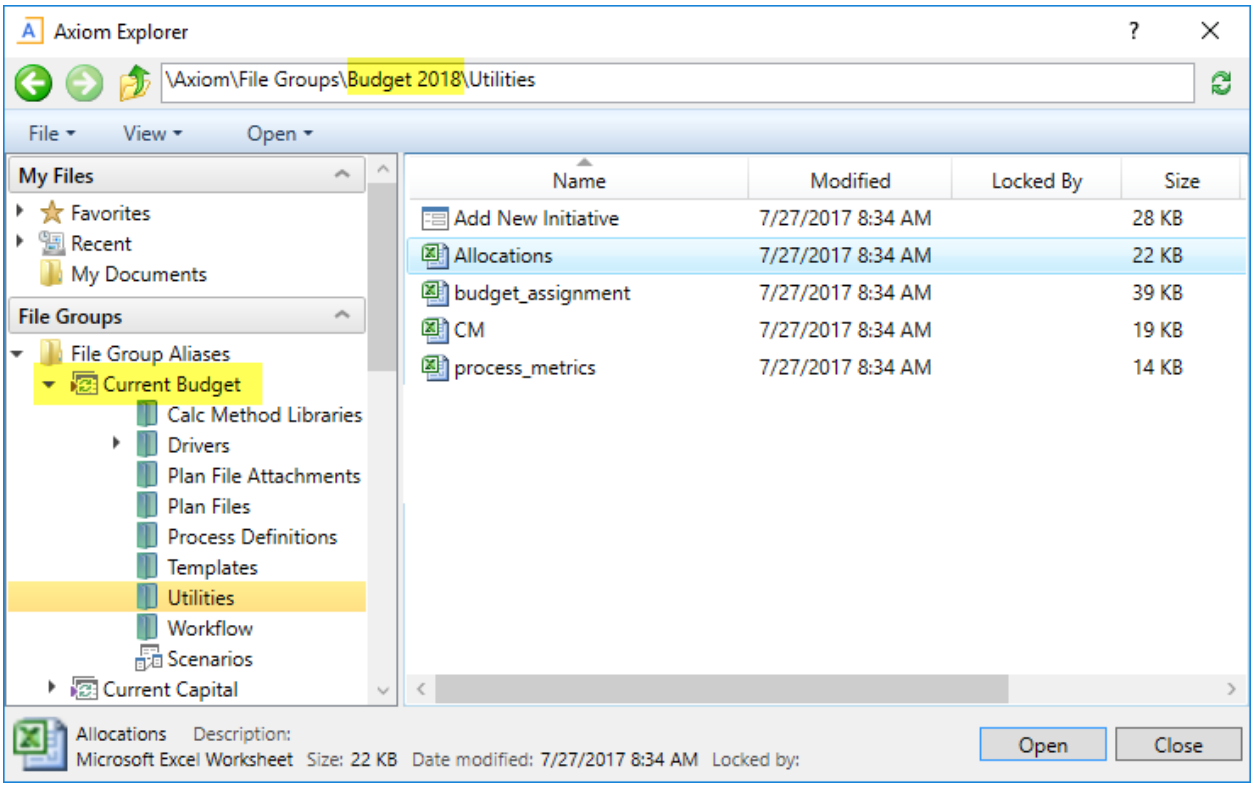
To change the order of documents, select the file in the list and then click the arrow buttons to move the file up or down.

Only Axiom-managed Excel files are valid to be processed in the task.

Selecting a document using a file group alias

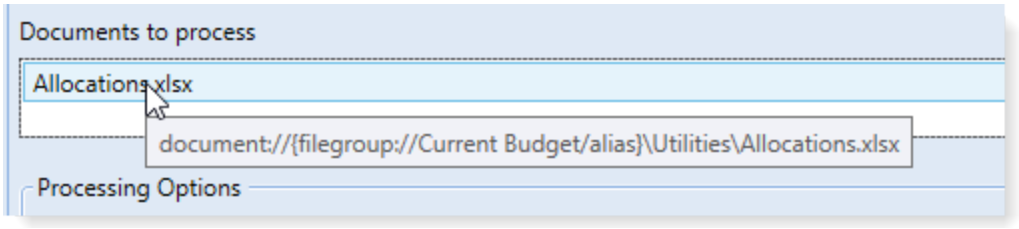
You may want to specify the document to process using a file group alias, so that the task does not have to be manually updated after rolling over to a new file group for a new year of planning. When you are selecting a document in the Axiom Explorer dialog, you can expand the file group alias to see 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.

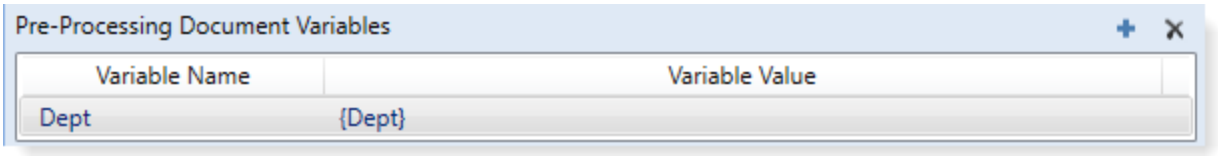
For each pre-processing document variable, you can specify a variable name and a variable value. The target file must be set up with GetDocumentInfo functions that return the values for the specified variables.

- 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.

Scheduler task: 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.

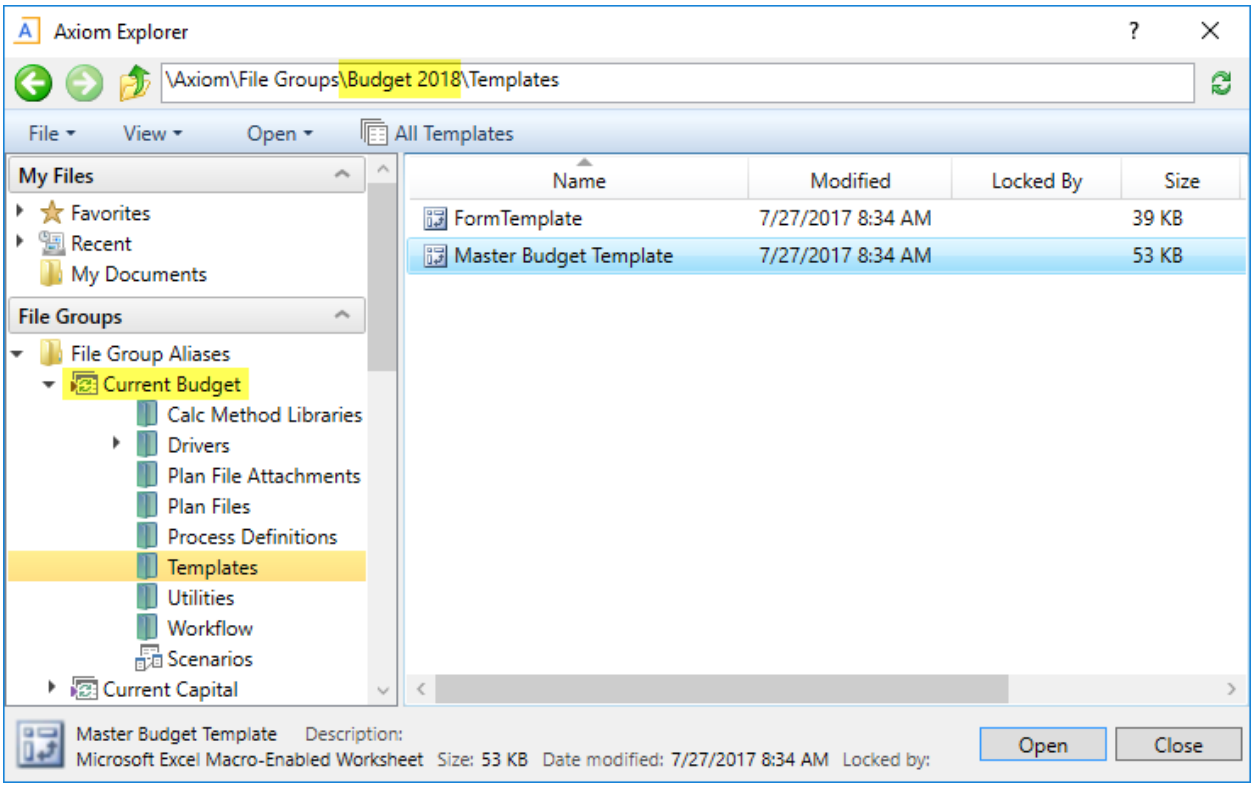
- To add a template, click the Add button. In the **Axiom Explorer** dialog, select the file or files that you want to add, and then click **Open**.
- To remove a template, select the file in the list and then click the Remove button. Only one file can be selected at a time.
- To change the order of 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

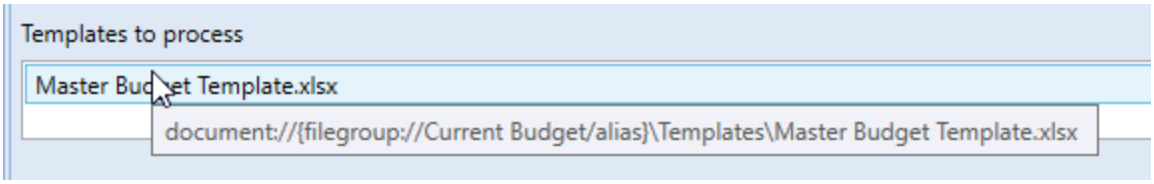
You may want to specify the template to process using a file group alias, so that the task does not have to be manually updated after rolling over to a new file group for a new year of planning. When you are selecting a template in the Axiom Explorer dialog, you can expand the file group alias node to 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.

Scheduler task: 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 Capital Planning, 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.

Scheduler task: 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. **NOTE:** It is not possible to specify a file group context for the event handler when using Raise Event. Axiom Capital Planning will run all jobs that contain the specified event handler name, regardless of whether the event handler is associated with a file group.

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.

Scheduler task: 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 Capital Planning 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.

Scheduler task: 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 if you want the parent job to stop processing tasks if the target job fails, then **Wait for all Subordinate Jobs to complete before proceeding to the next Task** must be enabled for the task and **If this Task fails, continue executing subsequent Tasks** must be disabled for the task. This is the default configuration.

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.

Scheduler task: SMTP Message Delivery task

This task delivers email notifications for Scheduler jobs.

NOTE: Scheduler automatically creates a system job for this task (System.SMTPMessageDelivery), which administrators can edit as needed.

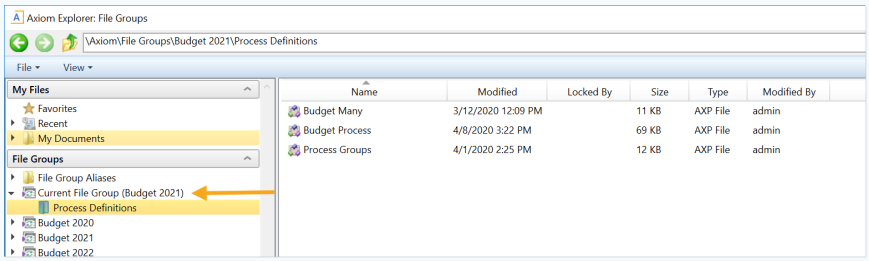
Item	Description
Server name	The server name of the SMTP email server.
Port number	The port number for the SMTP email server. By default, the port is 587, but you can specify a different port number if needed.
Server requires authentication	Select this check box if the SMTP email server requires authentication. If selected, type a **Username** and **Password**.

Item	Description
Test Mode	Specifies whether the task is run in test mode. If this check box is selected, the task verifies that it can successfully connect to the SMTP server to send email notifications, but no emails are actually sent. For the System.SMTPMessageDelivery job, new systems are automatically set to test mode. If you restore a database, the restore process also sets the system job to test mode. You must disable test mode before any emails will be sent.

Scheduler task: 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 that you have access to within the Process Definition Library or within a file group Process Definitions folder. If the Scheduler job is stored in a file group Utilities folder, then you can optionally navigate to the process definition file through the **Current File Group** node at the top of the file groups list. When you do this, the path to the file is stored relative to the current file group, which means that it will automatically update when the file group is cloned. This is the recommended method of referencing the process definition file when the Scheduler job belongs to a file group. 

Item	Description
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 Capital Planning when the task is executed. This ensures that the tasks always use the most current SQL code for each task as defined by Axiom Capital Planning.

Web Scheduler

Using Axiom Capital Planning's Scheduler, you can perform certain Axiom Capital Planning tasks using server-side processing. These tasks can be processed on demand, or scheduled to be processed at a certain date and time.

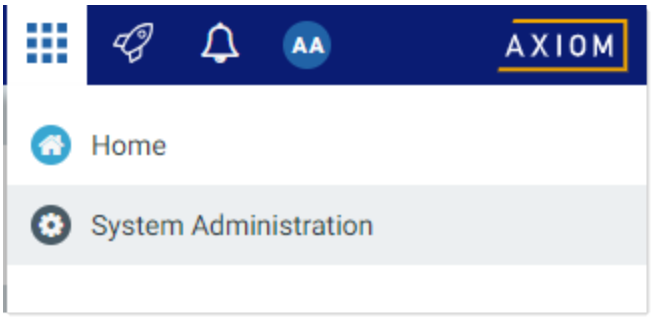
Most Scheduler setup activities—such as configuring general Scheduler settings, creating jobs and tasks, and scheduling jobs for future execution—can only be performed in the Desktop Client. For more information, see Scheduler Overview.

The Scheduler area of the Web Client can be used to monitor and manage the job schedule, review job results, and process existing jobs on demand. Only administrators and users with the **Scheduled Jobs User** permission can access Scheduler.

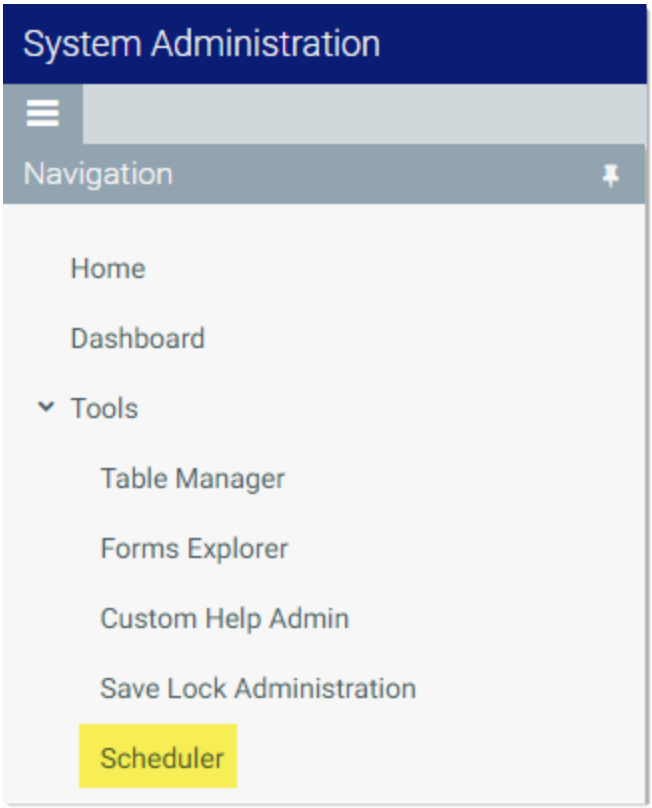
Although most Scheduler setup activities can only be performed in the Desktop Client, some job management can be performed in the Web Client. Using the "Web Scheduler", you can monitor and manage the job schedule, review job results, and process existing jobs on demand.

To access Scheduler in the Web Client:

1. In the Web Client, click the menu icon in the Global Navigation Bar. From the Area menu, select **System Administration**.



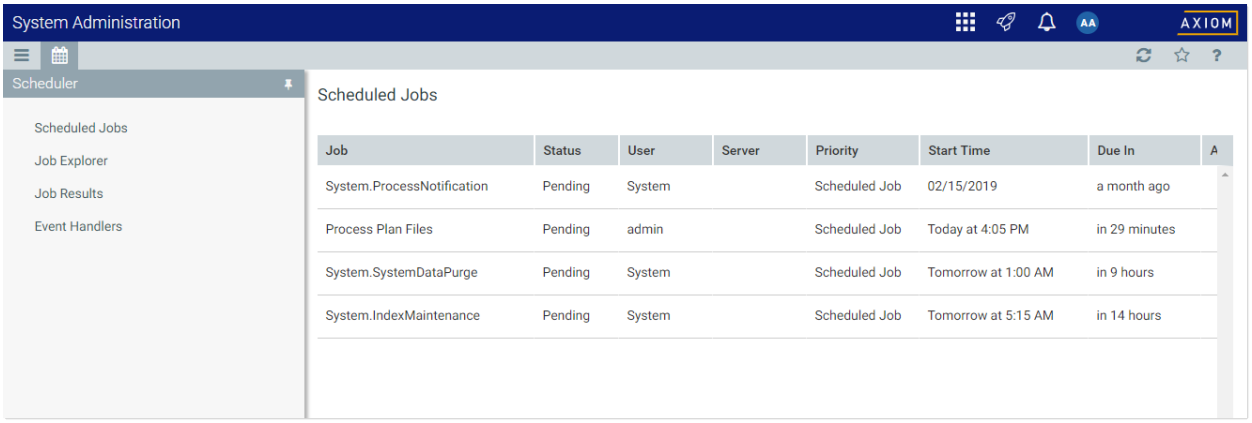
2. From the Navigation panel, select **Tools** > **Scheduler**.



Alternatively, you can go directly to the Scheduler page as follows:

Example Cloud URL	`https://ClientName.axiom.cloud/Jobs` Where *ClientName* is the name of your Axiom Cloud system.
Example On-Premise URL	`http://ServerName/Axiom/Jobs` Where *ServerName* is the name of the Axiom Application Server, and Axiom is the default name of the virtual directory.

When you access the Scheduler area, a Scheduler panel becomes available in the left side of the Task Bar. You can use this panel to change the current Scheduler view.



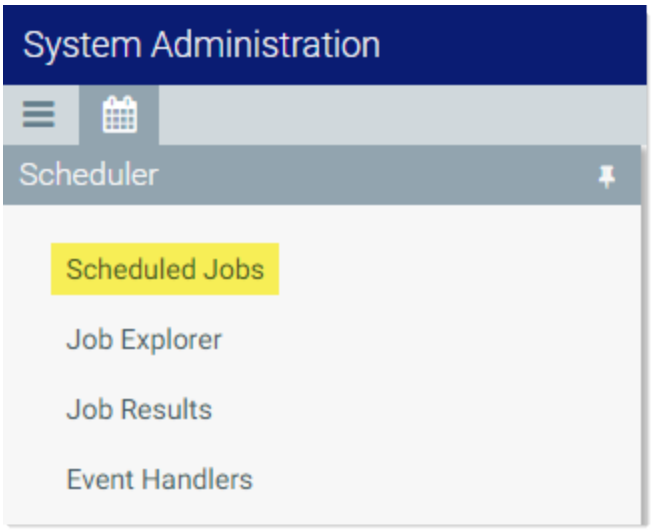
Example Scheduler area in Web Client

Managing the job schedule in the Web Client

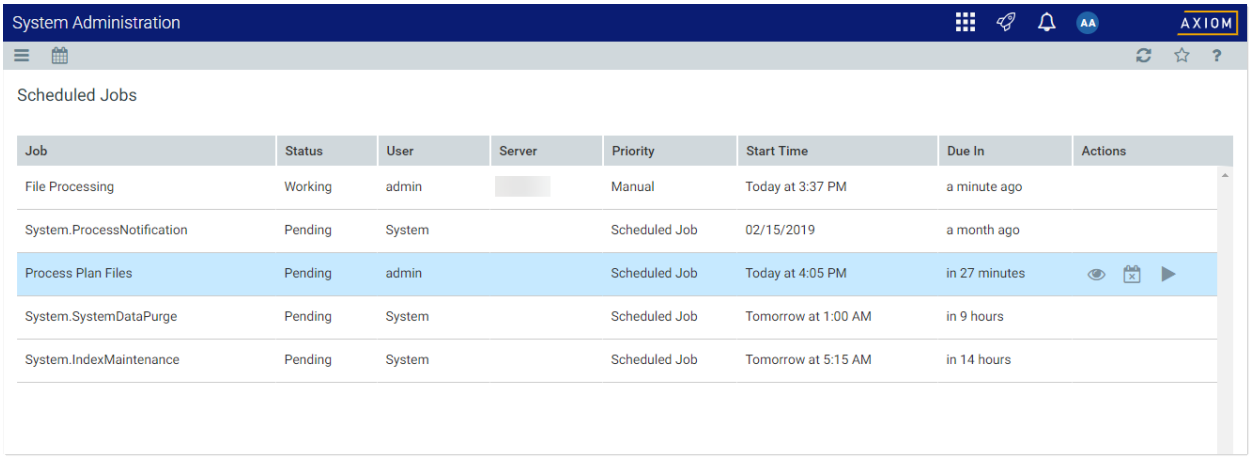
In the Scheduler area of the Web Client, you can view the status of all jobs that are currently on the schedule. If necessary, you can view the job details, remove the job from the schedule, or run the job now.

To view the current job schedule:

- On the Scheduler page, from the **Scheduler** panel, select **Scheduled Jobs**.



The **Scheduled Jobs** grid displays all jobs that are scheduled to be processed, or are currently in process. This includes scheduled jobs, jobs executed manually via **Run Now**, and jobs that were triggered for execution via an event handler.



Example Scheduled Jobs grid

You can use the **Actions** column in the right side of the grid to perform any of the following actions on a job:

View the job properties and results.

Remove the job from the schedule.

IMPORTANT: If the job is on the schedule due to a scheduling rule, this action disables the scheduling rule and removes all future executions from the schedule as well. If you want future scheduled instances of the job to proceed, you must edit the job to re-enable the scheduling rule.

Run the job now.

This action places the job on the schedule for immediate execution (if another manual instance of the job is not already pending). The future scheduled instance of the job remains on the schedule.

To refresh the list, click the Refresh icon in the Task Bar.

For each job on the schedule, you can view the following information:

Item	Description
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).
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.

Item	Description
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.

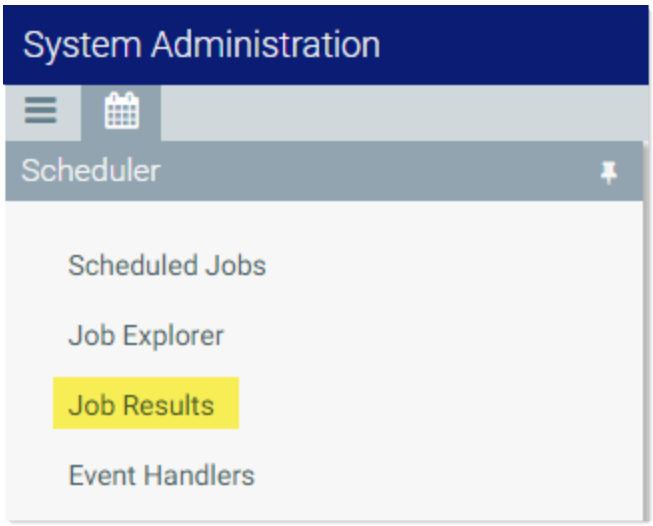
NOTE: If a job has a scheduling rule with a recurring schedule, only the first scheduled execution appears in the **Scheduled Jobs** list. For example, if you have a job that is scheduled to run once a month for a year, you will not see all twelve scheduled executions in the list—you will only see the first scheduled execution. Once that instance has been run, the scheduling rule is re-evaluated and the next scheduled execution appears in the list.

Viewing job results in the Web Client

In the Scheduler area of the Web Client, you can view the results of jobs that have been executed. For each job, you can see when it was run, and whether it completed successfully or had errors.

To view job results:

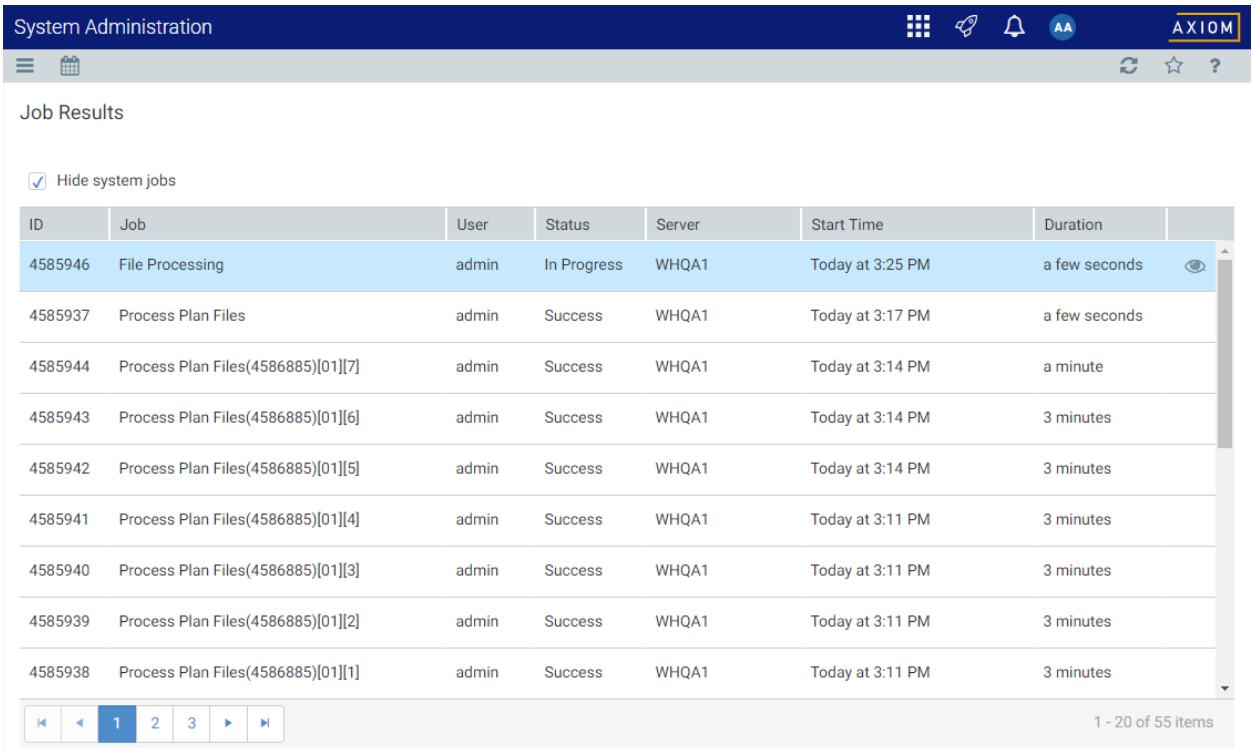
- On the Scheduler page, from the **Scheduler** panel, select **Job Results**.



The **Job Results** grid shows a list of jobs that have been recently executed. The grid shows the following summary information:

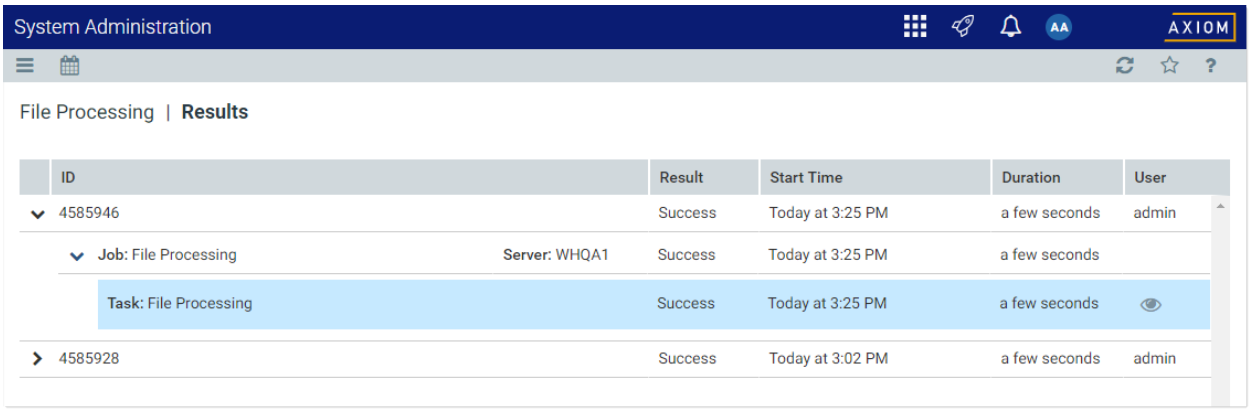
- The name of the job, and the ID of the particular execution of that job
- The user identity the job was run as
- The status of the job, such as Success or Failure
- The Scheduler server that ran the job
- The start time and duration of the job

To refresh the list, click the Refresh icon in the Task Bar.



Example Job Results grid

To view detailed results for a particular job execution, hover your cursor over the job and then click the View icon in the far right column. This opens the job properties to the **Job Results** section, with the corresponding execution ID expanded. You can further expand the job results to see the specific tasks that were executed.



Example Job Results detail showing tasks executed

To view the detailed task results, hover your cursor over the task and then click the View icon in the far right column. This opens a dialog to display the results for that task. For example, for a file processing task, the detailed results would contain information such as the processing type and the number of passes, and the output that was created at the end of the process.

Once you are viewing the Job Results section of the job properties, you can review all of the available job history as needed. Expand any execution ID to view the details for that particular execution.

TIP: You can also view job results by opening a job and viewing the job properties, which include the job results. In some cases it may be easier to open the job and review all of its results rather than trying to find the job within the overall job results. For more information, see Viewing jobs and event handlers in the Web Client.

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.

System job results

By default, system job results are hidden in the **Job Results** grid. System jobs such as the SMTP message delivery job may run frequently, and can easily fill up the result history, 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:

- Clear the **Hide system jobs** check box above the **Job Results** grid. The list immediately updates to include system jobs.
- Open the system job directly, and view its job results within the job. For example, you can go to the **Scheduled Jobs** page and double-click the **System.SystemDataPurge** job to view all results for that job.

Job result availability

Job results are purged periodically to help optimize system performance. The availability of job results in your system depends on the configuration of the system job **System.PurgeSystemData**. This system job runs periodically to purge old data in your system, including old job results. By default, when this job is run, it purges job history older than 15 days.

The configuration of this system job can only be viewed and edited in the Desktop Client, and only by administrators. For more information, see Configuring Scheduler system jobs.

Additionally, individual jobs can be configured to purge old results when the job is run. In the Web Client, you can view the job properties to see if this option is enabled, but you cannot edit the job properties. The option is displayed in the **General** section of the job, under **Job Results Cleanup**. For more information on viewing job properties, see Viewing jobs and event handlers in the Web Client.

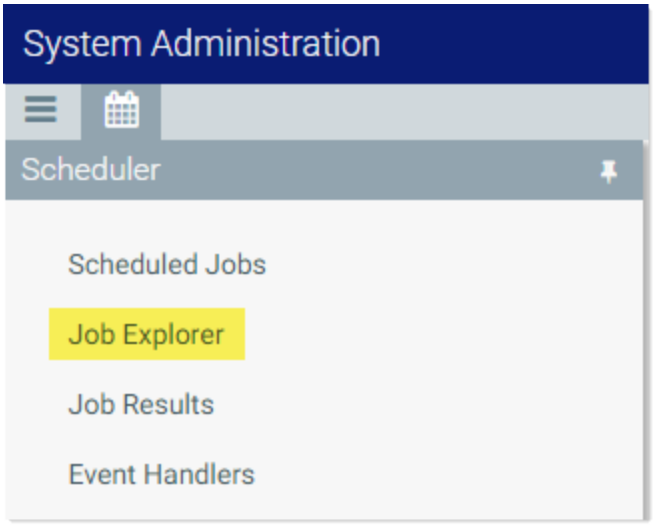
Running a job manually in the Web Client

In the Scheduler area of the Web Client, you can run a job manually as needed.

When using this approach, the job is run now. It is not possible to run a job manually and specify a future execution time. If you want to schedule a job for future execution, you must define a scheduling rule on the job, which can only be done in the Desktop Client. For more information, see Defining scheduling rules for a job.

To run a Scheduler job manually:

1. On the Scheduler page, from the **Scheduler** panel, select **Job Explorer**.



2. In the Job Explorer page, locate the job that you want to run. This page lists all jobs in the Scheduler Jobs Library that you have permission to access.
3. Hover your cursor over the job, then click the **Run Once** icon ▶ in the far right column.

The job is added to the schedule with a start time of now, and is eligible for immediate execution (pending available Scheduler threads and any higher-priority jobs already in the queue). You are automatically taken to the **Scheduled Jobs** area of Scheduler, so that you can see the job on the schedule.

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.

Viewing jobs and event handlers in the Web Client

In the Scheduler area of the Web Client, you can view Scheduler jobs and event handlers.

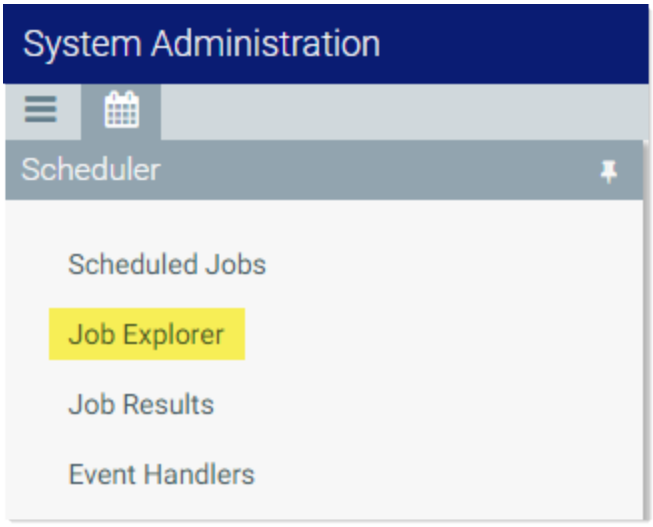
▶ Viewing jobs

You can view any job in the Scheduler Jobs Library that you have permission to access.

Scheduler jobs are read-only in the Web Client. You can view the job properties to better understand the purpose of a particular job and the tasks that it performs. The Web Client does not support creating new jobs, editing existing jobs, or deleting jobs. If you need to perform any of those actions, you must use the Desktop Client. For more information, see Scheduler Overview.

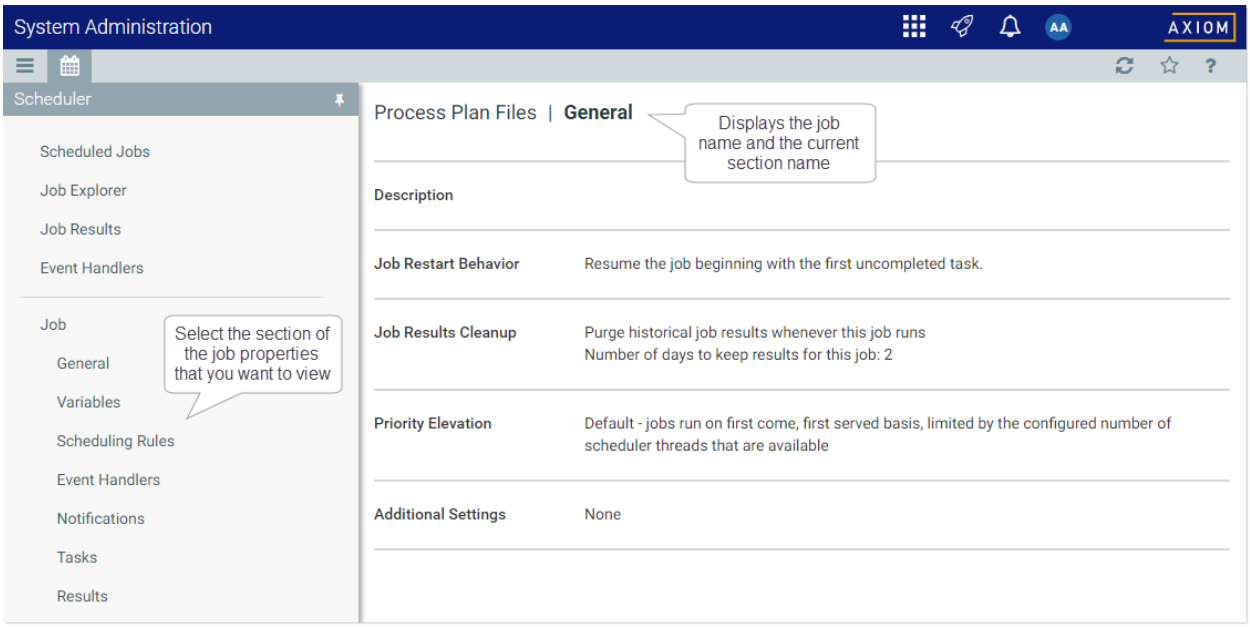
To view a Scheduler job:

1. On the Scheduler page, from the **Scheduler** panel, select **Job Explorer**.



2. In the Job Explorer page, locate the job that you want to view. This page lists all jobs in the Scheduler Jobs Library that you have permission to access.
3. Hover your cursor over the job, then click the **View** icon in the far right column.

The job opens, and the Scheduler panel updates to show the viewable sections of the job. You can switch between sections by selecting section names in the Scheduler panel. By default, the **General** section is shown.



Example job properties

All job properties are defined in the Desktop Client. The following is a brief overview of the job properties shown in the Web Client.

Section	Description	More Information
General	General job properties that impact the job's processing priority and processing behavior.	Job properties
Variables	Variables used by the job. • If the job has defined variables, those variables display in the **Job Variables** section at the top of the page. Most likely, the tasks in the job are configured to use these variables. This typically means that the job is designed to be run using an event handler, and the necessary variable values will be passed to the job when it is triggered. • The **System Variables** section displays the job's values for various system-defined variables. This section can help you understand who the owner of the job is, and how other system variables will resolve for the job.	Using job variables

Section	Description	More Information
Scheduling Rules	Scheduling rules to schedule jobs for future execution. If the job has an active scheduling rule, the job will be executed according to the rule (one time or recurring, depending on how the rule is configured). • **Day of Week**, **Hours**, and **Minutes** specify when the job will be executed within the start / end range of the rule. An asterisk in any of these fields means "all"—for example, if Hours is set to * then the job is run every hour. • **Starting On** and **Ending On** determine the start / end range of the rule. If they are blank, then the rule has no start or end date.	Defining scheduling rules for a job
Event Handlers	If the job is designed to be run using an event handler, the event handler name is listed here. The **Execute As** property determines whether the job is run as the requester or the job owner when it is triggered for execution.	Viewing event handlers
Notifications	Notification settings for the job. The job can be configured to send email notifications when the job completes, or only when the job has errors. Variables can be used to determine the notification recipients.	Setting up notifications for jobs
Tasks	Tasks to be executed by the job, listed by name and task type. No other task properties are available in the Web Client. If you want to see more information about the task, you must view the job in the Desktop Client.	Scheduler tasksTask Reference
Results	Detailed results of the previous job executions. Results are organized by execution ID and displayed in execution order (the most recent listed first).	Viewing job results in the Web Client

Viewing event handlers

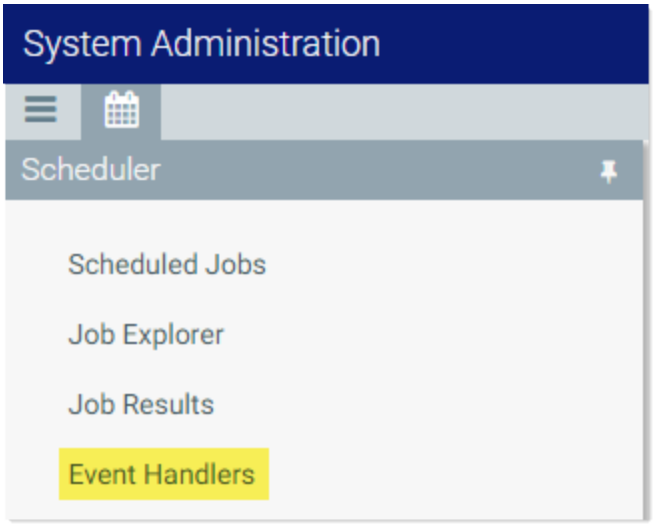
You can view the event handlers that are defined in the system. Event handlers are used to trigger Scheduler jobs based on an event.

For example, an Axiom form can have a Button component that is configured with the RunEvent command. When a user clicks the button, the specified event name is passed to Scheduler, and any jobs associated with that event are triggered to run. Variable values can also be passed from the form to the Scheduler job as part of this process.

Event handlers are read-only in the Web Client. If you need to create, edit, or delete an event handler, this can only be done in the Desktop Client. For more information, see Managing event handlers.

To view Scheduler event handlers:

- On the Scheduler page, from the **Scheduler** panel, select **Event Handlers**.



The **Event Handlers** grid lists all of the event handlers as follows:

- **Event Name**: Name of the event handler. This is the name used in features such as RunEvent to trigger execution of a Scheduler job.
- **Job**: Name of the job where the event name is used. When the event is raised by a feature such as RunEvent, this job will be executed.
- **User**: The user identity that will be used to execute jobs triggered by the event handler. If the event handler is configured to run as the requester, then **Requester** is listed here. If the event handler is configured to run as the owner, then the owner name is listed here (either a specific user name, or **System**).

Managing security

Security

All users of Axiom Capital Planning 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

About security

Security Overview

Using Axiom Capital Planning Security, you can create users and roles, and assign access rights. This section explains how security is applied in Axiom Capital Planning.

Users can be created manually within Axiom Capital Planning, 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 Capital Planning 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 Capital Planning 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 Capital Planning. 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 Capital Planning.

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 Capital Planning. For more information, see Axiom Capital Planning 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 subsystemsSubsystems.

The Security Management dialog

All security settings for Axiom Capital Planning are controlled in the **Security Management** dialog. To access this dialog:

- On the **Axiom** tab, in the **Administration** group, click **Manage > Security > Security Manager**.

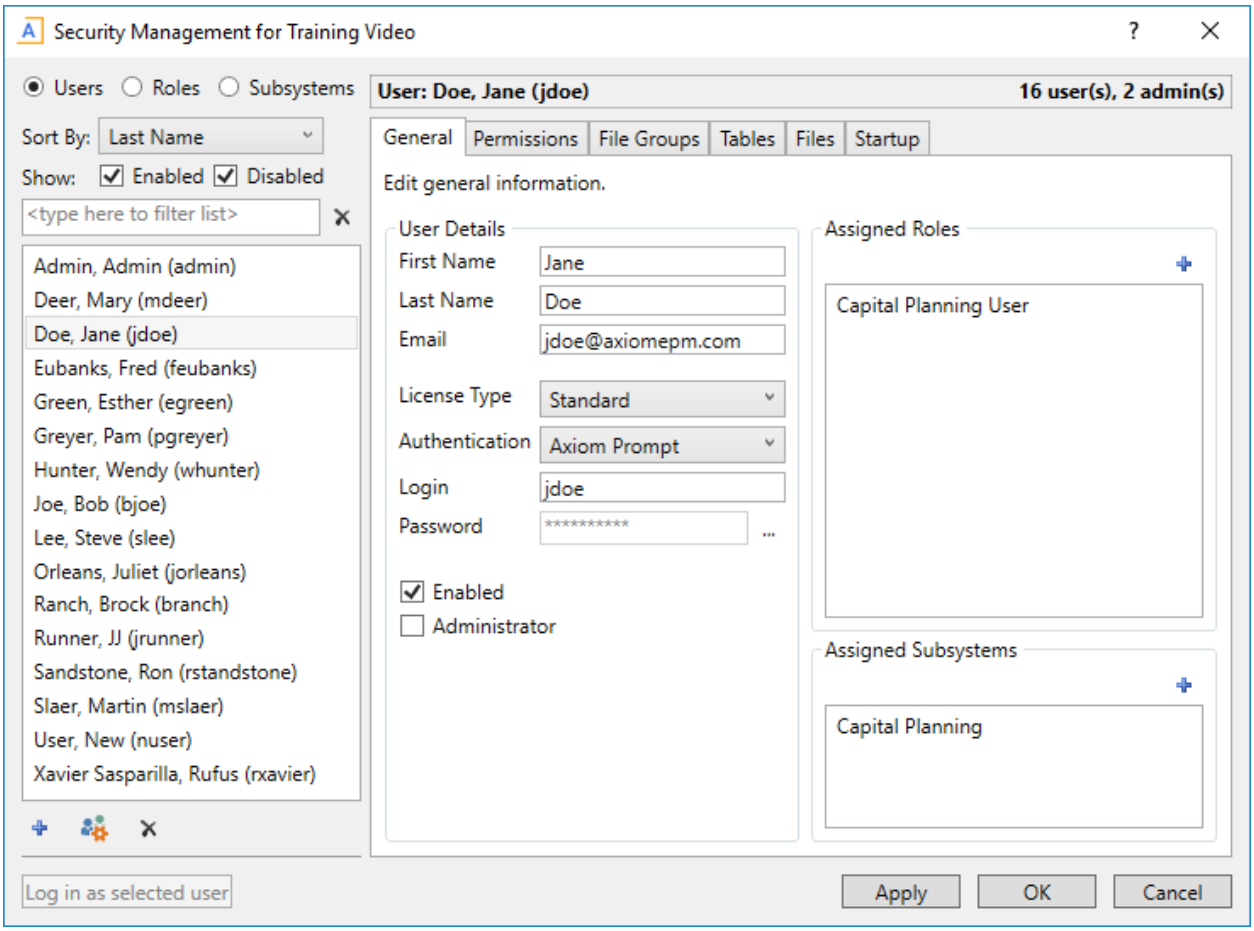
  NOTE: In systems with installed products, this feature may be located on the **Admin** tab. In the **System Management** group, click **Security > Security Manager**.

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

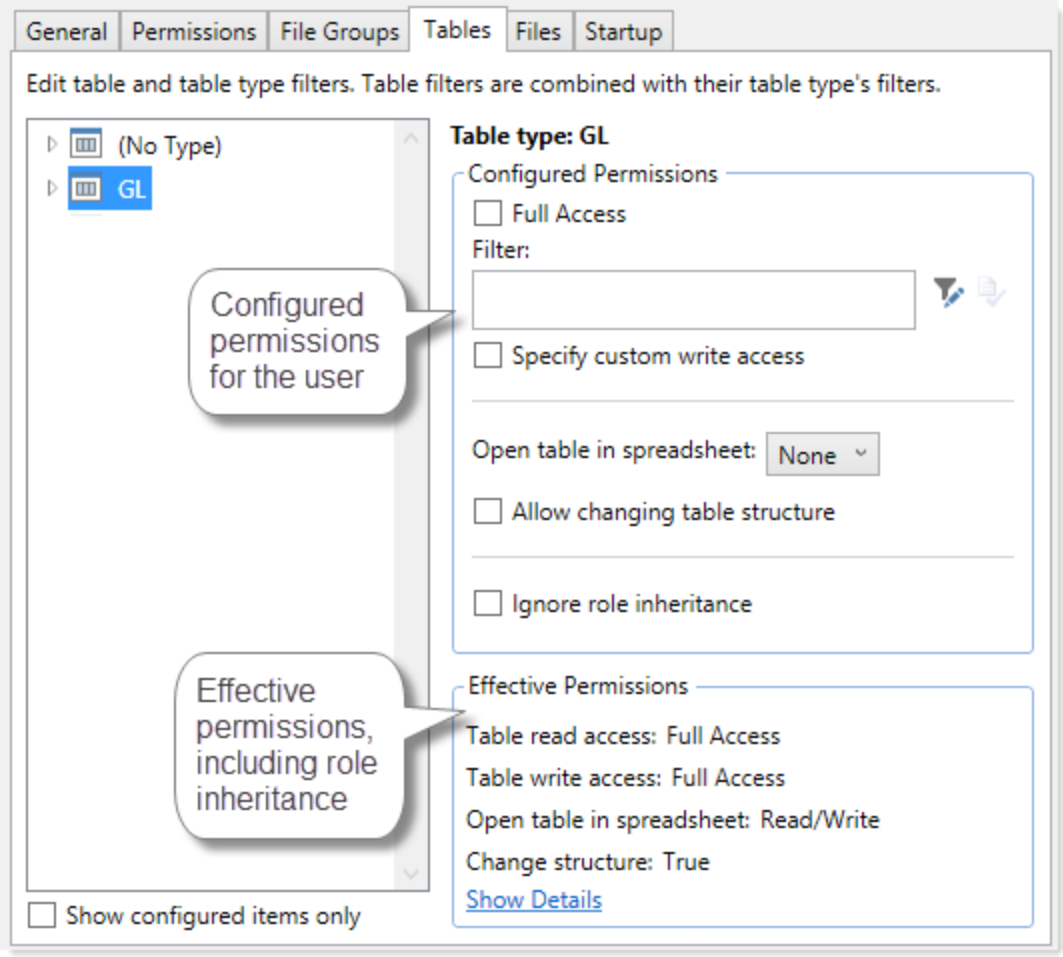
Changes made in the Security Management dialog are reflected in "real-time" within the dialog. If a required setting is missing, a validation message appears in the bottom left of the dialog. You can click on the message to be taken to the applicable setting. This issue must be resolved before you can 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 rolesManaging Users and Roles

All users of Axiom Capital Planning 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.

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 Capital Planning security entirely. Alternatively, you can disable a user if you want to keep the user record, but prevent the user from accessing Axiom Capital Planning. 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.

NOTE: Alternatively, you can use the Security Manager page in the Web Client to assign users to roles. For more information, see Web Security Manager.

To assign roles to a user from the user record:

1. In the Security Management dialog, select the user.
2. On the **General** tab, in the **Assigned Roles** section, click the **Add** button ✚.
3. Use the **Assign Roles** dialog to assign one or more roles to the user:

- Use the **Add** and **Remove** buttons to move role names between **Available Roles** and **Assigned Roles**. All roles listed in the Assigned Roles box will be assigned to the user.
- You can also double-click role names to move them between the boxes.

4. When you have finished assigning roles, click **OK** to close the Assign Roles dialog, and then **Apply** or **OK** to save the changes to the user record.

To assign users to a role from the role record:

1. In the Security Management dialog, select the role.
2. On the **General** tab, in the **Assigned Users** section, click the **Add** button ✚.
3. Use the **Assign Users** dialog to assign one or more users to the role:
   - Use the **Add** and **Remove** buttons to move user names between **Available Users** and **Assigned Users**. All users listed in the Assigned Users box will be assigned to the role.
   - You can also double-click user names to move them between the boxes.
4. When you have finished assigning users, click **OK** to close the Assign Users dialog, and then **Apply** or **OK** to save the changes to the role record.

How role settings are applied to users

Axiom Capital Planning 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 subsystemsSubsystems.

▶ Permissions

The **Permissions** tab of security defines access rights for specific Axiom Capital Planning 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.

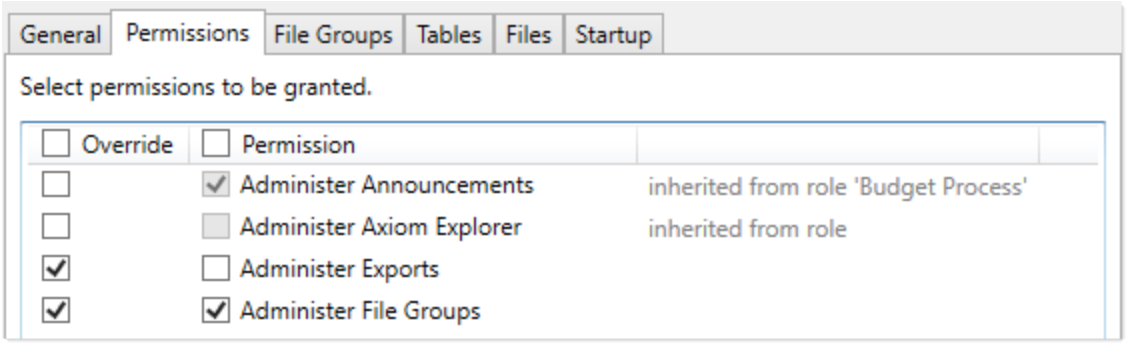
If a permission is set to inherited, then the user is granted the most permissive set of rights among any roles the user is assigned to. For example, imagine the following settings for the **Browse Audit History** permission:

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 Capital Planning, such as the home page, task panes, and ribbon tabs. Users inherit startup files from roles in addition to their own individually assigned startup files.

Each user can have only one home page. If a user has an individually assigned home page, that file will be used and any role settings are ignored. Otherwise, the user will inherit the home page from a role. If no home page is assigned, the default home page is used.

For more information about startup file inheritance, see Assigning startup files (Startup tab), and review the section for the applicable type of startup file.

File groups

The **File Groups** tab of security defines access rights for plan files in file groups. For file groups, you can configure role inheritance to be handled in a variety of ways. You can specify that role settings are combined with user settings, or that role settings are inherited independently from user settings, or that role settings are ignored entirely and not inherited.

For more information and examples of how role file group permissions apply to users, see Understanding role inheritance options for file group permissions.

All other areas

For all other areas of Security, the user inherits the most permissive set of rights among their own personal security settings and any roles that they are assigned to. This applies to the **Tables** tab and the **Files** tab.

For example, imagine the following access level settings for a report folder:

User	Read-Only
Role1	None
Role2	Read/Write

If the user is assigned to both Role1 and Role2, then the user has Read/Write access to that report folder, because that is the most permissive set of rights available to the user.

Each tab has an **Effective Permissions** section where you can view the rights that the user will be granted after taking into account role inheritance, administrator status, and folder inheritance (where applicable).

NOTES:

- For table access, if both the user and a role have filtered access, the filters are concatenated using OR. So if a user has a table filter of `DEPT.Region='North'` and a role the user is assigned to has a table filter of `DEPT.Region='South'`, then that user's full filter is:

  ```
  DEPT.Region='North' OR DEPT.Region='South'
  ```

  That user has access to data for either the North or South regions.

- For table access, you can choose to ignore role inheritance. If this option is enabled for a user, then any applicable role access settings for the table are not inherited (including the **Full Access** setting) and the only filter applied is the user's filter.

Granting administrator-level permissions

In Security, users can be designated as a system administrator, by enabling the **Administrator** option on the **General** tab.

System administrators have full rights to all features and all data for the system. Although you can configure security settings for administrators, such as to define file access or table filters, these settings will be overridden as long as the Administrator check box is enabled for the user. The Effective Permissions will reflect the user's full access.

Administrator-only features

Administrators have access to all features and files in the current Axiom Capital Planning 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 Capital Planning system. The purpose of this role is to define security settings that apply to every user in the system. All users automatically belong to the Everyone role.

The Everyone role has the following default settings:

- **Document reference tables.** When a new document reference table is created, the Everyone role is automatically granted full read access to that table. This permission grants all users the right to query the data in document reference tables. In most cases, this is the desired level of rights. If you have some particular document reference tables that you do not want every user to have access to, then you can do one of the following:
  - Modify the Everyone role to remove access to those tables, and instead grant access directly to specific users and roles.

    OR

  - Leave the Everyone role at the default of full access, and instead modify certain users to ignore role inheritance for that table.
- **On-demand file groups.** When a new on-demand file group is created, the Everyone role is automatically granted the **Create New Records** permission for that file group. Effectively, this means that any user who also has access to plan files in the file group will also have permission to create new plan files. If you do not want this behavior—meaning that you want some users to be able to access plan files in the file group without being able to create new plan files—then you can remove the permission from the Everyone role and instead grant it to individual users and roles as needed.

- **Startup task panes.** By default, the Everyone role is configured to open the Explorer and Process task panes on startup, as non-closeable task panes. You can modify the Everyone role to remove any of these task panes, and instead grant access directly to specific users and roles (or do not grant access to anybody, if you do not want to use these task panes at all). Only the Explorer task pane will open automatically for all users; the Process task pane only displays when it is relevant to the user.

  NOTE: In systems with installed products, your Everyone role may have been modified to not open these task panes on startup, and instead open different task panes.

- **Startup ribbon tabs**. By default, the Everyone role is configured to open the Axiom and Axiom Designer ribbon tabs on startup.
  - The Axiom ribbon tab shows for all users and provides the default menu for the Desktop Client. You should not remove this tab from the Everyone role unless you have created one or more custom ribbon tabs that you plan to assign to the necessary users and/or roles instead.
  - The Axiom Designer ribbon tab is limited to administrators only. You can modify the configuration of the startup file so that it displays to other users, or you can remove it from the Everyone role and instead grant access directly to specific users and roles (or do not grant access to anybody, if you do not want to use the ribbon tab at all).

  NOTE: In systems with installed products, your Everyone role may have been modified to not open these task panes on startup, and instead open different task panes.

If desired, you can modify the Everyone role to grant additional rights to every user. Any right granted at the Everyone level will be inherited by every user, except for rights that have been overridden at the user level. Subsystem restrictions, if applicable to the user, still apply.

Note the following about the Everyone role:

- The Everyone role cannot be renamed or deleted. The security settings for the role can be modified in either the **Security Management** dialog or by using **Open Security in Spreadsheet**.
- Users cannot be explicitly assigned to the role, nor can they be removed from the role. All users permanently belong to this role.
- The Everyone role is not recognized by GetSecurityInfo("InRole") or when querying security tables via Axiom query. It is assumed that all users belong to the role; therefore it is not listed as a role assignment.

Configuring security settingsConfiguring Security Settings

Security settings for users, roles, and subsystems are organized by tabs in the Security Management dialog. The following tabs are available:

Tab	Description
General	Define general settings such as name and email, as well as role assignments and system access.
Permissions	Set permissions for individual features.
File Groups	Set access rights for file groups.
Tables	Set access rights for tables.
Files	Set access rights for files in the Axiom Capital Planning file system. This includes reports, imports, task panes, and Scheduler jobs.
Startup	Specify certain files to open automatically on system startup.

Defining user properties (General tab)

The following settings are available for users on the **General** tab.

User Details

Each user has the following general properties:

Item	Description
First Name	The user's first and last name.
Last Name	This information can be referenced by using the function GetUserInfo.
Email	The user's email address. This address is used to send user notifications, such as for process management. This information can be referenced by using the function GetUserInfo.
License Type	The user's license type. By default, users are **Standard** users unless a different user type is selected. Standard users have the potential to access any feature or file in Axiom Capital Planning, limited by their security permissions. In addition to standard users, the following user types are available:

Item	Description
	• **Axiom Support** users are intended to allow Axiom Capital Planning support representatives to log into your system as part of requested support activities. Any user accounts assigned to this license type must acknowledge that they are Axiom representatives when they log into the system. Once a user has been assigned an Axiom Support license, that license can only be removed by another Axiom Support user. Support users must use either Axiom Prompt authentication or Internal AD authentication (Axiom Cloud systems only). **NOTE:** The Axiom Support license type is primarily intended for use in on-premise systems. For Axiom Cloud systems, active Axiom support representatives can access your system to troubleshoot reported issues without requiring a support user to be created in the system. • **Consultant** users are intended to allow Axiom Capital Planning consultants to log into your system as part of contracted consulting engagements. Any user accounts assigned to this license type must acknowledge that they are Axiom representatives when they log into the system. Only Axiom support users can create a consultant user. Consultant users must use **Internal AD** authentication for Axiom Cloud systems, and **Axiom Prompt** authentication for on-premise systems. • **Viewer** users allow for view-only access to Axiom Capital Planning. 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 Capital Planning license.
Authentication	The method used to authenticate the user for access to Axiom Capital Planning. 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.

Item	Description
	• **Axiom Prompt**: Select this option if you want the user to be authenticated by using their Axiom Capital Planning 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. • **Internal AD**: This option can only be used with **Consultant** and **Support** license types, and only for Axiom Cloud systems. It allows the consultant or support user to be authenticated using Syntellis' internal Active Directory. The login name must match the email address for the user within Active Directory. For example, if the user's email address is jdoe@syntellis.com, then the user's Axiom login name must be jdoe@syntellis.com. In order to log in using Internal AD authentication, the user must go to the following page for the system: `https://ClientName.axiom.cloud/internal`. An additional option of **Unspecified** 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 Capital Planning 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 Capital Planning 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 Capital Planning 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 Capital Planning. If this check box is *not* selected, the user cannot log into any Axiom Capital Planning 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 subsystemsSubsystems.

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)

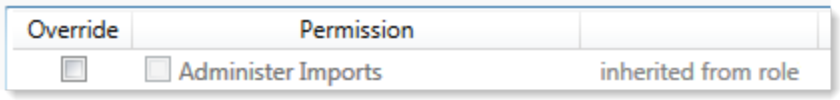
On the **Permissions** tab of the **Security Management** dialog, you can specify which features a user or role has access to. The **Permissions** tab works slightly differently depending on whether you are defining rights for a user or a role.

NOTE: If you are defining permissions for a subsystem, see Defining maximum permissions for subsystems.

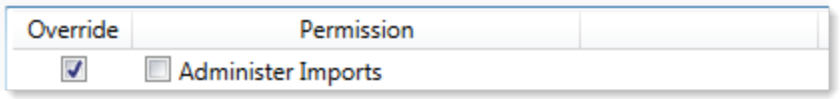
Setting permissions for users

For users, each permission has three available settings:

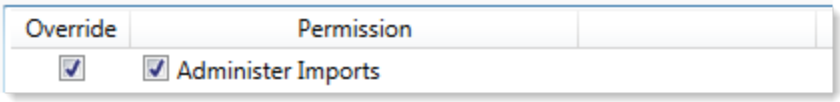
- **Inherited**: The permission is not set for the user. The permission is grayed out and the text "inherited from role" appears to the right of the permission name. If the user is assigned to a role, this permission can be inherited from the role.



- **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.



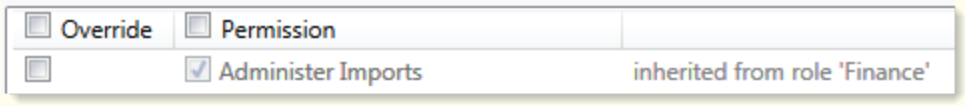
- **Allowed**: If the **Override** check box and the **Permission** check box are selected, this means that the user explicitly has access to the feature, regardless of any role settings.



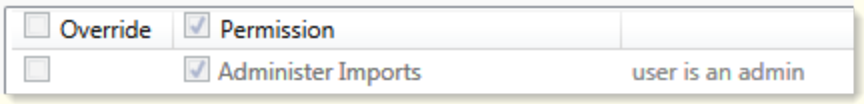
By default, all user permissions are left unset and are inherited from any role assignments. If you want to override role inheritance and explicitly set a permission for the user, then you must select the **Override** check box and then leave the permission unchecked (to deny the permission) or checked (to allow the permission).

NOTES:

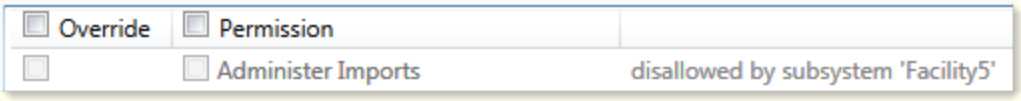
- When a permission is inherited from a role, it displays the effective permission for the user. For example, if a user is assigned to a role that has the **Administer Imports** permission, and that permission is eligible for inheritance, then the check box for that permission displays as grayed out 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 apply product updates to the Axiom Capital Planning installation.
Create Web Reports	The user can create web reports and fixed row structures. The user must also have read/write access to at least one folder in the Reports Library in order to save any newly created web reports. This permission only controls creation of new web reports and fixed row structures. Users with the appropriate read/write access can still edit and delete existing web reports and fixed row structures. **NOTE:** Currently, this is the only report type with an explicit permission to control creation of new reports. For all other report types, any user can create a report as long as they have access to a location to save the report.

Permission	Description
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.
Excel Client Access	The user can launch and use the Axiom Capital Planning Excel Client. If the user does not have this permission, the Excel Client icon does not display on the Quick Launch menu or the default Home page.
PowerPoint Add-In Access	The user can launch and use the PowerPoint Add-In for Axiom Capital Planning. If the user does not have this permission, the PowerPoint Add-In icon does not display on the Quick Launch menu.
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.
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.

Permission	Description
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`.
Windows Client Access	The user can launch and use the Axiom Capital Planning Windows Client. If the user does not have this permission, the Windows Client icon does not display on the Quick Launch menu or the default Home page.
Word Add-In Access	The user can launch and use the Word Add-In for Axiom Capital Planning. If the user does not have this permission, the Word Add-In icon does not display on the Quick Launch menu.

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:

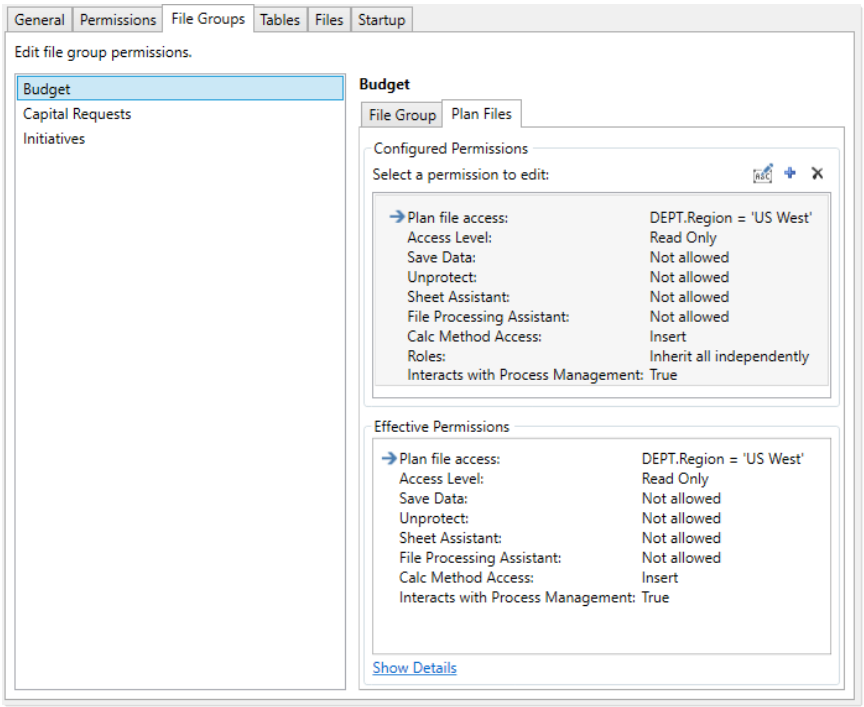
- The settings on this tab do not apply to administrators. Administrators have access to all plan files and all file group features.
- If you are defining permissions for a subsystem, see Defining maximum permissions for subsystems.

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.
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.

Item	Description
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 GL2021:

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 GL2021:

If the table type GL is set to...	And the table GL2021 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')

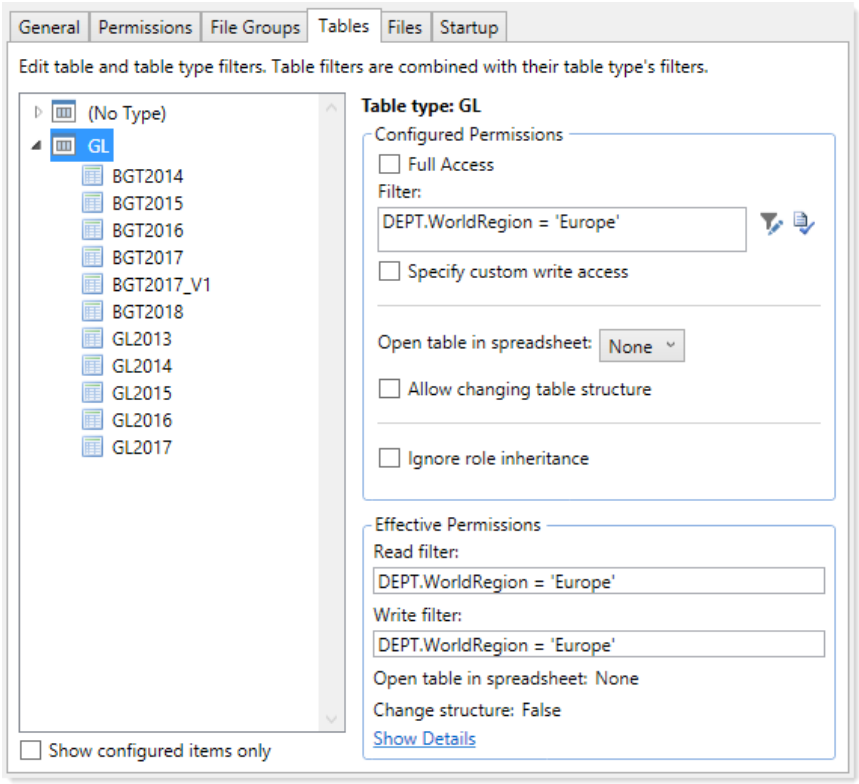
Tables that do not belong to a table type only have their individual table access rights.

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 GL2021 data table, the filter wizard automatically uses `ACCT.ACCT` in the filter (instead of `GL2021.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 GL2021 data table, the filter wizard automatically uses `ACCT.ACCT` in the filter (instead of `GL2021.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 Capital Planning file system. The following areas can be controlled:

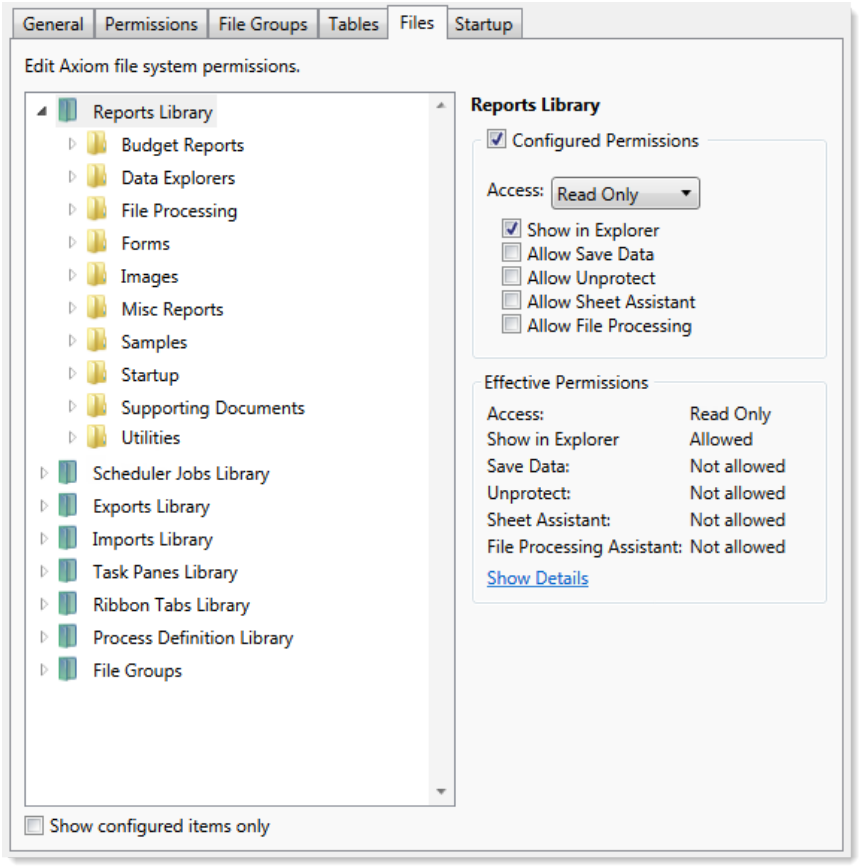
- The Reports Library
- The Data Diagrams Library
- The Filter Library
- The Imports Library and the Exports Library
- The Process Definitions Library
- The Scheduler Jobs Library
- The Task Panes Library
- The Ribbon Tabs Library
- Certain supporting files for file groups: Templates, Drivers, Utilities, 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.

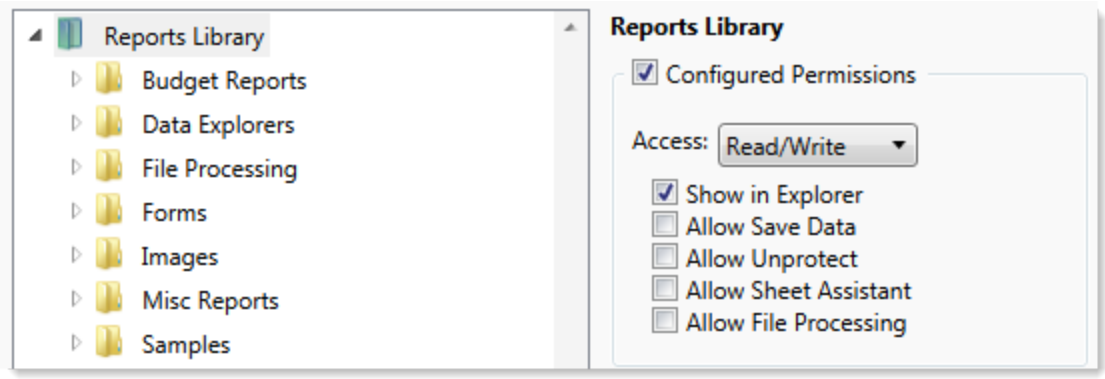
Option	Description
Show in Explorer	Select this check box if you want the file to display in the Explorer task pane and other "Explorer views" of the file library (such as Axiom Explorer, libraries displayed on the ribbon menu, and libraries displayed when saving files). This check box becomes selected 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.

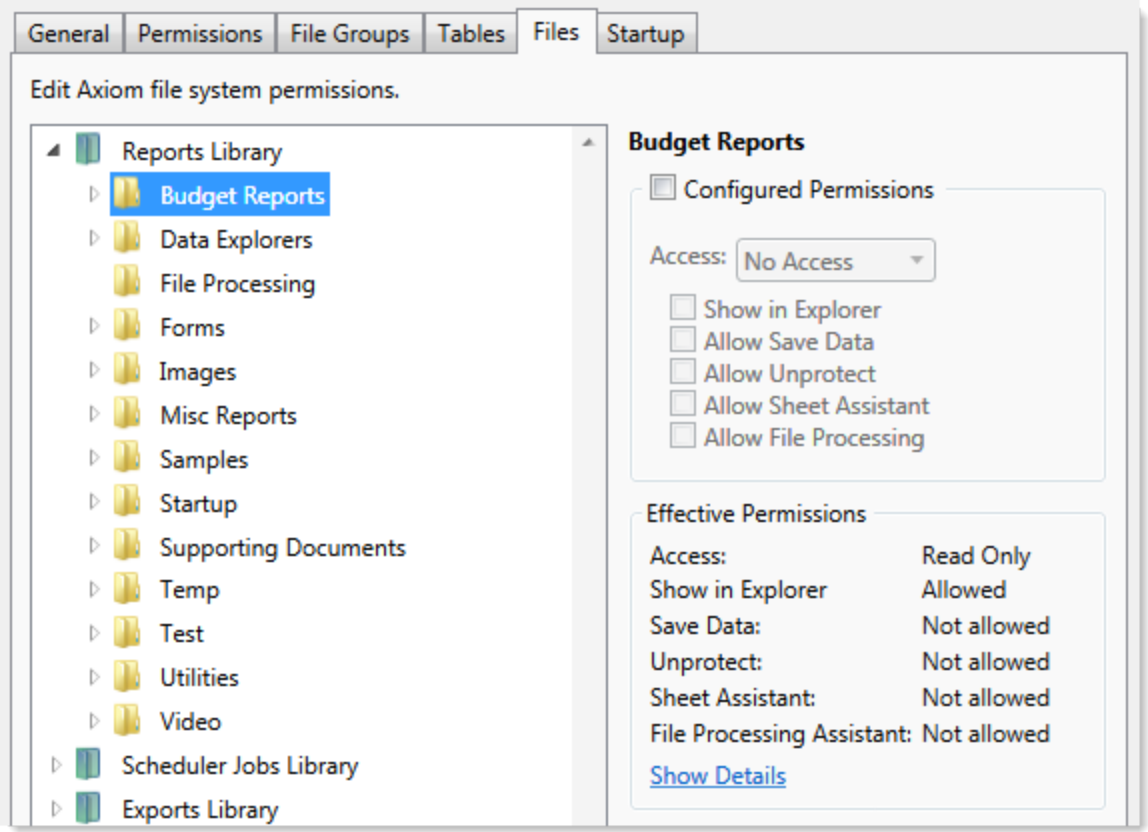
File permission examples

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:

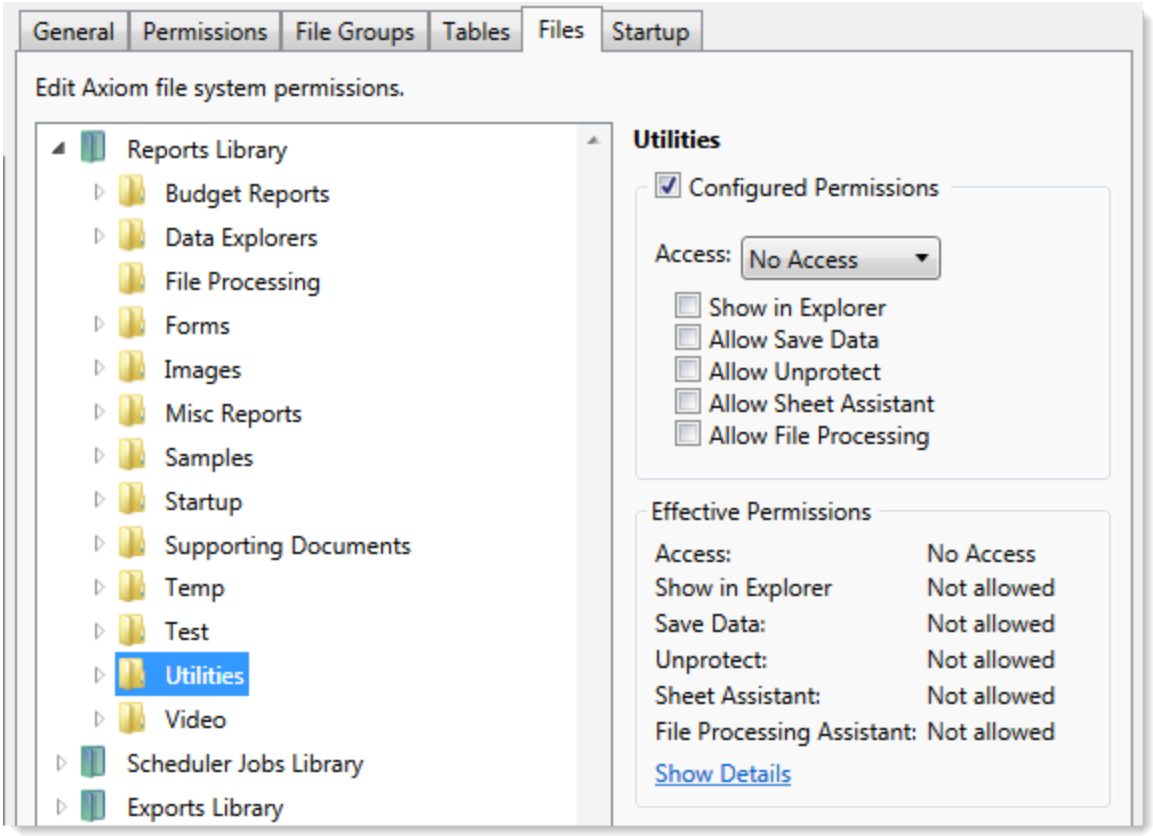


Sub-folders and files inherit the rights defined for the parent folder, unless permissions are explicitly set for the sub-folder or file. When you select a sub-folder or file in the folder tree, you can tell if it is inheriting permissions by whether the **Configured permission** check box is selected. 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.



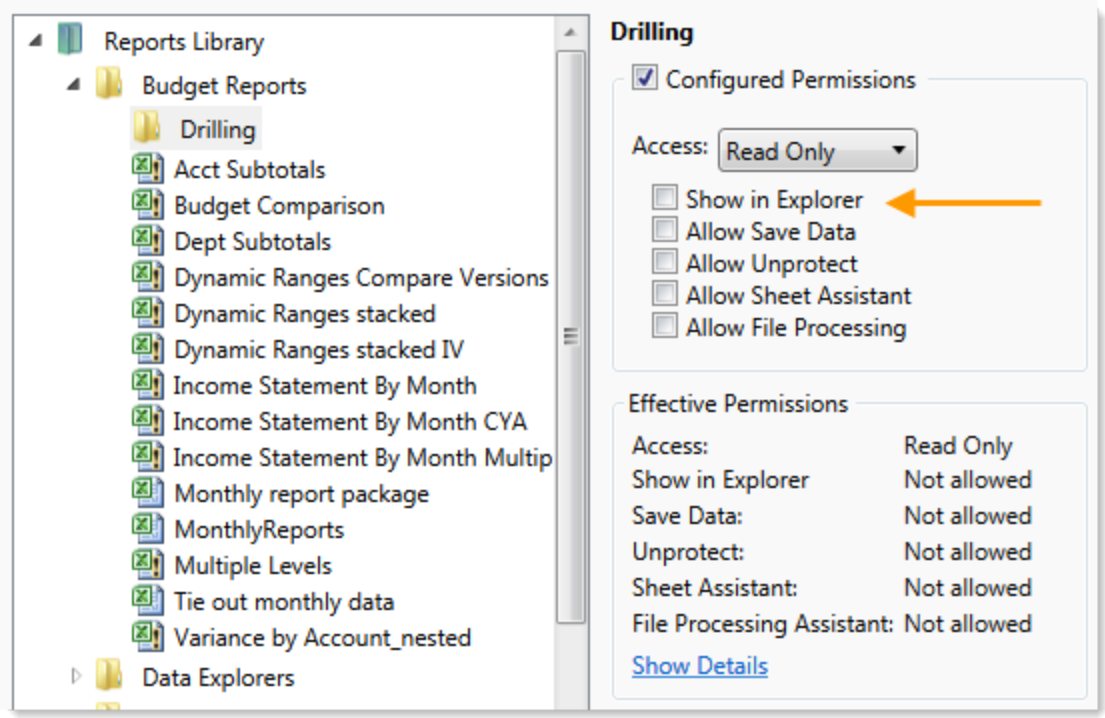
NOTE: The effective permissions also take into account role inheritance and administrator rights (if applicable). Therefore, the sub-folder or file might show a different level of permissions than its parent folder, if it is inheriting from a role.

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)

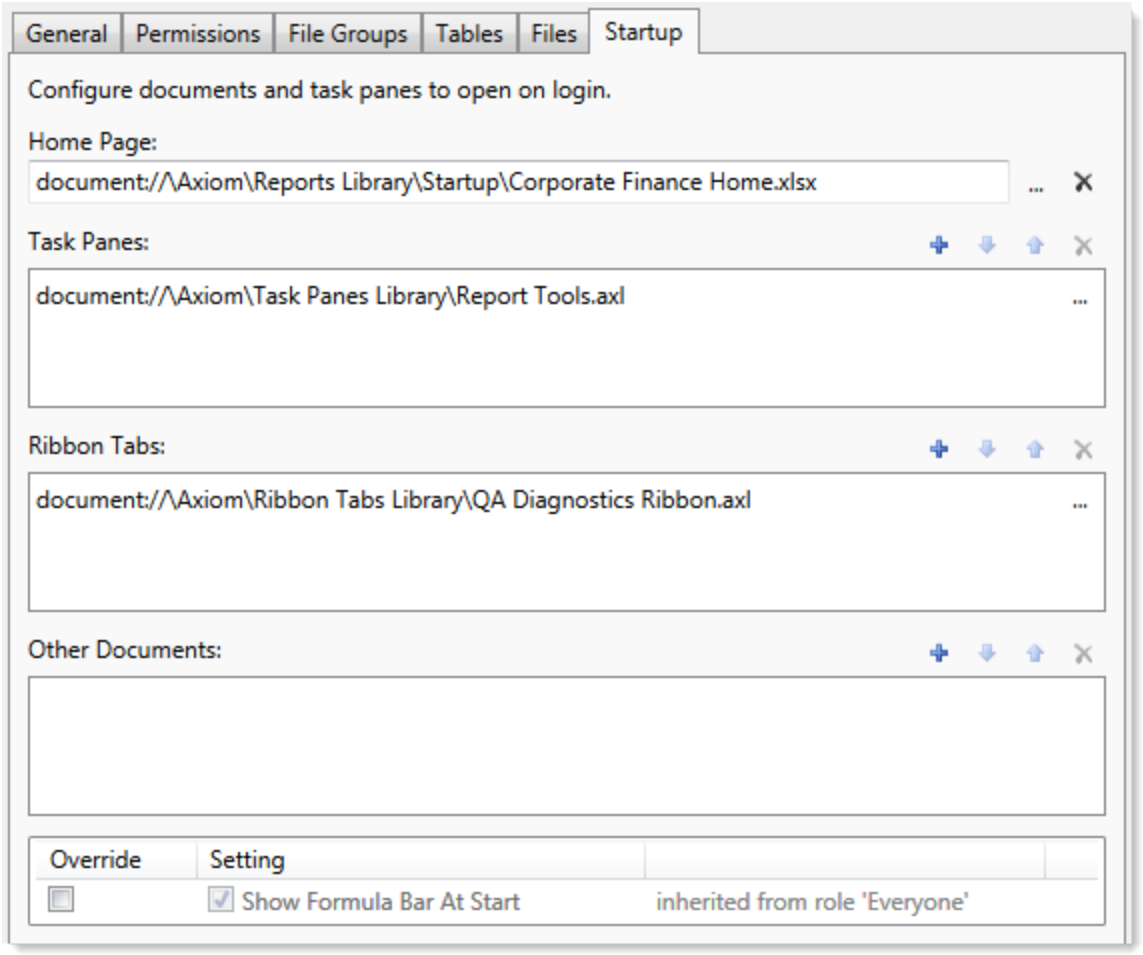
On the **Startup** tab of the **Security Management** dialog, you can specify which files to open automatically when a user logs into the system. You can also configure certain startup options.

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 Capital Planning 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 Capital Planning first cycles through items 1-3 looking for a **Desktop Client Home Page** assignment. If no assignment is found, Axiom Capital Planning cycles through items 1-3 again, this time looking for a **Home Page** assignment. If no security home page is found, Axiom Capital Planning continues to the next item.

4. Default home page in the Axiom System directory
   - In the Windows Client, Axiom Capital Planning checks `\Startup\Home\Windows Client` first, then moves on to `\Startup\Home`.
   - In the Desktop Client, Axiom Capital Planning 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 Capital Planning continues to the next item.

5. Default home page in the Axiom System directory

   In the Web Client, Axiom Capital Planning 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 Capital Planning continues to the next item.

6. Default Web Client home page provided by Axiom Capital Planning

   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.

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.

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 Capital Planning 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 Capital Planning.

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 Capital Planning 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 Capital Planning 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 Capital Planning will remember the last state of the formula bar and apply that on startup, disregarding this setting.

Control user access to Desktop Clients and Office Add-Ins

You can now control which users and roles have access to the Axiom Capital Planning Desktop Clients and the Microsoft Office Add-Ins, using permissions defined in Axiom Capital Planning security. These new permissions streamline and simplify the user experience, so that all of your users only have access to the specific client applications and add-ins that they need to use. For example:

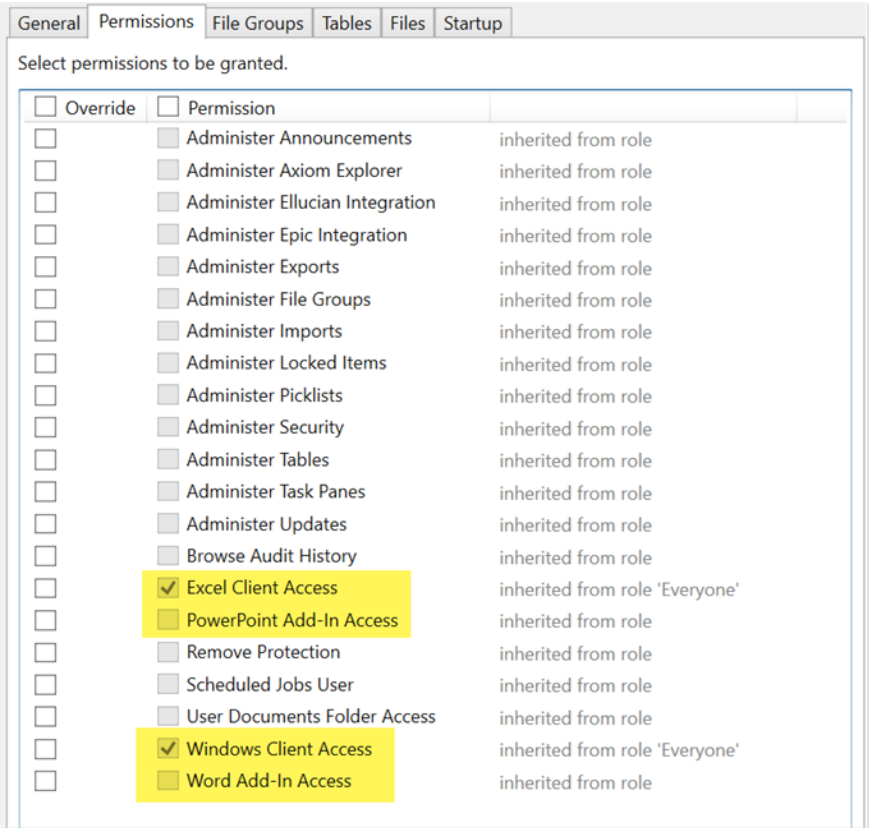
- End users who only need to access the Windows Client can be limited so that it is the only client option available.
- The ability to use the Excel Client can now be enabled only for those users who need to perform spreadsheet design activities.
- The ability to use the Word or PowerPoint add-ins can now be enabled only for those users who need to edit Word and PowerPoint documents within the Axiom Capital Planning Reports Library. Users who only need to view these documents will no longer inadvertently install the add-in when the document is opened.
- Additionally, users who only need to use the Web Client can be limited so that they do not have permission to any of the Desktop Clients or Office add-ins, thereby removing unnecessary options from their user experience.

New security permissions

The following security permissions are now available on the **Permissions** tab of the **Security Management** dialog:

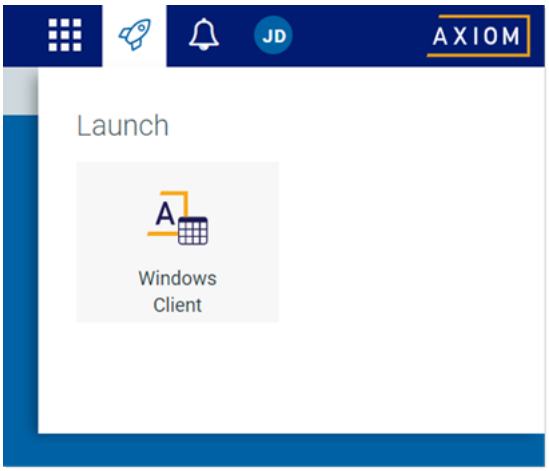
- **Excel Client Access**
- **Windows Client Access**
- **PowerPoint Add-In Access**
- **Word Add-In Access**

If a user is granted these permissions at the user or role level, then the user can see the client application or the add-in on the Quick Launch menu (and other places), and can launch the client or add-in.



New security permissions to control client access and add-in access

If a user does not have these permissions, then the client or add-in is hidden from the user, and the user cannot launch the client or add-in. For example, the following screenshot shows the Quick Launch menu for a user who only has access to the Windows Client:



Quick Launch menu showing only the Windows Client

Upgrade behavior for Desktop Client permissions

When you upgrade to 2020.4, Axiom automatically enables the **Windows Client Access** permission on the Everyone role, so that all of your users can continue to use the Windows Client.

The upgrade behavior of the Excel Client depends on the system configuration setting **AllowShowExcel** (True/False). In previous versions, this optional setting was used to control whether the Excel Client displayed on the Quick Launch menu. Organizations who did not want end users to use the Excel Client could set this to False so that the icon was hidden. This did not prevent use of the Excel Client, but it did discourage use.

- If AllowShowExcel is True, then **Excel Client Access** is enabled on the Everyone role, and all users can continue to use the Excel Client.
- If AllowShowExcel is False, then the upgrade does not enable the Excel Client for any users or roles. Users with the **Administrator** check box can continue to use the Excel Client because administrators are implicitly granted all permissions, but no other users can access the Excel Client. In this circumstance, you must manually enable **Excel Client Access** for any users or roles who need to be able to use the Excel Client.

  You can tell whether AllowShowExcel is False in your current system by opening the Quick Launch menu in the Web Client. If the Excel Client is not shown, then AllowShowExcel is False.

If your installation uses subsystems, then Windows Client Access and Excel Client Access are automatically enabled for all existing subsystems. This is necessary in order to allow the permission on the Everyone role to take effect. If a particular client is not necessary for use at a subsystem level, then you can disable the access permission for the subsystem, so that users in the subsystem cannot use that client (unless the permission is allowed by another subsystem that the user belongs to).

Upgrade behavior for Office Add-In permissions

The upgrade to 2020.4 does *not* enable the **PowerPoint Add-In Access** permission or the **Word Add-In Access** permission for any users or roles. Users with the **Administrator** check box can continue to use the add-ins because administrators are implicitly granted all permissions, but no other users can access the add-ins.

If you have any non-administrator users who need to access one or both of these add-ins, then you must manually enable the necessary permissions at a user or role level.

Deprecated system configuration settings to hide icons on the Quick Launch menu

In previous versions, the only control over client and add-in access was provided by a set of system configuration settings:

- AllowShowExcel
- AllowShowPowerPoint
- AllowShowWord

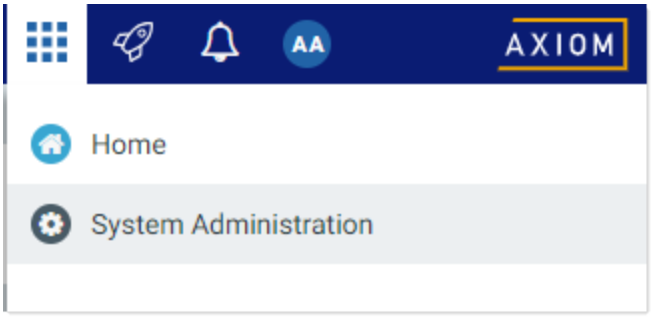
If any of these system configuration settings were set to False, then the corresponding icon would be hidden from the Quick Launch menu. This did not prevent use of the client or add-in, but it did discourage use.

Going forward, these system configuration settings are deprecated because they are no longer necessary. However, they have not yet been removed, and they will be honored if set to False. For example, imagine that your system has AllowShowExcel set to False, but a user has the Excel Client Access permission. The Excel Client icon will be hidden from the Quick Launch menu per the system configuration setting, but the user can launch the Excel Client using some other method (such as a desktop shortcut or a ClickOnce hyperlink).

If you currently have any of these system configuration settings set to False, we recommend changing them to True after upgrading to 2020.4. This will allow the security permissions to be the sole determiner of whether the client or add-in icons are hidden on the Quick Launch menu. If the system configuration settings are left at False, this may cause confusion in the future when trying to troubleshoot an access issue for the Excel Client or either of the add-ins.

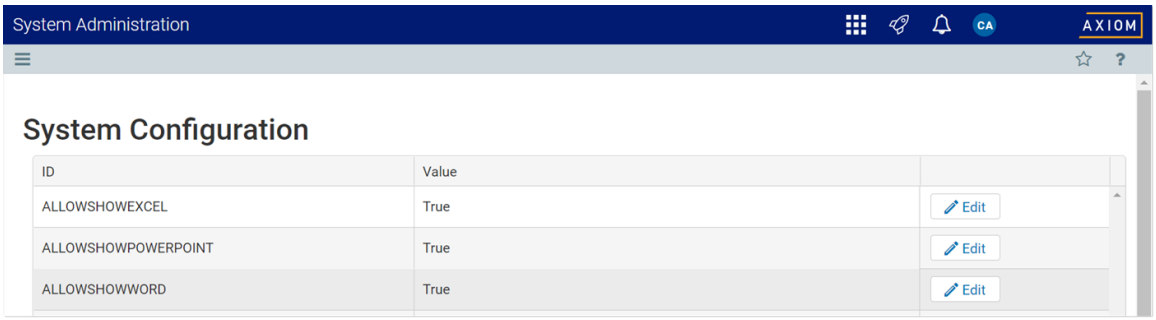
After the upgrade, an administrator user can easily review and edit these settings as follows:

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 **Software Configuration > System Configuration**.

3. On the System Configuration page, review the three "AllowShow" settings and make sure they are all set to True. If you need to edit a setting:
    - Click the **Edit** button. This makes the **Value** field editable.
    - Type `True` into the Value field.
    - Click the **Update** button.



Security subsystemsSubsystems

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.

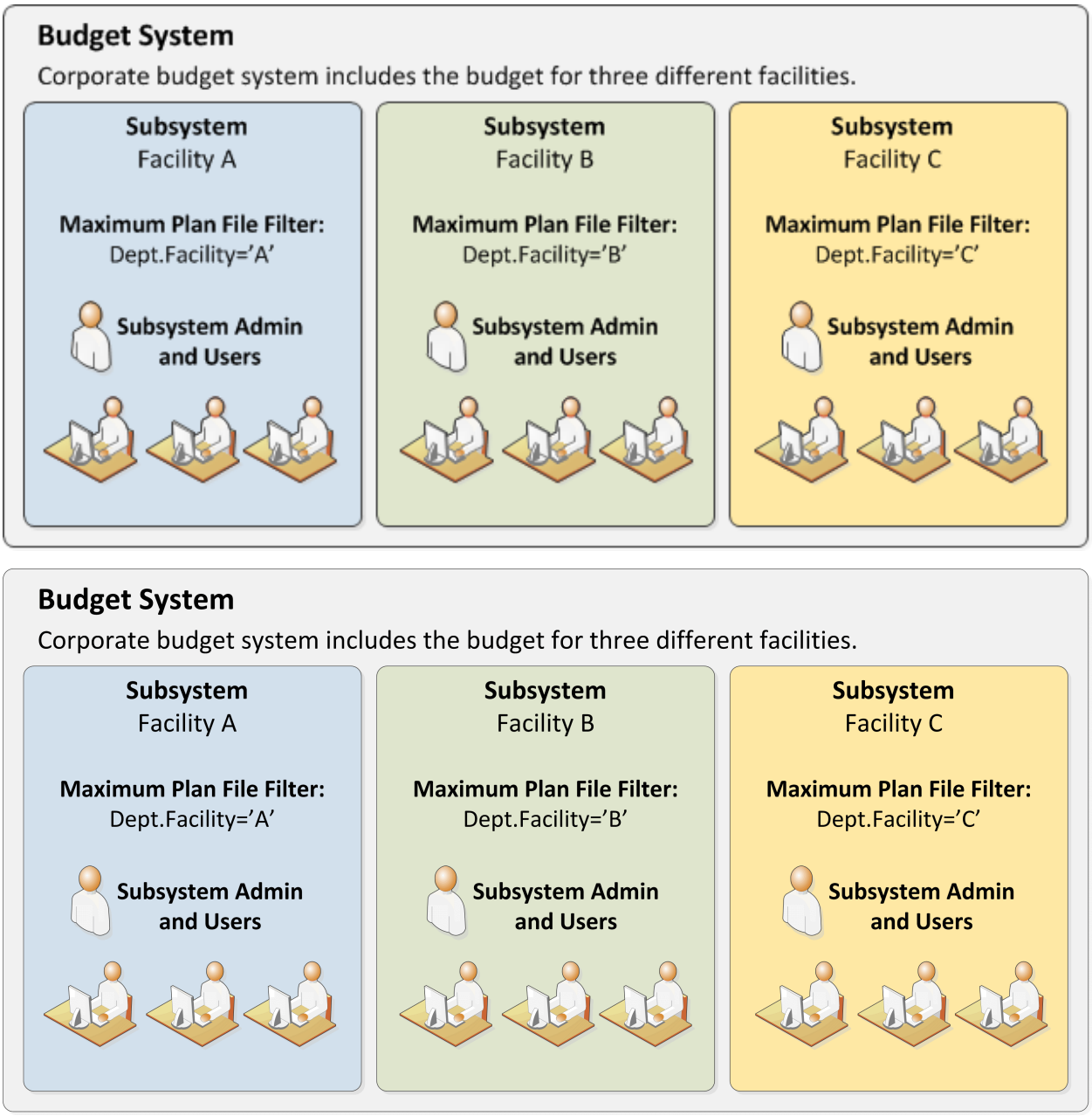
NOTE: Subsystems are optional in systems without installed products. Subsystem features are only available if you have enabled them using the system configuration settings.

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 Capital Planning 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 Capital Planning 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.

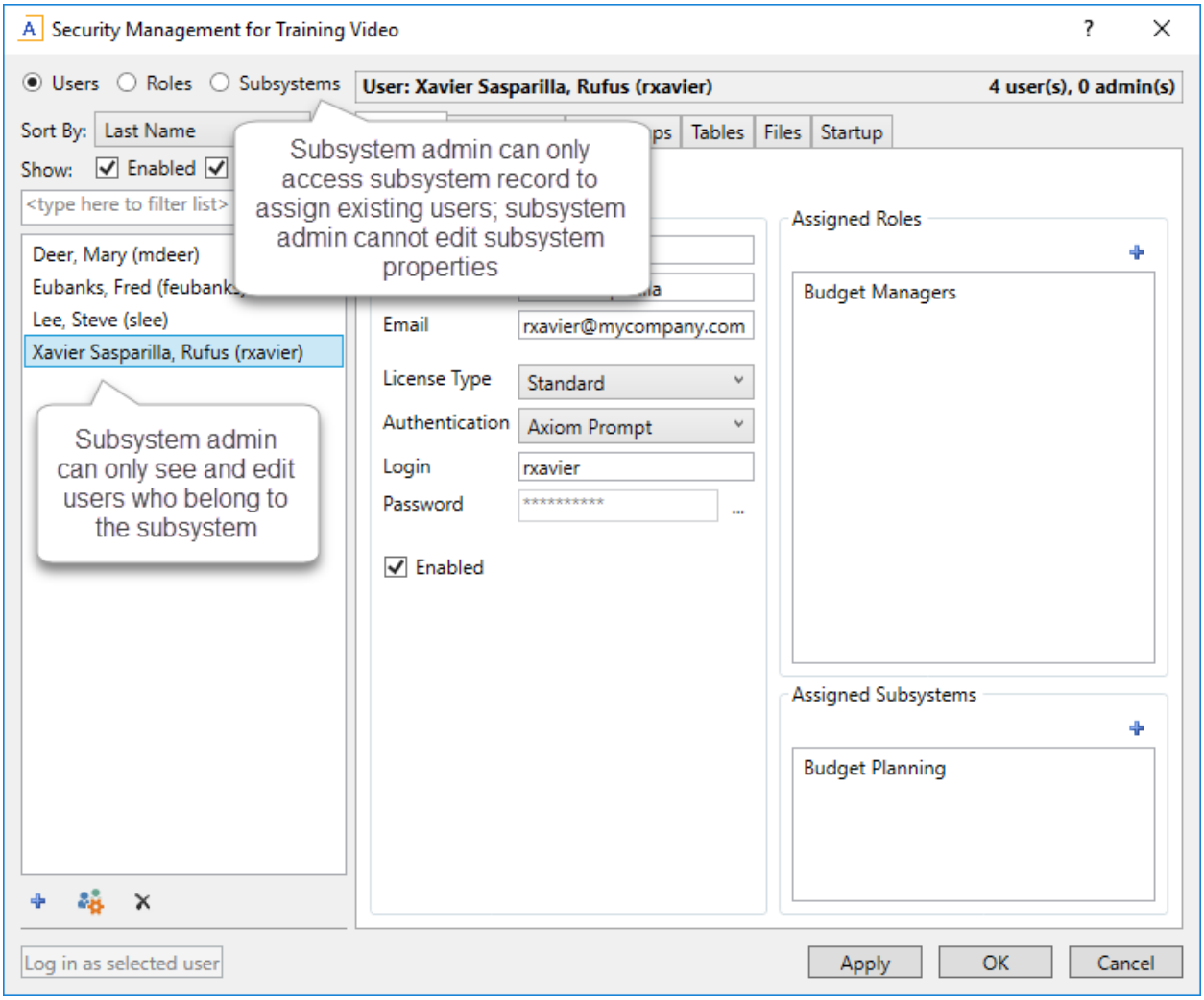
Subsystem administrators are not administrator-level users. The behavior is similar to being granted the **Administer Security** permission, except that the subsystem administrator can only work with users and roles within the subsystem.

Subsystem administrators can do the following:

- Create, edit, and delete users and roles within the subsystem.
- 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

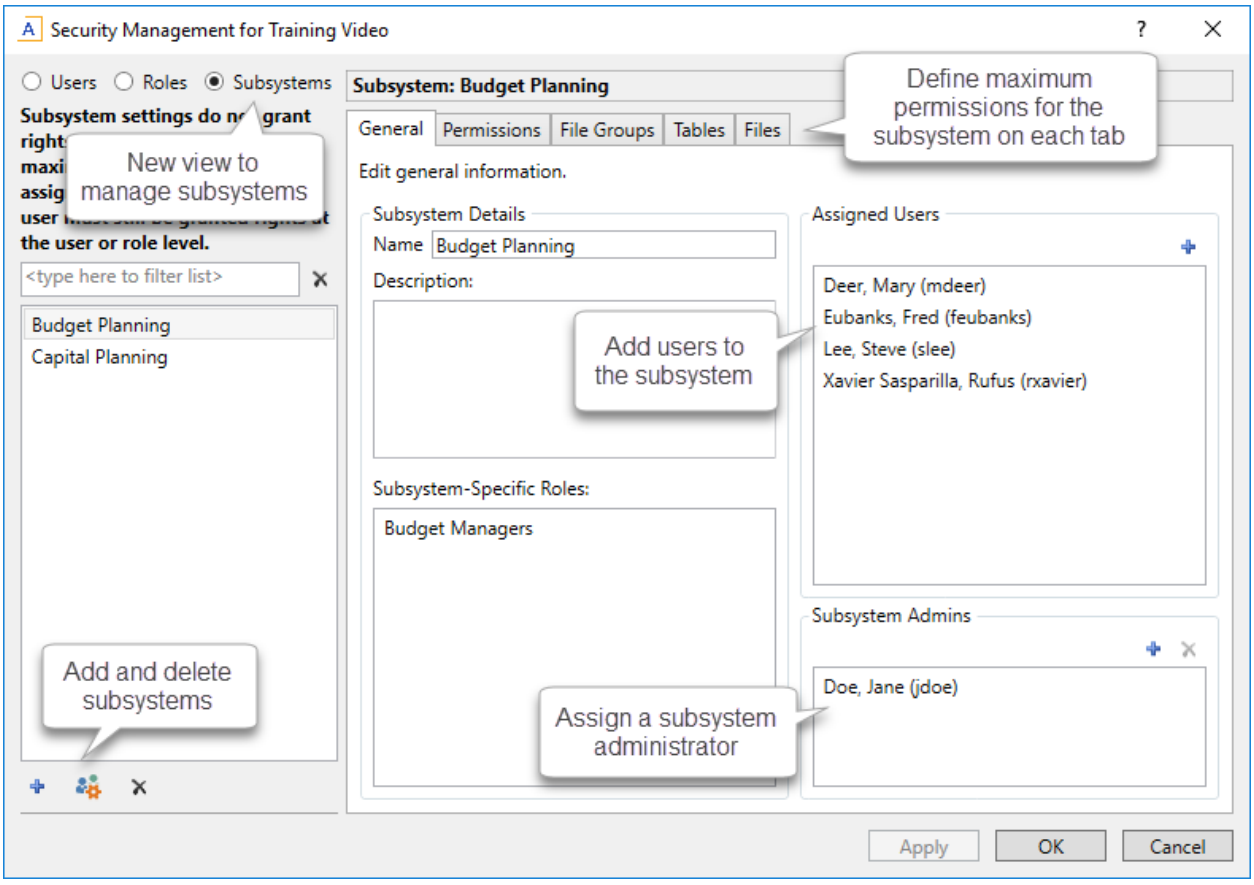
Using the **Security Management** dialog, you can create new subsystems, edit existing subsystems, and delete subsystems. To access this dialog:

- 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.

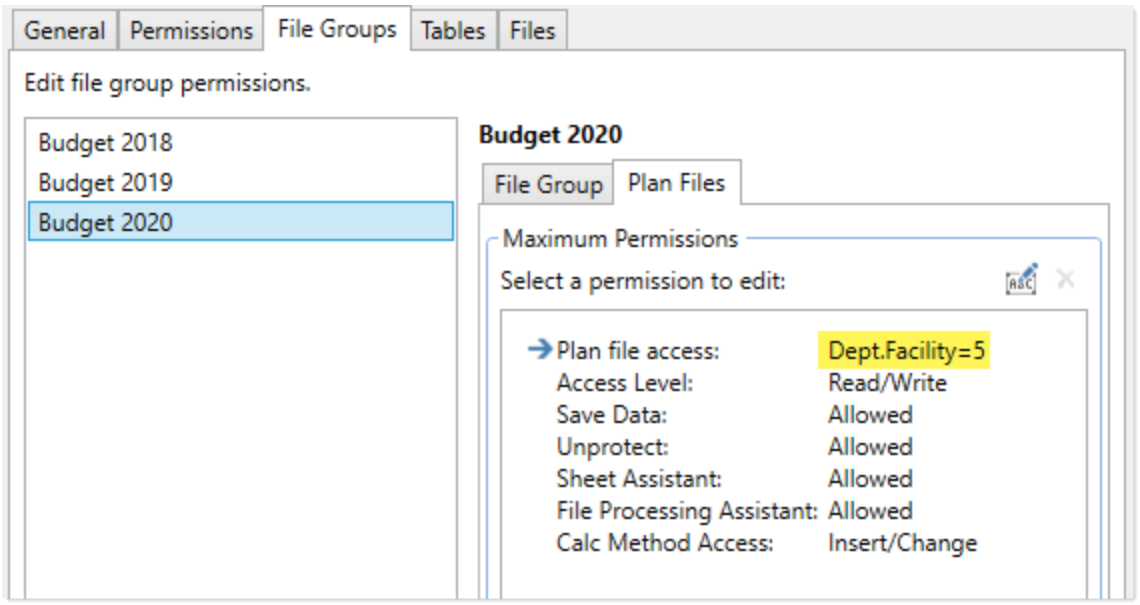
Remember that subfolders and files will inherit any permission set at a "parent" folder level (unless permission is explicitly set for the lower level). For this reason, the effective permissions section displays for the subsystem, so that you can select a folder or file and see any inherited permissions 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

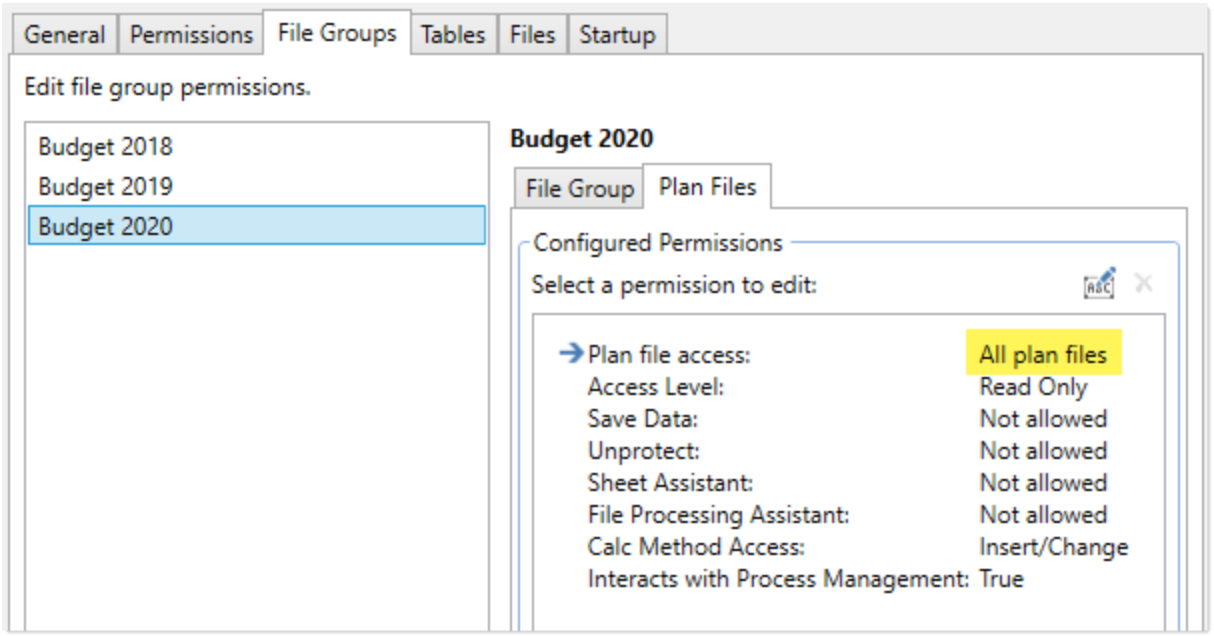
This example illustrates how subsystem maximum permissions limit users who are assigned to the subsystem.

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.



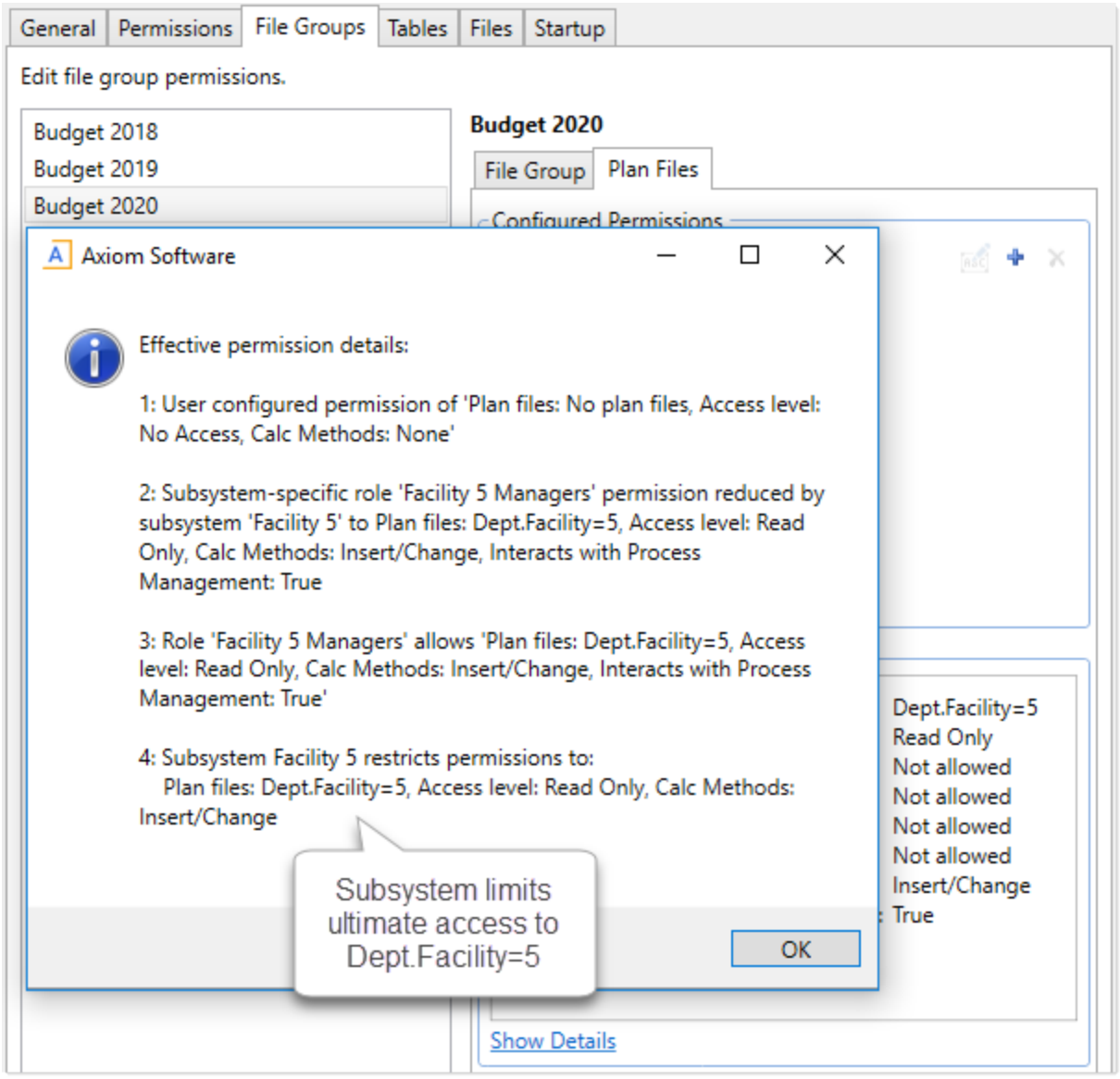
Subsystem maximum permissions

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

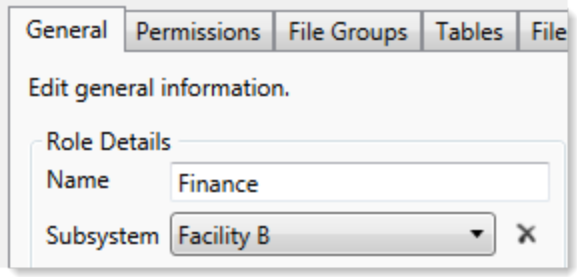
You can create new roles for a subsystem, and you can assign existing roles to a subsystem. When a role belongs to a subsystem, the role permissions are restricted by the subsystem boundaries, and all users in the role must also belong to the subsystem.

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.

NOTE: Alternatively, you can use the Security Manager page in the Web Client to assign users to subsystems. For more information, see Web Security Manager.

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 cannot assign existing users to a subsystem, because subsystem administrators can only see user records for users that are already in the subsystem. It is assumed that a general security administrator will add existing users to the subsystem as needed. (The exception is if a user is the subsystem administrator for multiple subsystems. In that case, if an existing user belongs to one of the subsystems but not the other, the subsystem administrator can assign that user to the other 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 Capital Planning. 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

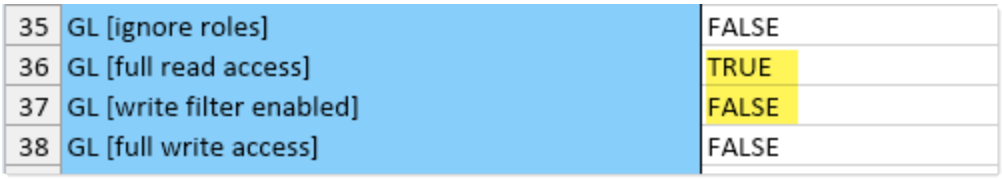
The following is a reference for completing or editing security settings via the spreadsheet interface.

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.

Item	Description
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**.
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 Capital Planning provides security tools to control and monitor user access to Axiom Capital Planning.

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 Capital Planning 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 Capital Planning 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 Capital Planning 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 Capital Planning 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 Capital Planning 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 Capital Planning support for assistance.

Testing user security

Administrators and other users who manage security may need to log into Axiom Capital Planning 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 Capital Planning 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:

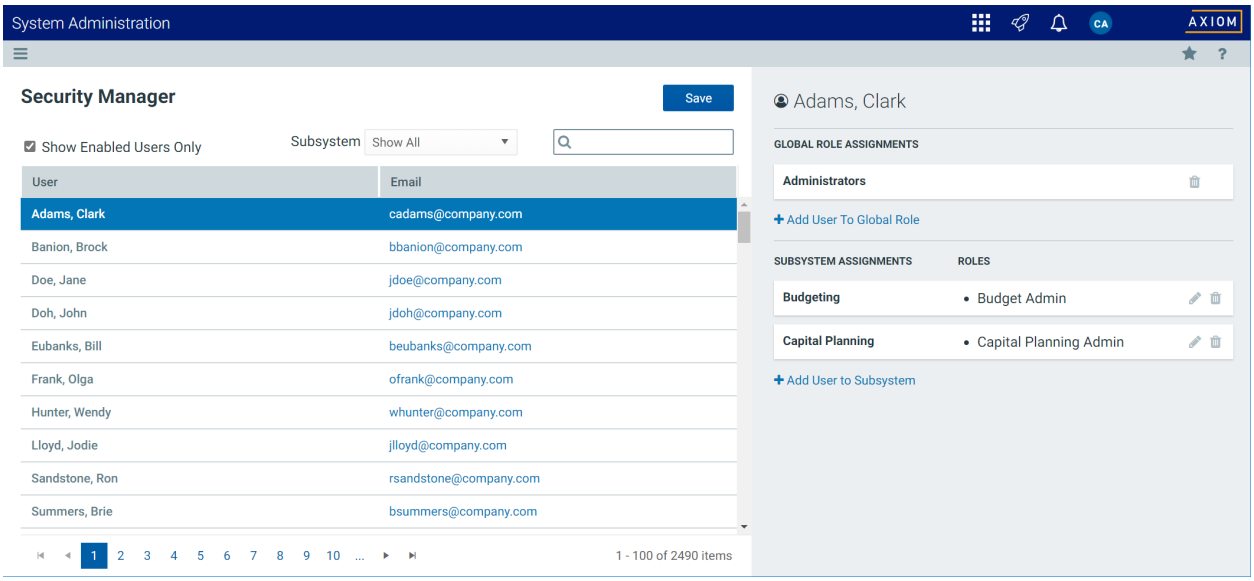
- On the **Axiom** tab, in the **Administration** group, click **Manage > Security > Table Permission Report**.

  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.

Web Security Manager

Using the Security Manager in the Web Client, you can assign users to subsystems and roles. This feature provides a browser-based, easy-to-use interface for managing role and subsystem assignments.



Example Security Manager in the Web Client

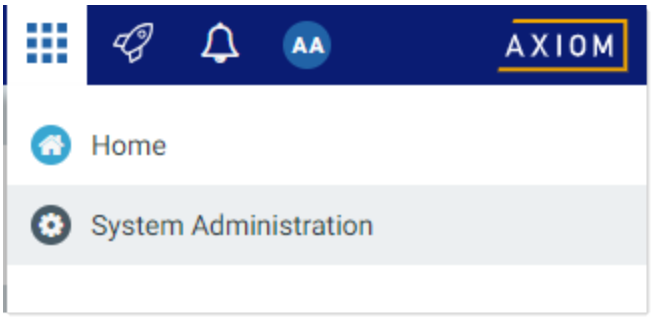
In Axiom Capital Planning security, subsystems and roles are used as follows:

- **Subsystems** are used to organize a system into certain "areas" of access. Axiom Capital Planning product suites use subsystems to define security boundaries by product, such as Capital Planning and Budgeting.
- **Roles** are used to assign permissions to users. You can define permissions on a role, and then all users assigned to that role inherit the permissions. Roles can be associated with a particular subsystem, or they can be "global" roles.

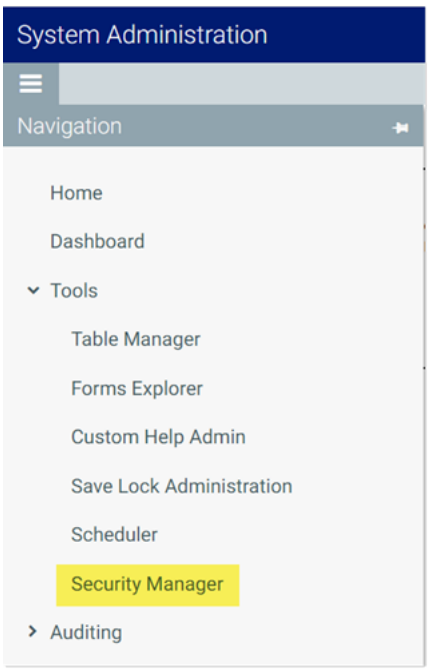
NOTE: The functionality of this page is limited to assigning users to subsystems and roles. This page does not support creating or deleting users, roles, or subsystems, nor does it support editing security permissions. For full security functionality, you must use the security features of the Desktop Client.

To access the web Security Manager:

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 **Tools > Security Manager**.



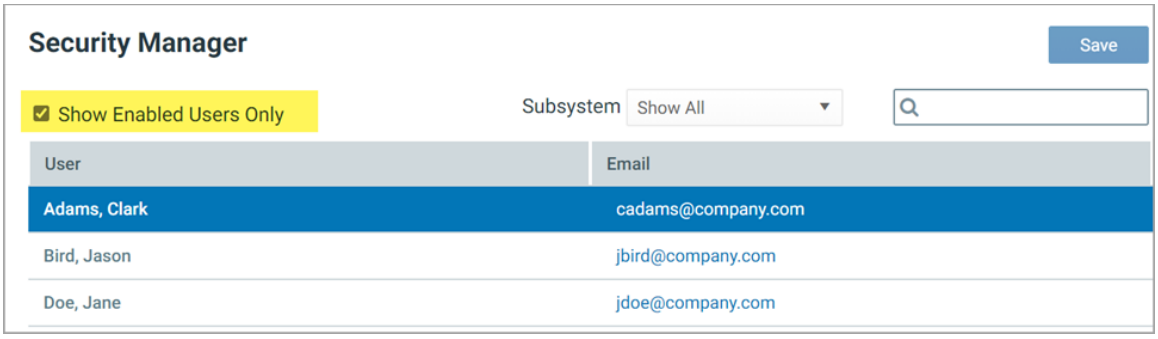
NOTE: The Security Manager is only available to administrators, subsystem administrators, and users with the **Administer Security** permission.

Security Manager overview

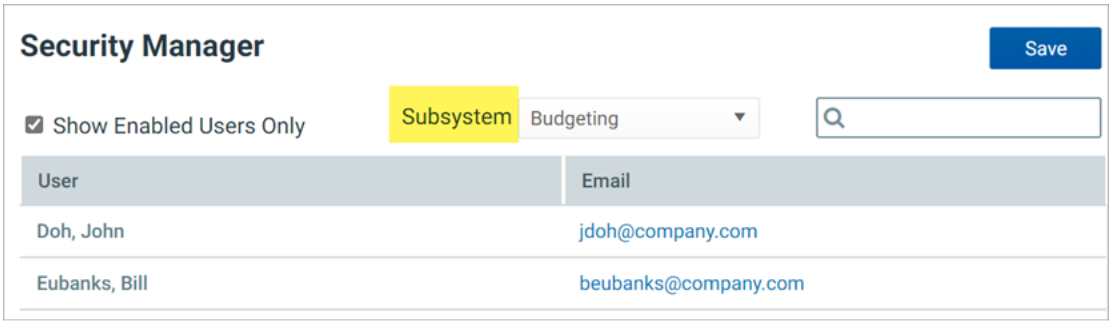
The left-hand pane of the Security Manager displays the users in your system. Once you have selected a user, that user's subsystem and role assignments display in the right-hand pane. You can use the right-hand pane to add, edit, or remove assignments.

To find users for which you want to manage assignments, you can do the following:

- **View only enabled users:** Select **Show Enabled Users Only** to hide disabled user accounts. To view all users again, clear this check box.

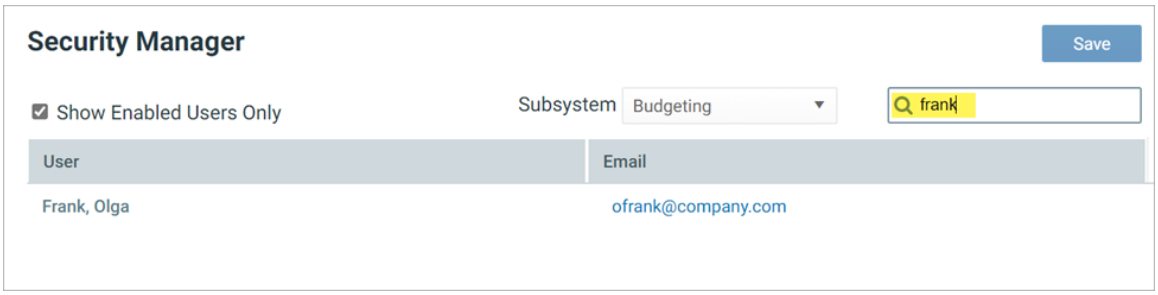


- **View users in a specific subsystem:** To filter the user list by subsystem, select a subsystem from the **Subsystem** drop-down list. The page updates to only show users that are assigned to the selected subsystem. To show all users again, select **Show All** from the Subsystem drop-down list.



NOTE: If your system does not use the subsystem feature, then this option is not present.

- **Find a specific user**: Type into the search box and then press the Enter key to find a specific user. The user's first name, last name, and email address are considered for the search. To show all users again, clear the search text and press the Enter key.



The user list shows 100 users per page. You can use the page controls at the bottom of the list to move to specific pages in the list.

IMPORTANT: If you make any changes in the Security Manager, you must click the **Save** button at the top of the page in order to commit those changes. Any changes that are not explicitly saved will be lost when you navigate away from the page or close the browser tab. Note that the page does *not* prompt you about unsaved changes when you attempt to leave the page.

Managing subsystem assignments for a user

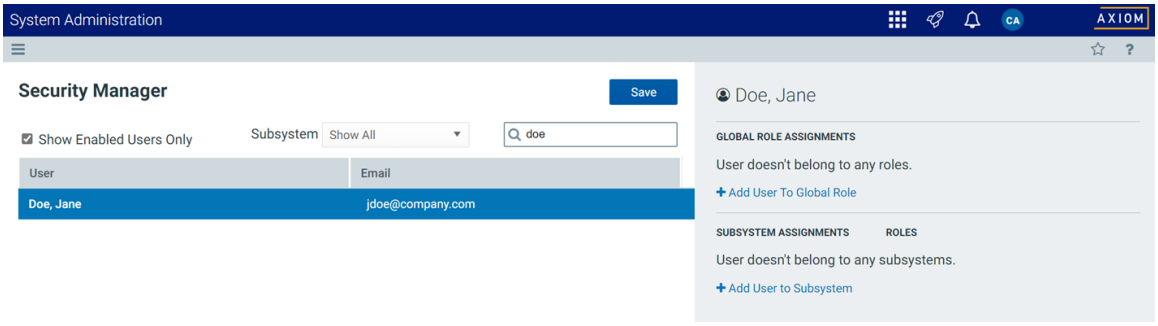
Use the Subsystem Assignments section in the right-hand pane to assign the selected user to one or more subsystems, or to remove a subsystem assignment. Once a user is assigned to a subsystem, you can edit that assignment to add or remove roles in the subsystem.

NOTE: If your system does not use subsystems, then this section does not apply and is not present on the page.

To assign a user to one or more subsystems and subsystem roles:

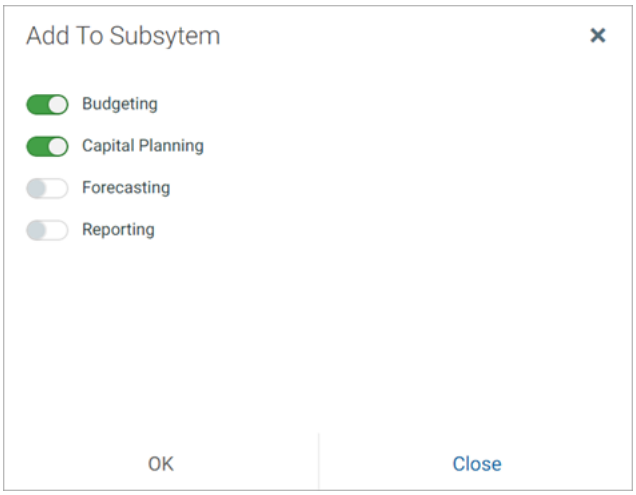
1. In the left-hand pane of the Security Manager, select the user. You can use the features described in the previous section to find the user that you want to work with.

   Once a user has been selected, that user's current role and subsystem assignments display in the right-hand pane. In the following example, the user does not yet belong to any subsystems.



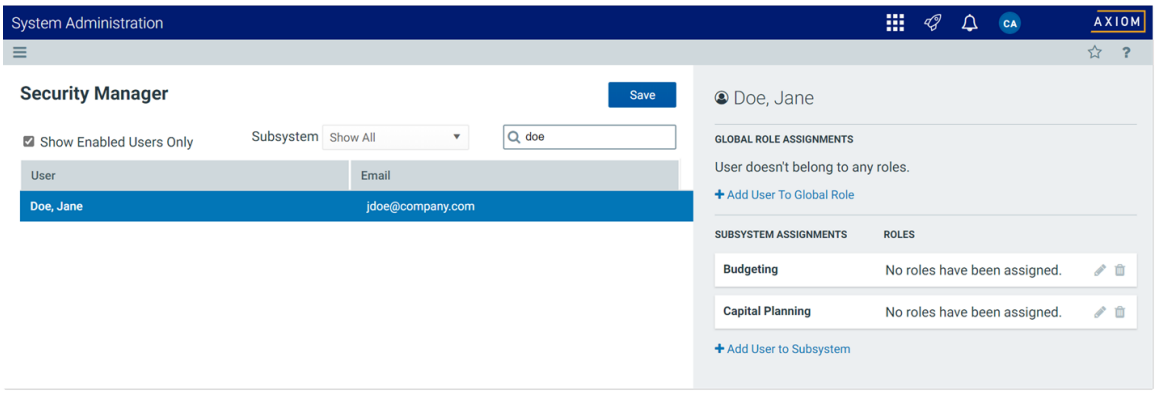
2. In the **Subsystem Assignments** section, click **Add User to Subsystems**.

3. In the **Add To Subsystem** dialog, select the toggle switch next to the subsystems that you want the user to be assigned to, then click **OK**. If the toggle switch shows green, the user will be assigned to that subsystem.



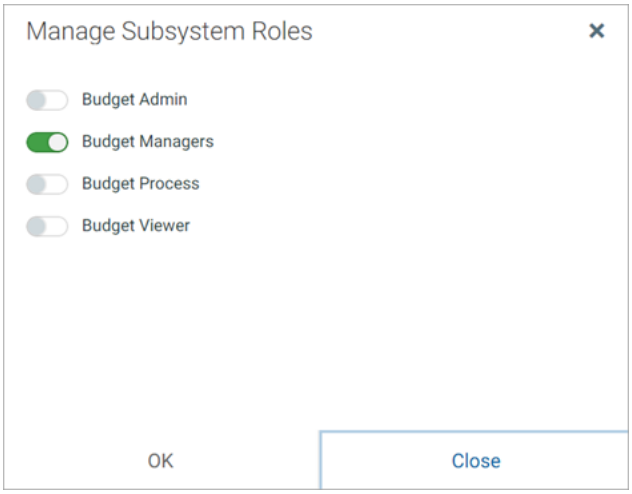
   If the user already belongs to one or more subsystems, those subsystems show with a gray check mark next to the subsystem name. You can only add the user to subsystems that they do not already belong to. This dialog cannot be used to remove subsystem assignments.

   After you click OK, the selected subsystems now display in the Subsystem Assignments section. You can now edit these assignments as needed to add subsystem roles.

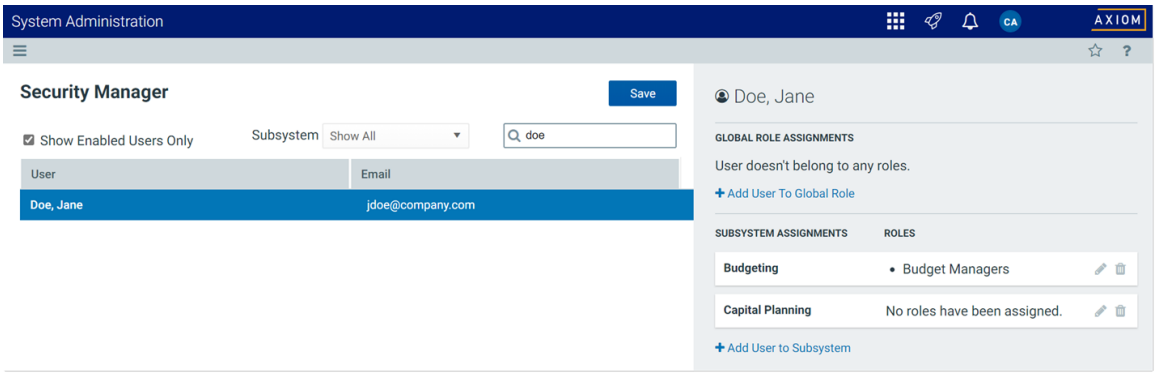


4. Click the pencil icon for the subsystem where you want to add role assignments.
5. In the **Manage Subsystem Roles** dialog, select the toggle switches next to the roles that you want the user to be assigned to, then click **OK**. If the toggle switch shows green, the user will be assigned to that subsystem.

   This dialog displays all roles that are associated with the selected subsystem.



   After you click OK, the subsystem assignment updates to show the assigned subsystem roles for the user.

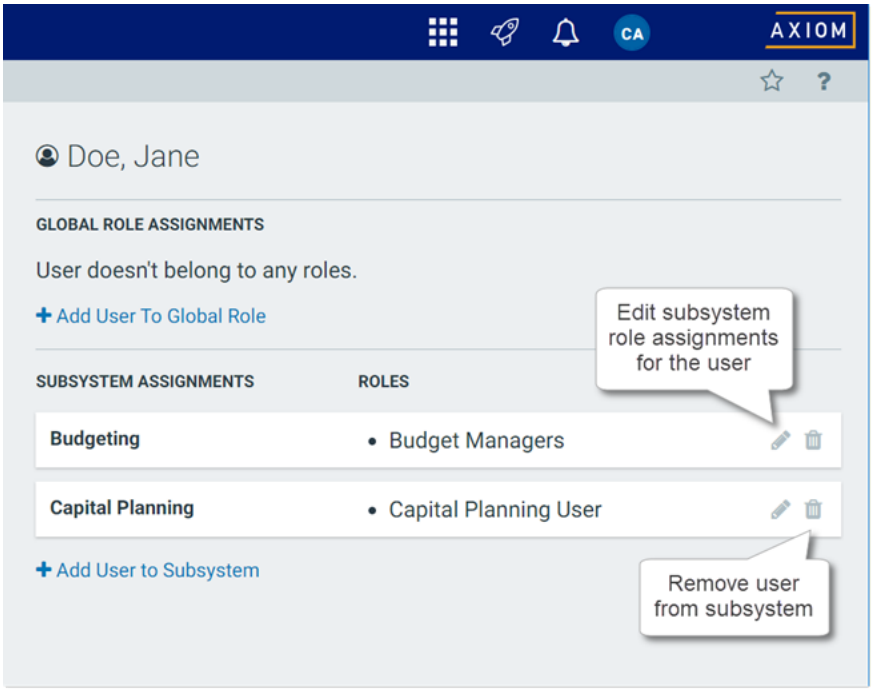


6. Click **Save** to commit the subsystem and role assignments. Changes to this page are not committed until they are saved.

Once a user has been assigned to a subsystem and subsystem roles, you can later modify the role assignments, or you can remove the user from the subsystem as needed.

- **To modify subsystem role assignments**: Click the pencil icon on the subsystem to open the **Manage Subsystem Roles** dialog, then use the toggle switches to add or remove role assignments as needed.
- **To remove a user from a subsystem**: Click the trash can icon on the subsystem to remove the user from the subsystem. The user will also be automatically removed from all of the subsystem's roles.

Remember to click the **Save** button after making any modifications to subsystem and subsystem role assignments.



Managing global role assignments for a user

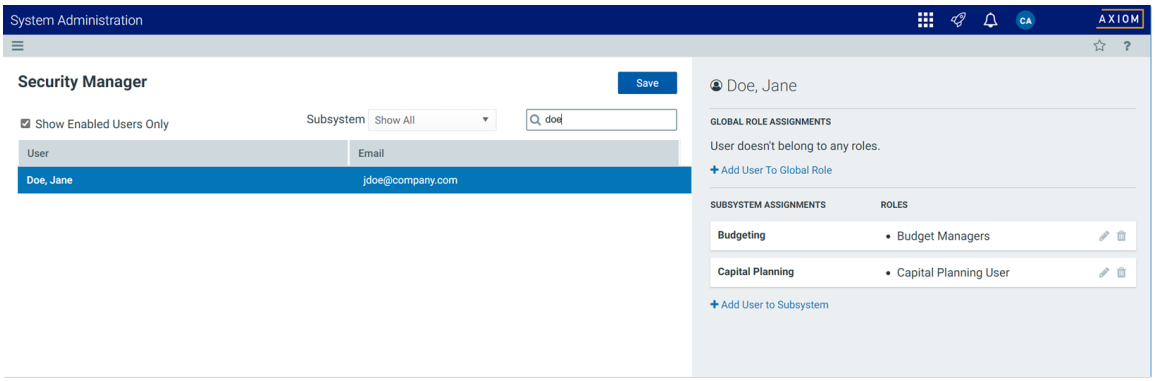
Use the Global Role Assignments section in the right-hand pane to assign the selected user to one or more global roles, or to remove a role assignment. Global roles are roles that are not associated with a subsystem.

NOTE: If your system does not use subsystems, then the word "global" does not display on this section, because there is no need to differentiate between global roles and subsystem roles.

To assign a user to one or more global roles:

1. In the left-hand pane of the Security Manager, select the user. You can use the features described previously to find the user that you want to work with.

   Once a user has been selected, that user's current role and subsystem assignments display in the right-hand pane. In the following example, the user does not belong to any global roles.

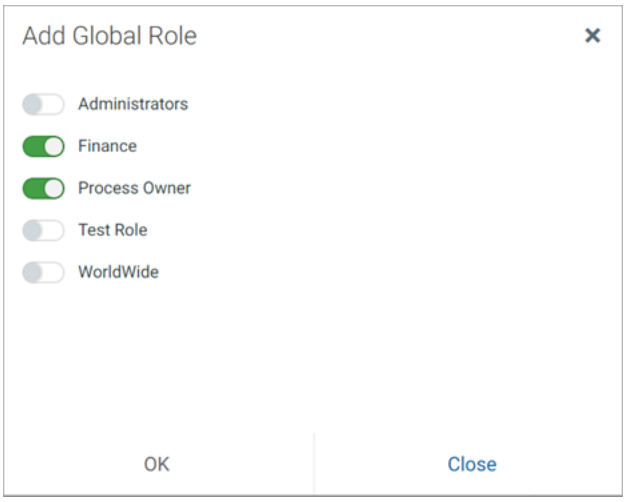


2. In the **Global Role Assignments** section, click **Add User to Global Role**.

   If your system does not use subsystems, then the section is titled **Role Assignments** and the action is **Add User to Role**.

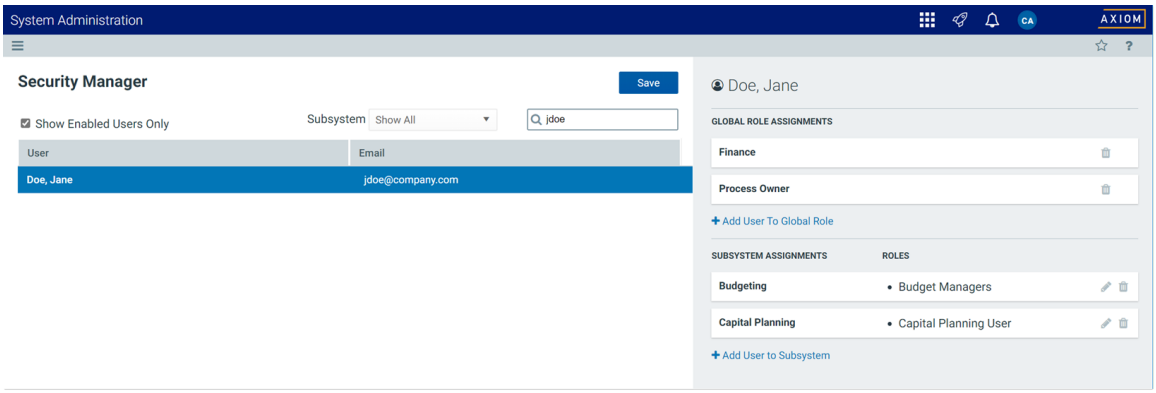
3. In the **Add Global Role** dialog, select the toggle switch next to the roles that you want the user to be assigned to, then click **OK**. If the toggle switch shows green, the user will be assigned to that role.

   If your system does not use subsystems, then this dialog is titled **Add Role**.



If the user already belongs to one or more roles, those roles show with a gray check mark next to the role name. You can only add the user to roles that they do not already belong to. This dialog cannot be used to remove role assignments.

After you click OK, the selected roles now display in the Global Role Assignments section.



4. Click **Save** to commit the role assignments. Changes to this page are not committed until they are saved.

To remove a user from a global role:

- Click the trash can icon on the role assignment. Remember to click Save after making any changes.

Limitations for subsystem administrators

If you are a subsystem administrator, the Security Manager page has some limitations. These limitations are consistent with the behavior of the Security Management dialog in the Desktop Client.

- The user list is limited to only showing users that belong to one of the subsystems that you administer.
- The subsystem list is limited to only showing subsystems that you administer. This applies to the Subsystem filter and the Add To Subsystem dialog.

This means that as a subsystem administrator, you are limited to managing users that already belong to one of the subsystems that you administer. If a user does not belong to any subsystems, or if a user belongs to a subsystem that you do not administer, then that user will not display in the web Security Manager. In this case, if the user needs to be assigned to your subsystem, a system administrator or a user with the Administer Security permission must make this assignment.

Security integrationSecurity Integration

Axiom Capital Planning 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 Capital Planning 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 Capital Planning, then the credentials are passed to Windows for authentication into Axiom Capital Planning.

If the Windows Authentication configuration for Axiom Capital Planning 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*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 Axiom 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 Capital Planning users must be set up as follows to support Windows Authentication:

   - The user's Axiom Capital Planning 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. Axiom Cloud systems have the following additional requirements:

   - Installation of the Cloud Integration Service is required to enable the Axiom Cloud system to communicate with your local Windows domain, to validate user credentials. For information on installing the Cloud Integration Service, see the *Axiom Cloud 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 Capital Planning 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 Capital Planning as that user. For more information, see Testing user security.

Adding or removing domains for Windows Authentication

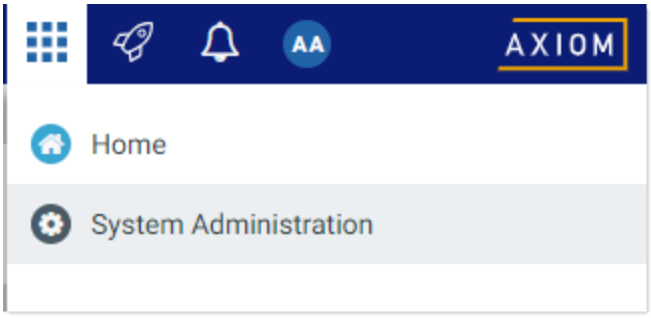
If the Windows domain names used by your organization for authentication have changed, you must update the list of allowed domains in Axiom Capital Planning. Users can only log into Axiom Capital Planning using Windows Authentication if their domain name matches one of the allowed domain names in this 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 Capital Planning, 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.

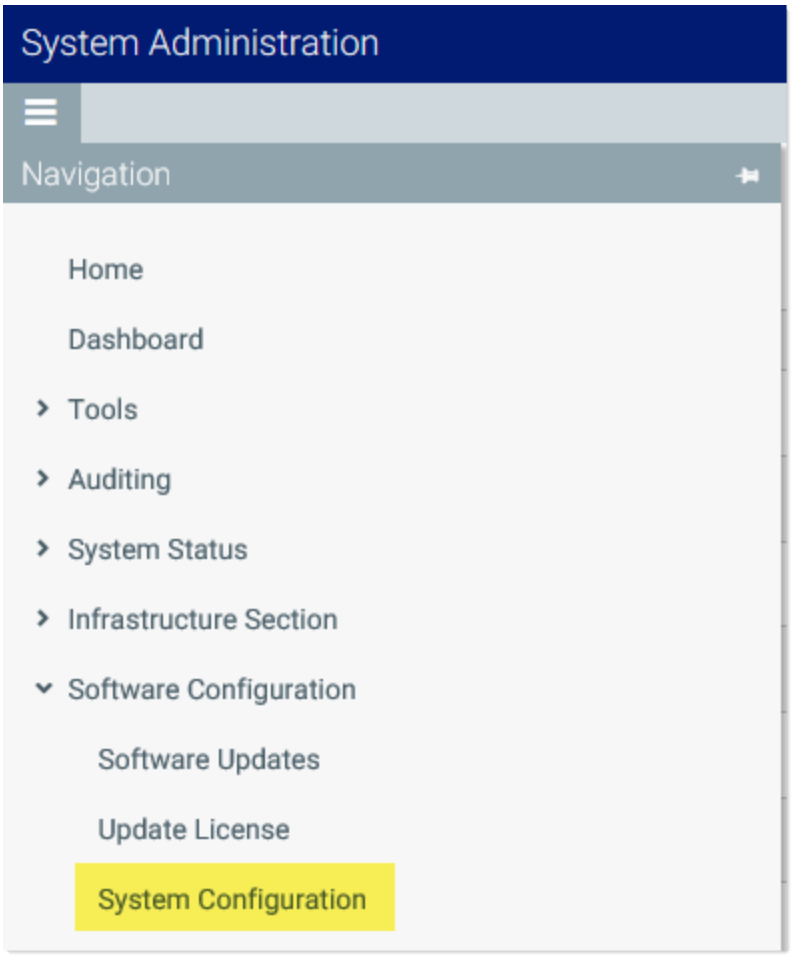
The list of allowed domain names for Windows Authentication can be managed in the Axiom Web Client, on the **System Configuration** page.

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**.



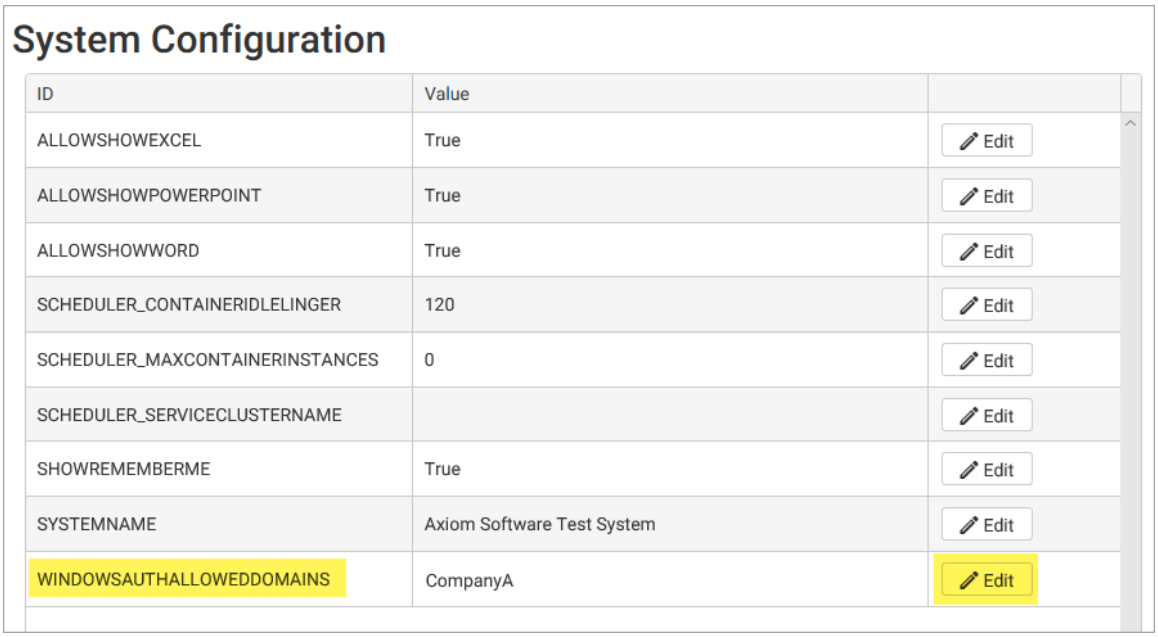
2. From the Navigation panel, select **System Status > System Configuration**.



Alternatively, you can go directly to the System Configuration page as follows:

Example Cloud URL	`https://ClientName.axiom.cloud/Admin/SystemConfiguration` Where *ClientName* is the name of your Axiom Cloud system.
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.

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 Capital Planning 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*Installation Guide.
- Use a Save Type 4 report to modify the applicable system configuration setting (**WindowsAuthUserSyncEnabled**).

For Axiom 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 Capital Planning 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 Capital Planning.

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 Capital Planning 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 Axiom Cloud 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 Capital Planning. If you do not have groups that exactly correspond with the users that you want to create in Axiom Capital Planning, you may need to work with your Information Technology department to create new groups or refine existing groups.
- **The Axiom Capital Planning 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 Capital Planning, and assigned a user license type and an authentication type. Make sure you know which options to use.

Creating the job

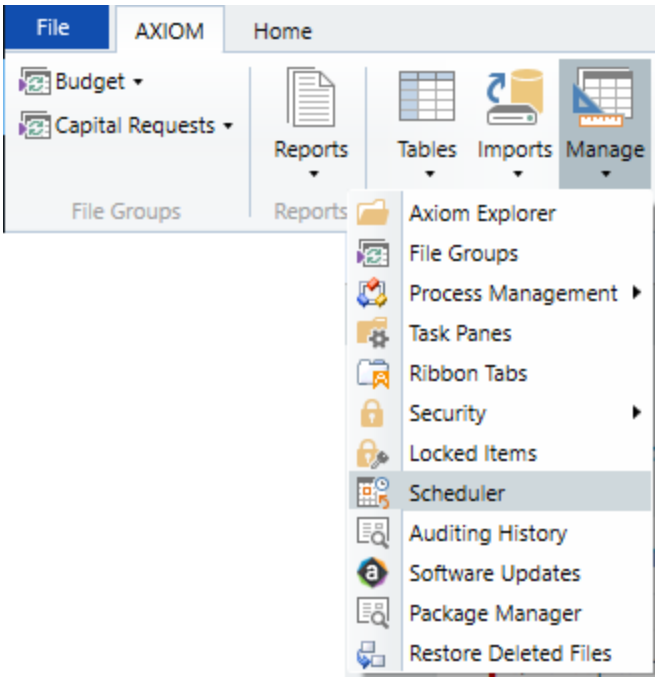
In order to create a Scheduler job, you must be an administrator or have the **Scheduled Jobs User** security permission. Non-admin users must also have read/write access to at least one folder in the Scheduler Jobs Library.

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**.

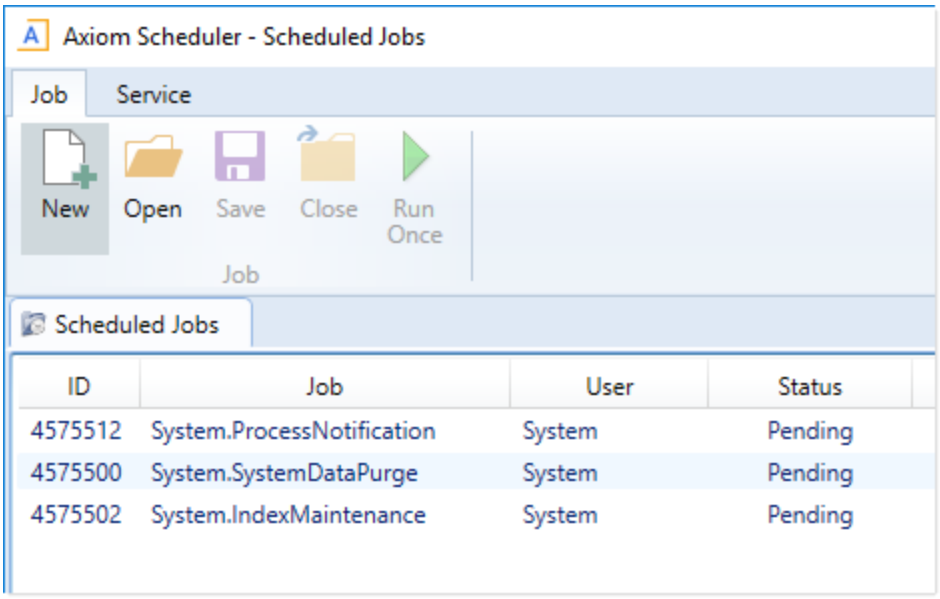


Scheduler on default Axiom ribbon tab

In systems with installed products, this feature may be located on the **Admin** tab. In the **System Management** group, click **Scheduler**.

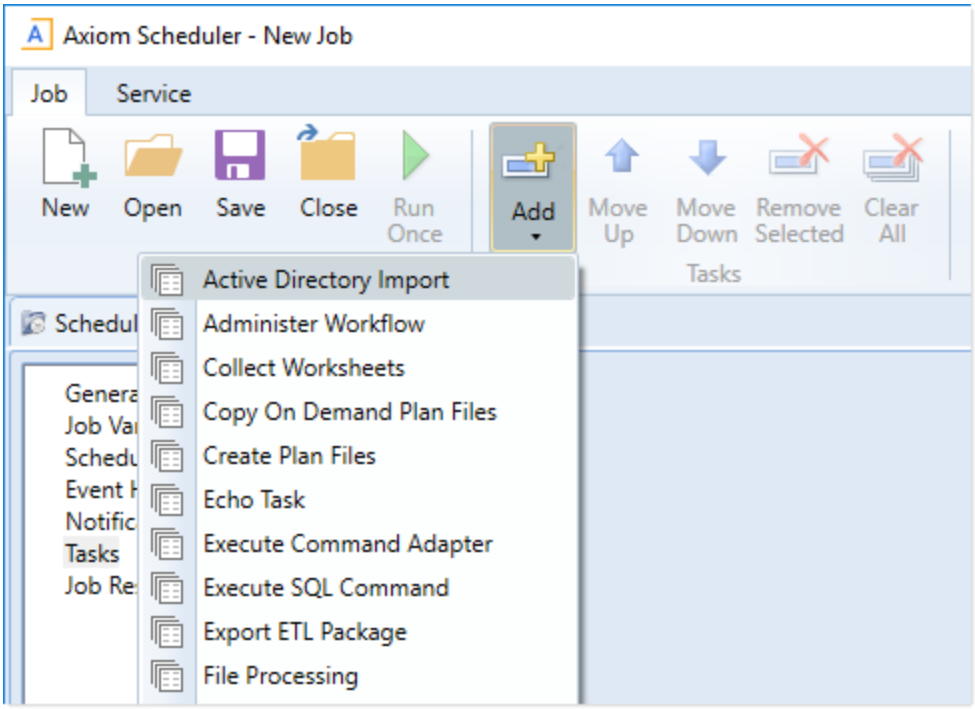
Scheduler on Admin tab (example product ribbon)

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.

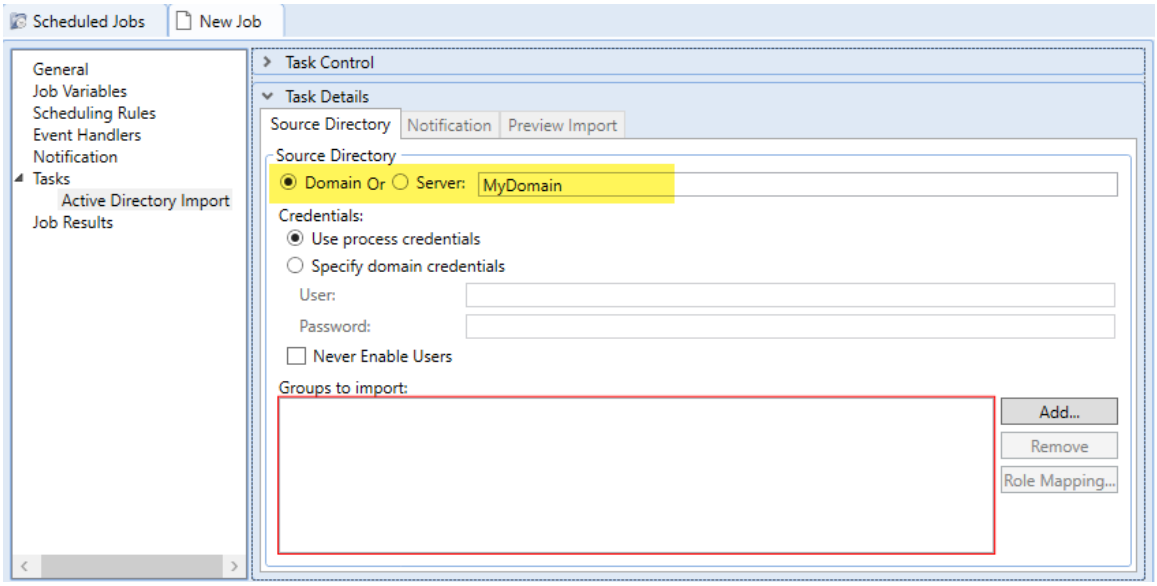


The task is added to the job, and you can now configure the task properties. In the **Task Details** section, the task has three tabs: **Source Directory**, **Notification**, and **Preview Import**.

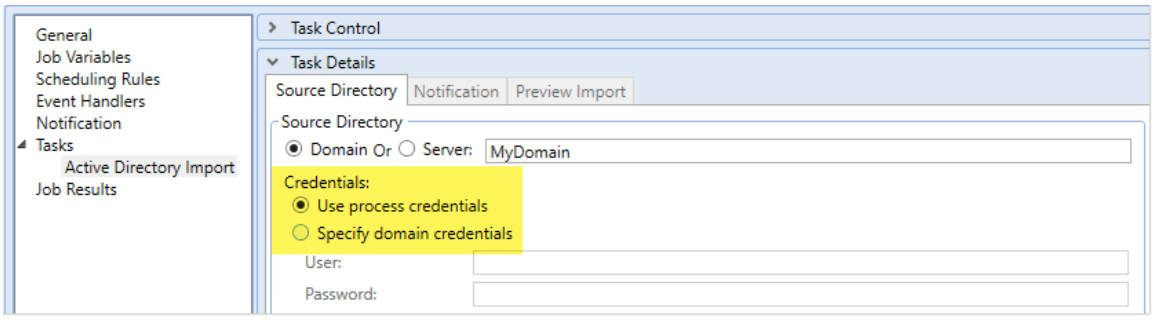
4. On the **Source Directory** tab of the Task Details, select either **Domain** or **Server** to specify the source domain for the import.
    - If you select Domain, enter the name of the domain.
    - If you select Server, enter the name of the domain controller server.

    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 Capital Planning system, then you must create multiple import tasks.

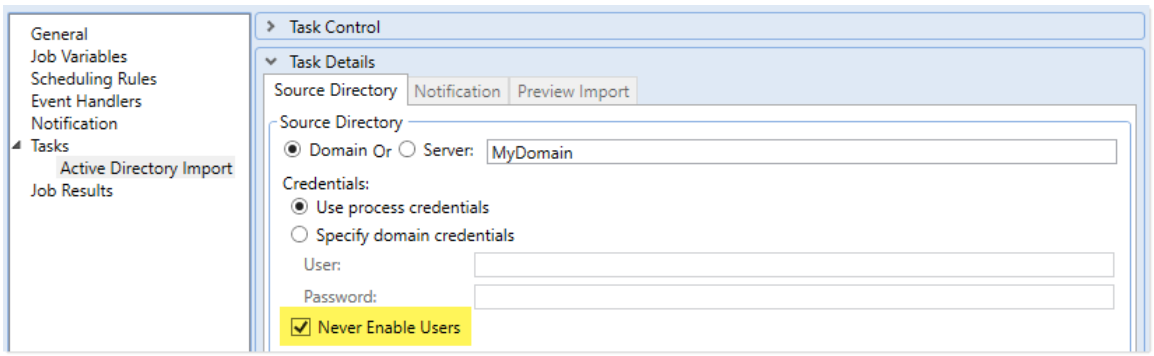


5. For **Credentials**, specify the user credentials to use when accessing Active Directory for the import. Select one of the following:
    - **Use process credentials**: (Default) Use the credentials of the network service account for Axiom Scheduler Server (on-premise installations) or Axiom Cloud Integration Service (Axiom Cloud 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.

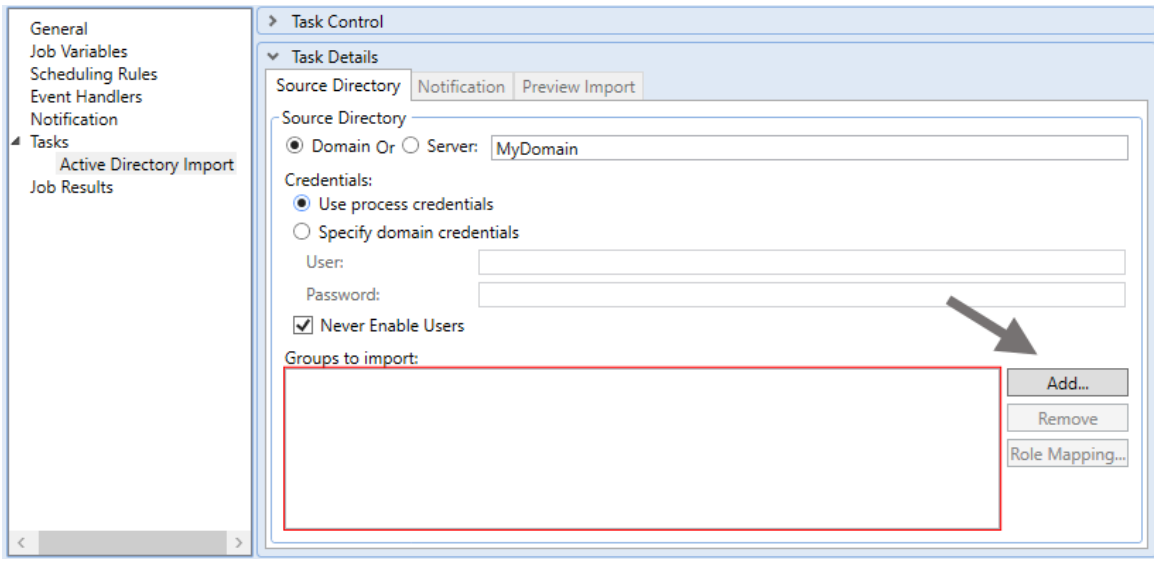


6. If you do not want new and synchronized users to be automatically enabled by the import, select **Never Enable Users**. This option works as follows:
    - If unchecked (default), then newly imported users are enabled as part of the import. Additionally, any existing imported users who have been changed 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.

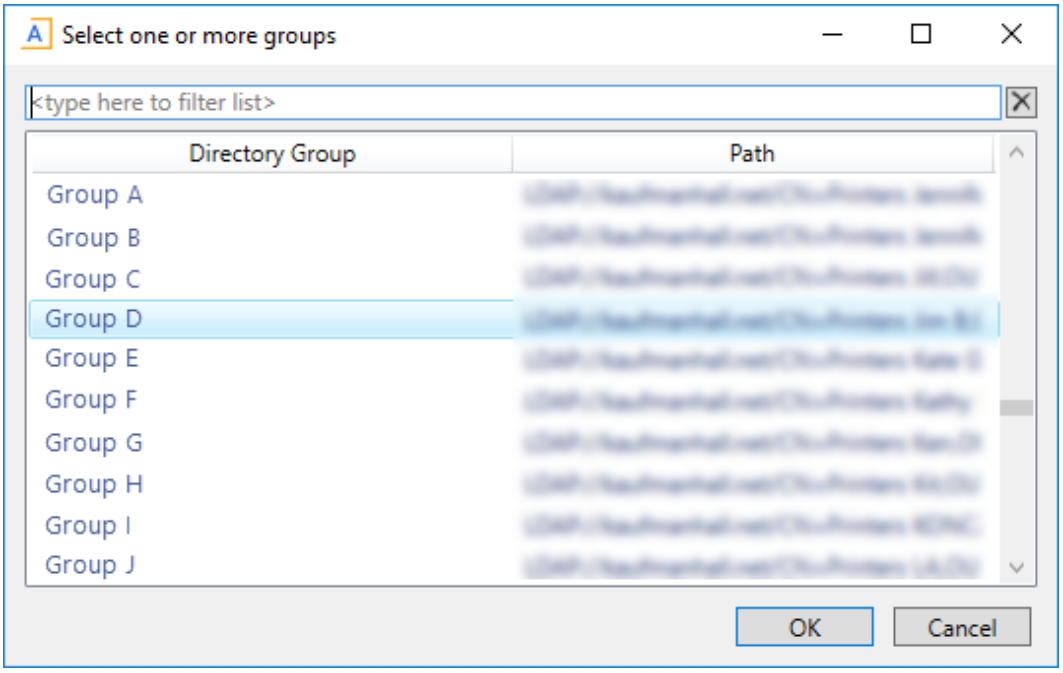


7. In the **Groups to import** section, click **Add** to select one or more groups to import.



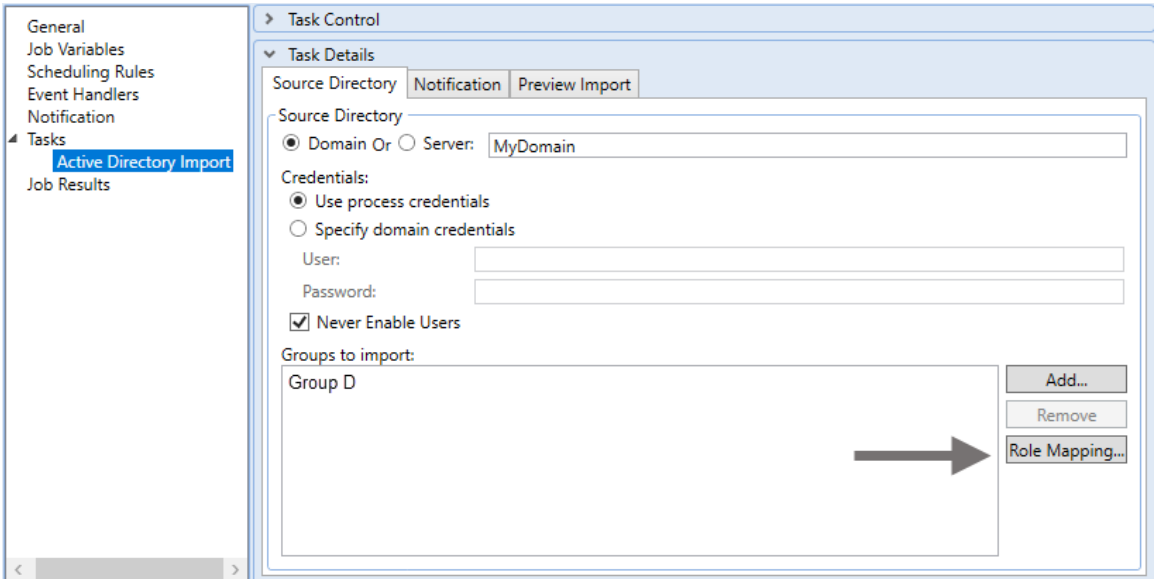
The **Select Groups** dialog opens, displaying a list of groups from the source domain.

- 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.

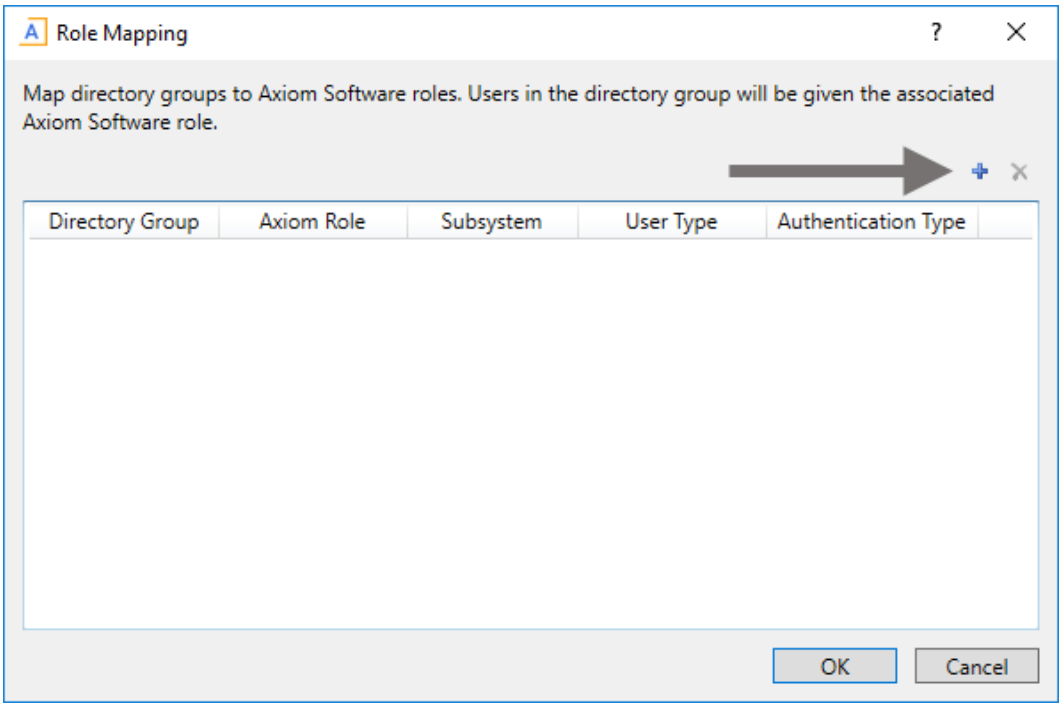


- The selected group(s) display in the **Groups to import** box. If you have added a group by mistake, you can select it and click **Remove**.

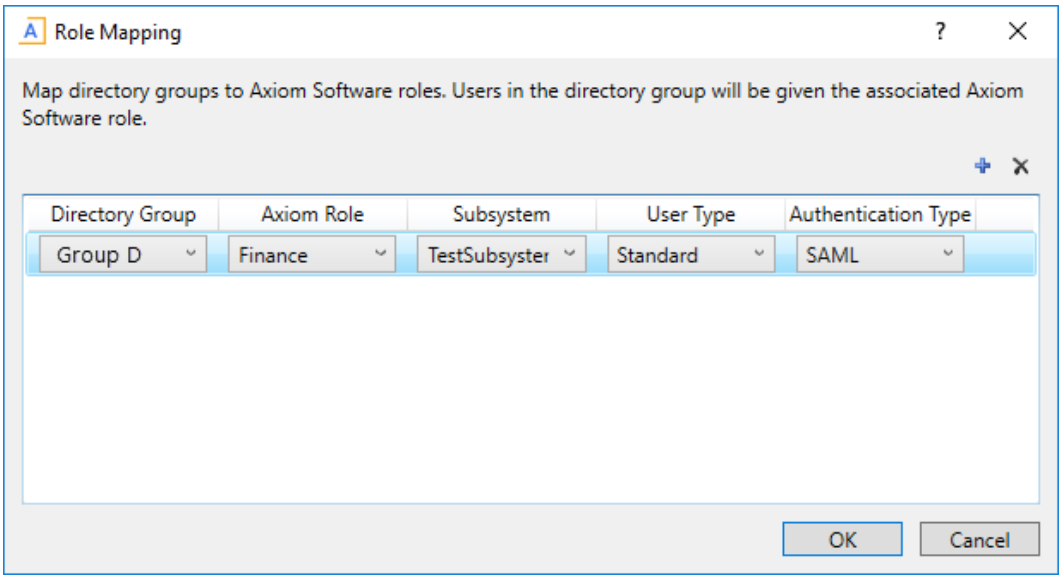
8. In the **Groups to import** section, click **Role Mapping** to define the role mappings for each selected group:



- 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.



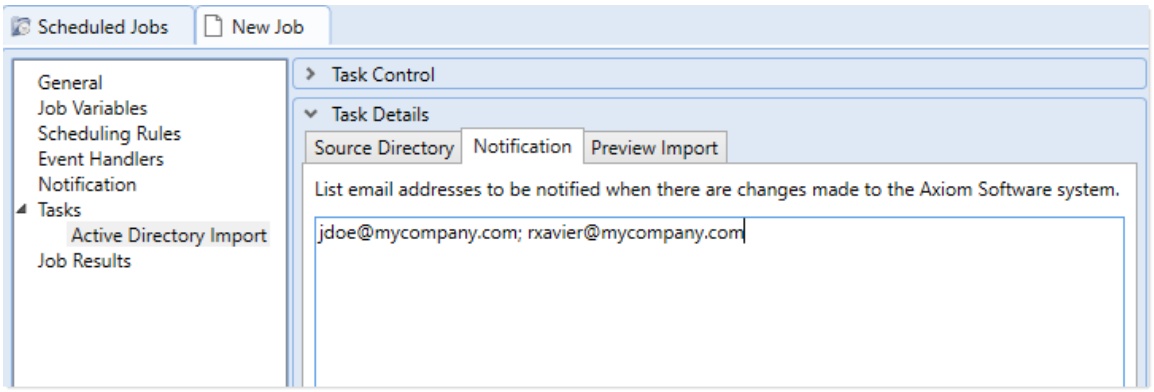
- Repeat these steps for each group to be imported. If you want the users in a group to belong to more than one role and/or subsystem, you can create multiple mapping rows for that group. If you need to remove a mapping row, select it and then click the **Remove mapping** icon ✕ in the top right of the 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.

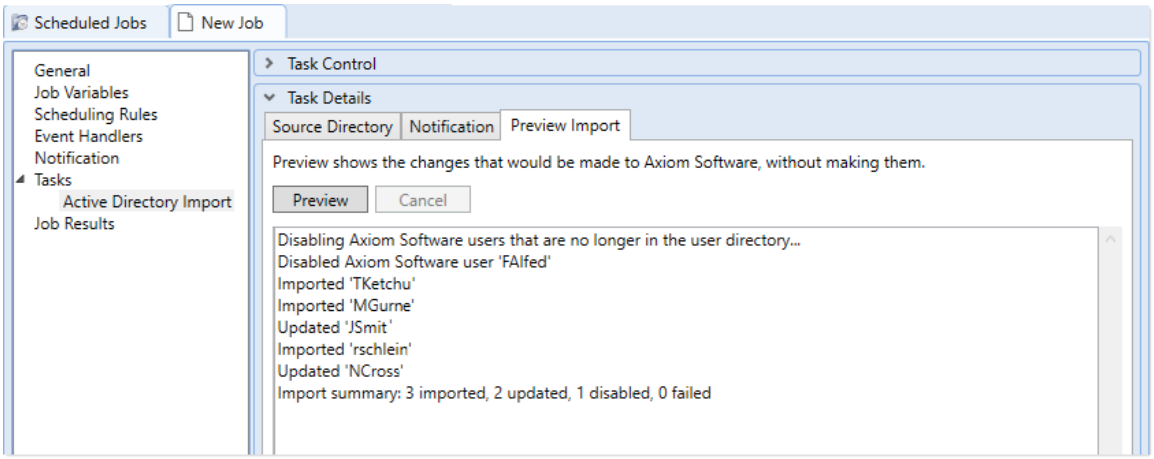


When the import task is run, if any users are created or modified in the Axiom Capital Planning system, an email notification will be sent to the addresses specified here. The email summarizes the changes made. This email notification is independent of any job-level notification settings (which notify 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 Capital Planning, 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 Capital Planning Security when the Active Directory Import task is run.

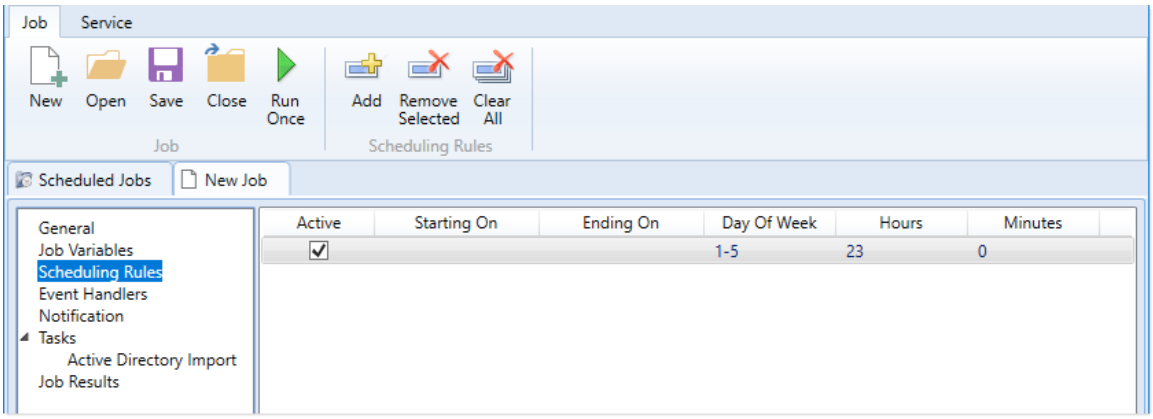
    The preview feature is intended to help you verify that you have set up the task correctly. If the reported changes are not as you expect, then you can review and adjust the task settings as needed. No changes are made to security when preview is run.



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.

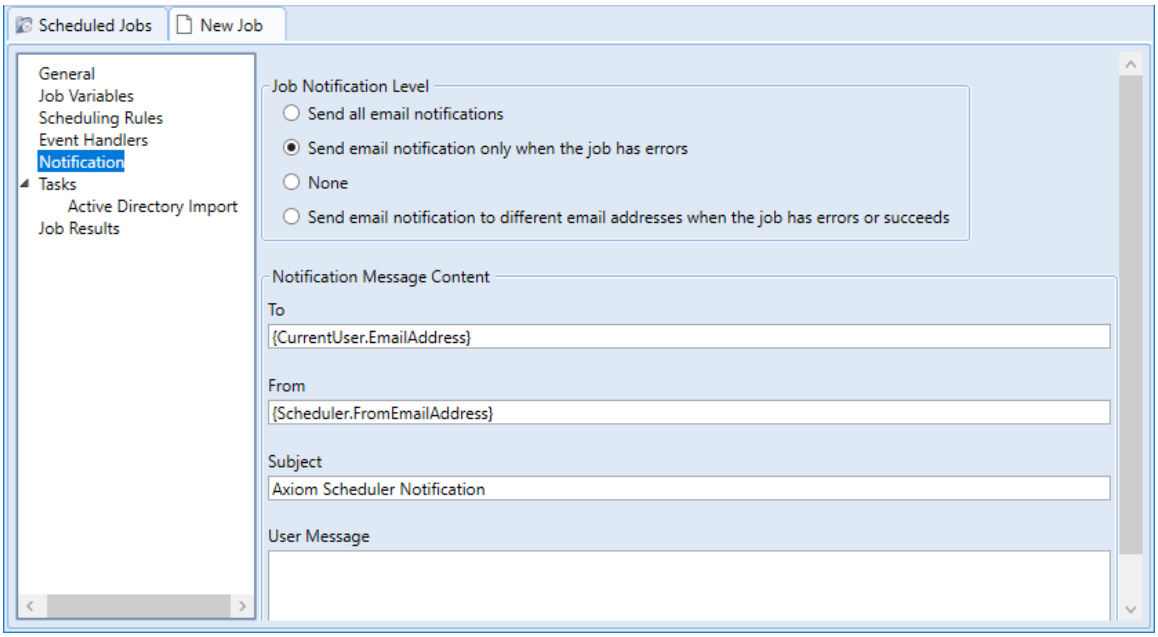
11. In the left-hand pane, click **Scheduling Rules**. Using this section, you can define a scheduling rule so that the job runs automatically as needed. Typically, organizations want the Active Directory Import task to run regularly so that users are kept in sync.

    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 Capital Planning 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 Capital Planning looks for a matching user name in Axiom Capital Planning 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 Capital Planning 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 Capital Planning.
- **User License Type**: If the assigned user license type for the Active Directory group has changed, then the license type is updated in Axiom Capital Planning.
- **Authentication Type**: If the assigned authentication type for the Active Directory group has changed, then the authentication type is updated in Axiom Capital Planning.

- **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 Capital Planning. If the user is disabled in Axiom Capital Planning 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 Capital Planning, 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 Capital Planning, 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 Capital Planning, so that users are authenticated against your LDAP server when launching Axiom Capital Planning.

NOTE: LDAP Authentication is not supported for use with Axiom Cloud systems.

LDAP Authentication behavior

When the Axiom Capital Planning 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 Capital Planning, then the credentials are passed to LDAP for authentication into Axiom Capital Planning.

If the LDAP Authentication configuration for Axiom Capital Planning 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 Capital Planning 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*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 Capital Planning users must be set up as follows to support LDAP Authentication:
   - The user's Axiom Capital Planning 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 Capital Planning 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 Capital Planning as that user. For more information, see Testing user security.

Using SAML Authentication

You can enable SAML Authentication for Axiom Capital Planning, 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 systems.

SAML Authentication behavior

SAML Authentication (Security Assertion Markup Language) is a web-based authentication method. Users access Axiom Capital Planning 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 Capital Planning, 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 Capital Planning 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 Axiom 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 Capital Planning users must be set up as follows to support SAML Authentication:

   - The user's Axiom Capital Planning 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 Capital Planning 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 Capital Planning, 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 Capital Planning 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 Capital Planning, 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 Capital Planning 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 Capital Planning, you must specify the Client ID and Client Secret for your OpenID provider.

For Axiom 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 Capital Planning 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 Capital Planning users must be set up as follows to support OpenID Authentication:
   - The user's Axiom Capital Planning 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 Capital Planning 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 Capital Planning 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.

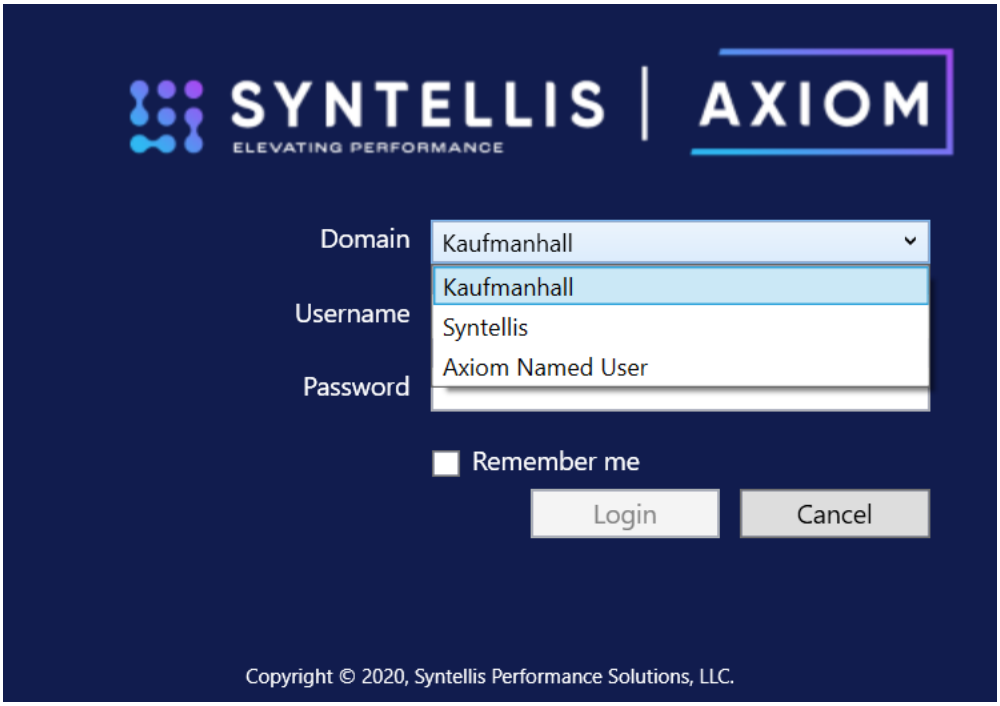
Alternatively, you can configure your system so that all users must specify their authentication type / domain when logging into Axiom Capital Planning, using the **Domain** selection list. The Domain selection list displays the following:

- **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 Capital Planning 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 Capital Planning on the current machine, they will not be prompted to log in.

Although all Axiom Capital Planning 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 Capital Planning 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 Capital Planning 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 Capital Planning 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 Capital Planning 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 Capital Planning 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.

Importing Datadata

Imports can be used to import external data into Axiom Capital Planning tables, so that the data can be included in reports or used in planning models and calculations. Data can be imported from files or by directly reading a database.

Imports are created in the Import Wizard, and stored in the Imports Library. Access to imports is controlled via security.

For Axiom Cloud systems, a remote data connection can be used to access local databases or files for the import data source.

About imports

Imports can be used to import external data into Axiom Capital Planning tables, so that the data can be included in reports or used in planning models and calculations. This topic explains some of the key concepts and requirements for importing data.

Import sources

You can import data into Axiom Capital Planning from the following sources:

- From an external database
- From a file (delimited or Excel)
- From special designated sources, such as Ellucian

Import Wizard

Imports are defined in the Import Wizard dialog. Imports consist of the following:

- **Source** tab: Specifies the source of the data to be imported.
- **Variables** tab: Defines variables to be used in the import, in order to dynamically change certain import settings.
- **Mapping** tab: Specifies the destination table for the import, and maps the import data to columns in the destination table.
- **Transforms** tab: Defines transformation statements to be performed on the import data before it is saved to the destination table. Transforms can use SQL or built-in Axiom Capital Planning functions.

The Import Wizard also contains the **Execute** tab, which can be used to execute the import in preview mode for testing, or to execute the actual data import.

The import process

When data is queried from the source file or database, it is first placed in a temporary table known as the *temp table*. The import can perform actions on the temp table before the data is saved to the destination table in Axiom Capital Planning, such as mapping or data transformations. Use the reserved term `{temptable}` whenever you want to refer to this temporary table in SQL statements.

When an import is executed, the following processes occur:

1. If any import variables are defined on the **Variables** tab, the user is prompted to select values for these variables. The selected variable values are then substituted for the variable names within the import settings.

   When running the import using a Scheduler job, you must specify values for the import variables within the Scheduler import task, or use job variables that will populate the import variable values when the job is executed.

2. The import creates the temp table by querying data from the source database or by gathering data from the specified file. The settings on the **Mapping** tab are used to determine the structure of the temp table. You can insert additional columns into the temp table (meaning columns that were not in the source file or table) by adding them as work column mappings.
3. Any transforms defined on the **Transforms** tab are processed, in the order listed. Transforms can edit the temp table directly, and they can reference information held in other tables in the Axiom Capital Planning database. Transforms can also set values for transform variables, which can then be used in subsequent transform steps and in certain import settings.
4. The temp table data is validated and then saved to the destination table, based on the destination column settings on the **Mapping** tab. If a column in the temp table is not mapped, then that data is not saved.

If the import utility is a multiple-file import, then steps 2-4 are performed for each file to be imported. For more information, see How multiple-file imports work.

Import save behavior

The save-to-database process for imports is performed as follows:

- If the destination table has any validated columns (columns that have an assigned lookup column), then the temp table data is validated against these lookup columns before saving. If a data row contains an invalid value, that data row is invalid and cannot be saved.
- By default, temp table data is aggregated before the save is performed. This means that duplicate rows (rows with the same key column values) will be treated as follows:
    - Columns holding numeric data will be summed.
    - For all other column types, the duplicate rows must have the same values. For example, if a column contains strings or dates, the duplicate rows must have the same string or the same date.

  If instead the optional setting **Aggregate rows on final save** option is disabled, then no aggregation is performed on the temp table data. In this case, any duplicate rows are invalid and cannot be saved.

  NOTE: Aggregation only applies when importing data to a data table. If the destination table is a reference table, aggregation is not allowed. If duplicate keys are present in the import data, those rows are invalid and cannot be saved to the reference table.

- Blanks are not allowed in key columns. If a data row in the temp table contains a blank key value, that data row is invalid and cannot be saved.

If any invalid rows are present in the import data, the import behaves as follows:

- By default, if any invalid data rows are present, then the import is aborted and no data is saved to the destination table.

- If instead the optional setting **Ignore lookup and key errors** is enabled, then the save-to-database process ignores the invalid data rows and only valid data rows are saved.

Managing imports

Using the **Imports** menu, you can create, edit, and delete imports as needed. Each import can import data from a designated source to a designated destination table.

For information on how to execute an import, see Executing imports.

Creating an import

Only administrators and users with the **Administer Imports** security permission can create imports. Non-admin users must also have read/write access to at least one folder in the Imports Library, in order to have a location to save the newly created import.

1. On the **Axiom** tab, in the **Administration** group, click **Imports > Create New Import**.

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

   TIP: You can also create new imports by right-clicking the Imports Library in the Axiom Explorer dialog or the Explorer task pane.

2. In the **Create New Import** dialog, select one of the following and then click **OK**.
   - **Create from scratch** (default): Create a new import starting with blank import settings.
   - **Create from existing**: Create a new import by copying an existing import. If you select this option, then select the import that you want to copy from the list in the bottom of the dialog.
3. In the **Import Wizard** dialog, complete the settings on each tab as appropriate. For details on specific import settings, see Import Wizard.

   If you copied an existing import, that import's settings are copied into the Import Wizard, and the import is named "Copy of *ImportName*." Edit these settings as appropriate for the new import.

   You can move between tabs in any order, however, before you can save the import, all required settings must be completed and no invalid settings must be present. If errors exist, an error message displays at the bottom of the dialog; you can click the error link to be taken to the tab with the error.
4. When you are finished completing the settings and no errors exist, click **OK** to save the import.
5. In the **Save As** dialog, navigate to the folder where you want to save the import, then click **Save**. By default, the import will be saved to the root of the Imports Library. You can create a new sub-folder from this dialog if desired (and if you have the appropriate permissions).

Once an import has been created, it becomes available on the **Imports** menu (to users with the appropriate permissions). Imports are listed in alphabetical order based on the import name.

Editing an import

You can edit existing imports as needed, as long as the import was not installed by a product package. Only administrators and users with read/write access to the import file can edit imports.

Product-controlled imports are locked and cannot be edited. Some of these imports may be designed to work as is, without customizations. If customizations are required, you can create a copy of the product-controlled import and make customizations in the copy. If the original import is later updated by the product, you can review the original import to see the changes that need to be made in your copy (or you can create a new copy of the import and re-make your customizations as needed).

To edit an existing import:

1. On the **Axiom** tab, in the **Administration** group, click **Imports** > ***ImportName*** > **Edit**.

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

   TIP: You can also edit an import from the Axiom Explorer dialog or the Explorer task pane. You can double-click an import in the Imports Library to open it.

2. In the **Import Wizard** dialog, edit any import settings as desired. For details on specific import settings, see Import Wizard.
3. Click **OK** to save your changes the import, or click **Save As** to save the edited import as a new import file.

Deleting an import

You can delete an existing import if it is no longer needed, as long as the import was not installed by a product package. Only administrators and users with read/write access to the file and its folder can delete imports.

Product-controlled imports are locked and cannot be deleted.

To delete an import:

- On the **Axiom** tab, in the **Administration** group, click **Imports** > ***ImportName*** > **Delete**.

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

  TIP: You can also delete an import from the Axiom Explorer dialog or the Explorer task pane.

Using variables in imports

Imports can use variables, so that certain import settings can change dynamically depending on the variable value. You can use two different types of variables in imports:

- **Import variables:** Import variables are defined on the **Variables** tab of the Import Wizard. Import variables can be used throughout the import settings (though not in *all* settings—see the documentation for each setting to see if variables are supported there). When the import is executed manually, the user is prompted to define values for the variables. If the import is run using Scheduler, the Scheduler job must define values for the variables.
- **Transform variables:** Transform variables are defined on the **Transforms** tab of the Import Wizard. Transform variables can only be used in transform statements, and as destination columns. Transform variables are associated with a specific SQL statement that results in a single value.

The values for import variables are defined at the start of the import, before any other import steps are processed. Therefore import variables are a good fit for actions such as:

- Selecting the appropriate source file based on user input.
- Selecting the appropriate destination table based on user input.

On the other hand, values for transform variables can only be determined as a result of a SQL statement, and are defined near the end of the import, after the temp table has been created. Transform variables are a good fit for situations where actions need to be driven dynamically based on the contents of the imported data, not by a user selection.

Variable syntax

To use a variable in the import, enter the variable name into one of the supported areas of the import settings, enclosed in curly brackets {}. For example, if the variable name is "mycolumn", you would enter `{mycolumn}`.

NOTE: If the variable defines the destination table, then you must place the variable in double curly brackets when you use it in a SQL statement, so that the eventual table name value is enclosed in curly brackets as expected. For example, if you have a variable named "destinationtable", you would reference that variable as `{{destinationtable}}`. That way, when the `{destinationtable}` value is defined, it will resolve as `{GL2021}`.

System variables

In addition to the user-defined variables, you can reference system variables in imports. The following variables are supported:

System Variable	Description	Can Be Used In
{CurrentPeriod}	The current period as defined for the destination table (if not set, then this is the system current period).	All import locations that support variables, except the destination table.
{CurrentUserDomain}	The domain name of the user running the import. Returns blank for users who do not have a defined domain.	All import locations that support variables.
{CurrentUserEmail}	The email address of the user running the import.	All import locations that support variables.
{CurrentUserLogin}	The login name of the user running the import.	All import locations that support variables.
{DefaultRemoteDataConnection}	The name of the default remote data connection for your system. If your system has multiple defined connections, then the default is determined alphabetically among the connections that are not enabled for authentication. If all of the connections are enabled for authentication, then the default is simply determined alphabetically. If the variable is used in a system without any remote data connections, then the variable returns blank and the import will not attempt to use a remote data connection. This allows products to develop standard imports for use in both on-premise and Axiom Cloud systems.	In the Remote Data Connection field on the Source tab, or as an import variable choice.

System Variable	Description	Can Be Used In
{SourceFileName}	The name of the source file for the import.	Import transformation steps only.
{SystemCurrentYear}	The current year as defined for the system.	All import locations that support variables.
{SystemCurrentPeriod}	The system current period.	All import locations that support variables.
{TempTable}	The temporary table where imported data is placed before saving to the destination table.	All import locations that support variables.
{*TableName*}	Any user-defined table created in the Axiom Capital Planning system. For example, {ACCT}, {DEPT}, {GL2021}, {BGT2021}.	All import locations that support variables.

Executing imports

When you execute an import utility, data is queried from the source database or file, import steps are processed, and the resulting data is saved to the destination table. For more information on what occurs when an import is executed, see About imports.

Only administrators and users with **Execute** permission to the import file can execute an import.

NOTE: You can also use Scheduler to execute import utilities, using the **Import ETL Package** task.

To execute an import:

1. Do one of the following to open the import for execution, depending on whether you need to access the full import settings:
   - **Open the full Import Wizard**: On the **Axiom** tab, in the **Administration** group, click **Imports** > ***ImportName*** > **Edit**. Then in the Import Wizard, go to the **Execute** tab.

     Using the Import Wizard, you can switch between the Execute tab and other tabs to view and edit the import settings as needed, and then run the import again.
   - **Open in execute-only mode**: On the **Axiom** tab, in the **Administration** group, click **Imports** > ***ImportName*** > **Execute**.

This opens a special **Execute Import** dialog that only displays the import execution options and controls. Use this mode if you only need to execute the import and you don't need to review or edit any import settings. This is the only mode available to users who have execute-only permissions to the import.

NOTE: In systems with installed products, these features may be located on the **Admin** tab.

TIP: You can also open imports for execution using Axiom Explorer or the Explorer task pane. If you have read/write or read-only access to the import, the full Import Wizard opens. If you have execute-only permission to the import, then the Execute Import dialog automatically opens when you access the import from the Imports Library.

2. Click **Execute** to start the import.

   The option at the top of the dialog, **Execute in development mode**, should only be used if you want to test or troubleshoot the import. When development mode is enabled, the import is executed, but the data is not saved to the destination table. For more information, see Executing imports in development mode.

3. If the import uses variables, the **Variables** dialog opens so that you can to define values for the variables. For each variable, you can select a value from the drop-down list. Some variables may also allow you to type in a user-defined value.

4. If the import uses a source file, you may be prompted to specify the location of the source file. In the **Open** dialog, navigate to the file that you want to use and then click **Open**.

   In this case, a copy of the specified file is uploaded to the application server for processing. Once the import is complete, the temporary copy of the file is deleted.

As the import is processed, status messages display in the **Execution log** box. If an error occurs, the error message displays in the log and the import is stopped. If necessary, you can copy and paste the text in the execution log—for example, to send the error to Axiom Support. To copy the log text, right-click inside the log and choose **Select All**, then select **Copy**.

TIP: If an import experiences an error and you need more information on the error, try running the import in development mode. The error messages in development mode may contain more detail.

If you want to stop the import while it is executing, click **Stop**. The import stops after completing the step that is currently in-process. You cannot restart the import at the same spot—when you click **Execute**, the import starts over from the beginning.

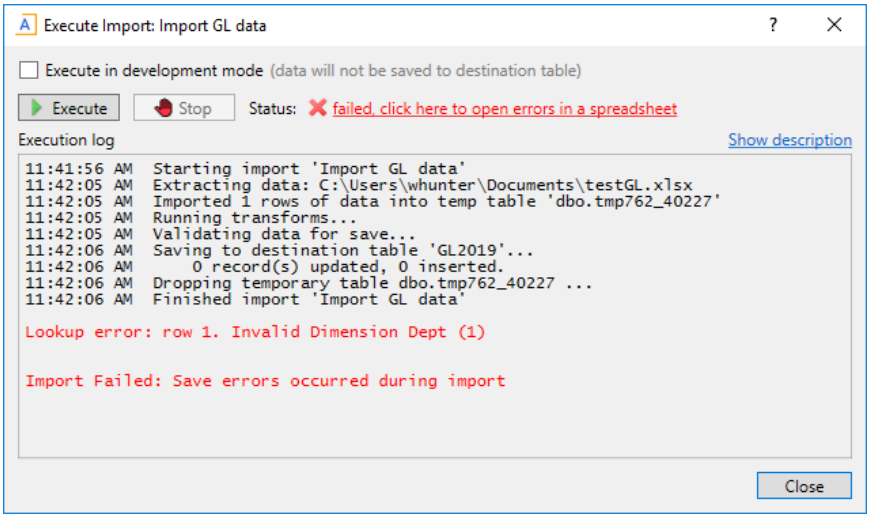
Import validation errors

If the import experiences import validation errors, then those errors are logged to a separate CSV file in addition to being displayed in the **Execution log** within the dialog. You can open this file separately to see exactly which rows of data were invalid within the context of the import data.

The error file includes the following information:

- Lookup validation errors from Axiom Capital Planning's built-in validation against lookup columns.
- Validation errors from any **Custom Data Validation** steps in the transforms.
- Key validation errors such as blank keys or duplicate keys.

You can open the file from the **Execute Import** dialog by clicking the link in the Status area. The status will be either "failed" or "warning," followed by the text "click here to open errors in a spreadsheet." The status type depends on whether the option to **Ignore lookup and key errors** is selected.



Example link to open validation errors in a spreadsheet

The CSV file contains the import data, followed by one or more validation columns. Validation columns are labeled as follows:

- Lookup and key validation messages are in a column named ***LookupColumnName* Lookup Error**. For example: "Acct Lookup Error" when looking up against the ACCT column.
- Custom Data Validation messages are in a column named **AXTRANSFORM_*StepNumber***, where *StepNumber* is the number of the associated transformation step. For example: "AXTRANSFORM_5" when the associated transform is step 5 in the list.

The error CSV files are placed in a system-maintained folder in the Imports Library named **Import Errors**. Access to the error files is automatically managed based on access to the import. You can access the error file directly later by using the Explorer task pane or Axiom Explorer.

Each execution of an import that results in a lookup error generates a unique error file (differentiated by a date/time stamp). These error files are not automatically deleted; you must manually delete them when you are finished investigating the error.

Executing imports in development mode

You can execute an import in development mode, in order to test import settings or troubleshoot an import issue. In development mode, all import steps are performed except for the last step that saves the temp table data to the destination table.

When executing in development mode, additional options are available:

- You can pause the import after certain transformation steps are performed, and view the data in the temp table as it exists after performing the step. Reviewing this data can help you determine if a particular transform is working as you expect. If an import doesn't have defined transformation steps, you can view the import data as it exists after the temp table is populated from the source data.
- For delimited file imports, you can limit development mode processing to a certain number of rows, for more efficient testing and troubleshooting.

IMPORTANT: When an import is run in development mode, all of the steps in the **Transforms** tab are performed, including any steps that modify tables other than the temp table. If you do not want these steps to occur during testing, then you should disable the step on the **Transforms** tab before executing the import in development mode.

To run an import in development mode:

1. Do one of the following to open the import for execution, depending on whether you need to access the full import settings:
   - **Open the full Import Wizard**: On the **Axiom** tab, in the **Administration** group, click **Imports** > ***ImportName*** > **Edit**. Then in the Import Wizard, go to the **Execute** tab.

     Using the Import Wizard, you can switch between the Execute tab and other tabs to view and edit the import settings as needed, and then run the import again.
   - **Open in execute-only mode**: On the **Axiom** tab, in the **Administration** group, click **Imports** > ***ImportName*** > **Execute**.

     This opens a special **Execute Import** dialog that only displays the import execution options and controls. Use this mode if you only need to execute the import and you don't need to review or edit any import settings. This is the only mode available to users who have execute-only permissions to the import.

   NOTE: In systems with installed products, these features may be located on the **Admin** tab.

   TIP: You can also open imports for execution using Axiom Explorer or the Explorer task pane. If you have read/write or read-only access to the import, the full Import Wizard opens. If you have execute-only permission to the import, then the Execute Import dialog automatically opens when you access the import from the Imports Library.

2. In the **Execute Import** dialog (or the **Execute** tab of the Import Wizard), select **Execute in development mode**.

   Once development mode is enabled, the **Development Mode Options** section becomes available.

3. Select the **Development Mode Options** as needed:

Option	Description
Limit the number of rows imported to	Limits the development mode processing to a specified number of rows. When testing the import, you may only need to process a handful of rows in order to verify that the import is working as expected. Using a smaller number of rows speeds import processing. After selecting this option, enter a number of rows from 1 to 1000 into the box. By default, the row limit is 1000. **NOTE:** This option is only available when the import source is a delimited file or Ellucian. If the import source is a database, you can limit the number of rows by setting a temporary WHERE clause in the SQL Select Statement.
Pause after specified transforms and display current temp table data	Specifies whether pauses are honored during development mode processing. • If enabled, then Axiom Capital Planning 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. See Troubleshooting transforms using pause. • If disabled (the default setting), then the import continues without pausing, regardless of whether any steps are flagged with **Pause**. **NOTES:** • This option is only available in the Execute tab of the full Import Wizard, and only if you have read/write access to the import. • If the import does not have any transforms, this option is renamed to **Pause and display temp table data after preview data is fetched**. If enabled, the temp table is populated with data from the import source, and then the temp table data is displayed in the View Data dialog.

NOTE: Development mode and its options only apply to the current import session—these options are not saved in the import settings.

4. Click **Execute** to run the import in development mode.

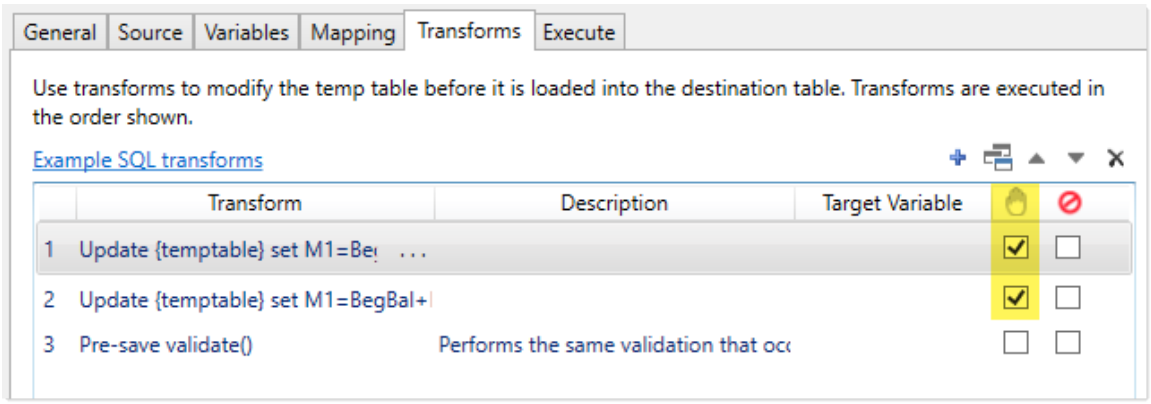
The import is executed and status messages display in the **Execution log** as normal. If pauses are enabled, the import pauses at the designated steps to display the **View Data** dialog. After closing the dialog, click **Continue** to continue processing. Once all transform steps have been executed, the import stops before saving data to the destination table.

Troubleshooting transforms using pause

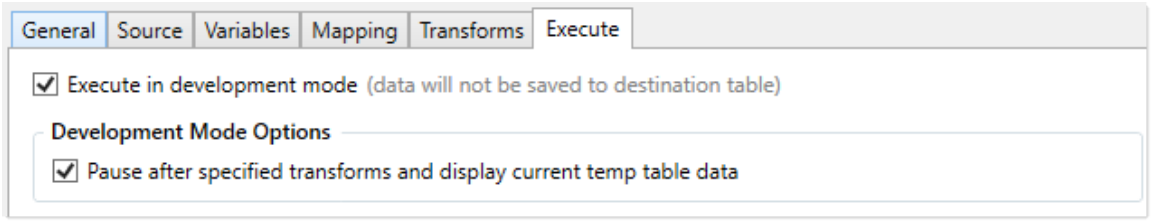
When running an import in development mode, you can configure the import to pause after performing certain transform steps, and view the data in the temp table.

To configure an import to pause after a transform:

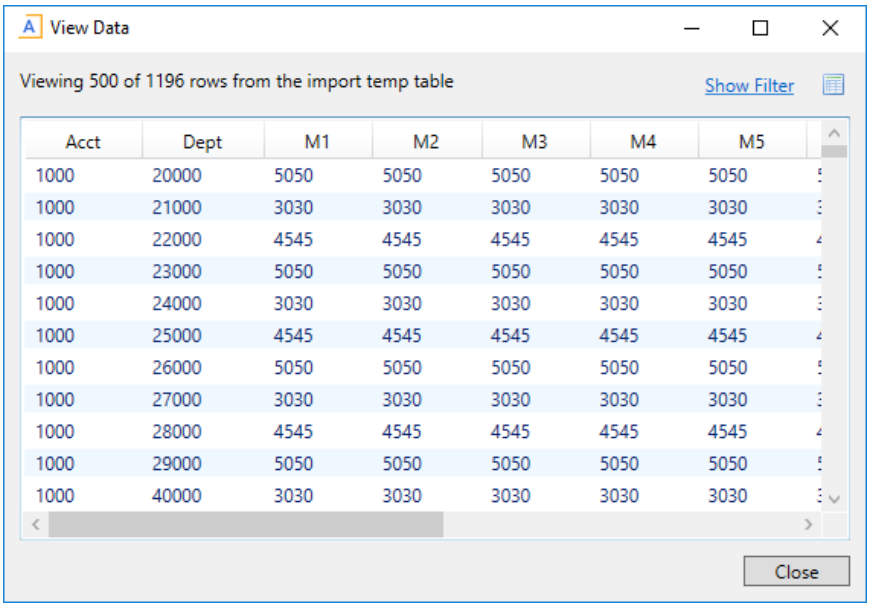
- On the **Transforms** tab, select the **Pause** check box for the transform.



- On the **Execute** tab, select **Execute in development mode** and then select **Pause after specified transforms and display current temp table data**.



When the import is executed in development mode with pauses enabled, it continues until it reaches a transform step that is configured to pause. After completing that step, the import pauses and shows the current temp table data within the **View Data** dialog.



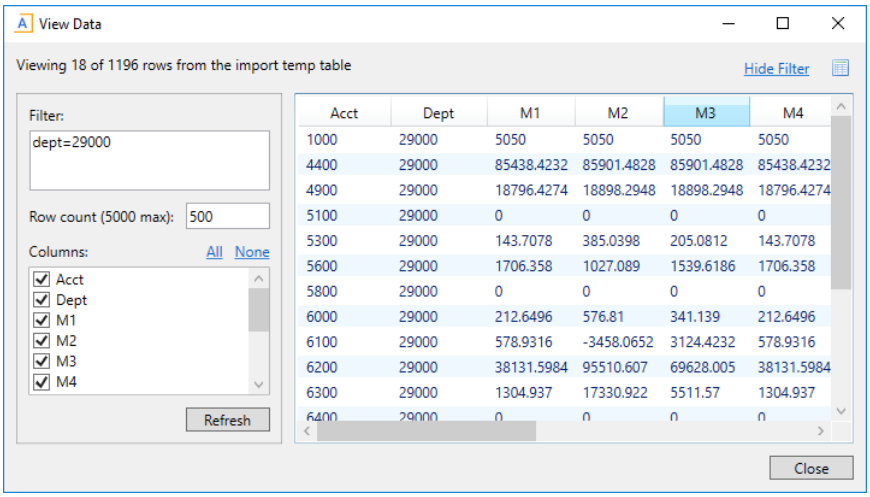
Example View Data dialog

Using this dialog, you can view and filter the data to help determine whether the transform is working as expected. When you are done viewing the data, click **Close** to return to the import. At this point the import is still paused. You can click **Continue** to continue the import, or **Stop** to stop it.

By default, the **View Data** dialog shows the first 500 rows of data in the temp table. This row limit is controlled by the **ETLMaxRows** system configuration setting. If desired, you can filter the data to make it easier to find specific records you might be looking for. To do this, click **Show Filter** in the top right corner of the View Data dialog. This enables the following filter options for the dialog:

Item	Description
Filter	Type a filter to limit the data shown in the dialog. The filter must use column-only syntax, using a column name in the temp table. For example: `Dept=45000` Where Dept is a column in the temp table.
Row count	Type a number to limit the data to a certain number of rows. The maximum number of rows that can be shown is 5000.
Columns	Select or clear columns to limit the temp table columns that display in the dialog. You can use the **All** or **None** options to select or clear all columns at once. If you clear a column, then that column cannot be used in the filter. **NOTE:** At least one column must be selected to display. If no columns are selected, then all columns will display.

After modifying the filter options, click **Refresh** to filter the data in the dialog using your selections. To clear your filter options and return to the default dialog, click **Hide Filter**.



Example View Data dialog with filter options

Import Wizard

Using the Import Wizard, you can create new imports and edit existing imports. Import settings are organized by tab.

Tab	Description
General	Defines the name of the import and other general settings.
Source	Specifies the source of the data to be imported, and how to access it.
Variables	Defines variables to be used in the import, in order to dynamically change certain import settings.
Mapping	Specifies the destination table for the import, and maps the import data to columns in the destination table.
Transforms	Defines transformation statements to be performed on the import data before it is saved to the destination table. Transforms can use SQL or built-in Axiom Capital Planning functions.
Execute	Execute the import. You can run the import normally, or you can run it in development mode for testing and troubleshooting purposes. **NOTE:** It is possible to configure user permissions so that a user has read/write or read-only access to the import utility file, but the user does not have execute permissions for the import. In this case, the Execute tab is hidden.

As you complete the import settings, the Import Wizard performs error checking for missing required settings and invalid settings. If an error is detected, an error message displays in the bottom of the dialog. You can click the link to be taken to the tab that contains the error. Only one error is displayed at a time; once you resolve the current error message, a new message may appear.

Import Wizard: General tab

On the **General** tab of the Import Wizard, you can define general properties for the import—such as the import name and save options.

Item	Description
Import Name	The name of the import. The import name is how you access and execute imports from the **Imports** menu, and in other areas such as the **Import ETL Package** task in Scheduler.
Description	Optional. The import description. The description can be used to document the purpose of the import and/or to detail important import instructions. The description is limited to 2000 characters. When an import is opened in execute-only mode, the description can be viewed by clicking the **Show description** link in the **Execute Import** dialog.

Save Options

The save options impact how data is saved to the destination table when the import is executed.

Item	Description
Ignore lookup and key errors	Specifies the import behavior if lookup and key errors exist in the temp table data before saving to the destination table. These errors include invalid lookup data, blank keys, and duplicate keys. • If enabled, then any rows with lookup and key errors are ignored, and only valid rows are saved to the destination table. Once the import is complete, an error log is provided to detail the invalid rows. For more information, see Import validation errors. This option allows you to continue to save valid data even if invalid data is present. You can then investigate the invalid data, make corrections, and reimport. • If disabled (the default setting), then the import is aborted if any lookup and key errors exist in the temp table data. No data is saved to the destination table. **NOTES:** • If this option is enabled and the import is executed by Scheduler, the execution status of the job is set to Partial Success if any errors are found. This will result in an email notification if the job is set to notify only on error. • This option does not apply if a **Pre-Save Validation** function is used in the import's transform steps. If this function is used, then the import is aborted if any validation errors are found, and no further import steps are processed. • Duplicate keys count as an error condition when saving to a reference table, or when **Aggregate rows on final save** is disabled.
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 temp table 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 may improve import performance for large imports where aggregation is not necessary. **NOTE:** This option does not apply when the destination table for the import is a reference table, or any table with an identity key column.

Item	Description
Bypass updating existing rows when saving to the destination table	Specifies whether the import saves both updated data and new data, or just new data. • If enabled, then only new records of data are saved to the destination table when the import is run. Updates to existing records are ignored. • If disabled (the default setting), then new records and updates to existing records are saved to the destination table when the import is run. Enabling this option may improve import performance for use cases where the import source is not expected to contain updates to existing data. Keep in mind that if you enable the option and the import source does contain updates to existing data, the updates are simply ignored with no warning. **NOTE:** If this option is enabled, existing records in the source data may still cause import errors, even though these records will be ignored for the final save to the destination table.

Import Wizard: Source tab

The **Source** tab of the Import Wizard specifies the source of the data to be imported. The contents of the tab depend on the **Import type** selection at the top of the tab.

The available import types are as follows. Select the type that corresponds to the source of the data that you want to import:

Import Type	Description	More Information
File	Use to import data from a file: • Delimited files or Excel files • A single file or multiple files	Importing from one or more source files
External database	Use to import data from an external database. The following database connections are supported: • SQL Server • Oracle • OLEDB • ODBC	Importing from an external database

NOTE: The OLEDB source type can also be used to import data from a file. If you want to import from a file that is not one of Axiom Capital Planning's supported file types, you may be able to use the OLEDB source type. The database connection strings can be configured to pull data from various file types.

The topics in this section detail the requirements and import settings for each import type.

Importing from one or more source files

You can import data into Axiom Capital Planning from a file, using either a delimited file or an Excel file. You can import from a single file, or from multiple files that use the same file structure.

File requirements

When using a delimited file, the file must meet the following criteria:

- Delimiters can be any character. You specify the delimiting character in the import settings.
- The first row of the file can optionally contain column header names.
- Numeric values cannot be in scientific notation or formatted with extraneous characters such as currency signs or parentheses.

When using an Excel file, the file must meet the following criteria:

- The file format must be XLS or XLSX. XLSM files cannot be imported.
- The first row can optionally contain header names.
- Each column in the Excel file translates to a column in the destination table. Each row in the file translates to a data record in the table. Blank columns and rows are ignored.
- The data in the spreadsheet must match the designated data type for the destination column. For example, if numeric values in the spreadsheet are prefixed with a quotation mark, then Excel considers those values to be strings instead of numbers. This will cause an error if attempting to import these string values into a numeric column.

Import source files can be no larger than 2GB. Additionally, some import features may impose a smaller file size limit. If the source file exceeds the file size limit, it should be split into multiple smaller files.

Source configuration

To import data from a file, complete the following configuration settings on the **Source** tab of the Import Wizard.

General settings

The following settings are always present at the top of the tab.

Item	Description
Import type	Select **File** to import data from a file.

Item	Description
Remote Data Connection	If your Axiom Capital Planning system is hosted on the Axiom Cloud, and you are not using the **Prompt for path during execution option** to allow the user to select a file, then you must specify a remote data connection so that the Axiom Cloud can read the file located on your network. You can select any remote data connection defined in your system, or you can enter an import variable name. For example, you can enter the built-in system variable `{DefaultRemoteDataConnection}` to automatically use the default remote data connection for your system. For information on how the default remote data connection is determined, see System variables. If no remote data connections have been defined in your system, then this setting does not apply and will not display.

File import options

The following settings are present when **File** is selected as the import type.

Item	Description
File type	Select one of the following to specify the type of file to use as the import source: • **Delimited file**: Import data from a delimited text file, such as CSV or TXT files. • **Excel file**: Import data from an Excel file (XLS or XLSX).

Item	Description
Source path	Select one of the following to specify the location of the source file: • **Use specified path**: Use this option if the file path is always known. To specify the file path, use either the **File path** or **Source folder** setting, depending on whether you are importing from a single file or multiple files. The specified path must be accessible to the Axiom Application Server (for on-premise installations) or to the Axiom Cloud Integration Service (for Axiom Cloud systems). • **Prompt for path during execution**: Use this option if you want the user to be able to specify the file when running the import. You can optionally complete the **Default folder** setting to provide a starting point. When using this option, a copy of the specified file is uploaded to the application server for processing. Once the import is complete, the temporary copy of the file is deleted. **NOTE:** Files greater than 100 MB cannot be uploaded using the "prompt" option. While it is possible to increase this limit, it is not recommended. Instead, you should use the **Use specified path** option if you need to import a file larger than 100 MB. Please contact Axiom Support if you need assistance with a large file. For more information, see Design considerations for the source path.
Import from	Select one of the following: • **Single file**: Use when importing data from a single designated file. • **Multiple files**: Use when importing data from multiple files within a designated folder. All of the files to be imported must use the same file structure. When importing from multiple files, additional configuration settings become available on the **Source** tab, in the Multiple file options section.

Item	Description
File path or Source folder	This setting applies when **Use specified path** is selected for the **Source path**. Specify one of the following, depending on whether you are importing a single file or multiple files: • **File path**: When importing from a single file, specify the path to the file. You can type the file path or click the folder icon to navigate to the file. • **Source folder**: When importing from multiple files, specify the path to the folder. All of the files to be imported must reside in this folder. You can type the folder path or click the folder icon to navigate to the folder. Once the path is specified, Axiom Capital Planning will validate whether the application server or the cloud integration service can access the file or folder, and will display an error if not. For assistance in resolving this error, see Troubleshooting file access. If the path is to a network location, it should be a UNC path (i.e. \\servername\foldername\filename). If you enter a mapped drive, the entry will be converted automatically to a UNC path if possible. Import variables can be used in the path. See Using variables in imports. **NOTE:** If a remote data connection is specified, then by default the file/folder navigation dialog shows the folder structure of the server where Axiom Cloud Integration Service is installed. If you need to point to a different location, you can either manually type the file or folder path, or you can temporarily set **Remote Data Connection** to **<None>**.
Default folder	Optional. This setting applies when **Prompt for path during execution** is selected for the **Source path**. Specify a folder path to use as the default location when prompting the user to select a file. You can type the folder path or click the folder icon to navigate to the folder. If a folder is specified, then when the user is prompted to select a file, the file selection dialog will open to this folder by default. The user can still browse to a different location. Import variables can be used in the path. See Using variables in imports.

File options (Excel)

The following options are present if the **File type** is **Excel file**.

Item	Description
First row has column names	Select this option if the first row of the file contains column names. If the first row of the file contains data, leave this option unchecked.

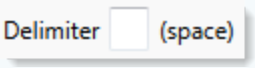
Item	Description
Sheet name	The sheet in the Excel file to import. Leave this blank to use the first sheet in the file. Only one sheet can be imported. Variables can be used to specify the sheet name. See Using variables in imports.

File options (Delimited)

The following options are present if the **File type** is **Delimited file**.

Item	Description
First row has column names	Select this option if the first row of the file contains column names. If the first row of the file contains data, leave this option unchecked.

Import file has multi-line values	Select this option if the import file has data where a field value splits across rows (within the text qualifier). For example:
	
	`DEPT, ACCT, LOCATION, A1, A2, A3`
	`100,4000, East Region, 123, 456, 789`
	`100,4100,"West`
	`Region",111,222,333`
	
	If this option is selected, then the split value will be read as a single import value.

Delimiter	In the box to the right of the option, enter the delimiting character used in the source file. For example, if the delimiter is a comma, enter a comma into the box. If the delimiting character is a space or a tab, place your cursor in the box and press the space bar or the tab key. The character will be indicated in parentheses to the right of the box (since the character is not visible in this case). 
Text Qualifier	By default, the text qualifier is double quotation marks ("). If desired, you can enter a different character as the text qualifier, or you can clear the field if you do not want to use a text qualifier. The text qualifier is used when values in the source file may contain the delimiting character. For example, if the delimiting character is a comma, but the source file contains values such as full names that also contain a comma (for example: "Doe, Jane"). In this case, the comma within the quotation marks is considered part of the field value instead of starting a new field.

Multiple file options

The following options are present if **Import from** is set to **Multiple files**.

Item	Description
Import order	Select one of the following to specify the order in which multiple files are imported: • **Alphabetical**: Files in the specified source folder are imported in alphabetical order. • **Creation date**: Files in the specified source folder are imported by creation date (earliest first).
File filter	Optional. Specify a filter to determine the files to import within the specified source folder. If the filter is left blank, then all files in the folder are imported. 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". Import variables *cannot* be used in the filter. **NOTE:** The import attempts to process all files in the folder allowed by the file filter, regardless of whether those files meet the specified file type for the import (delimited or Excel). You should make sure that the folder only contains valid file types, or set the filter appropriately so that invalid file types will not be imported.
Archive folder	Specify a target folder in which to archive source files after they have been imported. You can type the folder path or click the folder icon to navigate to the folder. After the data in a file has been imported successfully, the file is *moved* from the original source folder to the archive folder. Files are not moved when running the import in preview mode. Import variables can be used in the path. See Using variables in imports. **NOTE:** If a remote data connection is specified, then by default the file/folder navigation dialog shows the folder structure of the server where Axiom Cloud Integration Service is installed. If you need to point to a different location, you can either manually type the file or folder path, or you can temporarily set **Remote Data Connection** to **<None>**.

Item	Description
Add timestamp prefix to file names when archiving successful import files	Optional. Select this option if you want to add a timestamp to the file names in the archive folder. • If enabled, then when a file is moved to the archive folder after a successful import, the file is renamed so that the name starts with the current date and time. This is intended to make it easier to find and identify files that were imported as part of a particular import execution. • If disabled, then file names are left as is when they are moved to the archive folder.

Design considerations for the source path

There are two options to specify how the import obtains the source file: **Prompt for path during execution** and **Use specified path**. When deciding which option to use, you should consider the following to determine which option is most appropriate.

Prompt for path during execution

File permissions	The file must be accessible by the user's file system permissions.
Data flow	• A copy of the file is streamed from the client machine to the application server, then from the application server to the database server. • The file copy on the application server is deleted after the import is complete.
Ramifications / Limitations	• Slower performance (file is copied multiple times) • Only available when running the import interactively • Maximum file size of 100MB

Use specified path

File permissions	• The file must be accessible by the application server or the cloud integration service. • The file path must be a UNC path, not a mapped drive (meaning \\servername\foldername, not I:\foldername).
Data flow	The file is streamed from the file source to the database server for import.
Ramifications / Limitations	• Faster performance • Maximum file size of 2GB • Can be used in Scheduler

How multiple-file imports work

When the import is configured to use multiple source files, the import works as follows:

- When the import begins, Axiom Capital Planning inspects the source folder and compiles a list of all files found in that folder. If a file filter is specified, the list is limited to only those files that match the filter. If any files are added to the folder after this list is compiled, those new files will not be imported during the current import execution.

  If no files are found, the import stops. The absence of files to import is not an error condition.

- The files in the list are then imported sequentially, in the configured order (either alphabetical by file name, or by creation date). For each file, the following occurs:
  - Data is copied from the source file into the temp table.
  - Transform statements are run.
  - Data is saved to the destination table.
  - The source file is moved from the source folder to the archive folder.

  Each file must complete this import process successfully before moving on to the next file.

  NOTE: If the import uses import variables, these values are set once, before the file list is created. The import variables will remain the same for each file that is imported. However, transform variables are set by transform statements. Since the transform statements are run per file, it is possible that transform variables could resolve differently per file.

- If any file fails to import successfully, the import stops and the import status is set to Error. No further files are imported. Currently, it is not possible to configure the import to ignore the error and continue processing other files.
- If all files in the list import successfully, the import stops and the import status is set to Success.

Because all of the files are imported sequentially, if multiple files contain data for the same set of key values, the data in the last-processed file will be saved in the database (overwriting any previously saved data for the same keys). It is *not* currently possible to batch and aggregate the data from multiple files before saving.

Importing from an external database

You can import data into Axiom Capital Planning from an external database, such as a SQL Server or Oracle database.

When importing from an external database, you must provide the appropriate information to allow Axiom Capital Planning to connect to the database, such as the server and/or database name, and the login credentials. You must also create a SQL statement to query the necessary data that you want to import into Axiom Capital Planning.

NOTE: The Connection information is only used to connect to the source and extract the data into the import temp table. If the connection information includes a password, the password must be re-entered anytime the connection information is changed.

Source configuration

To import data from an external database, complete the following configuration settings on the **Source** tab of the Import Wizard.

Item	Description
Import type	Select **External Database** to import data directly from an external database.
Import source	Select one of the following database sources: • **SQL Server**: Use this to import from a SQL Server database. • **Oracle**: Use this to import from an Oracle database. • **OLEDB**: Use this to connect to any database that supports OLEDB. • **ODBC**: Use this to connect to any database that supports Open Database Connectivity. Generally speaking, this option should only be used if no other option is available to connect to your desired database. **NOTES:** • The OLEDB option can also be used to import data from files if necessary. However, it cannot be used with Excel files. The Excel file option should be used instead. • An ODBC driver is required for use with the ODBC option. See ODBC driver. • When using the Oracle option, the Oracle Data Access Connection software (ODAC) must be installed on the Axiom Capital Planning application server. If you want to import directly from an Oracle database without installing this software on the application server, you can use the OLEDB import source instead.
Remote Data Connection	If your Axiom Capital Planning system is hosted on the Axiom Cloud, then you must specify a remote data connection so that your Axiom Cloud system can connect to the database server located on your network. You can select any remote data connection defined in your system, or you can enter an import variable name. For example, you can enter the built-in system variable `{DefaultRemoteDataConnection}` to automatically use the default remote data connection for your system. For information on how the default remote data connection is determined, see System variables. If no remote data connections have been defined in your system, then this setting does not apply and will not display.

Connection information for SQL Server

Complete the following connection information when the **Import source** is **SQL Server**.

Item	Description
Server	The name of the SQL Server.
Database	The name of the database.
User	The user name to use to connect to the specified server and database. The user credentials must be for a SQL Server account; network domain credentials cannot be used.
Password	The password to use to connect to the specified server and database.

Once you have completed the connection settings, click the **Test connection** button to test the connection. The **Status** updates to show either a success message or an error message.

Connection information for Oracle

Complete the following connection information when the **Import source** is **Oracle**.

Field	Description
Server	The connection parameters for the Oracle server. You can obtain this information from the Oracle TNS Names entry. A typical TNS Names entry for Oracle looks like the following: `SERVER=(DESCRIPTION=(ADDRESS=(PROTOCOL=TCP)(HOST=`**`MyHOSTNAME`**`)(PORT=`**`MyPORT`**`))(CONNECT_DATA=(SERVICE_NAME=`**`MyOracleServiceID`**`)))` Axiom Capital Planning requires this information in the following format: **`MyHOSTNAME:MyPORT/MyOracleServiceID`** Where: • *MyHostName* is the name of the Oracle server machine • *MyPort* is the port number that the server is listening on, typically 1521 • *MyOracleServiceID* is the name of the Oracle service running on the host machine
User	The user name to use to connect to the database.
Password	The password to use to connect to the database.

Once you have completed the connection settings, click the **Test connection** button to test the connection. The **Status** updates to show either a success message or an error message.

Connection information for OLEDB

Complete the **Connection string** field when the **Import source** is **OLEDB**. The connection string identifies the name and location of the database or file to connect to, including any necessary validation information. Any valid SQL connection string can be used. The connection string cannot contain spaces.

Once you have completed the connection settings, click the **Test connection** button to test the connection. The **Status** updates to show either a success message or an error message.

A good resource for connection strings is http://www.connectionstrings.com/ (external link). Some examples of common connection strings are shown below:

Source	Sample string
CSV	Server=.\SQLExpress;Provider=MSDASQL;Driver={Microsoft Text Driver (*.txt; *.csv)};UID=test;PWD=test!123;Database=AxiomFinancial
SQL Server, trusted connection	Data Source=myServerAddress;Initial Catalog=myDataBase;Integrated Security=SSPI;
Oracle with TNS	Data Source=TORCL;User Id=myUsername;Password=myPassword;
SQLOLEDB (standard)	Provider=sqloledb;Data Source=myServerAddress;Initial Catalog=myDataBase;User Id=myUsername;Password=myPassword;
SQLOLEDB (trusted)	Provider=sqloledb;Data Source=myServerAddress;Initial Catalog=myDataBase;Integrated Security=SSPI;
SQLOLEDB (server instance)	Provider=sqloledb;Data Source=myServerName\theInstanceName;Initial Catalog=myDataBase;Integrated Security=SSPI;
AS400	Provider=IBMDA400;Data Source=MY_SYSTEM_NAME;User Id=myUsername;Password=myPassword;

Connection information for ODBC

Complete the **Connection string** field when the **Import source** is **ODBC**. The connection string identifies the name and location of the database to connect to, including any necessary authentication credentials. The connection string requirements and syntax vary depending on the source database you are attempting to connect to. Consult the documentation from your database vendor to determine an appropriate ODBC connection string for this purpose.

Once you have completed the connection settings, click the **Test connection** button to test the connection. The **Status** updates to show either a success message or an error message.

SQL Select Statement

The SQL SELECT statement defines the data query to the source database, resulting in the set of data to be imported to the *temp table*. You can then perform mapping and transformations on the data before importing into the destination table.

In the **SQL Select Statement** box, enter any valid SQL statement to define the data query. You can click the **SQL editor** button to open the **Edit SQL** dialog. This dialog provides a text editor for entering and reviewing large SQL statements, and several tools to check the statement. For more information, see Creating the SQL SELECT statement.

Variables can be used in the SELECT statement. See Using variables in imports.

NOTE: The syntax of the SQL statement cannot be validated when using OLEDB or ODBC as the source.

ODBC driver

Use of ODBC requires an ODBC driver to be installed on the following servers:

- For on-premise systems, the driver must be installed on the Axiom Capital Planning Application Server.
- For Axiom Cloud systems, the driver must be installed on the local server that is hosting the Axiom Cloud Integration Service.

The ODBC driver is specific to your source database. If you want to use ODBC with a particular database, that database vendor should provide or recommend an ODBC driver for use with that database.

Creating the SQL SELECT statement

If the import source is an external database or an internal database, then you must define a SQL SELECT statement to query the source database, resulting in the set of data to be imported to the *temp table*.

You can use the **Edit SQL** dialog to create and test the SELECT statement. To open the dialog:

- On the **Source** tab of the **Import Wizard**, click the browse button (**...**) to the right of the **SQL Select Statement** box.

The **Edit SQL** dialog provides a text editor for the statement, and also several tools to help create and test the statement.

Creating the statement

You can type the statement into the text editor, or copy and paste from another source.

You can use the **Choose Table** tool to automatically generate a SQL statement that selects all columns in a specified table. You can then edit the statement to meet the specific data needs. To do this:

1. Click the **Choose source table to create SQL** button .

2. In the **Choose Table** dialog, select the table for which to generate the SQL statement, and then click **OK**.

   The **Choose Table** dialog lists all tables in the SQL Server database specified on the **Source** tab, including views.

The generated SELECT statement is placed in the text editor. Any existing text in the editor is overwritten.

Testing the statement

NOTE: If the SQL statement uses variables, then these validation features are not available. Validation features are also not available if the source is OLEDB.

To validate the syntax of the SQL statement, click the **Check SQL syntax** button . Axiom Capital Planning 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.

To view a set of sample records, click the **View data** button . Axiom Capital Planning queries the database and returns the first 100 rows in the **View Data** dialog. You can review this data to help determine if the SELECT statement is returning the desired set of data.

Within the **View Data** dialog, you can sort, filter, and group the sample data using standard Axiom grid functionality. If desired, you can click the **Export data to .CSV file** button to export the data to a CSV file .

When you are finished reviewing the data, click **Close** to return to the **Edit SQL** dialog.

Troubleshooting file access

When running an import or performing certain file processing actions, an error may occur when attempting to access the specified file or folder location. The most common reasons for this error are:

- Using a mapped drive instead of a UNC path
- Not having the appropriate permissions to the specified file or folder

UNC path

When specifying the file or folder location, you must use a UNC path (Universal Naming Convention). A UNC path identifies the location using a server name instead of a mapped drive. For example:

UNC path: \\servername\foldername\filename

Mapped drive: I:\foldername\filename

Mapped drives cannot be used because they may vary by computer. The mapped drives that you see may be different than the mapped drives your co-workers see, and different from the mapped drives seen by the Axiom servers. The UNC path is the only way to universally identify a location within your organization's network.

File/Folder Permissions

The Axiom Capital Planning server that is performing the process must have the proper folder share and security permissions to access the specified file or folder location. The exact configuration depends on what process you are trying to perform.

Task being performed	Where to configure permissions	Account	Required permissions
Import: Source files located on network share local to the Axiom server	• Cloud: Axiom Cloud Integration Server • On-Premise: Axiom Application Server	Network Service Account	• Folder share: At least Read permissions • Folder security: At least Read, Read & Execute, and List Folder Contents
Import: Source files located on network share not local to the Axiom server	• Cloud: Axiom Cloud Integration Server • On-Premise: Axiom Application Server	Application Server Computer Account	• Folder share: At least Read permissions • Folder security: At least Read, Read & Execute, and List Folder Contents
File processing: Running via Scheduler	• Cloud: Axiom Cloud Integration Server • On-Premise: Axiom Scheduler Server	Scheduler Service Computer Account	• Folder share: Full Access • Folder security: Modify, Read & Execute, List Folder Contents, Read and Write
File processing: Running in Desktop Client	Desktop	User's Domain Account	• Folder share: Full Access • Folder security: Modify, Read & Execute, List Folder Contents, Read and Write

NOTE: On-premise installations can use an optional system configuration setting, **ETLAccessibleFolders**, to further control access to folders when running imports. If this setting is used, then any folder location in the import settings must also be listed in the ETLAccessibleFolders. If it is not, then an error occurs when attempting to access files in the folder. Keep in mind that the error message does not differentiate whether the folder is inaccessible due to general network permissions or due to the ETLAccessibleFolders setting.

Import Wizard: Variables tab

In the **Variables** tab of the Import Wizard, you can define variables to be used in the import. Import variables can be used in the following import settings:

- Source and destination columns (**Mapping** tab)
- Destination table (**Mapping** tab)
- Transform statements or functions (**Transforms** tab)
- SQL SELECT statement to the source table (**Source** tab)
- Source file (**Source** tab)
- Sheet name (**Source** tab)

When the import is executed, before any import steps are processed, Axiom Capital Planning checks the **Variables** tab for variables. If variables are defined (regardless of whether they are used in the import), the **Variables** dialog is presented to the user. Once the user has specified a value for each variable, the import begins processing.

For example, you might have database tables that have the year incorporated into the table name. You could define a variable for year, and configure the destination table to use the variable. Data would then be imported into the appropriate table, depending upon the year selected by the user.

To use a variable in the import, enter the variable name into one of the supported areas of the import settings, enclosed in curly brackets {}. For example, if the variable name is "mycolumn", you would enter `{mycolumn}`.

NOTE: If the variable defines the destination table, then you must place the variable in double curly brackets when you use it in a SQL statement, so that the eventual table name value is enclosed in curly brackets as expected. For example, if you have a variable named "destinationtable", you would reference that variable as `{{destinationtable}}`. That way, when the `{destinationtable}` value is defined, it will resolve as `{GL2021}`.

Managing import variables

This tab has two sections. In the top section, you can create user-defined variables for the import. The bottom section displays the built-in system variables that can be used in the import. This **Built-in Variables** section is for reference only, so that you can see the variables available for use.

- To add a variable, click **Add variable** +. The new variable row is added below the row that is currently selected.
- To edit a variable, type the changes into the grid.

  If you change the name of a variable, you must update any references to that variable in the import to use the new name.

- To delete a variable, select the row that you want to delete and then click **Remove variable** ✕.

  Make sure the variable is not used in the import before deleting it. If the import references a variable that is not defined, an error will result when executing the import.

The following settings are defined for variables:

Item	Description
Prompt for value even if variable only contains one choice	This setting applies to all defined variables for the import, and determines the system behavior when a variable has only one choice. • If enabled (default), then users will always be prompted to select variable values, even if a variable has only one defined choice. • If disabled, then users will not be prompted to select variable values for variables that have only one defined choice.
Name	The name of the variable. Import variable names cannot use the same name as transform variable names, and vice versa. Every variable name within the import must be unique. **NOTE:** Import variables cannot use the same names as tables defined in your system. This is because the syntax for referencing tables is the same as the syntax for referencing variables. A validation message will display in the Import Wizard if a variable name matches a table name. If a table is later created with the same name as an existing variable, then subsequent executions of the import will fail with an error identifying the table name / variable name duplication.
Choices	The set of valid choices for the variable, separated by semi-colons. You can leave the choices blank if there is not a defined set of values for the variable. When the import is executed, the user can type in a value for the variable (if **Allow Free Input** is enabled). Variables (user-defined or system variables) can also be used as choices. Note that variables used as choices will not be resolved to values in the Variables dialog that is presented to the user when the import is run interactively. However, the variable will be resolved during the import execution. You can also specify a column or columns in the database by entering fully qualified Table.Column syntax. The user will be presented with a drop-down list of all values (up to 500) in the specified column. For example, enter DEPT.Region if you want the user to select from the list of regions in the DEPT table. You can specify multiple database columns, separated by semi-colons. For example, DEPT.VP; DEPT.Mgr. The column values will be collected into a single list.

Item	Description
Description	Optional description text that displays in the **Variables** dialog. This dialog displays when the import is executed, to prompt the user to specify a value for the variable. Description text displays as follows above the variable selection drop-down list: *VariableName*:*DescriptionText*
Allow Free Input	Specifies whether users can type in their own values for the variable, or if they are restricted to the list of choices. • If enabled (default), then users can either select from the list of choices, or type in their own value. Keep in mind that the user-defined value may not be valid in the context of the import. • If disabled, then users can only select from the defined list of choices.

Import Wizard: Mapping tab

The **Mapping** tab of the Import Wizard maps the import data to the destination table. In this tab, you define:

- The columns to be created in the *temp table*, including any "work columns" to be used for interim calculations only.
- The destination table for the imported data.
- The destination columns for the imported data.

When an import is executed, data is first imported from the source file or table into the temp table. Each entry in the **Temp Table Column** field becomes a column in the temp table. After performing any mappings or calculations on the temp table (as defined in the transforms), data is imported from the temp table to the destination table. The entries in the **Destination Column** field determine whether a column of data is imported to the destination table, and to which column in the destination table.

▶ Setting the destination table

The **Destination table** field at the top of the tab specifies the table where imported data is to be saved. To specify this table, you can:

- Type the name of an existing table into the field, or use the **Choose table** button to select an existing table.
- Enter a variable name in curly brackets. When using this approach, the destination table will be determined dynamically based on the variable value. For more information, see Using variables in imports.

If needed, you can use the **create destination table** link to create a new table to hold the imported data. This process opens the **Create Table** wizard and populates the **Columns** screen with the columns defined in the **Mapping** tab, using the temp table names and data types. Before using this option, you should

first use **Auto-generate temp table and destination columns** to generate the list of columns based on the source data. Once the new table is created, the destination table and destination columns are automatically set. Only administrators and users with the **Administer Tables** security permission can see this option and create new tables.

Populating the import column mappings

The top section of the Mapping tab must contain a row for each column of data in the source. Each column in the source data becomes a column in the import temp table, which is then mapped to a column in the destination table.

The easiest way to generate the list of columns is to use the **Auto-generate temp table and destination columns** button in the top right of the tab. This process reads the source data and creates a row for each column. If a destination table is already specified, the auto-generate process attempts to map the source columns to the appropriate destination columns, based on column name. After auto-generating, you should review all entries to be sure they are correct.

NOTES:

- If the import source is set to **Prompt for file during execution**, you will be prompted to select a file to use for the auto-generated mappings.
- If the import source is set to import from multiple files, the mappings are generated based on the first file that is found in the specified folder.
- If the import uses a remote data connection, that connection is used to access the specified source file or database.
- If the import source is Ellucian, the import columns are automatically generated based on the selected data type on the Source tab. In this case, the only purpose of the auto-generate button is to map these columns to the destination columns.
- If the import source or the destination table uses variables, the **Variables** dialog opens so that you can specify variable values to use when generating the column mappings.

You can also define columns manually, or edit the settings after auto-generating:

- To add a row, click **Add imported column mapping** +. The new row is added below the row that is currently selected. This option is not available for certain source types that have a fixed set of source columns.
- To edit a row, type changes into the grid.
- To delete a row, select the row that you want to delete and then click **Remove mapping** ✕. This option is not available for certain source types that have a fixed set of source columns. Keep in mind that all columns in the import source must have a corresponding row in the mapping tab. If you do not need to save the corresponding data to the destination table (either because it is unneeded or because you need to manipulate data using a work column), simply leave the column unmapped.

- To change the order of rows, select the row that you want to move and then click the arrow icons to move it up or down.

  IMPORTANT: For all import types except Ellucian, the columns must be listed in the order of the columns in the source. For example, the first column of the source data must be row 1 in the mapping grid, the second column must be row 2, and so on. If you perform any action that changes the existing order of rows, this may cause data to be imported incorrectly. After making manual adjustments to the grid, check to make sure that each mapping row in the grid matches up with the appropriate source column.

Each row in the top section of the Mapping tab has the following properties:

Item	Description
Source Column	The number of the corresponding source column in the import source. The first row in the grid corresponds with the first column in the source, and so on. These numbers cannot be edited. If you auto-generate the mappings, the name of the source column will display next to the number for reference. Names are only displayed when the import source is a database or a file with a header row. **NOTE:** For Ellucian imports, this field displays the source column name without a number, because the columns can be listed in any order.
Temp Table Column	The name of the column to create in the temp table to hold the imported data. The column name does not have to match the name of the column in the source. The data is imported in column order, not by name. Import variables can be used to define temp table column names. For more information, see Using variables in imports. **NOTE:** Temp table column names must follow the same rules as normal table columns. See Column naming requirements. Keep in mind that if you auto-generate the column mappings, the temp table column names are based on the headers in the source. These headers may contain spaces or other invalid naming conventions that should be manually corrected.

Item	Description
Type	The data type of the column. The data type must match the data type of the destination column. The data type is automatically selected when you use the auto-generate mappings feature, or when you manually select a destination column. You only need to manually select a data type if the column is only for the temp table and does not have a destination column. EXCEPTION: If you are importing into a table with an identity column, and the identity column is mapped, the type should be set to **Integer**. For more information, see Importing data into tables with identity columns. If the data type is **String**, you must also specify the maximum length of the string field. This entry should match the string length of the destination column so that data is saved appropriately. To specify the string length, select the row and then click the browse button **[...]** to the right of the field. In the **Edit String Length** dialog, type the string length (from 1 to 4000). The string length displays in parenthesis after the data type. For example: **String (200)**. **NOTES:** • To create a string column with unlimited size, leave the string field blank. You should only do this if you understand the ramifications. • If a string column has a destination column, the column in the temp table automatically matches the Unicode status of the destination column (True/False). However, if the string column does not have a destination column, Unicode is assumed as True.

Item	Description
Nulls	Determines how blank values in the import source are brought into the temp table column. • If disabled (the default behavior), then blank values are brought into the temp table column as the default value for the specified destination column. If the column is unmapped, then the system default value as defined for the column type is used. • If enabled, then blank values are brought into the temp table column as null values. This setting can impact transform statements that look for "blank" or undefined values in the temp table. You should set this as appropriate depending on whether you want to check for null values or the default value for the affected column. The presence of null values in the temp table does not necessarily mean that the imported data will contain null values. When the temp table values are imported into the destination table, the default values for the destination columns are always applied to any null values at that point. However, if the default value for a destination column is null, then the null values will be retained.
Destination Column	The name of the column in the destination table where you want this data to be saved. You can type the name of the column directly, or use the drop-down list to select a column name. The data type of each column is displayed in the drop-down list for reference. The data type of the destination column must match the data type specified in the mapping grid. **NOTE:** If the destination table uses a variable and you are manually creating column mappings, the selections in the destination column drop-down lists are based on the first choice listed for the variable. If this column is not intended to be saved to the destination table, select **<not mapped>**. "Not mapped" is the default if you do not explicitly select a destination column. Import variables or transform variables can be used to define destination column names. If you are using a variable for a destination column and you want to set the column to not mapped, the value of the variable must be blank for import variables and empty string ('') for transform variables). For more information, see Using variables in imports.

Using work columns

You can use work columns in the temp table to perform calculations and data mapping before saving data to the destination table. For example, there may be a column in the source data that you need to manipulate before it can be saved to the destination table. In this case you would do the following:

- In the top mapping section, set the destination column for the source column to **<not mapped>**.
- In the work columns section, add a row for the work column, and set the destination column to the appropriate column in the destination table.
- On the **Transforms** tab, define a transform that manipulates the data from the original source column and populates the work column with the resulting desired data.

Any column defined in the **Work column mappings** section will be created in the temp table. If a destination column is specified, the data will be saved to the destination table.

- To add a row, click **Add work column mapping** +.
- To edit a row, type changes into the grid.
- To delete a row, select the row that you want to delete and then click **Remove mapping** ✕.
- To change the order of rows, select the row that you want to move and then click the arrow icons to move it up or down.

Each row in the work columns section of the Mapping tab has the following properties:

Item	Description
Temp Table Column	The name of the work column in the temp table. Import variables can be used to define temp table column names. For more information, see Using variables in imports. **NOTE:** Temp table column names must follow the same rules as normal table columns. See Column naming requirements.
Type	The data type of the work column. See the Type entry in the previous table for more information.

Item	Description
Null	Determines the starting values for work columns in the temp table (before transforms are applied). • If disabled (the default behavior), then the work column starts with the default value for the specified destination column. If the column is unmapped, then the system default value as defined for the column type is used. • If enabled, then the work column starts with null values. This setting can impact transform statements that look for "blank" or undefined values in the temp table. You should set this as appropriate depending on whether you want to check for null values or the default value for the affected column. The presence of null values in the temp table does not necessarily mean that the imported data will contain null values. When the temp table values are imported into the destination table, the default values for the destination columns are always applied to any null values at that point. However, if the default value for a destination column is null, then the null values will be retained.
Destination Column	The name of the column in the destination table where you want this data to be saved. If this column is used only for calculations in the temp table and is not intended to be saved to the destination table, select **<not mapped>**. See the Destination Column entry in the previous table for more information.

Column naming requirements

When naming temp table columns, the following requirements apply:

- Column names can use standard ASCII alphanumeric characters (a-z, 0-9) and the underscore character. No spaces and no other special characters are allowed.
- The first character in a column name cannot be a number or an underscore. For example, you can have a column named `Plan_09` but you cannot have a column named `09_Plan`.
- Columns cannot be named `Col#`, where # is a number, such as Col1, Col2, etc. Other column name constructions with text and numbers are allowed—for example, BUD1 is valid.
- Database reserved words should be avoided whenever possible.
- Column names are limited to 50 characters by default.

Miscellaneous behavior notes

- When importing numeric values, the number of digits in the import source cannot exceed the number of digits allowed by the data type assigned to the temp table column.
- If column data is null in the temp table and the destination column is a String column, the null data is converted to an empty string when the data is saved to the destination table (rather than using the column's default value).

Import Wizard: Transforms tab

The **Transforms** tab of the Import Wizard contains a set of statements to perform actions on the data in the temp table, in order to transform the data before saving it to the destination table.

When the import is executed, the transforms are processed after import variables have been selected and after the data query has been made to the source table or file. Transforms are processed in the order listed in the tab.

Transforms can use SQL statements or built-in Axiom transform functions.

Managing transforms

- To add a transform, click **Add transform** +. The new transform is added below the row that is currently selected.
- To duplicate a transform, select the row that you want to duplicate and then click **Duplicate selected transform**.
- To edit a transform, make changes directly in the grid.
- To delete a transform, select the row that you want to delete, and then click **Remove transform** ✕.
- To change the order of transforms, select the row that you want to move and then use the arrow icons to move it up or down.

The following settings are defined for each transform:

Field	Description
Number	The ordinal number assigned to each transform, to determine processing order. This setting is managed by Axiom Capital Planning. When you change the order of rows, Axiom Capital Planning automatically changes the order number.
Transform	A SQL statement, or a built-in Axiom import function. To define the transform, double-click the field or click the browse button (**...**) in the field. The **Edit Transform** dialog opens so that you define the transform. See Defining transform statements.

Field	Description
Description	Displays the description of the transform. This is for reference only. You can define this description when defining the transform.
Target Variable	Displays the name of the target variable for the SQL transform. For SQL statements, target variables are defined when editing the statement. Target variables do not apply to import functions. See Defining transform statements.
	Select the **Pause** check box if you want the import to pause and display the temp table after processing this transform. This option only applies when executing the import in development mode, using the option **Pause after specified transforms and display current temp table data**. For more information, see Executing imports in development mode.
	Select the **Disable** check box to disable the transform. When the import is processed, this transform will be skipped.

Transform notes

If the import contains a transform that zeroes old data before importing the new data, the **Pre-Save Validate** function should be used before the zero step. This allows you to identify any data issues before deleting existing data. If invalid data is found, the import is aborted and the zero step will not be processed.

Defining transform statements

For each transform listed on the **Transforms** tab of the **Import Wizard**, you must use the **Edit Transform** dialog to define the associated SQL statement or transform function. To open the dialog, click the **...** button in a transform field.

At the top of the **Edit Transform** dialog, specify whether the transform is a **SQL** statement, or a **Built-in Function**. By default, **SQL** is selected.

Defining a SQL statement transform

If the transform is a SQL statement, complete the following:

Field	Description
Enter a SQL statement	Type or copy and paste the SQL statement into the text editor. To validate the syntax of the SQL statement, click the **Check SQL syntax** button . **NOTE:** When referencing Axiom Capital Planning tables in a SQL statement, place the table name in curly brackets. For example, to reference the table DEPT, use `{DEPT}`. The SQL statement can use import variables and/or transform variables (that were defined in a previous transform statement). See Using variables in imports. If the statement includes variables, then the ability to check the SQL syntax is not available. Variables can be used in calculations in the SQL statement, for example, to calculate the value of a second variable based on the first variable. **NOTE:** If the variable defines the destination table, then you must place the variable in double curly brackets when you use it in a SQL statement, so that the eventual table name value is enclosed in curly brackets as expected. For example, if you have a variable named "destinationtable", you would reference that variable as `{{destinationtable}}`. That way, when the `{destinationtable}` value is defined, it will resolve as `{GL2021}`. For some examples of common SQL transforms, see Example SQL statements for transforms.
Target Variable Name	If you want to define a target variable for the transform, type the name of the variable. The SQL statement can be any query that results in a single value. If the query returns multiple values, the target variable uses the first value in the return set. The target variable can be used in subsequent transforms, or as destination columns in the **Mapping** tab. To use the variable in the import, enter the variable name into one of the supported areas of the import settings, enclosed in curly brackets {}. For example, if the variable name is Column, you would enter `{column}`. Transform variable names cannot use the same name as import variable names, and vice versa. Every variable name within the import must be unique. Transform variables should not use the same name as an Axiom Capital Planning table that you plan to reference in the import, because the syntax for table names is the same as for variables (both are placed in curly brackets). If a variable name and a table share the same name, any references will be interpreted as the variable, not the table.

Field	Description
Description	If desired, type a description for the transform. The description may be useful when viewing the list of transforms on the Transforms tab, to easily identify specific transforms.

Using a transform function

If the transform is a built-in function, select the function that you want to use from the **Function** list, and then complete the parameters for the function.

- Add new dimension elements
- Custom data validation
- Delete rows
- Pre-save validate
- Update temp column

You can edit the description for the transform if desired. By default, the standard description of the function is used.

NOTE: If you select a different function, the current description will be overwritten with the standard description of the new function. If you go back to the original function before saving the transform, the original description will be preserved.

Add new dimension elements during an import

To add new dimension elements during an import, create a transform step that uses the built-in function **Add new dimension elements**. You can use this function to add new accounts, departments, or other dimensions as part of the import.

This function is intended to be used in cases where the import data may contain new dimension elements that have not yet been added to the relevant reference tables in Axiom Capital Planning, and the organization wants these records to be added automatically as part of the import. Other organizations may prefer to prevent these records from importing and instead add the new dimension elements manually, in which case this function should not be used.

If new dimension elements are added by this function, then after the import is complete an administrator will most likely need to edit the reference table in order to fill in grouping columns for the new element. This is why the function supports notifying one or more users of the added dimension elements. Keep in mind that it is possible for invalid dimension elements to be added when using this function, if the source data for the import is not correct.

Function parameters

This function uses the following parameters:

Parameter	Description
Table	The name of the dimension table to update. This can only be reference tables that have a single-level lookup relationship with the destination table for the import. For example, if you are importing data into GL2021, and that table has columns Acct and Dept which have lookup relationships with the Acct and Dept tables, then you can add new dimension elements to the Acct and Dept tables. When this transform step is performed, the data in the temp table will be validated against this dimension table. If any dimension elements are found that do not match the dimension table, those new dimension elements will be added to the dimension table.
Column defaults	Optional. Values to use for grouping columns in the target dimension table when new dimension elements are added. You can add as many column=value pairs as needed, separated by commas. See the discussion following this table for more information on the specific syntax. Any columns in the target dimension table that are not listed here will use the column's default value (as defined in the column properties) when the new record is added. If the target dimension table contains any validated columns , then you must do one of the following: • List the validated column in this parameter with a valid value. That valid value will be used when the new records are added to the table. OR • Make sure the validated column has a valid default value in its column properties. If the validated column is not listed in this parameter, then its default value from the column properties will be used when the new records are added to the table. If the validated column is not assigned a valid value using one of these options, then an error will occur when this transform is processed and the import cannot continue.
Email notification	Users and or roles to notify via email when new dimension elements are added to the table. Enter a list of one or more user and role names, separated by commas.
Task pane notification	Users and or roles to notify via the Notifications task pane when new dimension elements are added to the table. Enter a list of one or more user and role names, separated by commas.

Defining column defaults

You can populate a grouping column using a fixed default value, or by using a value from a column in the import temp table.

- To use a fixed default value, use the following syntax:

  GroupingColumnName='StringValue',GroupingColumnName=NumericValue, etc.

  Where *GroupingColumnName* is the grouping column in the target dimension table. If the grouping column is a string column, then the value must be placed in single quotation marks, just like when writing a filter statement.

- To use a value from a column in the import temp table, use the following syntax:

  GroupingColumnName={temptable}.*TempTableColumnName*, etc.

  For example, if the temp table contains a column named Desc that you want to use to populate the Description column in the target dimension table, you would enter: `Description={temptable}.Desc`

NOTE: If the default values are populated from a column in the import temp table, those values must be the same for all instances of a particular dimension element. If the same dimension element has multiple rows in the temp table with different values in the specified temp table column, then the maximum value will be placed in the grouping column for that dimension element.

Example

To add new departments when importing GL actuals data, the function parameters could look as follows:

Table:	Dept
Column defaults:	Description={temptable}.Desc, DeptStatus='New'
Email notification:	sysadmins
Task pane notification:	jdoe

When the import is run, any departments that do not already exist in the DEPT table will be added to that table. The Description column in the DEPT table will be populated with the value from the Desc column in the import temp table, and the DeptStatus column in the DEPT table will be populated with the string "New". An email notification of the added departments will be sent to users in the role sysadmins, and a task pane notification of the added departments will display for user jdoe.

All other columns in the DEPT table will use the default value defined for the column in the column properties.

Deleting rows of data as part of an import

To delete rows from a target table during an import, create a transform step that uses the built-in function **Delete rows**. For example, you could use this function to clear the existing rows in a table before importing new data.

Function parameters

Parameter	Description
Table	The name of the table from which to delete rows.
Filter	Optional. A filter used to identify rows to delete. If omitted, all rows in the table are deleted. The filter can be against the specified table or against a lookup reference table. Standard Axiom filter criteria syntax applies. **NOTE:** The temp table cannot be referenced in the filter.

For example, if the table is GL2021, then the filter could be something like:

```
GL2021.YrMo='{YrMo}'
```

Where the value of YrMo is defined by an import variable.

```
Dept.Region='North'
```

Where the GL2021 table has a column Dept that looks up to the Dept table.

NOTES:

- If you are only updating specific columns in the destination table, then you may want to use a SQL step to zero data rather than using the Delete rows function.
- If all rows in the target table are being deleted, Axiom Capital Planning will attempt to perform a truncate instead of a delete, for improved performance. Truncate cannot be used if a filter is defined in the Delete rows function, or if the user performing the import has filtered access to the target table, or if the target table is a reference table.

Updating data in the temp table based on another column

To update data in the temp table based on another column, create a transform step that uses the built-in function **Update temp column**. This function updates a column in the temp table from a specified column in another table, using the given match key. For example, this function would typically be used to look up the credit reversal sign from the Account table.

Function parameters

Parameter	Description
Temp table column	The name of the column in the temp table to be updated.
Source column	The name of the column to use to update the temp table. Fully qualified Table.Column syntax must be used.
Match columns	The columns to use to match data to update, in the format *TempColName = SourceColName*. Separate multiple match sets with commas. For example: `ACCT = ACCT, DEPT = DEPT`
Temp table filter	Optional. A filter used in the SQL WHERE clause against the temp table, to identify rows to update. If omitted, all matching rows are updated. Fully qualified Table.Column syntax must be used. The temp table must be represented as a variable. For example: `{temptable}.ACCT > 20000` **NOTE:** If a temp table column uses a database reserved word (such as "Key") then in the filter you must place that column in double quotation marks and use all upper-case letters. Use of database reserved words should be avoided whenever possible.

Validating data to be imported before the save

To validate data against lookup columns *before* performing the save for the import, create a transform step that uses the built-in function **Pre-save validation**. This function takes no parameters.

This is the same validation process that occurs automatically as part of the actual save for the data import. By performing the validation before the save, you can check for invalid data and abort the process before performing irrevocable data changes in subsequent transform steps (such as deleting old data in the destination table). If instead you want to perform a different custom validation, see Performing custom data validation for an import.

If any destination columns in the import are validated columns, this function validates the data in the temp table against the lookup columns. If exceptions are found, an error message is written to the import log and the import is aborted.

NOTE: If this function is used in an import, then the option to **Ignore lookup and key errors** does not apply. If invalid data is found in the pre-save validation step, then the import is automatically aborted and does not proceed to the data save.

Performing custom data validation for an import

To exclude rows of data from an import based on a custom criteria, create a transform step that uses the built-in function **Custom data validation**. Any data in the temp table that matches the specified filter will be excluded from the save.

This custom validation is separate from the built-in lookup validation that occurs as part of the data save (or by use of the Pre-Save Validate function).

Function parameters

Parameter	Description
Filter	A filter used in the SQL WHERE clause against the temp table. Any rows that match this filter are *excluded* from the save, and will be reported in the import error log with any other validation errors.
Failure Message	An error message to display next to records that are excluded due to this data validation step. Errors are logged in a column named **AXTRANSFORM_*StepNumber***, where *StepNumber* is the number of the associated transformation step. For example: "AXTRANSFORM_5" when the associated transform is step 5 in the list.

For example, you might want to check to make sure that data exists in a particular column of the temp table before importing that record. If the necessary data is missing, then that record will be excluded from the import. In this case the function settings would be something like the following:

Filter: Benchmark=0

Failure Message: The Benchmark data is missing

Where Benchmark is the column in the temp table that must have a value in order to import the record.

Example SQL statements for transforms

The following example SQL statements can be used to perform common transforms for imports.

Converting data types

Convert a number to a string to populate into a string column

```
UPDATE {temptable} SET RATESTRING = CONVERT(NVARCHAR, RATENUM) WHERE
RATENUM IS NOT NULL
```

If Unicode is disabled for the string column, then convert to varchar instead.

Convert a string to a number to populate into a numeric column

```
UPDATE {temptable} SET RATENUM = CONVERT (BIGINT, RATESTRING) WHERE
RATESTRING IS NOT NULL
```

or

```
UPDATE {temptable} SET ACCT=CAST (tAcct as BigInt)
```

If you are using Integer 32 or Integer 16, then convert to int or smallint instead.

Convert a datetime field to a concatenated string (yearmo)

```
UPDATE {temptable} SET YEARMO = YEAR(DateTimeField) * 100 + MONTH
(DateTimeField)
```

Convert a datetime field to a concatenated string (yearmonthday)

```
UPDATE {temptable} SET YEARMONTHDAY = (YEAR(DateTimeField) * 100 + MONTH
(DateTimeField)) * 100 + DAY(DateTimeField)
```

Other conversion statements

```
CONVERT(STRING(xx), RATENUM)

CONVERT(BIGINT, RATESTRING)

CONVERT(DECIMAL(28,14), RATESTRING)
```

Math transformations

Convert values to a negative number if a credit column exists in the temp table

```
UPDATE {temptable} SET M1 = - M1, M2 = -M2, M3 = -M3, M4 = -M4, M5 = -M5,
M6 = - M6, M7 = -M7, M8 = -M8, M9 = -M9, M10 = -M10, M11 = -M11, M12 = -m12
WHERE Credit = 'C'
```

Perform math on a field if another field in the temp table contains a value

```
UPDATE {TempTable} SET M1 = M1 * Rate WHERE Rate <> ''
```

Round a value to 2 decimals and replace the value

```
UPDATE {temptable} SET RATE = ROUND(RATE, 2)
```

Divide two integer numbers and keep the decimal

Remember that an integer divided by an integer returns only an integer (example: 5/7 = 0). If you want to capture the decimal remainder, you must cast the integer values as decimal:

```
CAST(INT1 AS DECIMAL(28,14)) / CAST(INT2 AS DECIMAL(28,14))
```

Pivoting data

Pivot incoming data with respect to time

```
UPDATE {temptable} SET
  M1 = case when (TheMonth=1) then Amt else 0 end,
  M2 = case when (TheMonth=2) then Amt else 0 end,
  ETC.
```

Pivot data from columns to rows (using a monthly variable)

```
Update {temptable} set Amt =
  Case
    When ({VarMonth}=1) then M1
    When ({VarMonth}=2) then M2
    ETC.
    Else 0
  End
```

General temp table transformations

Perform a find and replace in a data column to detect the # character and replace it with nothing

```
UPDATE {temptable} SET AcctDesc = REPLACE(AcctDesc,'#','')
```

Place zeros in a field rather than null values

```
UPDATE {TempTable} SET Rate = 0 WHERE Rate IS NULL
```

Insert new records into the temp table by summarizing transaction detail records

```
INSERT INTO {temptable} (DEPT,ACCT,TRANSID,M1,M2,M3,DELETE) SELECT
DEPT,ACCT,'Summarized',SUM(M1),SUM(M2),SUM(M3),'DeleteFlag' FROM
{temptable} GROUP BY DEPT,ACCT
```

Add an identity or row number to each record, using the system column AxReference

```
UPDATE {temptable} SET MYROWNUMBER={temptable}.AxReference
```

Delete records from the temp table with a flag set

```
DELETE from {temptable} where FLAG = 'DeleteFlag'
```

Delete records from the temp table where the dimension combination already exists in the destination table

This example might be used to load only new transactional records and leave existing destination records untouched.

```
DELETE FROM {temptable} WHERE {temptable}.DEPT IN (Select DEPT from
{TRANSACTIONTABLE} group by DEPT) and {temptable}.TRANSID IN (Select
TRANSID from {TRANSACTIONTABLE} group by TRANSID)
```

Concatenate strings together with a hyphen in between

```
UPDATE {temptable} SET DESCRIPTION = DESC1 + ' - ' + DESC2
```

Fill an entire column with the same value

```
UPDATE {temptable} SET RATE = 0
```

Copy the left 5 characters into a new column

```
UPDATE {temptable} SET ShortDesc = LEFT(LongDesc,5)
```

Subtract 1 character from the end of a field and copy the remaining text to a new column

```
UPDATE {temptable} SET ShortDesc = LEFT(LongDesc, (LEN(LongDesc) - 1))
```

Aggregate balance sheet records

```
UPDATE {temptable} SET M1=BegBal+M1
UPDATE {temptable} SET M2=M2+M1
UPDATE {temptable} SET M3=M3+M2
UPDATE {temptable} SET M4=M4+M3
UPDATE {temptable} SET M5=M5+M4
UPDATE {temptable} SET M6=M6+M5
UPDATE {temptable} SET M7=M7+M6
UPDATE {temptable} SET M8=M8+M7
UPDATE {temptable} SET M9=M9+M8
UPDATE {temptable} SET M10=M10+M9
UPDATE {temptable} SET M11=M11+M10
UPDATE {temptable} SET M12=M12+M11
```

Import into only the current period using a variable

On the Mapping tab, for each column where you want to use a variable, set the destination column as {M1}...{M12} instead of the normal M1 … M12.

On the Transforms tab, create 12 statements—one for each data column that you set up with a variable. The SQL for each statement is as follows (each statement will have a different current period value and a matching column name):

```
SELECT RESULT =
  CASE
    WHEN {CurrentPeriod} = 1 THEN 'M1'
    ELSE ''
  END
```

In the **Target Variable Name** section of the transform, type the name of each variable. In the text above, the variable name would be M1. The next statement would be M2, then M3, and so on. This will set the variable value to the result of the SQL statement. Columns that do not match the current period will be set to '', which means they will not be imported to the destination table.

Abort the import if no data exists to import

```
IF (SELECT COUNT(*) FROM {temptable}) = 0

RAISERROR ('Temptable was empty, aborting import', 11, 0)
```

Updating a table other than the temp table

Update a reference table with new elements that currently exist in the temp table, but not in the reference table

Whenever possible, the new built-in function **Add new dimension elements** should be used for this instead of a SQL statement. See Add new dimension elements during an import. If this function cannot be used, then use a SQL statement like the following:

```
INSERT INTO {ACCT}(ACCT, Description) Select ACCT, 'Exception from Import'
FROM {temptable} WHERE NOT EXISTS (SELECT ACCT FROM {ACCT} WHERE
{temptable}.ACCT = {ACCT}.ACCT GROUP BY ACCT) GROUP BY ACCT
```

Zero out columns in a destination based on a flag in a reference table

```
UPDATE {{destinationtable}} set M1=0,M2=0,M3=0,M4=0,
M5=0,M6=0,M7=0,M8=0,M9=0,M10=0,M11=0,M12=0 FROM {{destinationtable}} INNER
JOIN {ACCT} ON {ACCT}.ACCT={{destinationtable}}.ACCT WHERE
{ACCT}.ZEROME='1'
```

This example assumes that {destinationtable} is an import variable that resolves to a table name.

Delete large numbers of records from a table

```
DECLARE @RowsDeleted INTEGER
SET @RowsDeleted = 1
WHILE (@RowsDeleted &gt; 0)
  BEGIN
    DELETE TOP (10000) FROM MyTable [WHERE .....]
    SET @RowsDeleted = @@ROWCOUNT
  END
```

The WHERE clause in the DELETE step is optional.

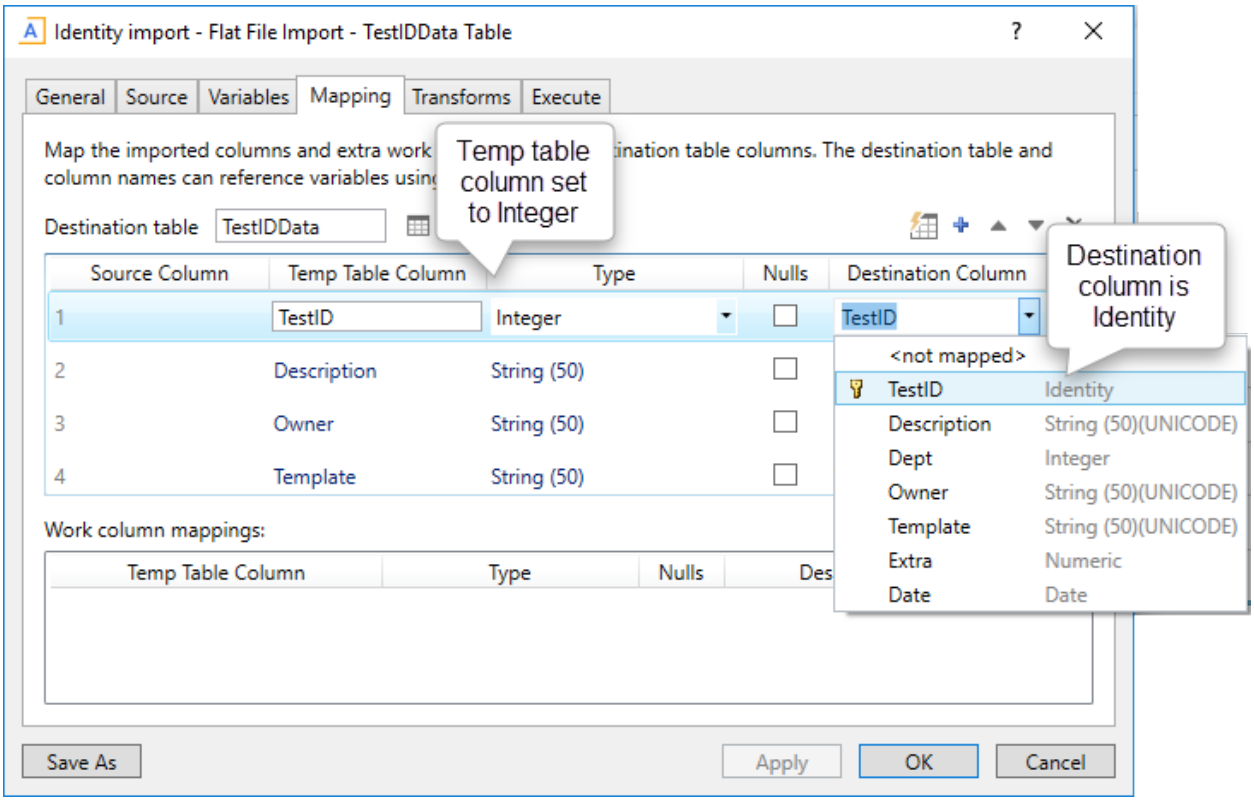
Importing data into tables with identity columns

Columns that use the Identity data type contain automatically-generated, unique ID numbers. If you want to import data into a table with an identity column, special considerations apply. The identity column can be mapped as part of the import, or left unmapped. The decision of how to handle this depends on whether you are updating existing data or only creating new records, and whether you want new records to use automatically generated numbers or specific numbers.

▶ Updating existing data with an identity key column

If the import is updating existing data and the table contains an identity key column, the identity column must be mapped. In order to update existing data, the import must be able to match the value in the import temp table with an identity key in the destination table.

When mapping a temp table column to an **Identity** column in the destination table, the data type of the temp table column must be set to **Integer**. (If the identity column is **Identity32**, the temp table column should be set to **Integer32**.)



Creating new records with an identity key column

If the import is creating new records in the destination table, you can opt to use automatically-generated ID numbers in the identity column or you can specify the ID numbers.

If you want to use automatically-generated ID numbers, there are two ways to accomplish this:

- **Leave the identity column unmapped.** When the identity column is unmapped, all records in the import data are created as new records with automatically-generated ID values. This configuration is appropriate when the only purpose of the import is to create new records. If the import data contains a mix of new and updated records, then the identity column cannot be left unmapped.

  This is also the only use case where it is possible to leave a key column unmapped in an import.

- **Map the identity column, but leave the column blank for new records.** When the identity column is mapped, but the temp table column is left blank, new records are created for the blank values using automatically-generated ID values. This configuration is appropriate when the import data contains a mix of new and updated records. If the column contains an existing identity value, the existing record is updated.

In some cases, you may have a need to create new records using specific identity values. You can do this by mapping the identity column, and populating the import data with the desired identity values. When new records are created in the table, they will use the specified values instead of using automatically-generated values. When using this approach, keep in mind the following:

- In order to create new records, the values in the temp table column must not already exist in the destination table. If a temp table value matches an existing value, then the existing record is updated instead of creating a new record.
- The "seed" value for the identity column will be reset to the largest inserted value, instead of continuing where it left off. For example, if the last auto-generated value was 20, but you import a specific new value of 80, the next auto-generated value will start at 81.
- It is not possible to create new records with a mix of automatically-generated ID values and specific values. If you want to create any new records with specific values, then all new records in the import data must be assigned specific values. The temp table column cannot be left blank when using this configuration.

When mapping a temp table column to an identity column, the data type of the temp table column must be Integer (see previous section).

Other considerations

It is also possible for a table to contain a non-key identity column. This column can be mapped or unmapped for an import, and will be treated as follows:

- If the identity column is unmapped, then new records are created using automatically-generated values, and existing values are unchanged. This is the recommended approach unless you need to create new records with specific identity values (an unlikely situation).
- If the identity column is mapped, and new records are created in the table, the value in the temp table column will be used if it is available. If the value already exists in the identity column on another record, then the value is ignored and an automatically-generated value is used. When updating existing records, the temp table value is ignored and the existing values are left as is (in other words, it is not possible to change the identity value on an existing record).

  As mentioned previously, if new records are created with specific values, the "seed" value for the identity column is reset to the largest inserted value, instead of continuing where it left off.

Exporting data from Axiom Capital PlanningData

Using an export utility, you can export data from an Axiom table to an external database or to a delimited file.

When you create an export, you specify a client-defined table in Axiom Capital Planning from which to export data. You can export all of the data in the table, or you can limit the data by selecting columns to export or by defining a data filter. Then, you define the destination properties, such as connection information for the target database and table, or the name and location of the destination file. For Axiom Cloud systems, a remote data connection is used to access the local target for the export.

When an export is executed, Axiom Capital Planning extracts the data from the source table in the Axiom database, and then creates or updates the destination table in the target database or creates the destination file.

Export utility alternatives

The following features can be used as alternatives to export utilities:

- **File Processing:** The File Processing feature supports the ability to create a delimited export file, using the **Export to File** processing option. Instead of extracting data directly from a table, the desired data is first populated into an Axiom report, and then extracted from that report. The data can be manipulated within the report as needed before it is extracted.
- **OData API:** The Axiom Capital Planning OData API can be used in custom web solutions to access data from the Axiom Capital Planning database. Standard OData syntax is used to query data from specified tables, then the data is returned in JSON format.

Managing exports

Export utilities can be created, edited, or deleted using the Exports Library.

To access the Exports Library:

- On the **Axiom** tab, in the **Administration** group, click **Manage > Axiom Explorer**. The Exports Library is available in the Libraries section.

  NOTE: In systems with installed products, this feature may be located on the **Admin** tab, as **System Browser**.

  You can also use the Explorer task pane to access the Exports Library.

For details on executing an export, see Executing export utilities.

Creating an export

Only administrators and users with the **Administer Exports** security permission can create exports. Non-admin users must also have read/write access to at least one folder in the Export Library, in order to have a location to save the newly created export.

1. Right-click the **Exports Library**, and then click **New > Export Package**.

2. In the **Create New Export** dialog, select one of the following and then click **OK**.
   - **Create from scratch** (default): Create a new export starting with blank export settings.
   - **Create from existing**: Create a new export by copying an existing export. If you select this option, then select the export that you want to copy from the list in the bottom of the dialog. All settings for the existing export will be copied to the new export as a starting point.

   The Export Wizard dialog opens. You can move between tabs in any order, however, before you can save the export, all required settings must be completed and no invalid settings must be present. If errors exist, an error message displays at the bottom of the dialog; you can click the error link to be taken to the tab with the error.
3. In the **General** tab, enter a **Name** for the export and an optional **Description**.

   The export name is how users access and execute the export. If this export is a copy of an existing export, the default name is "Copy of *ExportName*".
4. In the **Source** tab, specify the source table for the export and then complete the source settings. For more information, see Export Wizard: Source tab.
5. In the **Destination** tab, specify the destination type (database or delimited file) and then complete the destination settings. For more information, see Export Wizard: Destination tab.
6. When you are finished completing the settings and no errors exist, click **OK** to save the export.

   NOTE: By default, new exports are saved to the root of the Exports Library. If you want to save an export to a sub-folder instead, click **Save As** to save the export instead of clicking OK. This brings up the Save As dialog, where you can select a folder location to save.

Editing an export

You can edit existing exports as needed, as long as the export was not installed by a product package. Only administrators and users with read/write access to the export file can edit exports.

Product-controlled exports are locked and cannot be edited. Some of these exports may be designed to work as is, without customizations. If customizations are required, you can create a copy of the product-controlled export and make customizations in the copy. If the original export is later updated by the product, you can review the original export to see the changes that need to be made in your copy (or you can create a new copy of the export and re-make your customizations as needed).

To edit an existing export:

- Right-click the export in the **Exports Library**, and then click **Edit**.

The Export Wizard opens. You can change any export settings as desired.

NOTE: When editing an export, you can use the **Save As** button to save the current export as a new export file. If you have read-only rights to the export, then the **Save As** button is the only save option available.

Deleting an export

You can delete an existing export if it is no longer needed, as long as the export was not installed by a product package. Only administrators and users with read/write access to the file and its folder can delete exports.

Product-controlled exports are locked and cannot be deleted.

To delete an export:

- Right-click the export in the **Exports Library** and then click **Delete**.

Executing export utilities

When you execute an export utility, data is queried from the source table in Axiom Capital Planning according to the export configuration settings, and then the resulting data is saved to the destination table or the destination file. If the export destination is a table, the table is either created or updated, depending on the export configuration.

NOTES:

- By default, only administrators can execute export utilities. Non-admin users can be granted permission to execute specific exports, as defined on the **Files** tab of Security.
- If the user executing the export has a security filter for the source table, that filter will be honored to determine the available data to export.
- You can also use Scheduler to execute export utilities, using the **Export ETL Package** task.

To execute an export:

1. On the **Axiom** tab, in the **Administration** group, click **Manage > Axiom Explorer**. You can also use the Explorer task pane.

   NOTE: In systems with installed products, this feature may be located on the **Admin** tab, as **System Browser**.

2. In the **Exports Library**, double-click the export that you want to execute.
   - If your security permissions only allow you to execute the export, then the export opens in a special execute-only dialog, which displays the contents of the **Execute** tab.
   - If your security permissions allow you to view or edit the export settings, then the full **Export Wizard** opens.
3. On the **Execute** tab, click the **Execute** button to start the export.

As the export is processed, status messages display in the **Execution log** at the bottom of the dialog. If an error occurs, the error message displays in the log and the export is stopped. If necessary, you can copy and paste the text in the execution log—for example, to send the error to Axiom Support. To do this, right-click inside the log and choose **Select All**, then select **Copy**.

If you want to stop the export while it is executing, click **Stop**. When the export is complete, click **OK** to close the dialog.

Export Wizard

Using the Export Wizard, you can create new exports and edit existing exports. Export settings are organized by tab.

Tab	Description
General	Defines the name of the export and other general settings.
Source	Specifies the table data to be exported.
Destination	Specifies the destination for the exported data, either a delimited file or an external database.
Execute	Execute the export. **NOTE:** It is possible to configure user permissions so that a user has read/write or read-only access to the export utility file, but the user does not have execute permissions for the export. In this case, the Execute tab is hidden.

As you complete the export settings, the Export Wizard performs error checking for missing required settings and invalid settings. If an error is detected, an error message displays in the bottom of the dialog. You can click the link to be taken to the tab that contains the error. Only one error is displayed at a time; once you resolve the current error message, a new message may appear.

Export Wizard: General tab

On the **General** tab of the Export Wizard, you can define general properties for the export.

Item	Description
Export Name	The name of the export. The export name is how you access and execute exports from the Exports Library, and in other areas such as the **Export ETL Package** task in Scheduler.
Description	Optional. A description for the export. The description can be used to document the purpose of the export and/or to detail important export instructions. The description is limited to 2000 characters. When an export is opened in execute-only mode, the description can be viewed by clicking the **Show description** link in the **Execute Export** dialog.

Export Wizard: Source tab

Use the **Source** tab of the Export Wizard to specify the data to be exported. You can export data from any user-defined table in the system.

Item	Description
Source table	The Axiom table that contains the data to be exported. You can select any table in the Table Library. To specify a table, click the table icon to the right of the entry box. In the **Choose Table** dialog, select the table to use as the source table and then click **OK**. You can change the view and filter the list to find the table you are looking for.
Filter	Optional. A data filter to specify the rows in the table to export. If no filter is applied, then all rows will be available for export. **NOTE:** If the user executing the export has a security filter on the source table, that filter will be honored in addition to any filter defined here. You can type in a filter criteria statement, or you can use the Filter Wizard to create one. Once you have specified a filter, you can click the validate icon to validate the filter and return the current row count for the filter.
Choose columns to export	The columns of the table to export. By default, all columns are selected for export. If desired, you can clear the check box for specific columns if you do not want to export the data in those columns. Key columns must be included in the export and cannot be changed. The column list includes all regular columns, all calculated fields, and the system information columns for modified by / date.

Export Wizard: Destination tab

Use the **Destination** tab of the Export Wizard to specify the export destination and configure the necessary destination properties. You can export data to the following destinations:

- External database (SQL Server or Oracle)
- Delimited file

The destination properties differ depending on the selected destination type.

Exporting data to an external database

Complete the following settings to export data to a target table in an external database.

Item	Description
Remote Destination	Select either **SQL Server** or **Oracle**.
Remote Data Connection	If your Axiom Capital Planning system is hosted on the Axiom Cloud, then you must specify a remote data connection in order to connect with the external database. You can select any remote data connection that has been set up in Scheduler. If no remote data connections have been defined in your system, then this setting does not apply and will not display.
Server	• For SQL Server, enter the server name for the external database. • For Oracle, enter the connection parameters for the external database. You can obtain these parameters from the Oracle TNS Names entry. For more information, see the similar discussion for setting up Oracle as an import source (Connection information for Oracle).
Database	Enter the name of the external database. This setting only applies if the database is SQL Server.
User	Enter the user name to use to connect to the external database. For SQL Server, the user credentials must be for a SQL Server account; network domain credentials cannot be used. **NOTE:** The user credentials must have the appropriate permissions to perform the table actions for the export in that database.
Password	Enter the password to use to connect to the external database. **NOTE:** The password must be re-entered whenever any of the other connection properties are changed.
Target Table	Specify the name of the table to create or update in the destination database. If desired, you can use the Choose Table button to the right of the box to look up existing table names in the destination database. You can update an existing table or create a new table. The behavior is determined by the setting **Drop and Create Destination Table**. Note that if "drop and create" is not enabled for the export, then the table must already exist in the destination database because the export will not create it. You can either manually create the table in the destination database before running the export, or you can run the export once with "drop and create" enabled to initially create the table, then disable the option for future executions to update the existing table.

Item	Description
Drop and Create Destination Table	Specifies whether the destination table is created or updated. • If enabled (default), the destination table will be created as part of the export. If the destination table already exists in the destination database, it will first be dropped (deleted), and then re-created with the new data from the export. Any existing data in the table will be lost. • If disabled, the existing destination table will be updated with the new data from the export. The destination table must already exist in the destination database; the export will not create the table. Any existing data in the table may or may not be retained, depending on whether the option **Truncate Destination Table** is enabled.
Truncate Destination Table	Specifies whether the existing rows in the destination table are deleted before updating the table with new data from the export. Only applies if the export is configured to update an existing table (**Drop and Create Destination Table** is disabled). • If enabled, all existing rows in the destination table will be deleted before the table is updated with new data. • If disabled (default), then all existing rows in the destination table are preserved, and new data rows are appended to the table. **NOTE:** New data rows are added "as is", without validating for duplicate keys or other constraints. This option should only be used if you are confident that new data will not conflict with existing data.

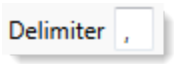
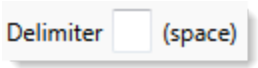
Once the connection information is completed, you can click **Test connection** to test the connection information for the external database. The **Status** updates to show either a success message or an error message.

NOTE: The test connection requires the user to have the highest level of permissions that could potentially be used by the export (permission to drop and create tables). If the specified user does not have this level of permissions, the test connection will fail. However, if "drop and create" is not enabled for the export, then the export may succeed even though the test connection failed.

▶ Exporting data to a delimited file

NOTE: The ability to export data to a delimited file using an export utility is only supported for Axiom Cloud systems using a remote data connection. As an alternative, on-premise systems can use the File Processing feature instead.

Complete the following settings to export data to a delimited file.

Item	Description
Remote Destination	Select **Delimited File** to export data to a delimited text file.
Remote Data Connection	Select a remote data connection to use for the export. You can use any remote data connection that has been set up in Scheduler.
Folder path	Enter the folder path where you want the destination file to be saved. You can type the path or click the folder icon to navigate to the desired path. The folder path must be a UNC path (i.e. \\servername\foldername). If you enter a mapped drive, it will automatically be converted to a UNC path. The folder path must be accessible to the Axiom Cloud Integration Service.
File name	Enter the name of the delimited file for the export to create. By default, comma-delimited files are saved as CSV format, and all other delimiters are saved as TXT format. If you want a comma-delimited file to be saved as TXT format instead, then include the file extension on the file name.
First row has column names	Select this option if you want the first row of the delimited file to contain column names.
Delimiter	In the box to the right of the option, enter the delimiting character to use in the export file. For example, to delimit by a pipe character, enter a pipe character into the box. By default, the delimiter is set to comma.  If you want to use a space or tab as the delimiting character, place your cursor in the box and press the space bar or the tab key. The character will be indicated in parentheses to the right of the box (since the character is not visible in this case). 
Text Qualifier	By default, the character used as the text qualifier is double quotation marks ("). If desired, you can enter a different character as the text qualifier, or you can clear the field if you do not want to use a text qualifier. The text qualifier is used when values in the data may contain the delimiting character. For example, when the delimiting character is a comma, but the data contains values such as full names with a comma (for example: "Doe, Jane"). When the delimited file is created by the export, the value with the comma will be wrapped in quotation marks so that the comma is not read as a delimiter.
Compress	Select this option if you want the export file to be compressed. If enabled, the export generates a ZIP file that contains the export file.

Configuring the home page (Desktop Client only)

The Axiom Capital Planning home page is Excel-based and table-driven, with each section populated from table records. You do not need to modify the file itself, but instead you use a template to make your changes.

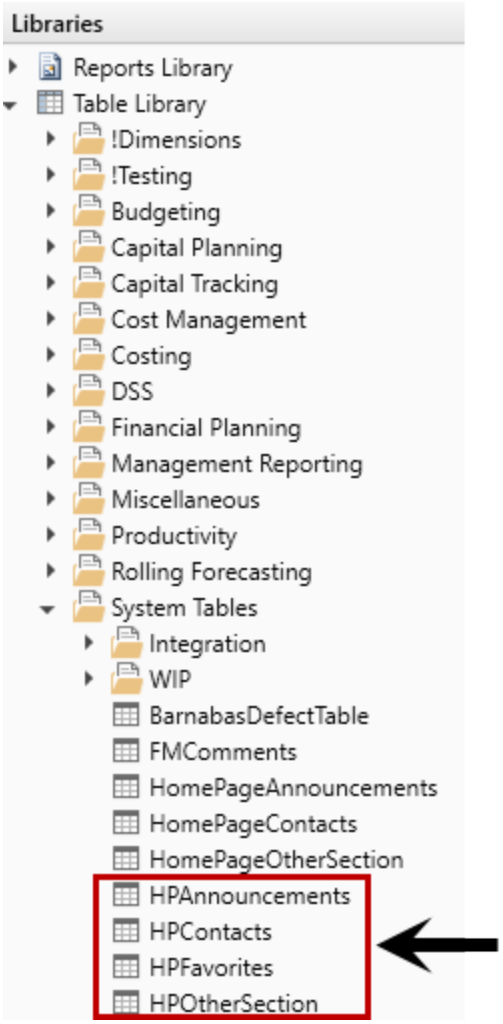
NOTE: To update the home page tables, users must be assigned the Suite Admin role since the tables may contain content that impacts all Axiom Healthcare Suite products.

The home page is comprised of the following sections:

Section	Description
Announcements	Post up to 8 announcements
Calendar	Post up to 8 calendar items
Contacts	Post up to 8 contacts
Dashboards	Post up to 8 dashboard links
Key Reports	Post up to 8 key report links

To configure the home page:

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



2. Double-click the following tables to configure the corresponding section of the home page. The following tables outline the rules for each data field.

   NOTE: Only enter information in the fields listed in these tables.

HPAnnouncements (Announcements)

Integer	*String 50*	*String 50*	*String 50*	*String 50*	*String 60*	*DateTime*
AnnounceID	**Product**	**Type**	**Recipien**	**Creato**	**Description**	**CalendarDate**
1	Global	Announcement			Under Construction. Please Ignore the dust ..	
1	Global	Calendar			sample calendar	3/1/2016 12:00 AM
2	Global	Announcement			Length Test 15 Length Test 15 Length Test 15 Length Test 15	
2	Global	Calendar				
3	Global	Announcement				
3	Global	Calendar				
4	Global	Announcement				
4	Global	Calendar				
5	Global	Announcement				
5	Global	Calendar				

Data Field	Parameters
AnnounceID	Use number 1 – 8 for the order to display the announcement.
Product	Use **Global**.
Type	Use **Announcement**.
Description	Type a description of the announcement. (Max length of 60 characters)

HPAnnouncements (Calendar)

Data Type ***String Length***	*Integer*	*String 50*	*String 50*	*String 50*	*String 50*	*String 60*
Description						
Delete Row	**AnnounceID**	**Product**	**Type**	**Recipien**	**Creato**	**Description**
	1	Capital Planning	Calendar			
	1	Financial Planning	Announcement			sample announcement
	1	Financial Planning	Calendar			
	1	Global	Announcement			Our offices will be closed July 4th weekend.
→	1	Global	Calendar			sample calendar
	2	Budgeting	Announcement			
	2	Budgeting	Calendar			
	2	Capital Planning	Announcement			
	2	Capital Planning	Calendar			
	2	Financial Planning	Announcement			
	2	Financial Planning	Calendar			
	2	Global	Announcement			
→	2	Global	Calendar			July 4th - Offices closed!
	3	Budgeting	Announcement			

Data Field	Parameters
AnnounceID	Use number 1 – 8 in the order to display the calendar item.

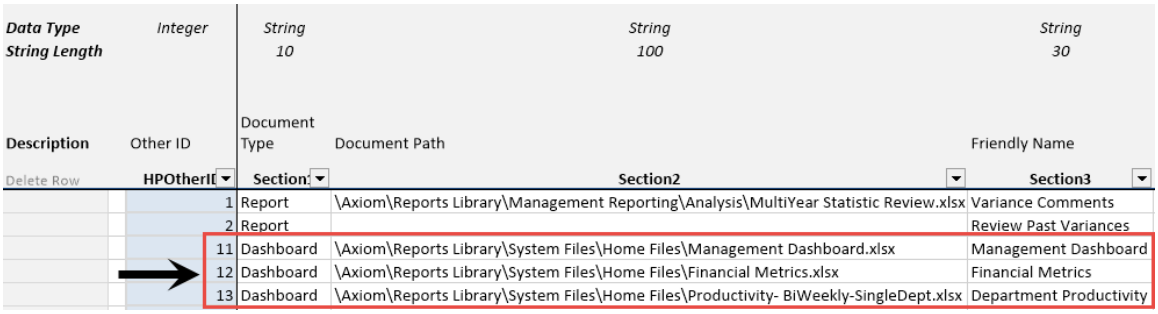
Data Field	Parameters
Product	Use **Global**.
Type	Use **Calendar**.
Description	Type a description of the calendar item.
CalendarDate	Enter the date and time for the calendar item.

HPContacts (Contacts)

Data Type	*Integer*	*String*	*String*	*String*
String Length		*50*	*50*	*15*
Description				
Delete Row	**ProductID**	**ProductDescription**	**Contact**	**ProductRe**
	1	Capital Planning & Tracking Contact:	Ext 128	Global
	2	Financial Planning Contact:	Ext 176	Global
	3	Budget Planning & Reporting Contact:	Ext 301	Global
	4	General Questions:	Ext 301,302,303	Global

Data Field	Parameters
ProductID	Type a number 1 – 8 in the order to display the contact item.
ProductDescription	Type a contact description (description or name).
Contact	Type contact information (name or phone number).
ProductRef	Type **Global**.

HPOtherSection (Dashboards)



Data Type		Integer	String	String	String
String Length			10	100	30
Description	Other ID		Document Type	Document Path	Friendly Name
Delete Row	HPOtherID		Section1	Section2	Section3
	1		Report	\Axiom\Reports Library\Management Reporting\Analysis\MultiYear Statistic Review.xlsx	Variance Comments
	2		Report		Review Past Variances
	11		Dashboard	\Axiom\Reports Library\System Files\Home Files\Management Dashboard.xlsx	Management Dashboard
	12		Dashboard	\Axiom\Reports Library\System Files\Home Files\Financial Metrics.xlsx	Financial Metrics
	13		Dashboard	\Axiom\Reports Library\System Files\Home Files\Productivity- BiWeekly-SingleDept.xlsx	Department Productivity

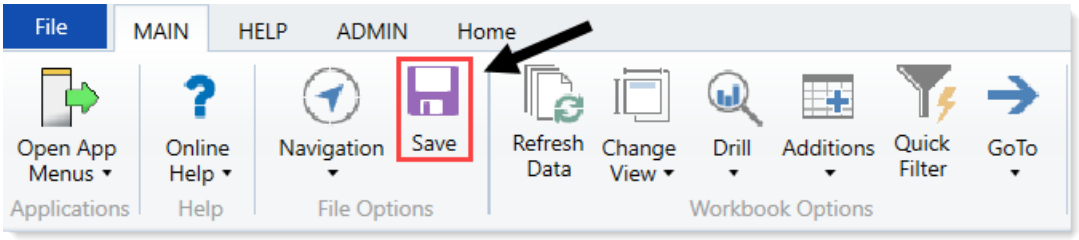
Data Field	Parameters
HPOtherID	Type number 1 – 8 for the order to display the dashboard item. **NOTE:** Because this table allows you to include dashboards and reports, the number you assign to a dashboard cannot be the same number used for a report. In the example above, the HPOtherID 1 is assigned to a report, so you cannot assign this number to a dashboard.
Section1	Type **Dashboard**.
Section2	Enter the document path by copying it from Explorer and pasting it into this field.
Section3	Type a name for the dashboard to display on the home page.
ProductRef	Type **Global**.

HPOtherSection (Key Reports)

Data Type / String Length		Integer	String 10	String 100	String 30
Description	Other ID		Document Type	Document Path	Friendly Name
Delete Row	HPOtherID		Section1	Section2	Section3
	1		Report	\Axiom\Reports Library\Management Reporting\Analysis\MultiYear Statistic Review.xlsx	Variance Comments
	2		Report		Review Past Variances
	11		Dashboard	\Axiom\Reports Library\System Files\Home Files\Management Dashboard.xlsx	Management Dashboard
	12		Dashboard	\Axiom\Reports Library\System Files\Home Files\Financial Metrics.xlsx	Financial Metrics
	13		Dashboard	\Axiom\Reports Library\System Files\Home Files\Productivity- BiWeekly-SingleDept.xlsx	Department Productivity

Data Field	Parameters
HPOtherID	Type a number 1 – 8 in the order to display the key report. **NOTE:** Because this table allows you to include both dashboards and reports, the number you assign to a report cannot be the same number used for a dashboard. In the example above, the HPOtherID 11 is assigned to a dashboard, so you cannot assign this number to a report.
Section1	Type **Report**.
Section2	Enter the report file path by copying it from Explorer and pasting it into this field.
Section3	Type a name for the key report to display on the home page.
ProductRef	Type **Global**.

3. After making changes to the appropriate table, in the **Main** ribbon tab, click **Save**.

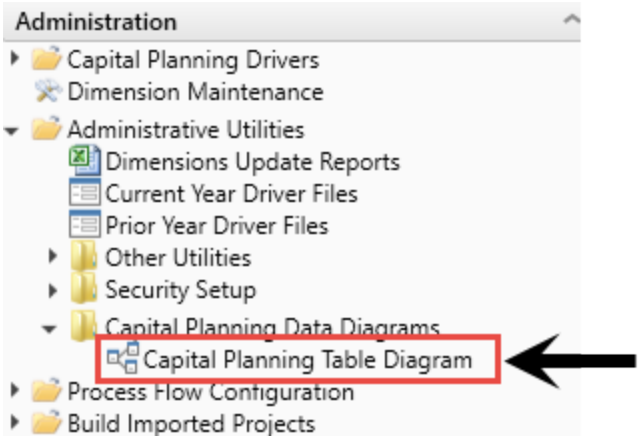


IMPORTANT: To see the changes you made to the home page, you must log out and log back into the system.

Viewing capital project or purchase request table diagram

To view the capital project or purchase request table diagram:

1. In the Cap Plan Admin task pane, in the **Administration** section, click **Administrative Utilities** > **Capital Planning Data Diagrams**, and then double-click **Capital Planning Table Diagram**.



The diagram displays in a browser window, similar to the following: