Plan File Process Guide

Axiom Software

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axiom software

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Introduction

Using plan file processes, you can define a set of edit and review steps for plan files to progress through, and manage access to plan files through step ownership. This guide discusses how to create and administer plan file processes.

Intended audience

This guide is intended for administrators and other power users who are responsible for managing the planning process using plan files in a file group.

What is covered in this guide?

This guide covers the following aspects of plan file processes:

- Creating and configuring the process definition to define the steps, due dates, owners and more
- Defining custom process notifications to inform users of new tasks, due dates, and other milestones
- Starting and administering an active plan file process

What is not covered in this guide?

The following related topics are not covered in this guide:

- End user workflow for completing process tasks. For information on how end users interact with process tasks, see the *User Guide*.
- Setting up Axiom forms to complete process tasks and display process information. For more information, see the *Axiom Forms and Dashboards Guide*.
- General file group and plan file administration. For more information, see the *File Group Administration Guide*.
- Using general process definitions. For more information, see the *Process Management Guide*.

All documentation for Axiom Software can also be accessed using the Axiom Software Help Files.

Axiom Software Client versions

This guide discusses functionality that is available in the Axiom Desktop Client (Excel Client and Windows Client). Screenshots of features may show either the Excel Client or the Windows Client. The Axiom Software functionality is virtually identical in both environments.

Some plan file process features are available in the Axiom Web Client. Web Client features are explicitly called out where applicable.

Plan File Process Overview

Using Process Management, you can define and manage the set of steps necessary for the plan files in a file group to complete a particular planning process. This is a special feature of Process Management known as a *plan file process*.

When using a plan file process, you can:

- Define a set of steps for plan files to progress through. Plan files can skip certain steps if those steps do not apply to all plan files.
- Assign ownership for each plan file in each step, and manage access to plan files based on that ownership.
- Assign due dates for each step, to establish a timeline for each step, as well as for the overall process.
- Automatically notify users when they are responsible for completing a step for a plan file, as well as other process notifications and reminders.

Plan file processes consist of edit steps and approval steps:

- When a plan file is in an edit step, the owner is responsible for editing the plan file as needed to complete the step. When the user has finished their edits, they can complete the task to submit the plan file to the next step in the process.
- When a plan file is in an approval step, the owner is responsible for reviewing the plan file and optionally making edits as needed. The user can then either approve the plan file to move it on to the next step, or reject the plan file to return it to a prior step. Approvals can be sequential (one user must approve the plan file before it progresses) or concurrent (multiple users can review and approve the plan file at the same time).

NOTE: Some customers may be using workflow, which is the legacy feature for managing plan files through a set of planning stages. For information on editing or managing an existing workflow, see the *Workflow* section in Axiom Software Help (search on AX3700 to jump to the topic).

About plan file processes

File groups support a special type of process management, known as a *plan file process*. Plan file processes are used to manage plan file progression through a set of edit and approval steps.

When using plan file processes, you can define a set of steps for plan files to progress through, assign owners to each step, and control the level of edit rights at each step. You can set due dates for each step, and review the process status periodically, so that you have a constant view of where all plan files are in the process.

Defining plan file processes

Plan file processes are defined by using a dedicated process type known as a *plan file process definition*. Plan file process definitions only allow steps that focus on editing and reviewing plan files. No other process step types are allowed.

Plan file process definitions can only be created within a file group, and are automatically associated with the file group they belong to. If a file group is cloned and the processes are included in the clone, the processes in the new file group will automatically be associated with the new file group.

The plan file process definition defines the properties of the process, such as:

- Name, display name, and description (for example "2019 Budget Process")
- Process owner
- Steps in the process
- Ownership assignments and due dates for each step
- Notifications to be sent during the process
- Optional configuration settings for Web Client process pages

Plan file process steps

Plan file processes support three kinds of process steps:

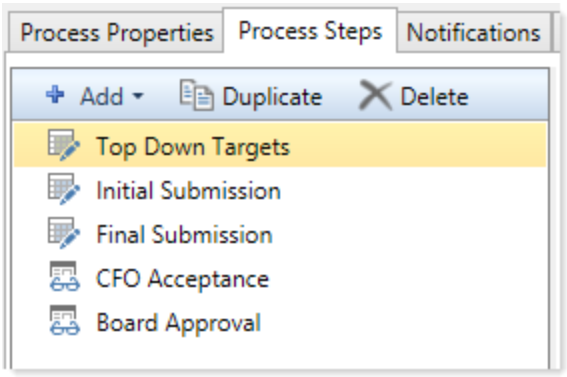
- **Edit Plan File**: This step type allows the step owner to edit the plan file. Owners of Edit Plan File steps have read/write access to plan files, and can save plan data to the database. It is assumed that these owners will be developing plans and making changes to plan files. Owners can submit their files to the next step, but cannot send files back to a prior step.
- **Approval**: This step type allows the step owner to approve or reject the plan file. Owners of Approval steps have read-only access to plan files, unless read/write access is explicitly granted for the step. It assumed that these owners will be reviewing the plan files and then either approving the plan files to send them to the next step, or rejecting the plan files to send them back to a prior step. The rejection behavior is configurable at the process level and the individual step level, so that you can specify which step the plan file is rejected back to.

  Plan file processes for on-demand file groups also support an optional ability for approvers to stop the plan file in the process entirely ("deny request").

- **Multiple Approvals**: This step type allows multiple Approval steps to be active simultaneously instead of sequentially. All of the step owners must approve the file before it can progress to the next step in the process.

  For example, imagine that you have two different approvals that need to be obtained for a plan file process. If these approvals should be sequential—meaning that the first approval must be obtained before the plan file progresses to the second approval—then you should use two regular Approval steps in a sequential order. But if the two approvals can occur in any order, then you can use the Multiple Approvals step with two Approval sub-steps, so that both owners can approve the plan file concurrently.

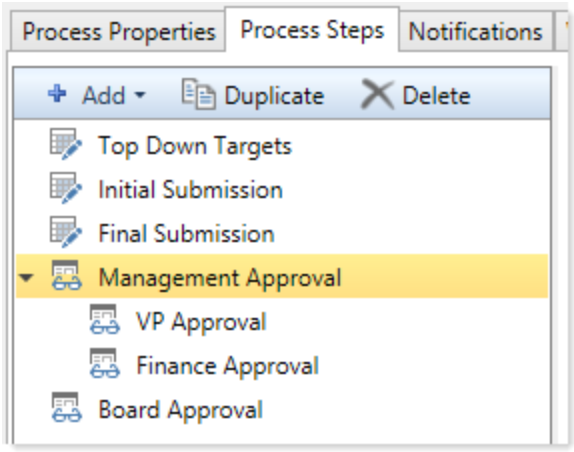
The following screenshot shows an example plan file process for a budget process. When the process is active, each plan file in the file group will progress through these steps independently.



Example plan file process (as a plan file process definition)

This process has three Edit Plan File Process Steps and two Approval Process Steps. During the edit steps, users can access and edit the plan file, and then move it on to the next step when done. During the approval steps, users can access and review the plan file (and optionally edit it), and then either approve it to the next step or reject it to a prior step.

Alternatively the process can use the Multiple Approvals step for concurrent approvals. In the following example, The Management Approval item is a Multiple Approvals step with two Approval sub-steps. When the Multiple Approvals step becomes active, both the VP and Finance approvals will become active at the same time, and can be completed concurrently. Once both owners have approved the step, the plan file moves on to the final Board Approval step.



Example plan file process with a Multiple Approvals step

Ownership assignments and access to plan files

Each step in the plan file process has assigned ownership. When a task is generated for a plan file, the task owner has the responsibility to complete the task and then progress the plan file in the process.

You can assign a user or role directly to the step, or you can look up the ownership dynamically for each plan file using a designated table column or a workbook. For more information on assignment options for plan file process steps, see Assigning owners to plan file process steps.

If some plan files do not need to complete a particular step, then you can configure the ownership assignments so that those plan files will skip the step. The assignment must use either a table column or a workbook. Using these options, you can enter the keyword `[skip]` as the owner assignment to cause a plan file to skip a particular step.

If the process has certain aspects that are conditional, then the best approach is to use the workbook assignment option. For example, in a capital process you might want to assign different owners depending on the amount of the capital request. Or, you might want to include or skip an "IT Review" step depending on the nature of the capital request. When using the workbook assignment option, you can include logic in the workbook that looks up other values and determines who the owner should be (or if it should be set to `[skip]`).

If a user is assigned as a step owner for a plan file in a plan file process, the user must have a file group permission set that includes the plan file. If the plan file is not included in any of the user's permission sets (either directly configured or inherited through a role), then the user cannot be the step owner for the plan file and the plan file will stall in the process. The permission set must also have **Interacts with Process Management** enabled in order for process management to "elevate" access to plan files.

If a role is assigned as a step owner for a plan file in a plan file process, then not all users in the role will become step owners. Instead, ownership is limited to users in the role who have a file group permission set that both includes the plan file and that has **Interacts with Process Management** enabled. If no users in the role meet the criteria for ownership, then the plan file will stall in the process.

When a user is the owner of a plan file for an active process step (either directly or via a role), process management will "elevate" the user's security permissions as necessary so that the user can complete the task. In summary:

- For Edit Plan File Process Steps, the user will be elevated to **Read/Write** and **Allow Save Data**. This allows the user to access the file with edit permissions, and save data.
- For Approval Process Steps, the user will be elevated to **Read-Only** access so that they can access and review the file. If the option **Allow reviewers to edit the plan file** is also enabled, then the user is elevated to **Read/Write** and **Allow Save Data** so that they also have the option to edit the file and save data.

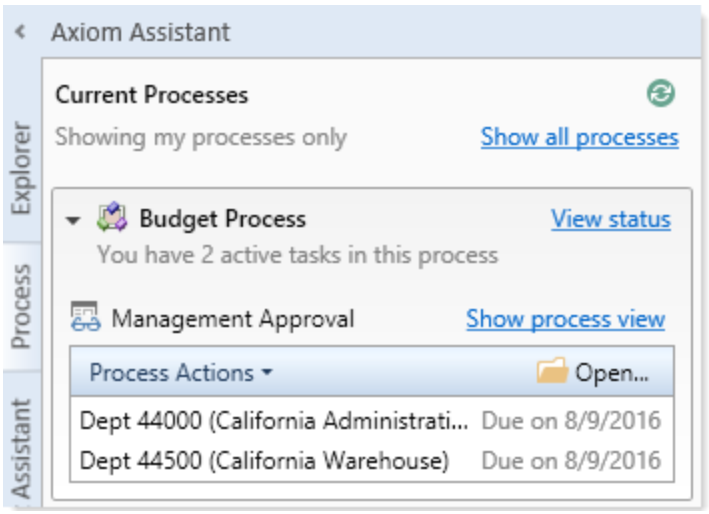
For more information, see How plan file processes and security interact.

Activating the process and completing process tasks

When you are ready for the planning process to begin, you "activate" or start the process. The behavior of the process depends on whether it is for a standard file group or an on-demand file group:

- For standard file groups, typically all plan files are created before the process is started. All plan files become active in the first step of the process and tasks are generated for the owner(s) of each plan file for that step. Plan files then progress through the process steps as owners complete their tasks. Once all plan files have completed all steps, the process is automatically completed.
- For on-demand file groups, typically the process is started before plan files are created in the file group. As end users create plan files "on demand," the plan files are automatically started in the process and tasks are generated for the owners of the first step. Plan files then progress through the process steps as owners complete their tasks. On-demand processes remain active until they are manually stopped, to accommodate the continued creation of new plan files.

In the Desktop Client, tasks for a plan file process display in the Process task pane. Task owners will also receive a notification of the new task, if the step is configured to send notifications. Notifications can be delivered by email and/or the Notifications task pane, and can be customized as desired.



Example Process task pane with plan file tasks

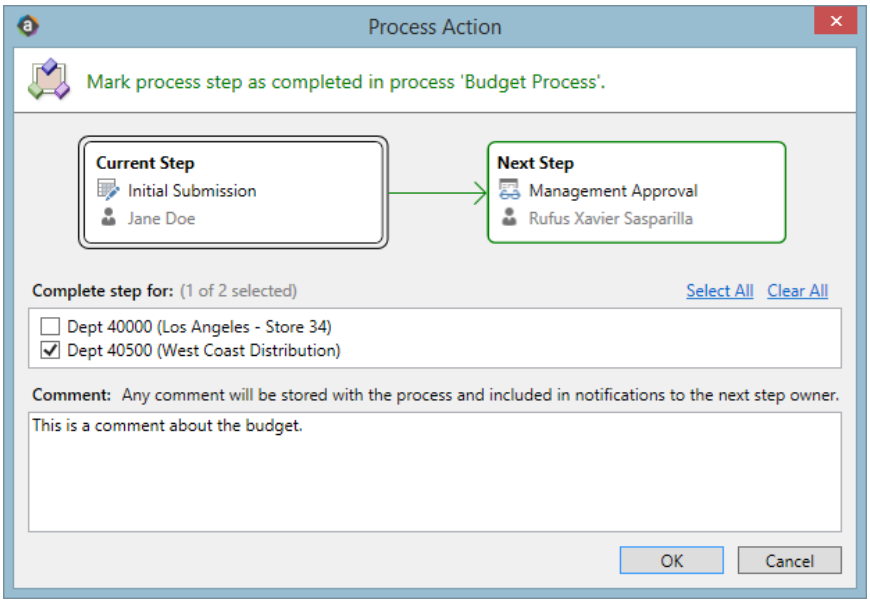
Task owners can open the plan file from the Process task pane. They can double-click a plan code to open that specific plan file, or they can click the **Open** button to launch the Open Plan Files dialog, which is filtered to only show the user's currently assigned plan files.

Task owners can complete tasks by using the **Mark step as complete** option in the task pane for edit steps, or the **Approve** and **Reject** options for approval steps. If the user currently owns multiple plan files in the step, the user will have the option to select multiple plan files to complete in batch. The user also has the option to enter a comment for the next step owner.

- If the user completes or approves the task, then the step is completed for that plan file. If the current step is an edit step or a regular approval step, then the plan file is moved to the next step. If the current step is a sub-step of a multiple approvals step, then the sub-step is completed and the plan file will only move to the next step when all sub-steps are completed.

  NOTE: If **Save and validate plan file before advancing to next step** is enabled in the process definition, then the plan file will be validated and saved in the background before the task is completed. If an error occurs that prevents the save, the user will be informed of the error and the task will not be completed.

- If the user rejects the task, then the step is rejected and the plan file moves back to a prior step. In the case where the current step is part of a multiple approvals step, the rejection of any sub-step causes the parent multiple approvals step to be rejected.
- For plan file processes for on-demand file groups only, owners of approval steps may have a third option of **Deny Request** (the specific wording of the option can be customized). If the user chooses to deny the request, then the plan file is aborted in the process and no longer progresses.



Example task completion dialog for plan file tasks

Task owners can also complete tasks as part of saving the plan file. For more information, see Prompting users to complete process tasks when saving plan files.

In most cases, the current, next, and prior step owners show in the task completion dialog. Prior steps and their owners only show when the plan file can be rejected back to the prior step. However in some cases, it is not possible or feasible to show the step owners. For example, if multiple plan file tasks are being completed at once, each plan file could have different and multiple step owners. In this case Axiom Software does not attempt to show the step owners and simply indicates "(multiple selections)".

Process features for the Web Client

If the plan files in the process are form-enabled, then most or all task completion will likely take place in the Web Client. Axiom Software provides a variety of resources for end users to complete their tasks in the Web Client, however, it is the responsibility of the file designers to make these resources available to end users. For example:

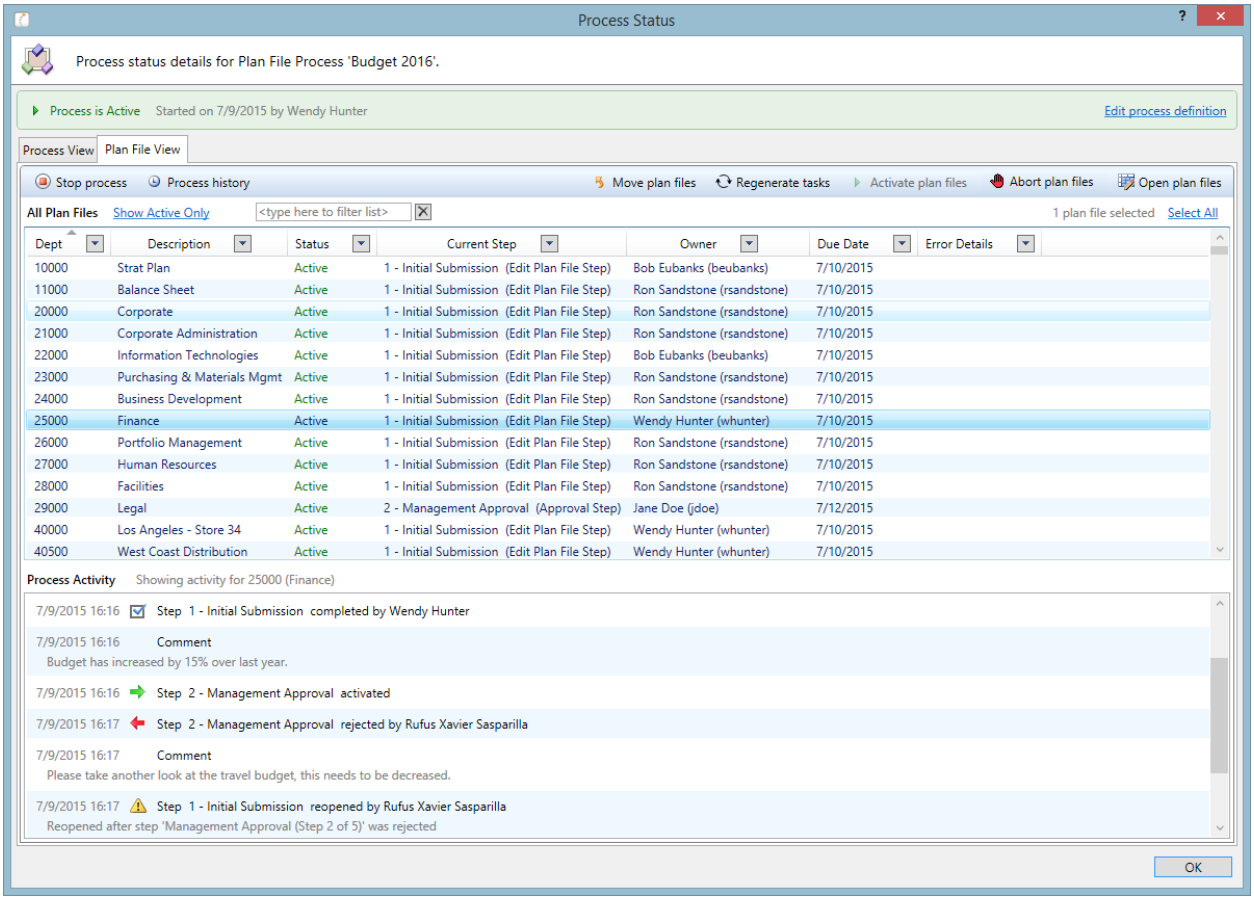
- If you want users to be able to complete the current process task from within the form-enabled plan file, then the form must be set up with a Button component that provides the functionality to submit, approve, or reject the current task.
- The Process Summary component can be used to provide users with a summary of their current tasks, for a particular process. Typically this component is placed on a form-enabled Home file.
- End users can use the Process Tasks web page to review and complete their current tasks for a particular process. This page can be accessed from the Process Summary component, or you can include a link to the page on a form-enabled Home file or other Axiom form.

- End users can use the Process Routing web page to review the process history of a particular plan file. If the user is the current step owner, they can also complete the task from the page. This page can be accessed from the Process Summary component, or you can include a link to the page on a form-enabled Home file or other Axiom form.

For more information, see the *Axiom Forms and Dashboards Guide*.

Tracking process status and history

Administrators and process owners can check the status of the process at any time using the Process Status dialog. In addition to the overall process status, they can check the status of individual plan files to see which step the plan file is currently active in, the process activity of the plan file, and any comments made by owners of the plan file.



Example plan file status in the Process Status dialog

Process administration tasks can also be performed within this dialog, such as moving plan files to different steps, regenerating tasks for stalled plan files, and stopping the process. For more information, see Managing Active Plan File Processes.

Axiom Software also provides a variety of reporting options that can be used to keep track of the process. You can build your own reports using Axiom queries that incorporate process information, and by using the GetProcessInfo function. You can also reference the built-in Time-in-Step report that is available in the Web Client. For more information, see Reporting on plan file processes.

Handling plan files with different process requirements

Plan file processes can easily handle minor differences in process requirements for plan files. For example, if some plan files don't need to complete a particular step, they can skip that step. You can also use dynamic owner assignments to accomplish conditional ownership, such as to assign a plan file to a different reviewer if the plan file exceeds a certain amount.

However, larger organizations that are comprised of distinct groups, sites, or facilities may have more significant differences in process requirements. Plan files may need to start the process at different times and be managed by different users. In more extreme cases, the groups may need different steps, assignments, notifications, and other process properties that cannot be reconciled within a single process definition.

Plan file processes provide two features that are intended to help meet these needs:

- **Grouping Column**: You can specify a grouping column for the process, so that each group can be managed individually within the process. The plan files in each group can be started at different times, and can be managed by group within the Process Status dialog. For more information, see Managing a plan file process by groups.
- **Process Filter**: You can specify a filter for the process, so that the process is limited to a subset of plan files. This allows you to have multiple active process definitions that can be started at different times, managed separately, and configured to the precise needs of each subset. The filters on the process definitions cannot overlap—although multiple processes can be active for the file group, each plan file can only be active in one process. For more information, see Using a process filter to limit plan files in the process.

If your process requirements can be met by a single process that uses the grouping column feature, then it is recommended to use that feature due to the lower system overhead and simplified maintenance. Although the process filter approach provides more flexibility to accommodate differing needs, having multiple processes introduces more setup and maintenance, and places a heavier processing load on the system. Additionally, using multiple processes has limitations. Certain features, such as the Process Directory in the Web Client, only support showing one process per file group.

NOTE: The grouping column and filter features are only available for standard file groups. On-demand file groups must use a single active process, so that newly created plan files are automatically started in that process.

How plan file processes and security interact

In order to control access to plan files using a plan file process, plan file security permissions for users and roles should be set as follows:

- For every user whom you want to participate in the process, enable the **Interacts with Process Management** option for the plan file permission in security.
- The plan file access level for the user can be set to any level, including No Access.
- The plan file permission must either have a defined plan file filter, or grant access to all plan files. This determines the list of plan files that the user is eligible to own in the process.

This "baseline" security permission determines the user's access level to plan files when no plan file process is active for the file group. However, if a plan file process is active for the file group, then the process will "elevate" the user's permissions as needed when the user is an active step owner. Otherwise, the user's baseline security permissions apply.

This permission elevation works as follows, depending on the step type:

- **Edit Plan File steps**: If the user is the current owner of a plan file for an edit step, that user's rights to the plan file will be temporarily elevated to the equivalent of **Read/Write** and **Allow Save Data** while the step is active. Once the plan file is submitted to the next step, the user's rights to the plan file will revert to their baseline security permissions.
- **Approval steps**: If the user is the current owner of a plan file for an approval step, that user's rights to the plan file will be read only, unless the approval step has been configured to allow reviewers to edit the plan file. If reviewers can edit the file, then the user's rights will be temporarily elevated to the equivalent of **Read/Write** and **Allow Save Data** while the step is active. Once the plan file is approved or rejected, the user's rights to the plan file will revert to their baseline security permissions.

Keep in mind the following regarding the interaction between security and plan file processes:

- Plan file processes do not grant permissions to plan files, they only elevate existing permissions. If a user is assigned as the step owner for a plan file, but the user does not have a permission set that includes that plan file, then the user cannot be the step owner and the plan file will stall in the process.
- Plan file processes can only elevate user permissions, they cannot decrease user permissions. If a user has read/write permission to a particular plan file, then that level of permission is always available to the user, regardless of whether a plan file process is active and whether the user is the current step owner.
- When individual users are assigned as step owners, the user is not required to have the **Interacts with Process Management** permission in order to be the step owner. If the user already has the appropriate level of permissions in security to access the plan file and complete their process tasks, then **Interacts with Process Management** has no effect. However, if you need the process to elevate the user's permissions, then **Interacts with Process Management** must be enabled.

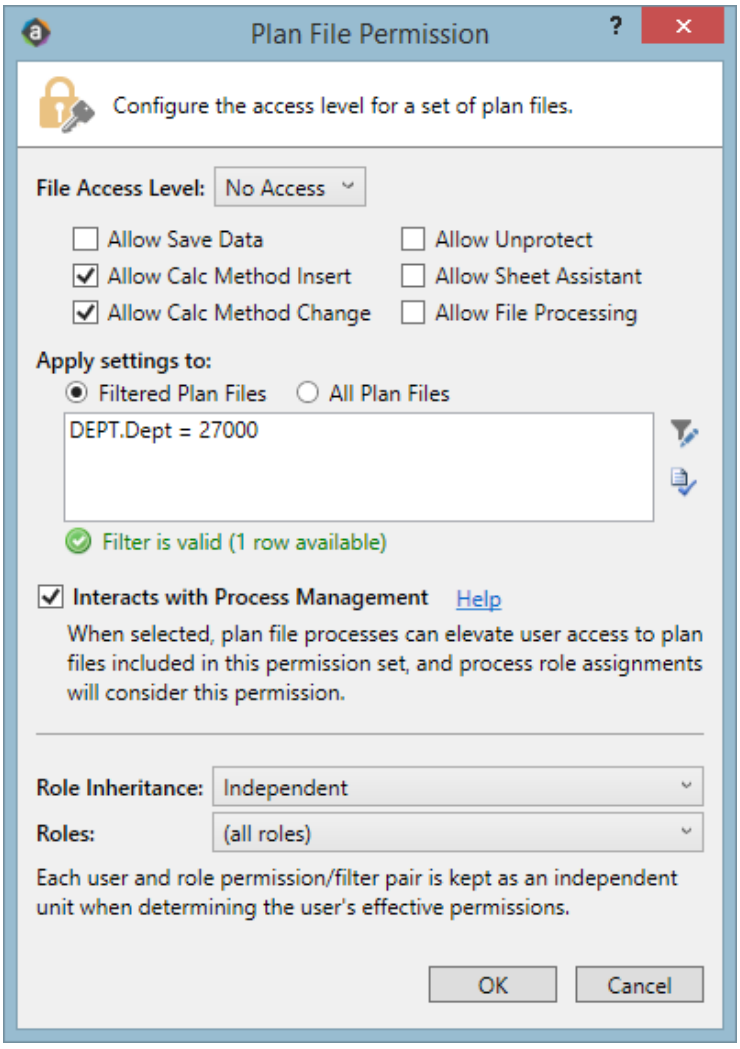
- When roles are assigned as step owners, then users in the role *must* have the **Interacts with Process Management** permission in order to be evaluated as potential step owners. See Role assignments, security, and step ownership for more information.

Administrators always have full access to plan files and file groups, regardless of their Security or Process Management settings.

NOTE: Currently, Axiom Software does not automatically regenerate active process tasks in response to security changes. This may result in situations where a current plan file owner cannot access or save their assigned plan file, if their security permissions have changed since the task became active. The administrator or process owner must manually regenerate tasks as needed in this situation.

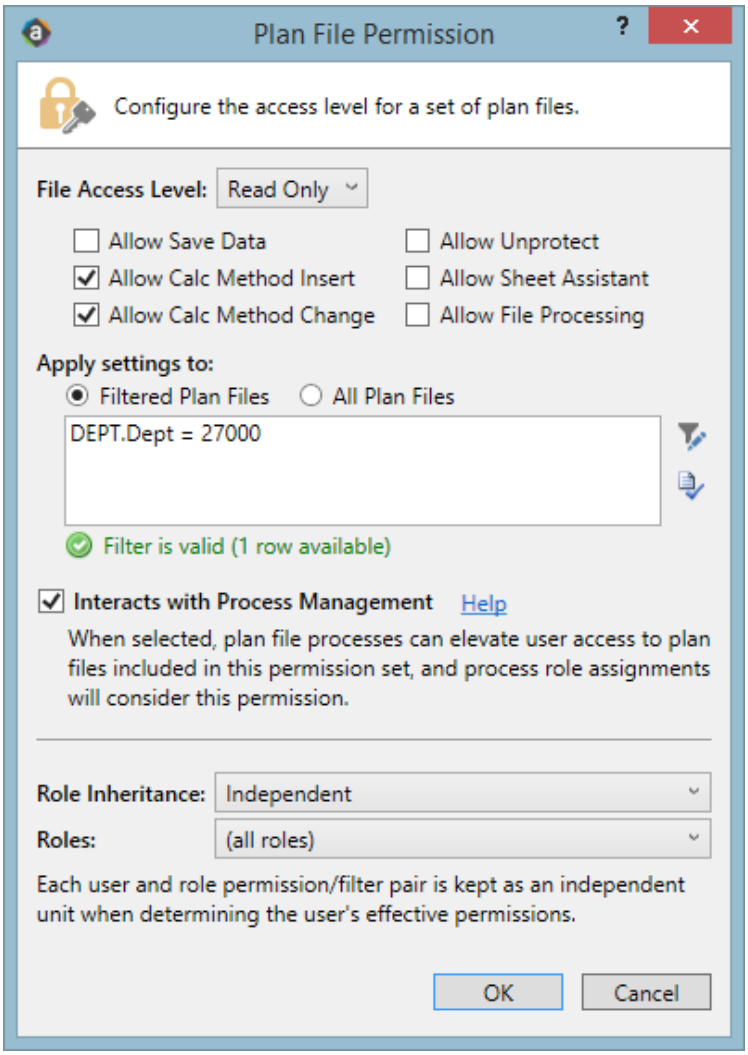
Examples of a plan file process interacting with security permissions

The following examples are intended to help illustrate how plan file processes work in conjunction with security permissions to control access to plan files.



Example 1: No Access

- This user's configured access is **No Access** to plan file 27000, which means that under normal circumstances the user cannot see or open this plan file.
- Because **Interacts with Process Management** is checked, when the user is the owner of the active step in a plan file process, their access will be elevated as appropriate for the step (for example Read/Write and Allow Save Data for an Edit Plan File step).
- While the step is active, the user will be able to access and edit the file, and save data from the file (if applicable). Once the user completes the process task and the plan file moves on to the next step, the user will no longer be the step owner and they will revert to having no access.
- The user must have a permission set with **Interacts with Process Management** enabled in order for the process to elevate the permissions. If Interacts with Process Management was not checked in this example, then the user could not be the step owner because the user doesn't have any access to the plan file.



Example 2: Read-Only Access

- This user's configured access is **Read Only** to plan file 27000, which means that under normal circumstances the user can see the plan file and open it as read-only.
- Because **Interacts with Process Management** is checked, when the user is the owner of the active step in a plan file process, their access will be elevated as appropriate for the step (for example Read/Write and Allow Save Data for an Edit Plan File step).
- While the step is active, the user will be able to edit the file, and save data from the file (if applicable). Once the user completes the process task and the plan file moves on to the next step, the user will no longer be the step owner and they will revert to read-only access.

- The user must have a permission set with **Interacts with Process Management** enabled in order for the process to elevate the permissions. If Interacts with Process Management was not checked in this example, the user would still be assigned as the step owner, and the user could see and open the file as normal, but their permissions would not be elevated to allow saving data. If the user was only an Approval step owner, that might be acceptable, but if the user is an Edit Plan File step owner, then the user would require their permissions to be elevated.

If the user has Read/Write and Allow Save Data permissions, then **Interacts with Process Management** is not required to be checked if the user is directly assigned as the step owner, because the user already has the full level of permissions that could be granted by the process. However, if the step ownership assignment is through a role rather than for the user directly, then Interacts with Process Management must be checked if you want the user to be a step owner. The permission set will not be evaluated for potential step ownership through the role if the setting is not checked.

In all cases, the user must have a permission set that includes permission to the plan file. If Interacts with Process Management is checked but none of the user's permission sets include the plan file that the user is assigned to in the plan file process, then the user cannot be the step owner and the plan file will stall in the process.

Role assignments, security, and step ownership

If the assigned step owner for a plan file is a role, then the way the step owners are determined depends on the **Role Assignment Options** defined for the step. For more information, see Assigning owners to plan file process steps.

All permissions

If the step is configured to use **All permissions**, then the specific step owners are determined as follows:

- All users assigned to the role are eligible to be step owners, regardless of the specific role permissions for the plan file and regardless of the role inheritance settings defined for the user. The role assignment simply defines the list of *potential* owners.
- If a user within the role has *any* permission set for the file group that includes the plan file AND has **Interacts with Process Management** enabled, then that user is assigned as a step owner. It does not matter whether that permission set is associated with the assigned role. The permission set can be defined at the user level, or defined for any role that the user belongs to, or result from some combination of user and role permissions (when using Combine inheritance).

For example, imagine that a user has a configured permission set that grants **Read-Only** access to the plan file, and the user also belongs to a role named Budget Process. The Budget Process role does not grant access to the plan file. If Budget Process is assigned as the step owner, and the user's permission set has **Interacts with Process Management** enabled, then the user is a step owner. If **Interacts with Process Management** is not enabled for the permission set, then the user will not be a step owner, even though they have permission to the plan file and they belong to the role.

Now imagine a user who belongs to two roles, Budget Process and Finance. The Budget Process role does not grant the user any particular plan file permissions, but the Finance role includes the plan file in its filter and also has **Interacts with Process Management** enabled. If Budget Process is assigned as the step owner, then the user will be a step owner due to the permission they inherit from the Finance role. The user's membership in Budget Process makes the user eligible to be a step owner, and then at that point all permission sets for the user are evaluated to determine whether they will be a step owner.

Lastly, imagine that the Budget Process role itself grants access to the plan file and has **Interacts with Process Management** enabled. If Budget Process is assigned as the step owner, then all users who belong to the role will be step owners, because they are all inheriting the permission from the role. The only exception is any user with their role inheritance set to None. However, even in that case the user could be a step owner if they have another permission set with rights to the file and **Interacts with Process Management** enabled.

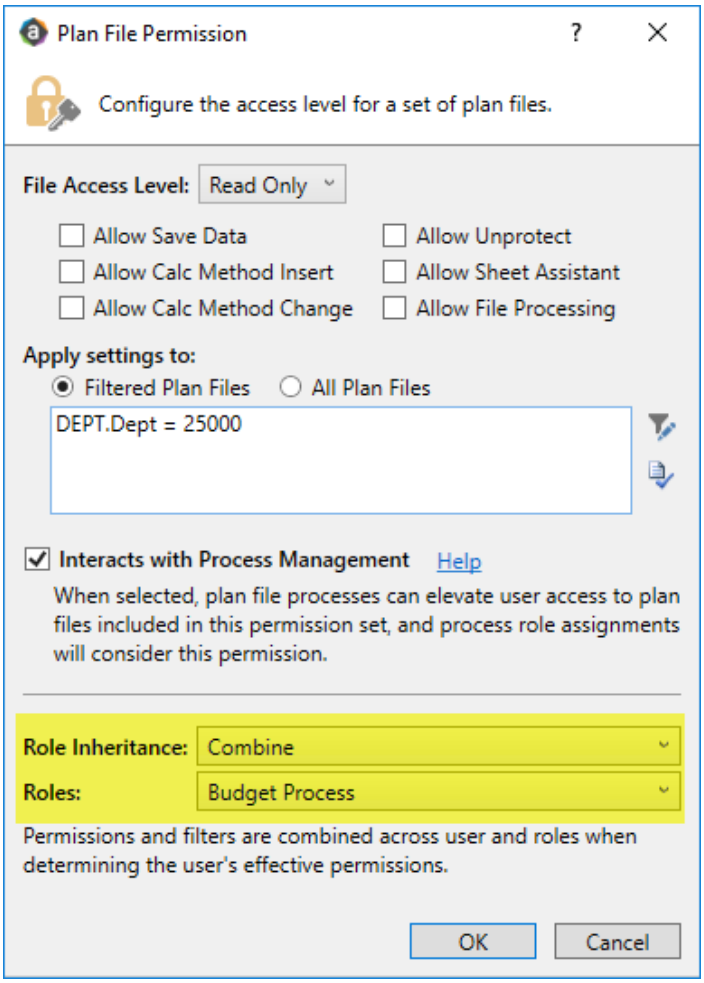
Role permissions only

If the step is configured to use **Only permissions associated with the assigned role**, then all users assigned to the role are eligible to be step owners, just like when using the **All permissions** option. However now the permission sets that are considered to determine step ownership are limited to permissions on the role itself, or to any individual user permission sets that are explicitly combined with the role.

If the role itself grants access to a plan file and has **Interacts with Process Management** enabled, then all users in the role are step owners of that plan file (except for any users in the role who are configured to not inherit the role's plan file permissions). This setup has limited usefulness, but might be appropriate in certain situations. For example, you might have a role with a small number of Finance approvers, and each plan file needs to be approved by someone in this role.

This option is most useful when users in the role have individual permission sets that are explicitly combined with the role. When using this approach, you can use the role to define the pool of eligible users, but use the filters defined on each individual user to determine step ownership for each plan file. All other inherited and configured permission sets for the user are ignored, so this option is especially useful when users may belong to many different roles but you want to limit the step ownership to permissions associated with a specific role.

For example, imagine that a user belongs to the Budget Process role, and this role does not grant any permissions to the plan file. If Budget Process is assigned as the step owner, the user will be the step owner for Dept 25000 if they have an individual permission set that is combined with the role as follows:



Because **Role Inheritance** is set to **Combine** with the role Budget Process, the user permissions and the role permissions are merged together and treated as a single permission set. This makes the user eligible to be a step owner for Dept 25000 using the Budget Process ownership assignment. If instead the Role Inheritance was set to None or Independent (or if a different role was specified to combine with), then this permission set would not be considered for step ownership. This permission set would also not be considered for step ownership if **Interacts with Process Management** was disabled, even if it still combined with the Budget Process role.

The user could belong to several other roles, but any permissions inherited from those other roles are ignored in this case. Similarly, the user could have other individual permission sets, and they will also be ignored unless they are set to combine with the Budget Process role.

Keep in mind the following:

- If the user's permission set is configured to combine with all roles instead of with the specific role, that permission set does not count as associated with the role and will not be considered for step ownership. Only user permission sets that are explicitly combined with the named role are considered for step ownership.

- If a user has only one defined permission set and that permission set is configured to combine with a specific role, the user will not inherit any additional plan file permissions from other roles. If you want the user to inherit permissions from other roles independently, you can create a "dummy" permission set for the user that has no permissions, but is configured with **Independent** inheritance.

NOTE: When a user's individual permission set and a role are configured to combine, the user is granted the most permissive set of rights as defined for either the user or the role. For more information on role inheritance for file group permissions, see the *Security Guide*.

Creating Plan File Processes

You can create plan file processes for a file group. These processes are associated with the file group and stored within the Process Definitions folder of the file group.

Plan file processes use a special kind of process known as a *plan file process definition*. Plan file process definitions are dedicated to progressing plan files through a defined set of steps. These processes can only contain steps relating to editing plan files and approving plan files. For more information on how plan file processes work, see About plan file processes.

Only administrators and users with the appropriate file access permissions (as defined on the **Files** tab of the **Security Management** dialog) can manage process definitions for a file group. In order to create new process definitions or delete existing process definitions, the non-admin user must have **Read/Write** access to the **Process Definitions** folder for the file group. To edit a process, the user must have **Read/Write** access to the process definition (either on the specific file or inherited from the folder permission).

To create a plan file process definition:

1. On the **Axiom** tab, in the **File Groups** group, click the button for the file group where you want to create a process definition. In the file group menu, click **Process Definitions > New Plan File Process Definition**.

   TIP: You can also create new plan file process definitions from the file group node in the Explorer task pane, or by going to **Manage > Process Management > Process Definitions**.

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

2. In the **Process Properties** tab, complete the general process settings as desired, such as the process name and the process owner. For more information on these settings, see Plan File Process Definition Properties.

   If the plan file process is for an on-demand file group, then the following additional settings are available in the **On Demand Properties** section:

   - **Enable aborting plan file processes**: On-demand processes can optionally allow approval

step owners to abort a plan file in the process, meaning the item is denied. To use this feature, it must be enabled at the overall process level and then for the individual steps where you want to permit it. For more information, see Enabling the "deny request" option for a plan file process.

- **Process Initiator Column**: On-demand processes can optionally designate a column to be used to set the process initiator when a plan file is started in the process. For more information, see Setting the process initiator for plan files.

3. In the **Process Steps** tab, define the steps for the process.

   - To add a step, click **Add** and then select the type of step to add. New steps are added after the step that you currently have selected in the list. Plan file process definitions can only use the following step types:
     - Edit Plan File Process Step
     - Approval Process Step
     - Multiple Approvals Process Step

     If the currently selected step is a Multiple Approvals step, then the new step can only be an Approval step and it is added as a sub-step to the Multiple Approvals step. In this case, if you want to add a new top-level step that comes after the Multiple Approvals step, you must click **Add After Current Step** and then select the type of step to add.
   - To remove a step, select that step and then click **Delete**. If the deleted step has child steps, those steps are removed as well.
   - To change the order of steps, you can drag and drop them to different locations in the list.
   - To copy a step, select the step and then click **Duplicate**. You can then modify the copied step as needed and move it to the desired location in the list.

   Steps are performed in the order listed. By default, steps are dependent and sequential—meaning, each step in the list must be completed before the next step can be done. The exception is the Multiple Approvals step. When a Multiple Approvals step becomes active for a plan file, all of its Approval sub-steps become active concurrently and can be completed in any order. When all of the Approval sub-steps are completed, then the parent Multiple Approval step becomes completed and the plan file moves to the next step in the process. (Unless one of the Approval sub-steps is rejected, in which case the plan file is rejected back to a prior step.)

   Once you have added a step to the process, you can configure the settings for that step in the right-hand pane. This includes the display text for the step, the step ownership assignment and due date, and other properties specific to the step type. You can also configure step-specific notification settings.

NOTE: If you want certain plan files in the process to skip a step, this is not configured in the step properties. Instead, it is controlled by using dynamic ownership assignments. If the ownership assignment for a step uses an assignment column or an assignment workbook, you can leave the assignment blank for a plan file instead of entering an owner name, to indicate that the plan file should skip the step.

For more information on configuring the steps in the process, see the following topics:

- Assigning owners to plan file process steps
- Defining the due date for plan file process steps
- Configuring rejection behavior for a plan file process
- Defining notifications at the step level for a plan file process

TIP: In most cases, you should configure the process-level notification settings on the **Notifications** tab before configuring any step-level notification settings. This way the steps will have access to the inherited process-level settings.

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. For more information, see Plan File Process Notifications.

5. In the **Web Configuration** tab, complete the configuration settings for the Web Client process pages. For more information, see Configuring process web pages for plan file processes.

   If your plan files are form-enabled and end users will be accessing them using the Web Client, then you should review and complete all web configuration settings as needed. If your plan files are traditional spreadsheet files and users will be accessing them using the Desktop Client, then you only need to complete these settings if users will be completing tasks in the Web Client, or if you want to customize the Time-in-Step report with refresh variables.

6. In the **Advanced Properties** tab, complete the advanced options as needed. This tab is only present for plan file processes in standard file groups. On-demand file groups cannot use these options.

   - **Process Grouping Options**: You can optionally specify a grouping column for the process, so that the process can be started and managed separately for each group. Specific owners can be designated to manage each group. For more information, see Managing a plan file process by groups.
   - **Process Filter Options**: You can optionally specify a filter to apply to the process, so that only plan files that meet the filter can be started in the process. For more information, see Using a process filter to limit plan files in the process.

7. Click **Apply** to save (or **OK** if you are finished editing).

After creating a plan file process definition, you may want to edit the file group properties of the file group to designate the process as the **Plan File Process** for the file group. This is required if you want to use the process with an on-demand file group, so that Axiom Software knows which process to start plan files in when the files are created. Additionally, various web components use this property to determine which process information to display for a given file group (whether on-demand or standard).

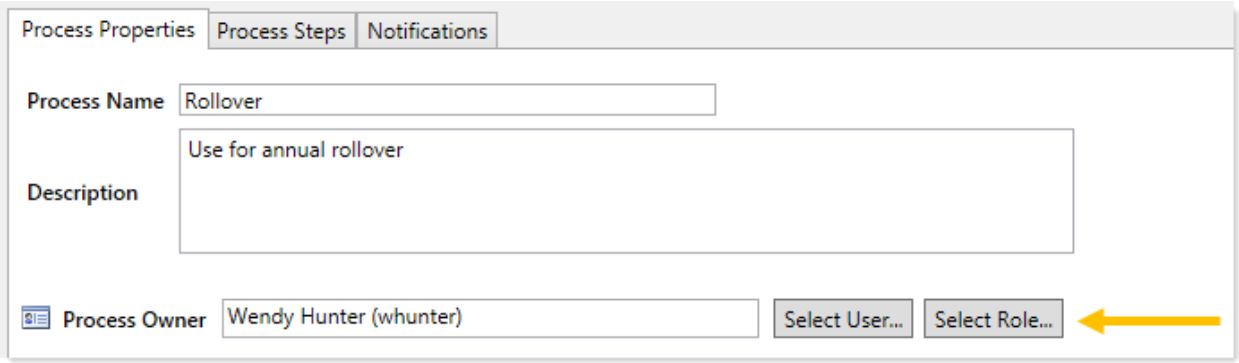
Designating the plan file process owner

Each plan file process definition has a designated owner. The process owner receives all administrative notifications for the process, and can also:

- Start and stop the process
- Access the Process Status dialog when the process is active
- Move, complete, and regenerate process tasks for plan files

NOTE: Administrators can also perform all of these actions, regardless of whether or not they are the process owner.

The owner of the process is designated by the **Process Owner** setting on the **Process Properties** tab. By default, the process owner is set to the user who created the process definition. If desired, you can change the owner to a different user or to a role by clicking **Select User** or **Select Role**. If the owner is a role, then all users in that role are treated as process owners.



If the designated owner is a non-admin user, then you should make sure that the user has read/write access to the process definition, so that the user can open and edit the definition as needed, and can start the process. Once the process has been started, the process will display in the owner's Process task pane for the duration of the process, and the owner will gain access to the **View status** link so that they can perform any necessary administrative functions for the process. Process owners can also access the Process Manager dialog (**Manage > Process Management > Current Processes**) to perform process management activities for the processes they own.

Process owners are limited to viewing and managing process tasks for plan files that they have access to, as determined by security. For example, if a process owner only has access to 200 out of 400 plan files in the file group, then the process owner can only see and manage those 200 plan files. Additionally, if that limited-access process owner starts the process, only the 200 plan files that the process owner has access to will be started in the process. Ideally, a process owner should have access to all plan files in the file group that need to participate in the process. If you need process owners to manage a restricted set of plan files, then you should also use the process grouping or process filtering features so that the plan files in the process and the process owner's plan file permissions cover the same set of plan files.

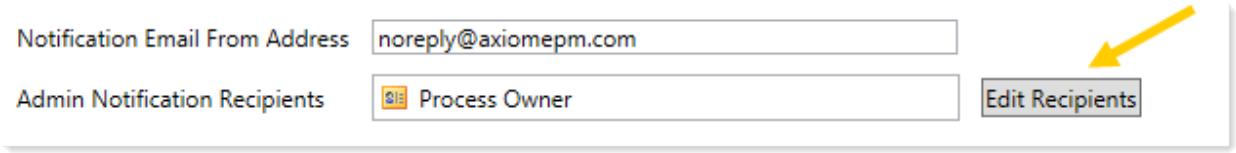
Admin notifications for plan file processes

Admin notifications are automatically sent to the designated process owner when the following situations occur:

- The process is started or stopped.
- An error occurs in a process step.

These notifications are system-managed and cannot be disabled or customized. However, you can designate additional users to receive these notifications.

The **Admin Notification Recipients** are designated on the **Notifications** tab. By default, the process owner is the only recipient of these notifications. To add or remove recipients, click **Edit Recipients**.



In the Edit Recipients dialog:

- To add a recipient, click **Add Recipients>User** or **Add Recipients> Role** to choose a user or role.
- To remove a recipient, select the user or role in the Notification Recipients list and then click **Delete**.

The process owner cannot be removed as a recipient. If the designated process owner is a role, then all users in that role will receive the administrative notifications.

If the process uses a grouping column with a group owner column, then the designated group owners will also receive admin notifications for their group. It is not necessary to add these users as recipients separately. For more information, see Managing a plan file process by groups.

NOTE: If the user who stopped or started the process is also an admin notification recipient, that user will not receive a notification, because that user already knows about the change in process status. The intent of the started and stopped notifications is to inform interested parties that somebody else stopped or started the process.

Assigning owners to plan file process steps

For each step in a plan file process, each plan file must have an assigned owner to complete the step for that plan file. There are various options to determine the owner of each plan file, such as using a security role, an assignment column, or an assignment workbook.

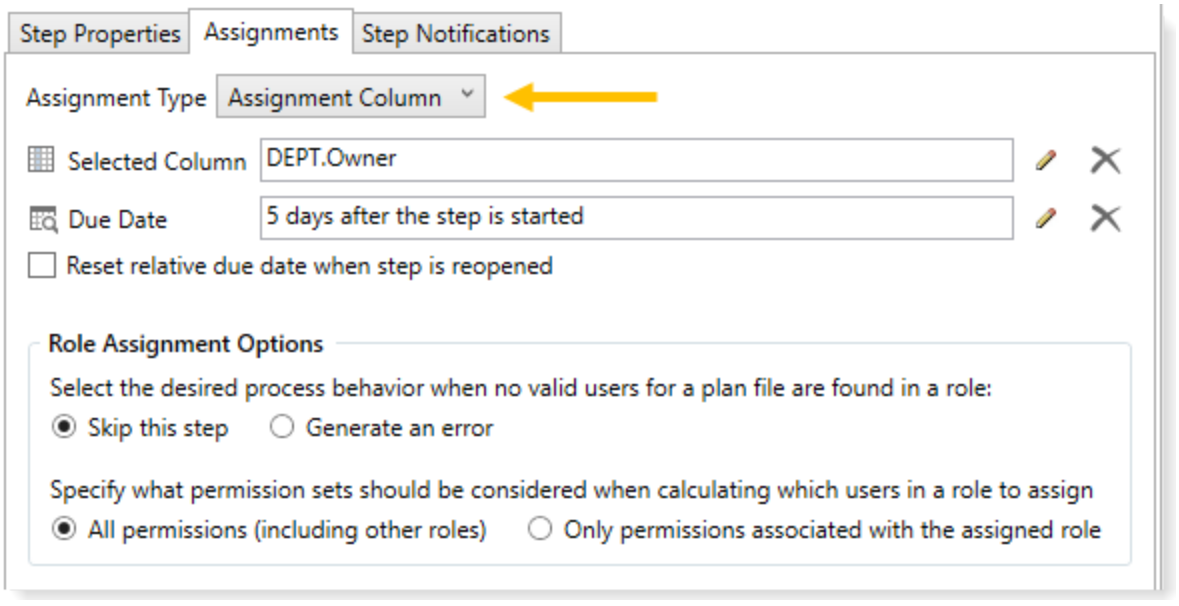
When a plan file becomes active in a step, the assigned owner is notified that they have a task to complete in the process (if notifications are enabled for the process and for the step). The owner can view the active task for the plan file using features such as the Process task pane or the Process Directory web page, open the plan file to edit or review it as appropriate, and then complete the task.

NOTES:

- When using a Multiple Approvals step, ownership assignments are only made on the child Approval steps. The parent Multiple Approvals step does not have ownership assignments.
- Step ownership in plan file processes can impact user permissions to plan files. Although step ownership does not *grant* access to plan files, it can *elevate* a user's existing access so that the user can complete the assigned process task. For more information, see How plan file processes and security interact.

Assigning ownership for each step

In the **Edit Plan File Process** dialog, step owners are assigned on the **Process Steps** tab, in the **Assignments** sub-tab. Select the step for which you want to assign ownership, then use the **Assignment Type** field to select the ownership type.



For plan file processes, the following assignment types are available:

User

Select **User** as the assignment type if you want to assign a specific user as the owner of plan files for the step. This means that all plan files will have the same owner for this step.

Click the Edit button to the right of the **Assigned User** box to select a user. You can select any user in the Axiom Software system.

This assignment type is not commonly used for plan file processes, because for most steps you want each plan file to have different owners. However, in certain cases it can make sense for all plan files to have the same owner. For example, you might have a "staging" step at the start of the process where all plan files are assigned to an administrator, so that the administrator can make sure that all plan files are ready to begin the process. Or you might have a "closing" step at the end of the process, so that an administrator can verify that all plan files have met all process requirements before officially completing the process.

NOTE: If the assignment type is User but the assigned user is left blank, then the step will use the user designated as the **Default Process Assignment** as defined on the **Process Properties** tab.

Role

Select **Role** as the assignment type if you want to assign a role as the owner of plan files for the step. For each individual plan file, all users in the role will be evaluated to determine if they have the security permissions to become a step owner for that plan file. If multiple users are eligible, then the plan file has multiple owners for the step, and any of those owners can complete the task. For more information on what makes a user eligible to be a step owner, see How plan file processes and security interact.

Click the Edit button to the right of the **Assigned Role** box to select a role. You can select any role in the Axiom Software system.

When the assignment is a role, the following additional options are available:

Role Assignment Options	Description
Select the desired process behavior when no valid users for a plan file are found in a role	Select one of the following: • **Skip this step** (default): If no users in the role are eligible to be the step owner for a plan file, the plan file skips the step. This also applies if the role has no users at all. • **Generate an error**: If no users in the role are eligible to be the step owner for a plan file, the plan file is stalled in the process.

Role Assignment Options	Description
Specify what permission sets should be considered when calculating which users in a role to assign	Select one of the following: • **All permissions** (default): All of a user's configured and inherited permission sets are considered to determine whether the user is eligible to be the step owner for a plan file. In this case the assigned role simply defines a pool of users to be evaluated. • **Only permissions associated with the assigned role**: Only the role permissions, and any user permission sets that are explicitly combined with the named role, are considered to determine whether the user is eligible to be the step owner for a plan file. In this case the role not only defines the pool of users to be evaluated, but also limits the permission sets to be considered. In both cases, plan file permission sets are only considered for step ownership if **Interacts with Process Management** is enabled for the permission set.

Assignment Column

Select **Assignment Column** as the assignment type if you want to look up the ownership assignments for each plan file from a column in the plan code table (or a related table). The column can contain user or role names. For more information on how this option works, see Using an assignment column.

Click the Edit button to the right of the **Selected Column** box to select a column. You can select any string column in the plan code table for the file group, or any string column in a table that the plan code table links to.

Because the assignment column can contain role names, the **Role Assignment Options** also apply when an assignment column is used. See the previous Role section for more information on these options.

This option and the workbook assignment option can be used to support dynamic ownership assignments, including skipping the step.

Workbook

Select **Workbook** as the assignment type if you want to look up the ownership assignments for each plan file from a workbook. The assignments in the workbook can be user or role names. The workbook must be set up with reserved tags to indicate the columns that hold the plan codes and the assignments. For more information on how this option works, see Using an assignment workbook.

Click the Edit button to the right of the **Selected Workbook** box to select a file. You can select any file in the Reports Library or in the Utilities folder for the file group. Once you have selected a file, click the Edit button to the right of the **Selected Worksheet** box to select a worksheet. Axiom Software will look on this sheet to find the assignments.

Because the workbook can contain role names, the **Role Assignment Options** also apply when a workbook is used. See the previous Role section for more information on these options.

This option and the assignment column option can be used to support dynamic ownership assignments, including skipping the step.

Process Initiator

Select Process Initiator as the assignment type if you want the process initiator for each plan file to be the owner of the step. This option is only available for on-demand file groups.

For each individual plan file, the process logs the user who started the plan file in the process. In most cases, this is the user who created the on-demand plan file, since the plan file is automatically started in the process as part of the creation. For more information on how the process initiator is determined, see Setting the process initiator for plan files.

This assignment type is typically used for the first step of the process for on-demand file groups, so that the creator of the plan file is automatically assigned as the owner of the first step in the process. However, it can be used for other steps as needed.

Until a plan file process is active, you can edit step ownership settings as desired. Once the process is active, you can continue to edit ownership settings, and those changed settings will apply to plan files as they become active in the step. Any plan files that have already completed the step will not be affected, unless the step becomes reopened for that plan file. If you change the ownership settings while plan files are currently active in that step, then new tasks will be regenerated for those plan files as needed to reflect the new settings, including sending new Step Activated notifications (if enabled for the process).

Using an assignment column

You can specify a table column to dynamically look up owner assignments for plan files. The specified column must be a string column, and must contain text that can be resolved to a role name or a user name defined in Axiom Software security. When the plan file becomes active in the step that uses the assignment column, the plan file process looks up the assigned user or role from the assignment column.

If you want a plan file to skip the step instead, leave the assignment column blank for that plan file or enter the keyword `[skip]`. This will cause the plan file to automatically skip the current step and move to the next step in the process.

When attempting to match column values to user and role names, the following rules apply:

1. **Role name.** If the column value matches a role name, the role name is used.

2. **User login name.** If the column value does not match a role name, but it matches a user login name, the login name is used.
3. **Combination of user first / last name.** If the column value does not match a role name or a user login name, Axiom Software attempts to find a match based on the user's first and last name. For example, if a user's name is John Doe, a match would be found for assignments of "jdoe", "doej", "johndoe", and "doejohn". In this case, the match is only valid if only one match is found. If multiple potential matches are found, the assignment is not made.

If the column value cannot be matched to a user or role name (and is not blank or `[skip]`), then the plan file is stalled in the process.

The assignment column can be used to support conditional step ownership and conditional steps. For example, you can use logic within the plan file to determine if the plan file needs to complete a certain step, or to determine who the owner needs to be for a certain step. You can then save the appropriate value back to the assignment column when saving data from the plan file.

NOTE: If the column value is edited when the step is already active, the change will not apply to the active task. You can use the **Regenerate tasks** feature in the **Process Status** dialog to regenerate tasks for the active step and pick up the changed assignments.

Using an assignment workbook

You can specify a sheet in a workbook to dynamically look up owner assignments for plan files. The designated sheet in the workbook must be set up as follows:

- The sheet must contain a `[ProcessAssignment]` tag to define the control column and control row for the assignments.
- The control column must contain the plan codes for the ownership assignments. These codes must be placed below the `[ProcessAssignment]` tag.

  For example, if the plan code table for the file group is DEPT, then the control column must contain the list of department codes. Typically, an Axiom query is used to populate the codes into the workbook.
- The control row must contain the step name in brackets, such as `[Finance Review]`. These tags can be placed either to the right or to the left of the `[ProcessAssignment]` tag. The column flagged with the step name must contain the assignments for that step.

	A	B	C	D	E
4					
5			[ProcessAssignment]	[Final Submission]	[Finance Review]
6					
7			1000	Joe Smith	Susan Jones
8			1200	Paulina Frank	[skip]
9			1300	Raul Martin	Kim Park

Example workbook assignments

When a task is ready to be generated for the step, Axiom Software checks the designated sheet in the workbook for the `[ProcessAssignment]` tag. If the tag is present, Axiom Software finds the step name in the control row and finds the plan code in the control column, and then uses the assignment in the intersecting cell.

The assignment must resolve to a valid role name or user name in Axiom Software security, using the same matching rules described for the Assignment Column option in the previous section. If you want a plan file to skip the step instead, leave the assignment blank for that plan file or enter the keyword `[skip]`. This will cause the plan file to automatically skip the current step and move to the next step in the process.

If the assignment cannot be matched to a user or role name (and is not blank or `[skip]`), then the plan file is stalled in the process.

The assignment workbook can be used to support conditional step ownership and conditional steps. You can use formulas within the workbook to determine if the assignment value for a plan file should be blank or `[skip]`, or to determine who the owner assignment needs to be for a certain step. The workbook can query any data from the database in order to make this determination.

Each sheet in the workbook must contain only one `[ProcessAssignment]` tag. If multiple tags are present in a sheet, the first tag found will be used. However, the control row can contain entries for as many steps as necessary.

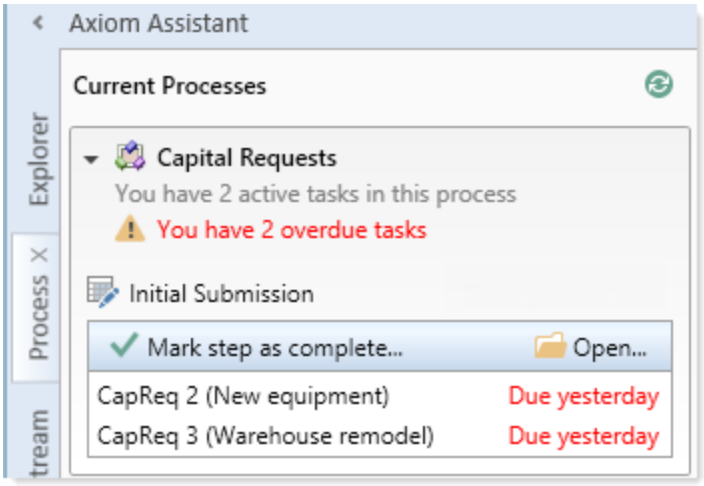
NOTES:

- If tasks are being generated for a subset of codes, then Axiom Software automatically applies a filter to the workbook when it is opened. This filter limits any queries in the workbook to the codes for which tasks are currently being generated. For example, if a task is only being generated for Dept 1000, then the workbook is filtered by Dept=1000. This is done for performance reasons. If the conditional logic in the workbook depends on querying data related to codes other than the current code, then you can use the "ignore sheet filter" option for GetData functions to return this data.
- If the assignment in the workbook is edited when the step is already active, the change will not apply to the active task. You can use the **Regenerate tasks** feature in the **Process Status** dialog to regenerate tasks for the active step and pick up the changed assignments.

Defining the due date for plan file process steps

Each step in a plan file process can have a defined due date. If a plan file has not completed the step by the due date, then the plan file becomes overdue.

When a plan file becomes overdue, the overdue status is indicated in similar ways in different areas of the system. For example, in the Process task pane, the due date displays in red on the task, and a warning displays at the top of the section. Additionally, if due date and/or overdue notifications have been enabled for the step, these notifications will be sent according to their configured timeframe.



Example display of overdue plan files

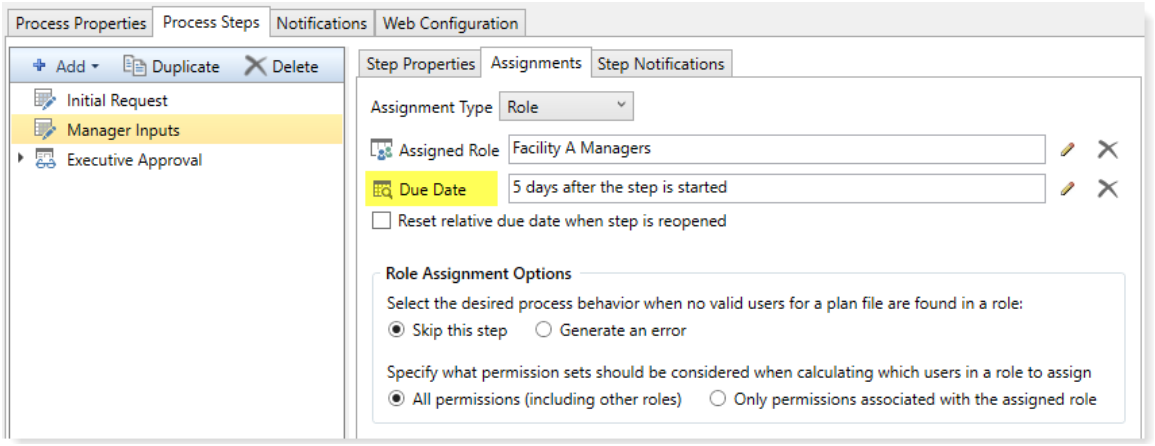
For plan file processes, the due date and the overdue status are evaluated per plan file. When using relative due dates, each plan file that is active in a step may have a different due date.

Due dates can be static dates, or they can be calculated relative to the start of the process or the start of the step. For example, if the due date of a step is explicitly set to 5/5/2018, then that is the step due date for all plan files in the process. Alternatively, if the due date is set to "7 days after the step is started," then each plan file can have a different due date, depending on when the plan file was started in the step. Relative due dates should be used for processes where plan files can start the process at different times, such as processes for on-demand file groups, or processes using a grouping column.

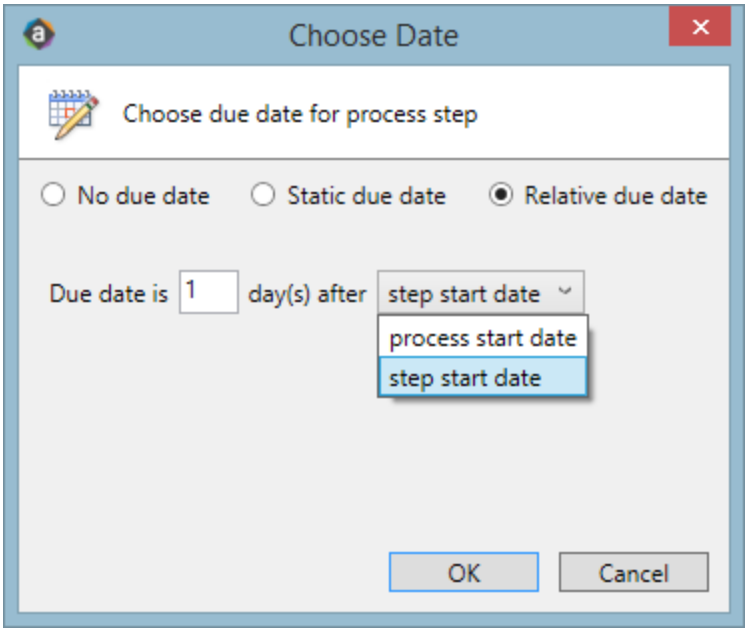
In the plan file process definition, step due dates are defined per step on the **Process Steps** tab, in the **Assignments** sub-tab.

To define the due date for a step:

1. Click the **Edit** icon to the right of the **Due Date** box.



2. In the **Choose Date** dialog, select one of the following options:
   - **No Due Date**: The step does not have a due date.
   - **Static Due Date**: Select a specific date for the due date. You can select the date from a calendar.
   - **Relative Due Date**: Specify a number of days to dynamically determine the due date. The number of days can be relative to the date the plan file was started in the process (**process start date**), or to the date the plan file was started in the step (**step start date**). For example, the plan file can be due 7 days after the process was started, or 7 days after this step was started. By default, the process start date is used.



Example Choose Date dialog

If the due date is relative then each plan file in the step can potentially have a different due date for the step, depending on when the plan file was started in the process or when it was started in the step.

3. If you specified a relative due date that is based on the step start date, decide whether or not to enable **Reset relative due date when step is reopened**. This option displays underneath the **Due Date** field.

   By default this option is disabled, which means that the step due date is calculated when the step is first started, and that due date does not change if the step is later reopened. So if the step due date is 6/1/2016 when the step is first started, and then later the step is reopened on 6/2/2016, the step due date will remain at 6/1/2016 and the reopened task will be 1 day past due.

   If instead you want the step due date to be reset (recalculated) based on the date the step is reopened, then you should enable this option. Continuing the above example, if the step is reopened on 6/2/2016 and the due date for the step is configured to be 3 days after the step start date, the due date for the reopened task will be recalculated to 6/5/2016.

   NOTE: This issue does not apply to steps with static due dates. If a step is reopened for a plan file, the due date is always the current due date for the step, even if that due date has been changed since the last time the plan file was active in the step.

Changing due dates

You can change the due date of a step at any time. If the process is active when you change the due date, then the new due date will apply to any plan files that are currently active in the step or that have not yet become active in the step. Any current tasks will be automatically regenerated for the new due date.

If you have already defined a due date and now you want to clear it (so that the step has no due date), click the **Delete** icon ✕ to the right of the **Due Date** field.

Managing a plan file process by groups

You can optionally designate a grouping column for a plan file process definition, so that the plan files in the process can managed by groups. For example, the plan files in the process may belong to several different entities, and you want to manage the process by entity.

When using a grouping column, you can:

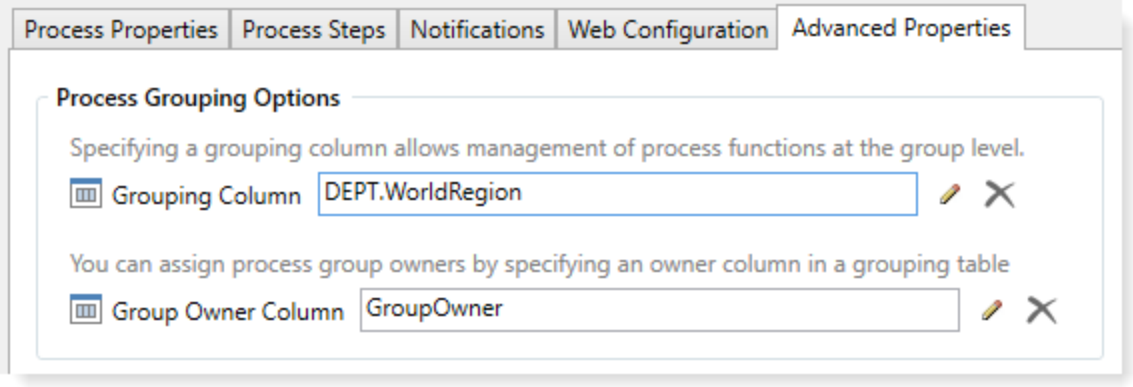
- Start the plan files in each group at different times
- Designate owners for each group
- Filter the Process Status dialog by groups
- Filter the Process Directory page by groups

This feature is only available for standard file groups. It does not apply to on-demand file groups, because in that case plan files are started in the process as they are created.

IMPORTANT: If plan files are started in the process at different times, the step due dates must be relative instead of static. For example, instead of designating a due date of 5/5/2018, the due date would be set to something like "7 days after the step is started".

Configuring a process to use groups

To enable managing a process by groups, complete the **Process Grouping Options** section on the **Advanced Properties** tab of the plan file process definition.



Click the pencil icon to select a column for each setting. To clear an existing column assignment, click the delete icon.

Item	Description
Grouping Column	The column that defines the groups for the process. You can select any column on the plan code table. For example, if the column is `Dept.WorldRegion`, then the process can be started and managed separately by world regions, such as North America and Europe. The entries in the selected column determine the groupings for the process.

Item	Description
Group Owner Column	Optional, but strongly recommended. The column that defines the owners of each group. This option is only available if the designated grouping column is a validated column. If it is, then you can select any string column on the lookup table. For example, if grouping column `Dept.WorldRegion` is a validated column with a lookup to `WorldRegion.WorldRegion`, then you can select a column such as `WorldRegion.GroupOwners`. The specified column must contain values that can be resolved to valid user or role names in Axiom Software. This process uses the same logic that the assignment column and assignment workbook use to resolve user and role names. For more information on how user names are matched, see Assigning owners to plan file process steps. For more information on how group ownership and overall process ownership works when using groups, see Process ownership when using groups.

Before the process has been started, you can change or clear the grouping column or the group owner column at any time. However, once the process has been started, the grouping column cannot be changed.

Process ownership when using groups

When using a grouping column with a plan file process, it is recommended but not required to designate group owners using the **Group Owner Column**. If a group owner column is used, the user listed in that column for each group becomes the official group owner. If a role is listed, all users in that role become official group owners.

Group owners can do the following:

- Start and stop their assigned groups.
- Manage the plan files in their assigned groups. This includes completing tasks, moving plan files to different steps, regenerating tasks, and activating or aborting plan files in the process. The Process Status dialog is filtered to only show plan files in the user's assigned groups.
- Receive admin notifications about the plan files in their assigned groups, such as when a plan file in the group stalls in the process.

If you do not have a designated group owner column, then the overall process owner (as defined on the **Process Properties** tab) performs all group management. If the overall process owner is a role, then all users in that role become potential group owners, and each user's security permissions determine which groups and plan files they can manage. This is more difficult to set up, because it means that the plan file filters for each process owner must exactly line up with the groups you want them to manage, with no permission gaps and no permission overlap. Additionally, the overall process owners receive all admin notifications for the process, including notifications about groups and plan files that they may not have

access to. This is why it is strongly recommended to use a group owner column to determine group management, so that the group owners are limited by the process to only managing their designated groups.

Administrators can always manage all groups and all plan files.

Security for group owners

The designated group owners must have plan file permissions that grant access to the plan files in the groups that you want them to manage. For example, if the grouping column is Entity, and you want user jdoe to manage the process for Entity 1, then user jdoe must have a plan file permission set that grants at least read-only access to all plan files in Entity 1. Simply being designated as group owner will not allow the user to manage these plan files; they must also have security access to the plan files.

If a group owner does not have access to all plan files in a group, then they cannot start or stop the group in the process. However, if the group is already started, the group owner can manage the plan files that they have access to within the group.

Group owners can have security permissions to other plan files that do not belong to their assigned groups. Plan files outside of the user's assigned process groups do not display in the Process Status dialog, and the user will not be able to perform process administration actions on those plan files.

It is recommended that the overall process owner be an administrator or a user with access to all plan files in the process, so that they can truly manage the overall process. However, if the overall process owner does have a plan file filter that limits access to plan files, that filter is also applied to the Process Status dialog.

Users designated as group owners or process owners must also have the following security permissions:

- At least read-only access to the lookup table that holds the group owner column.
- At least read-only access to the plan file process definition.

Process notifications

If a user is a designated group owner, then that user only receives notifications for their assigned groups. This applies to admin notifications about the process, and to custom notifications that use the Process Owner recipient type.

For example, if user jdoe is the group owner of Entity 1, and a plan file that belongs to Entity 1 stalls in the process, user jdoe will receive an admin notification about that plan file. However, the other group owners will not receive this notification, because the stalled plan file is not part of their group.

Overall process owners receive all admin notifications, and all custom notifications that use the Process Owner recipient type. Notifications are not filtered based on the process owner's plan file permissions. For example, if a plan file in Entity 1 stalls, all overall process owners will receive this notification, regardless of whether they have the required plan file permissions to manage that plan file.

Save Type 4 to Axiom.ProcessActions

When using Save Type 4 to Axiom.ProcessActions, group owners can only perform administrative actions on tasks for plan files in their assigned group. Administrators and overall process owners can perform administrative actions on all tasks in the process. This is true even if the process owner has a plan file filter that limits their access to plan files in the file group.

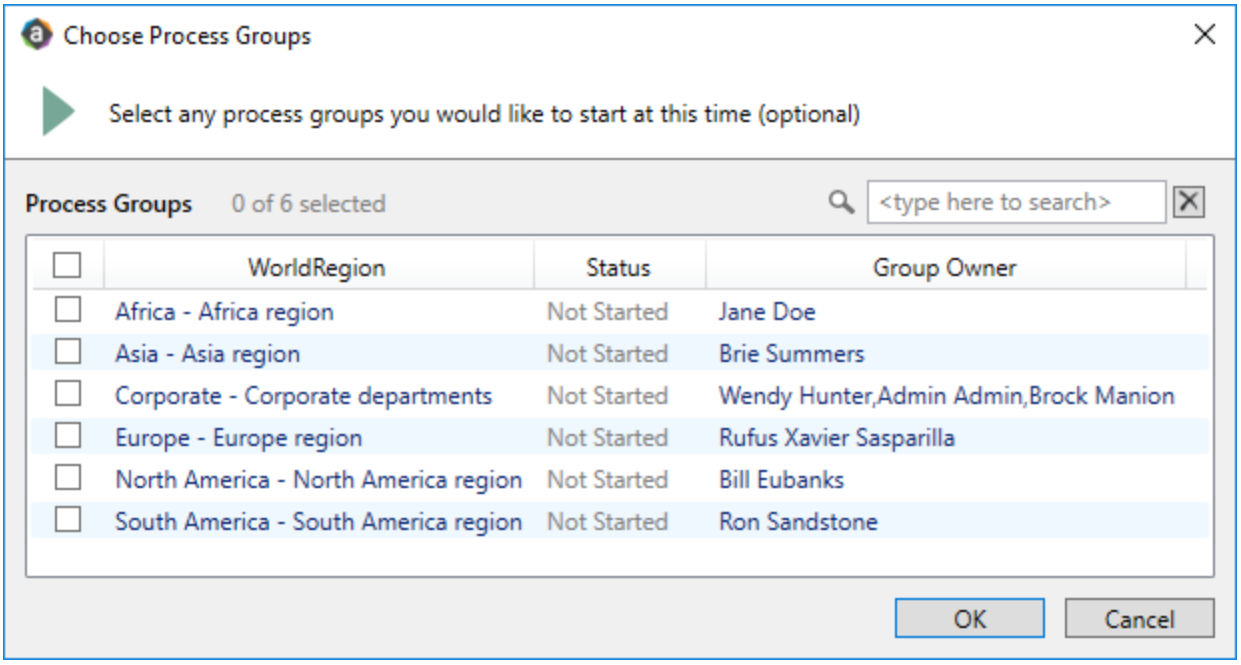
Starting groups in the process

When using groups, you can start each group in the process independently. As long as the overall process is started, each group can be started at any time.

Groups can be started by administrators, overall process owners, and group owners:

- Administrators can start any group.
- Overall process owners can start any group where they have security access to all of the plan files in that group. Note that process owners may see other groups if they have access to at least one plan file in that group, but they cannot start those "partial" groups.
- Group owners can only start their assigned groups. Group owners must have security access to all of the plan files in their assigned groups.

The overall process can be started using the normal methods, such as by using the **Start Process** link in the plan file process definition. When starting the overall process, you are also prompted to optionally start one or more groups in the process (depending on which groups you have access to). Note that the Group Owner column shown in the following example dialog is only present if the process has a designated group owner column.



When you click **OK**, the overall process and the plan files in any selected groups are started. The plan files in the other groups are not started, and remain at a status of Not Started. If you do not choose any groups, then no plan files are started in the process at this point.

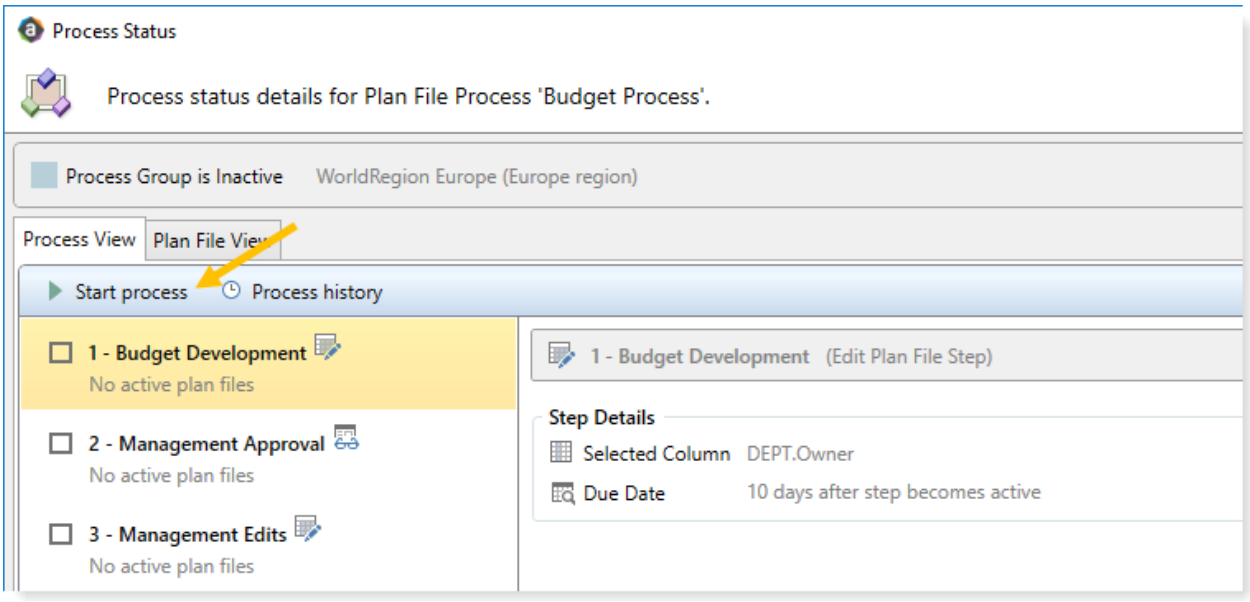
In the previous example screenshot, the user is an administrator or process owner with access to all groups, so all groups are listed. If the user starting the process only has access to one group, then this dialog does not display and the single group is started automatically.

You can start any of the unstarted groups later using the Process Status dialog. The behavior of the Process Status dialog depends on whether you have access to one group or multiple groups.

NOTE: If a plan file in an unstarted group is started separately (by selecting the plan file in the **Plan File View** tab and using **Activate plan files**), this does not cause the group to be flagged as started. The only way that the group status becomes started is if an administrator, process owner, or group owner explicitly starts the group. Therefore, if plan files are started separately, it is possible for most or all of the plan files in a group to be started but the group still has a status of not started.

One group

If you are a designated group owner of only one group, then the Process Status dialog is automatically filtered to show just that group. If the group has not yet been started, the Process Status dialog shows the process as inactive for that group. You can click the **Start process** button in the toolbar to start the process for your group.

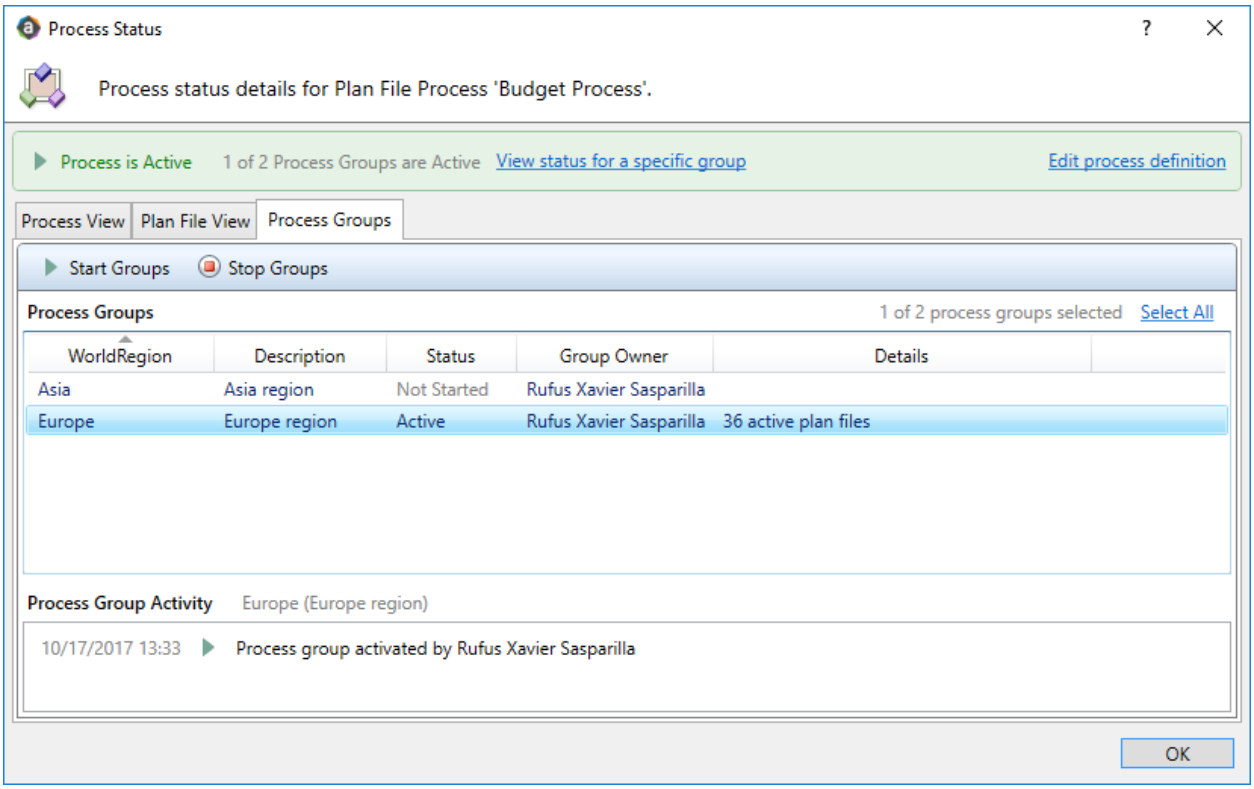


The Process Status dialog is also automatically filtered for one group if you are an overall process owner with a plan file filter that exactly aligns with one group.

Multiple groups

If you are a designated group owner for multiple groups, then you will see a new tab in the Process Status dialog named **Process Groups**. This tab can be used to start groups in the process as needed.

To start a group, click **Start Groups**. You are prompted to select the groups that you want to start in the process. If one or more groups are already selected in the Process Groups grid (and those groups are not yet started), those groups are selected by default.



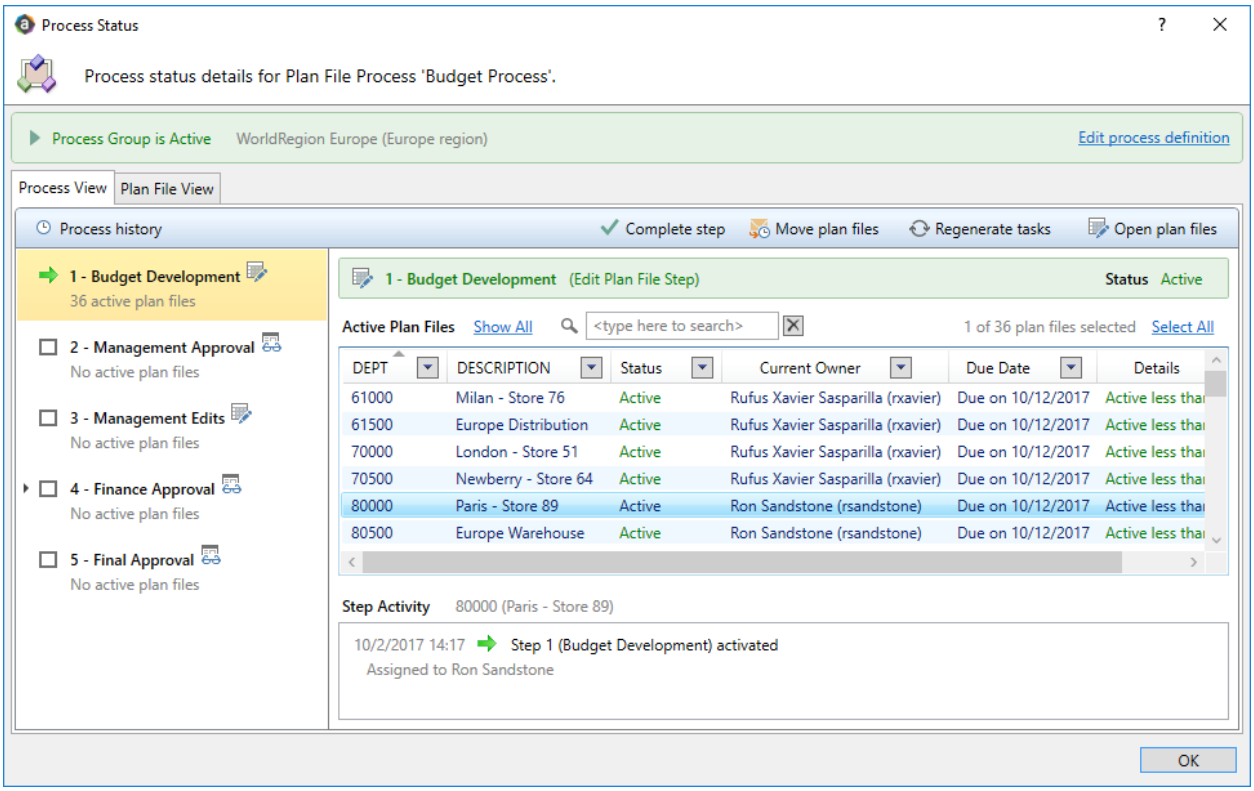
Administrators can always see and start all groups. If an overall process owner has access to plan files in multiple groups, the Process Status dialog is filtered to only show those groups.

Managing plan files in the Process Status dialog

When a process has a defined grouping column, the behavior of the Process Status dialog depends on whether you have access to just one group or multiple groups.

One group

If you are a designated group owner of only one group, then the Process Status dialog is automatically filtered for that group. The group name is shown at the top of the dialog. You are not given the option to view other groups, and the **Process Groups** tab does not display. All actions in the dialog only apply to plan files in the current group.



Example Process Status dialog for one group

The Process Status dialog is also automatically filtered for one group if you are an overall process owner with a plan file filter that exactly aligns with one group.

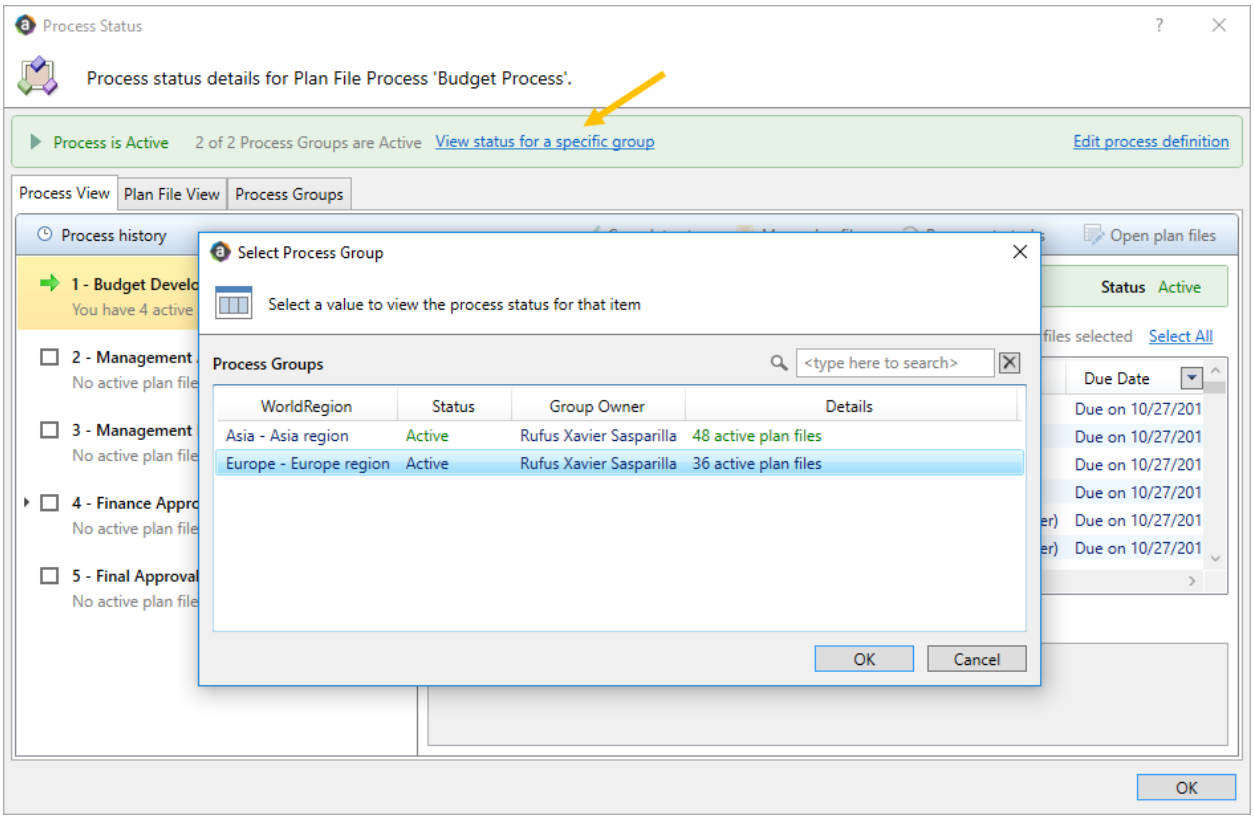
Multiple groups

If you are the designated group owner for multiple groups, then the Process Status dialog shows the plan files for all relevant groups. A summary of the currently shown groups displays at the top of the dialog.

You can optionally filter the dialog to only show plan files for a particular group. Filtering the dialog by a group can make it easier to review and manage plan files for that group. For example, you may need to move plan files for a particular group, or regenerate tasks for a particular group.

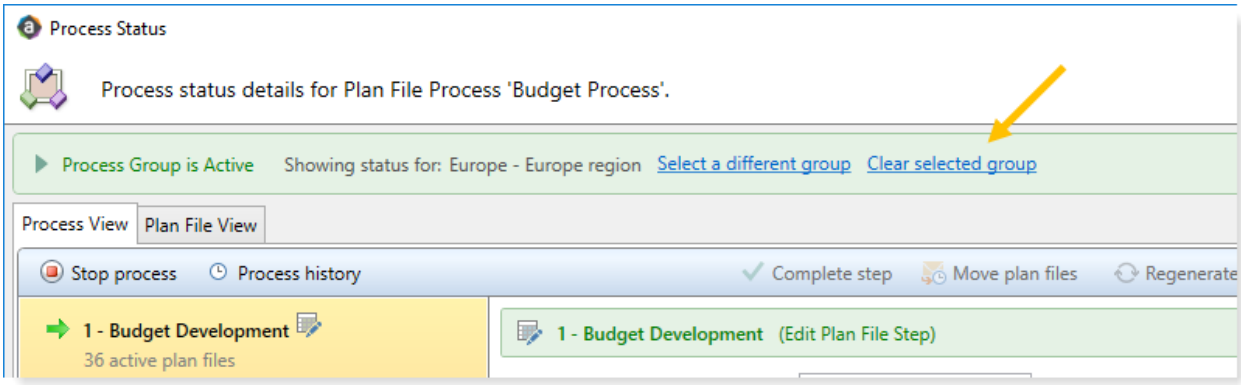
To filter the dialog by group:

1. Click **View status for a specific group**.
2. In the **Choose Process Groups** dialog, select the group that you want to view, and then click **OK**. Only one group can be selected at a time.



Changing the current group shown in the Process Status dialog

The dialog is now filtered to only showing the plan files and status of the selected group. If you want to clear that group and go back to showing all available groups, click **Clear selected group**.



Administrators can always see all groups and can optionally filter the dialog by any group. If an overall process owner has access to plan files in multiple groups, the Process Status dialog only shows the groups that the user has access to.

Stopping groups in the process

When using groups, you can optionally stop individual groups in the process, instead of stopping the entire process for all groups.

When you stop a group in the process, you are really just aborting those plan files in the process. The overall process itself remains active. If the group is later restarted, the plan files are re-activated within the same overall process instance, and their previous process history is retained.

Groups can be stopped by administrators, overall process owners, and group owners:

- Administrators can stop any group, and can stop the overall process.
- Overall process owners can stop any group where they have security access to all of the plan files in that group. Note that process owners may see other groups if they have access to at least one plan file in that group, but they cannot stop those "partial" groups. If the process owner has access to all plan files in the process, then they can also stop the overall process.
- Group owners can only stop their assigned groups. Group owners must have security access to all of the plan files in their assigned groups.

You can use the Process Status dialog to stop groups in a process. The behavior of the Process Status dialog depends on whether you have access to one group, multiple groups, or all groups.

NOTE: Only the Process Status dialog provides the ability to stop groups in the process. If you use the **Stop** button in the **Manage Processes** dialog instead (**Manage > Process Management > Current Processes**), it will attempt to stop the entire process.

One group

If you only have access to one group (or if you have filtered the Process Status dialog to only show one group), then you can use the **Stop process** button on the **Process View** tab to stop the plan files in that group.

Multiple groups

If you have access to multiple groups but not all groups, then you can do either of the following:

- Click the **Stop process** button on the **Process view** tab.

  OR

- Click the **Stop Groups** button on the **Process Groups** tab.

In both cases you are prompted to select the groups that you want to stop in the process. When using the Process Groups tab, if you already have one or more groups selected in the Process Groups grid, then those groups are selected by default in the Stop Process Group dialog.

All groups

If you have access to all groups in the process, then you can stop the entire process or stop certain groups.

- To stop the entire process, click the **Stop process** button on the **Process View** tab. The dialog must not be filtered by group in order to stop the entire process. If it is filtered by group, then this action will only stop the current group.
- To stop certain groups in the process, click the **Stop Groups** button on the **Process Groups** tab. You are prompted to select the groups that you want to stop in the process. If you already have one or more groups selected in the Process Groups grid, then those groups are selected by default.

Using a process filter to limit plan files in the process

You can optionally define a filter for a plan file process definition, so that the process only applies to plan files that meet the filter. You may have some plan files that do not need to be part of the plan file process, in which case the filter can be used to exclude them.

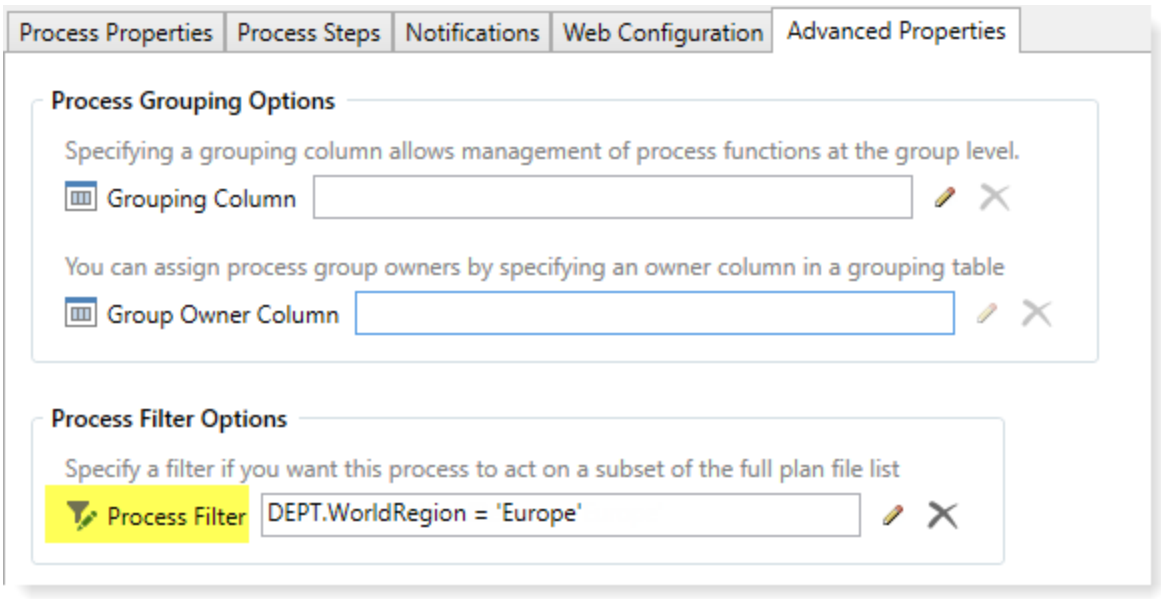
This feature can also be used to support multiple active plan file processes with a file group, where each process applies to a distinct subset of the plan files in the file group. Each subset of plan files may require different steps, due dates, assignments, and so on, in which case it may be easier to manage the plan files using separate processes. However, please note that this approach has limitations. Certain features, such as the Process Directory in the Web Client, only support showing one process per file group. Additionally, on-demand file groups can only use one active plan file process.

The process filter option is only available for standard file groups. On-demand file groups must use a single active process, so that newly created plan files are automatically started in that process.

NOTE: If the file group uses a Show On List column, then any plan files set to False in this column are automatically excluded from the process when it is started, regardless of any filter defined for the process.

▶ Specifying a filter for a plan file process definition

To limit the plan files in a process, you can define a **Process Filter**. This setting is located on the **Advanced Properties** tab of the plan file process definition.



To specify the process filter for a process:

1. Click the pencil icon to create the filter.
2. In the **Filter Wizard** dialog, make selections as needed to create the filter. You can create a filter using any of the following methods:
   - Using the Simple Filter view, you can create a filter based on selections from a hierarchy. The hierarchies shown are limited to those that apply to the plan code table.
   - Using the Advanced Filter view, you can create a filter based on columns in the plan code table or a lookup table.
   - If desired, you can manually type a filter criteria statement into the **Filter** box at the bottom of the dialog. The filter must use the plan code table or a lookup table.

In the example screenshot above, the filter is Dept.WorldRegion='Europe'. This means that only plan files that are assigned to the Europe world region can be started in this process. Plan files that belong to any other world region cannot be started in this process.

IMPORTANT: When using process filters and multiple active processes, each individual plan file in the file group can only be active in one process. Make sure that the filters used in each process definition do not overlap. If filters do overlap and plan files become active in multiple processes, these plan files may not behave as expected when performing process actions.

Before the process has been started, you can change or clear the process filter at any time. However, once the process has been started, the process filter cannot be changed.

Process behavior when using a process filter

When the process is started, only the plan files that meet the process filter are started in the process (minus any plan files excluded by the ShowOnList column). All other plan files are not started in the process.

Additionally, the Process Status dialog is limited to only showing the plan files that meet the process filter. This makes it easy to perform administrative actions on only the relevant plan files.

Once the process is started, if you need to move a plan file in or out of the filter, manual intervention is required to adjust the active processes. For example, imagine that a plan file that should belong to world region Asia is accidentally assigned to world region Europe. To move the plan file to the appropriate process, you must do the following:

- Before reassigning the plan file, use the Process Status dialog to abort the plan file in the Europe process.
- Edit the plan code table to reassign the plan file to the appropriate world region.
- Use the Process Status dialog to start the plan file in the Asia process.

If you were to reassign the plan file first, then the plan file would no longer display in the Process Status dialog for the Europe process and would remain active even though it no longer met the filter. Although you could start the plan file in the Asia process, the plan file would then be active in two processes and may have unexpected behavior.

Setting the process initiator for plan files

When setting up a plan file process for an on-demand file group, you may want to use the *process initiator* in various settings. For example, you might want the process initiator to be used:

- As the ownership assignment for a step in the process
- As the recipient of a process notification
- In the content of a process notification (using a process variable)

The process initiator 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.

Axiom Software has default behavior that determines the process initiator for each plan file. However, in certain special cases, you may want the process initiator to be determined differently. To accommodate these special use cases, you can optionally use a column to initially set the process initiator for each plan file.

Additionally, sometimes it is necessary to change the recorded initiator for a plan file, such as when the initiator leaves the company or moves to a different position. To accommodate this situation, you can optionally change the process initiator for a plan file after it has been set.

How the process initiator is set

When a plan file is initially activated in a process, the process initiator is set as follows:

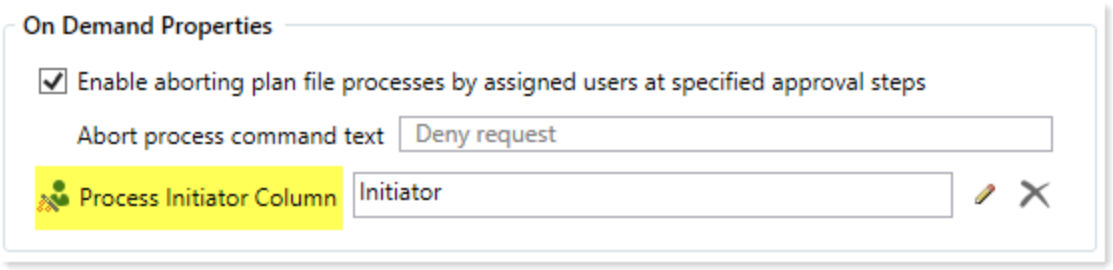
- If the process has a designated Process Initiator Column, and that column contains a valid user name, that user is the process initiator.
- Otherwise, the initiator is determined as follows:
  - If the plan file is being started in the process as part of creating a new plan file, the current user is the process initiator.
  - If the plan file already exists, and the recorded Created By user for the plan file is a valid user, the Created By user is the process initiator. If the Created By user is no longer a valid user, the current user is the process initiator.

Once the process initiator is set for a plan file, the only way to change it is to use Save Type 4 to modify the recorded initiator on the process. Editing the Process Initiator column does not change the recorded initiator (even if tasks are regenerated), and aborting / restarting the plan file in the active process does not clear and reset the initiator. As long as the overall process remains active, the recorded initiator for the plan file remains the same.

Using the Process Initiator Column

You can optionally specify a *process initiator column* for the process. If you designate a process initiator column, then the process initiator will be set to the user in the column when the plan file is activated in the process.

To designate a process initiator column, use the **Process Initiator Column** setting on the **Process Properties** tab of the plan file process definition.



Click the pencil icon to select a column from the plan code table, or a column from a related lookup table. To clear an existing column assignment, click the delete icon.

The specified column must contain values that can be resolved to valid user names in Axiom Software. This process uses the same logic that the assignment column and assignment workbook use to resolve user names, except that role names are not considered valid matches. For more information on how user names are matched, see Assigning owners to plan file process steps.

If a process initiator column is specified in the process definition, then the process initiator is determined as follows when a plan file is activated in the process:

- If the column value for the plan code resolves to a single valid user name, that user is designated as the process initiator.
- If the column is blank for the plan code, then the column is ignored and the normal default behavior for determining the process initiator is used.
- If the column value is ambiguous and could match multiple users, or if the column value cannot be matched to a valid user name, then the plan file is stalled in the process. In this case, you must correct the value in the column and then use the Process Status dialog to regenerate tasks for the plan file. This will restart the plan file in the process and properly assign the process initiator.

Once the plan file has been activated in the process and the process initiator has been set to a valid user, the process initiator value is stored within the process itself. If you edit the column value for an already-active plan file, the process initiator will not change, even if you regenerate tasks for the plan file. This means that you can delete the column assignment or change it to another column at any time, and only newly activated plan files will be affected. Existing plan files will keep the process initiator values that they were assigned when activated.

Changing the process initiator for active plan files

If necessary, you can change the recorded process initiator for an already-active plan file. The most typical use case for this is when a user leaves the organization, so you no longer want that user to receive notifications about the process or become the owner of an active task in the process. Instead, you want to designate a different user to act as the process initiator for the plan file.

To change the process initiator, you can use Save Type 4 to update the process initiator name for a particular process instance ID. Each plan file in the process has a unique process instance ID, which can be found by including the `Axiom.ProcessInstance.ProcessInstanceID` column in a *process Axiom Query*.

- For more information on how to set up a process Axiom Query, see Reporting on plan file processes.
- For more information on how to use Save Type 4 to update the process initiator, see Changing the process initiator using Save Type 4.

Reporting on the process initiator for a plan file

Several methods are available to find out who the process initiator is for a particular plan file:

- The GetProcessInfo function supports a keyword of "ProcessInitiator" to return the process initiator for a given plan file in a file group. For example:

  ```
  =GetProcessInfo("ProcessInitiator","Capital Planning 2016",178)
  ```

  This returns the process initiator for plan file 178 in the Capital Planning 2016 file group.

- The following columns can be queried from the `Axiom.ProcessInstance` table when running a *process Axiom query*. For more information on how to set up a process Axiom query, see Reporting on plan file processes.

Column Name	Description
ProcessInitiatorName	Returns the full name of the process initiator for the plan file.
ProcessInitiatorID	Returns the user ID for the process initiator.
ProcessInstanceID	Returns the ID of the process instance for the plan file. This ID is required for use in Save Type 4 if you want to change the process initiator for a plan file (as described in the previous section).

Administrators and process owners can also view the process initiator in the Process Status dialog, using the column **Initiator** in the **Plan File View** tab.

Configuring rejection behavior for a plan file process

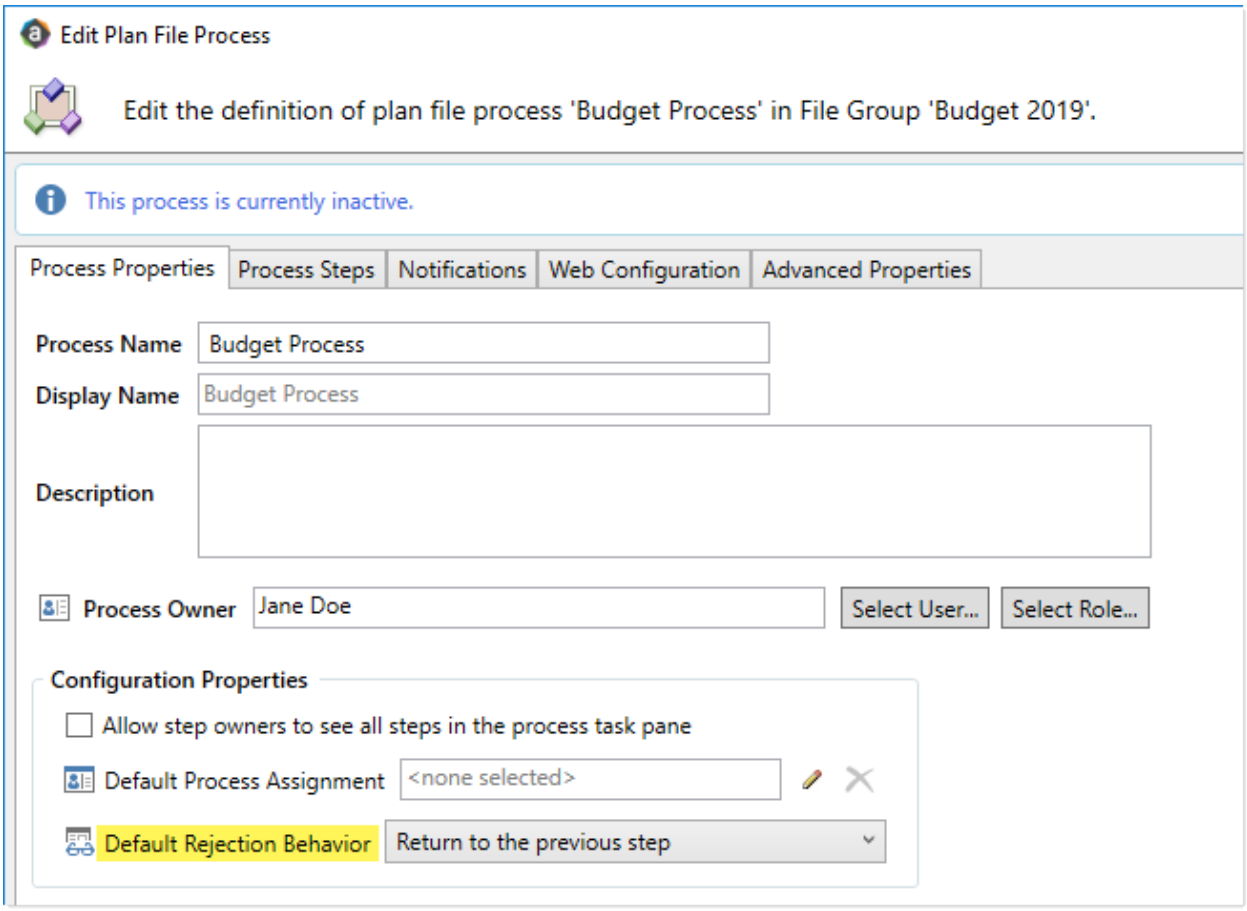
When a plan file is active in an approval step, the plan file can either be approved forward to the next step in the process, or rejected back to a prior step. The rejection behavior that determines which step the plan file is returned to can be configured at the process level and at the step level. The plan file can return to the previous step, or to the previous edit step, or to a specific step.

If the owner assignment causes the plan file to skip the target return step, then the plan file continues to move backward in the process to the next available non-skipped step.

Specifying the default rejection behavior for the process

For each plan file process, you can specify the behavior that applies by default when a plan file is rejected. This default behavior applies to all approval steps in the process, unless it is overridden for an individual step at the step level.

The default rejection behavior is specified on the **Process Properties** tab of the plan file process definition, in the **Configuration Properties** section.

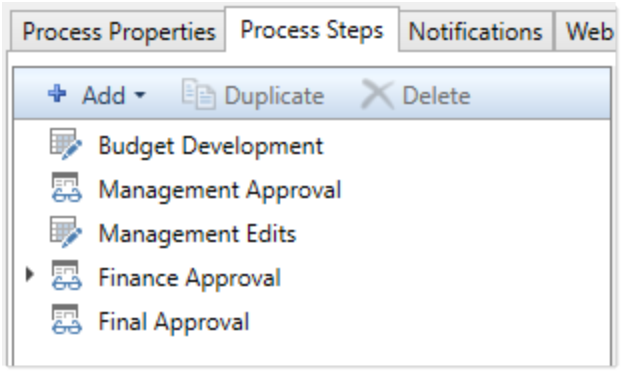


Default rejection behavior for the process

For **Default Rejection Behavior**, select one of the following:

- **Return to the previous step** (default): When a plan file is rejected, it is returned to the previous step (regardless of what type of step it is).
- **Return to the previous Edit step**: When a plan file is rejected, it is returned to the previous Edit Plan File step. If there are any approval steps in-between the rejected step and the previous edit step, they are bypassed.

For example, imagine that you have a plan file process with the following steps:

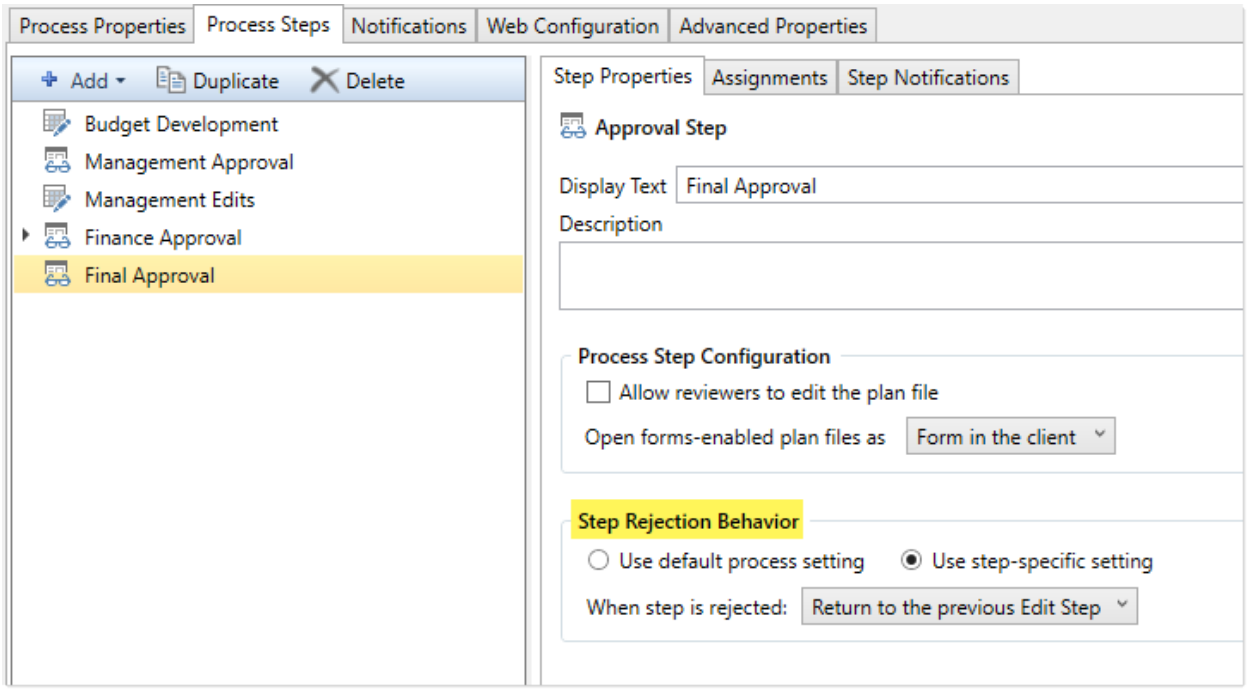


If a plan file is rejected from the Final Approval step, then by default it is returned to the immediately prior step of Finance Approval. However, if you configure the default rejection behavior to return to the previous edit step instead, then the plan file will bypass Finance Approval and instead return to Management Edits.

Specifying step-specific rejection behavior

You can override the default step rejection behavior for individual approval steps as needed. This applies to Approval Process Steps and to Multiple Approvals Steps. If an Approval Process Step is a sub-step of a Multiple Approvals Step, then it uses the behavior configured on the parent step.

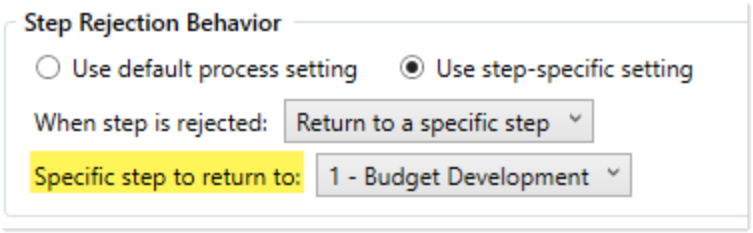
Select the step on the **Process Steps** tab of the plan file process definition, then configure the **Step Rejection Behavior** section of the **Step Properties** sub-tab as needed.



Step-specific rejection behavior

Select one of the following to determine how the plan file is handled if the step is rejected:

- **Use default process setting** (default): The step uses the default rejection behavior as configured for the process on the **Process Properties** tab. When this option is enabled, the process-level rejection behavior is displayed below the option for reference.
- **Use step-specific setting**: The step uses the rejection behavior configured for this specific step. The default rejection behavior does not apply. If this option is enabled, use the **When step is rejected** field to specify the step-specific rejection behavior:
  - **Return to the previous step**: The plan file returns to the previous step, regardless of the step type.
  - **Return to the previous Edit step**: The plan file returns to the previous Edit Plan File step, bypassing any approval steps that fall in-between.
  - **Return to a specific step**: The plan file returns to a specified step in the process. Use the **Specific step to return to** field to select the specific step. You can select any step that comes before the current step.



Example step configured to reject back to a specific step

Enabling the "deny request" option for a plan file process

When using a plan file process for an on-demand file group, you can optionally give owners of approval steps the ability to abort the plan file in the process. This is intended as a way for approval step owners to completely stop a plan file in the process, such as to indicate that a particular capital request has been denied.

The standard options for approval steps allow the step owner to either reject the plan file back to a prior step, or approve it to the next step. When the step owner rejects a request, the owner is saying that the plan file needs more work before it can be approved. But if the step owner denies a request, the owner is saying the request is not approved and that it should simply be stopped in the process. Once a plan file is denied, its process is aborted and it is no longer active in the process. Any existing tasks are deleted.

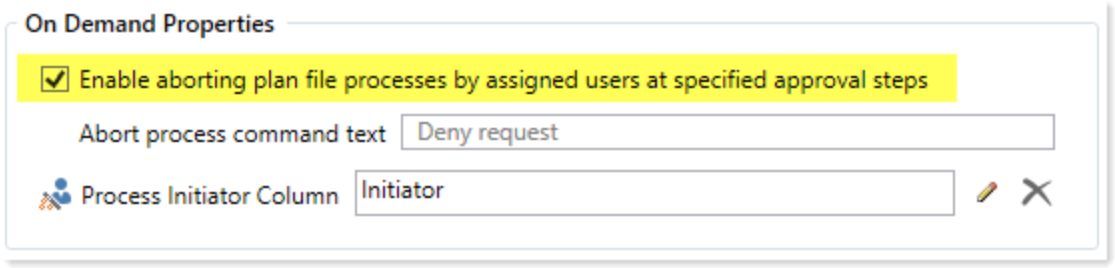
Once a plan file is aborted in the process, this cannot be undone by any end user. The denial option should only be used if the step owner is absolutely sure that the plan file will not be approved. Only an administrator can restart the plan file if necessary, by using **Activate plan files** in the **Process Status** dialog. The plan file will begin at the start of the process, not where it last left off.

NOTE: This option is only available for plan file process definitions for on-demand file groups.

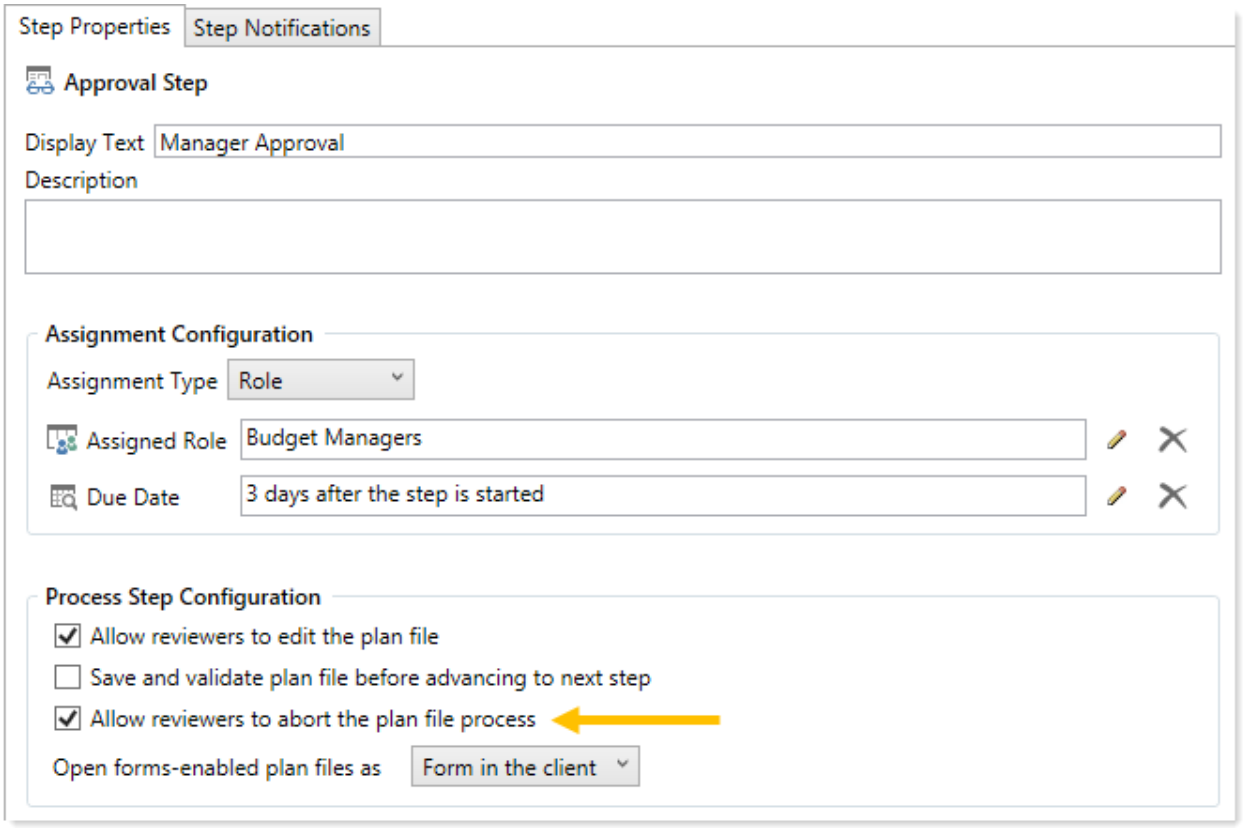
Configuring the process to allow denials

If you want the plan file process to allow denials for approval steps, enable the following option on the **Process Properties** tab of the plan file process definition: **Enable aborting plan file processes by assigned users at specified approval steps**.

If you enable this option, then you also have the option to specify **Abort process command text**. This is the text that will display on the abort process option. You can leave the default text of **Deny request**, or change it as desired.



Once the deny option is enabled at the process level, you must then enable it for each individual approval step where you want it to be an option. By default, the deny option is disabled at the step level.



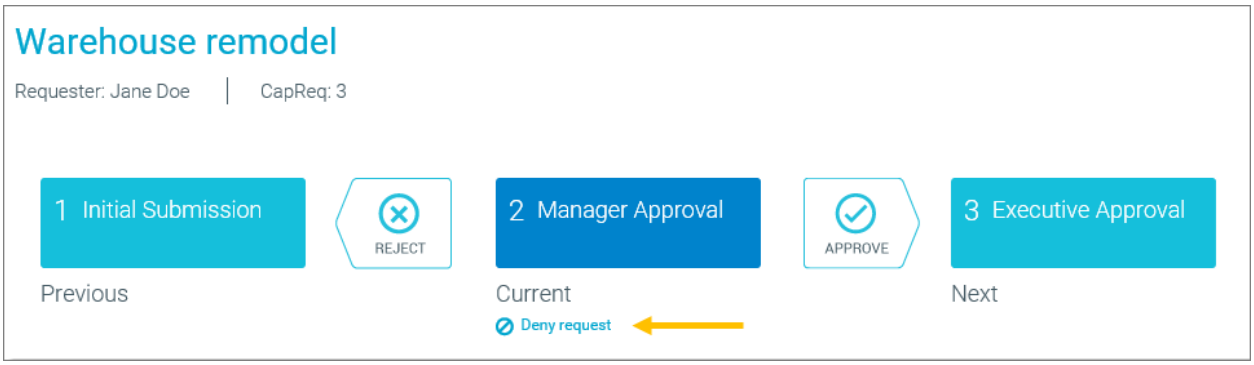
For example, you might only want to allow denial at a particular point of the process, while other approval steps should remain at the default behavior of approve / reject.

NOTE: There is no default notification to communicate that an approver has chosen to abort a plan file in the process. However, you can define a custom notification using the **On Demand Process Aborted** notification type. This notification can be sent to interested parties such as the initiator of the request and the process owner.

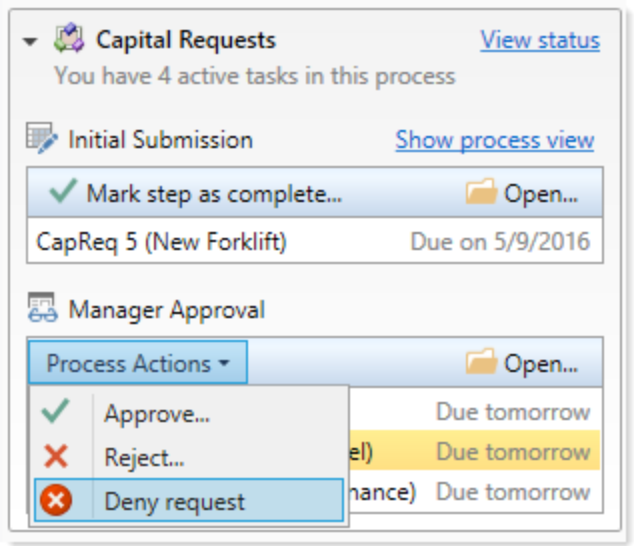
How task owners deny requests

If the deny option is enabled for a step, then the step owner has an additional action available to **Deny request** (or whatever custom text was defined for the action). This action is presented along with the normal **Approve** and **Reject** actions for the step.

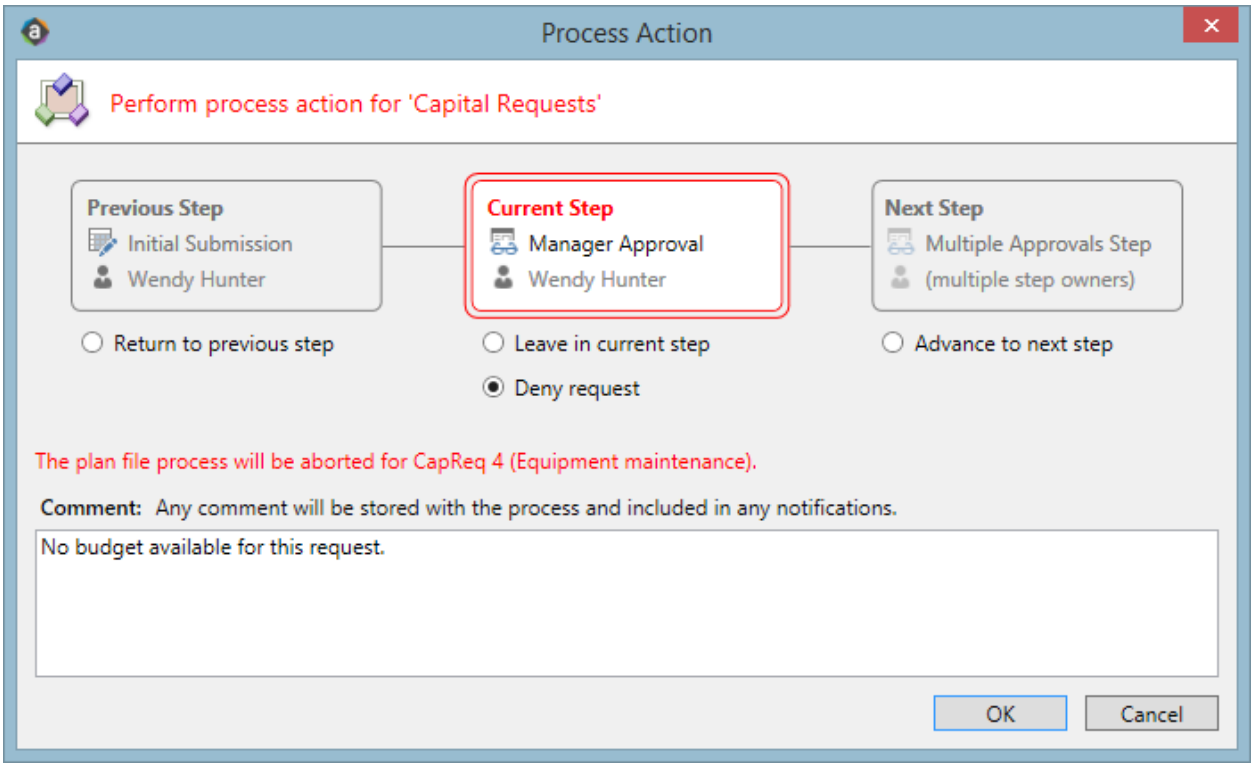
The following screenshots show examples of the deny action in various locations where a user can complete the current process task:



Web Client Process Routing page



Desktop Client Process task pane



Desktop Client Process Action dialog (shown on save of plan file)

The task owner is given the option to define a comment as to why the plan file is being aborted in the process. If a custom On Demand Process Aborted notification has been defined and is enabled for the step, this notification will be sent.

The **Deny request** action is not available in every place where a task owner can complete a task. Currently, it is not available in the following places:

- The Process Tasks page in the Web Client does not provide the deny option. The only way to deny a request in the Web Client is to use the Process Routing page.
- The process-related button behaviors for Button components do not provide the deny option. It is not possible to deny the current request from within a form-enabled plan file.

Configuring process web pages for plan file processes

Users can manage their plan file tasks in the Web Client by using the built-in process web pages. These pages provide a means for users to review and complete their active tasks, and view details about a plan file in the process.

The process web pages are most commonly used when your plan files are form-enabled and the Web Client is the primary means of access for your end users. For more information on using plan file processes with form-enabled plan files, see the *Axiom Forms and Dashboards Guide*.

Several properties of the process web pages are configurable to meet the needs of your plan file process. These properties can be configured on the **Web Configuration** tab of the plan file process definition.

Tasks Page

Web Client users can use the Process Tasks page to view and complete their tasks for a specified process. You can optionally customize the page title, and you can optionally configure the number of days that a task is considered new or due soon.

Page Title

By default, the page title is ***ProcessName* Action Required**. For example, if the process display name is Capital Requests, the page title will be **Capital Requests Action Required**.

You can customize this text as desired using the **Page Title** box. Note that you cannot edit the default text—you must define the full title text if you want to customize any part of it. The following variables can be used in the title text:

Variable	Description
{ProcessName}	The name of the process (display name if defined, process name if not).
{FileGroupName}	The name of the file group for the plan file process.

Task Status Configuration

You can optionally configure the number of days that a process task is considered new or due soon. These settings are used as follows:

- The Process Summary component for Axiom forms uses these settings to determine which tasks display in the "New Tasks" and "Tasks Due Soon" sections of the component.
- The Process Tasks page uses these settings to determine which tasks display when the page view is set to **New items** or **Due soon**.

By default, both items are set to 2 days. To change this, edit the number of days in the applicable setting.

Item	Description
A task is considered 'new' for X day(s) after a step is started	If this is set to 2 days and the step is started on 7/1/2016, then the task will be considered new on 7/1 and 7/2.
A task is considered 'due soon' for X day(s) before the due date	If this is set to 2 days and the task is due on 7/5/2016, then the task will be considered due soon for the 2 days before the due date (7/3 and 7/4), as well as the due date itself (7/5). On 7/6 it will be considered overdue.

Routing Page

Web Client users can use the Process Routing page to view the process status of the plan file and to open the plan file. Step owners, administrators, and process owners can also complete the current task for the plan file from this page. You can control the visibility of the routing page, and you can optionally customize some of the text used on the page.

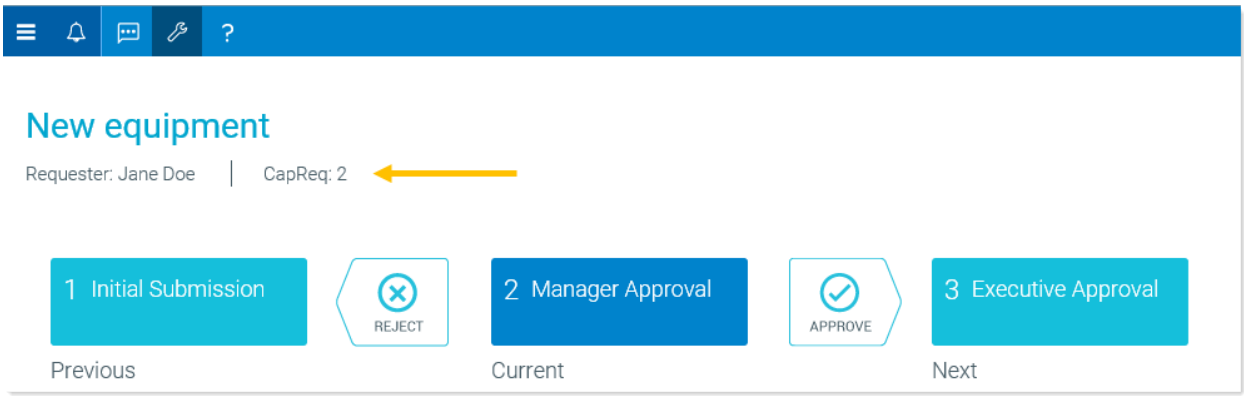
Item	Description
Make routing page visible to anyone with read access to the plan file	Specifies whether a user with read-only access to a plan file can access the Process Routing page. By default this option is enabled, which means that a user with read-only access to the plan file can view the routing page for that plan file at any time. Step ownership in and of itself does not grant a user access to this page. However, step ownership can "elevate" a user to having at least read-only access to the plan file and therefore gain access to the page while the user is step owner. If this option is disabled, then the Process Routing page is only available to administrators and process owners.
Open Plan File Link Text	Defines the link text for the hyperlink that displays in the top right-hand corner of the Process Routing page. Users can open the related plan file from the page using this hyperlink. By default, the text for this hyperlink is **open plan file**. If desired, you can customize this text using **Open Plan File Link Text** box. Whatever you type into this field will display as the hyperlink text.
Page Subheader	Defines the subheader text for the Process Routing page. You can use the default text or optionally customize it. See the following section for more details.

Customizing the page subheader

The description of the plan code / plan file always displays as the header text at the very top of the page. However, the subheader text underneath it can be customized. By default, the subheader text displays the following information.

- The name of the user who initiated the process for the plan file, with the label **Requester:** ***UserName***
- The plan code, with the label ***ColumnName*: *Code***

The following screenshot shows example header and subheader text for the routing page:



You can customize this text as desired using the **Page Subheader** box. Note that you cannot edit the default text—you must define the full subheader text if you want to customize any part of it. The following variables can be used in the subheader text:

Variable	Description
{PlanCode}	The plan code for the current task. For example: 100.
{PlanCodeDescription}	The description of the current plan code. The description is taken from the designated description column(s) for the plan code table.
{PlanCodeDisplayName}	The full name (dimension and code) of the current plan code. For example: Dept 100.
{Separator}	Inserts a separator line. The separator line is horizontal when used in the information panel, and vertical when used in the subheader of the routing page.
{ColumnValue: *ColumnName*}	Return a value from a specified column, for the current plan file. The column can be any column from the plan code table, or from a table that the plan code table links to. For example, imagine that you want to display the assigned region for the current plan code, and Region is a column in the plan code table. You can specify `{ColumnValue:Region}` as a process variable. If the column is on a linked table, you can specify `{ColumnValue:Region.RegionType}`, where the column Region links to a table such as Region.Region, and that table has a column RegionType. When you select Column Value from the **Insert Variable** list, you will be prompted to select a column. The variable will then be inserted using the correct syntax for the selected column.
{ProcessInitiator}	The user who initiated the process for the plan file. This variable is primarily intended to be used with on-demand file groups, where the process initiator is typically the user who initially created the plan file.

As you type into the Page Subheader box, the **Preview** box shows a preview of how the content will look in the routing page subheader. Variable values will display in the preview as `<ColumnName value>`. These variables cannot be resolved until they have a plan code to look up the values for.

Information Panel

You can configure an information panel for plan files, which users can view when looking at the Process Routing page for the plan file. The panel can contain information about the plan file, as well as information from the plan code table and related tables. It can also contain a link to open the plan file. The intended purpose of the panel is to provide users with a snapshot of the information they may need to decide what to do with the plan file task.

You can configure the information panel contents by typing into the **Panel Contents** box. You can use special tags to format the content, and you can insert process variables to retrieve information from the process and from the plan code table (and related tables).

- To create a link to the plan file, use the `link` tag as follows: `<link>LinkText</link>`. This text will automatically be resolved as a hyperlink to the current plan file when the panel is viewed. For example:

  ```
  <link>Open request</link>
  ```

  This will render as a hyperlink using the text **Open request**.

  If the plan file is forms-enabled, then it will open in the Web Client. Otherwise, the link will launch the Desktop Client (to the client that was last-used by the user, Excel or Windows) and open the spreadsheet plan file.

- To apply bold text, use the `b` tag as follows: `<b>Text</b>`.

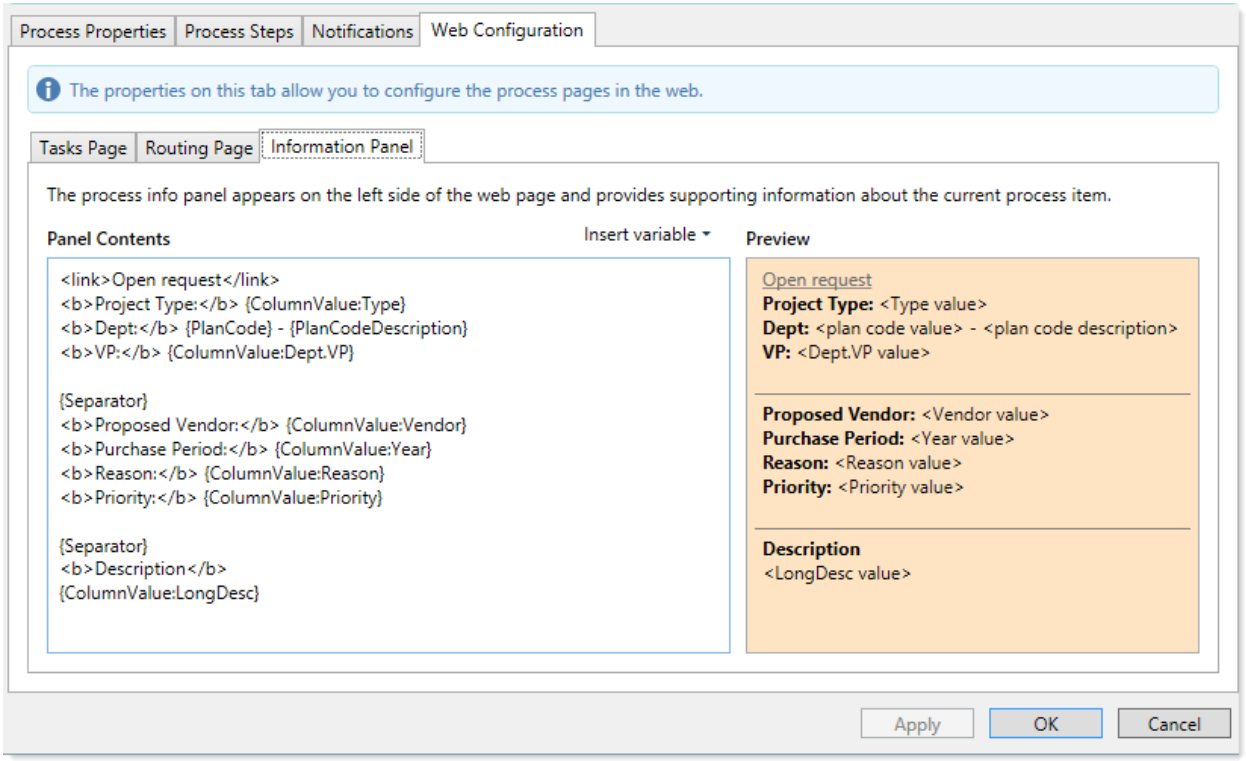
The following variables are available for use in the information panel. To insert a variable, you can type the variable in the text directly, or use the **Insert variable** menu.

Variable	Description
{PlanCode}	The plan code for the current task. For example: 100.
{PlanCodeDescription}	The description of the current plan code. The description is taken from the designated description column(s) for the plan code table.
{PlanCodeDisplayName}	The full name (dimension and code) of the current plan code. For example: Dept 100.
{Separator}	Inserts a separator line. The separator line is horizontal when used in the information panel, and vertical when used in the subheader of the routing page.

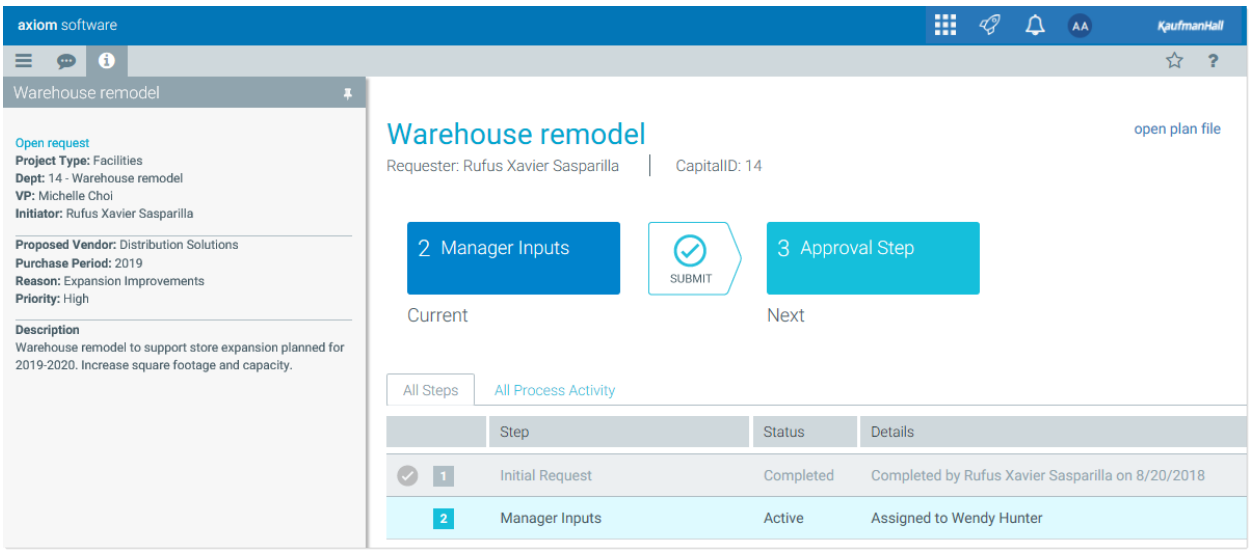
Variable	Description
{ColumnValue: *ColumnName*}	Return a value from a specified column, for the current plan file. The column can be any column from the plan code table, or from a table that the plan code table links to. For example, imagine that you want to display the assigned region for the current plan code, and Region is a column in the plan code table. You can specify `{ColumnValue:Region}` as a process variable. If the column is on a linked table, you can specify `{ColumnValue:Region.RegionType}`, where the column Region links to a table such as Region.Region, and that table has a column RegionType. When you select Column Value from the **Insert Variable** list, you will be prompted to select a column. The variable will then be inserted using the correct syntax for the selected column.
{ProcessInitiator}	The user who initiated the process for the plan file. This variable is primarily intended to be used with on-demand file groups, where the process initiator is typically the user who initially created the plan file.

As you type into the Panel Contents box, the **Preview** box shows a preview of how the content will look in the information panel. Variable values will display in the preview as `<ColumnName value>`. These variables cannot be resolved until they have a plan code to look up the values for.

The following screenshot shows an example configured information panel:



This panel would display as follows in the Process Routing page:



Time in Step Page

The Time in Step page of the Web Client provides reporting on the average time plan files spent in each step of the process. If desired, you can set up refresh variables to filter this report, so that you can see the time in step filtered by groupings in the plan code table. For more information about this report, see Reporting on average time in step for plan files.

To enable filtering, create a file group utility or a report file with a RefreshVariables data source, and define the variables to be used with the Time in Step report. Then, select this file as the **Time in Step Variables Report**.

When the Time in Step page is accessed, Axiom Software will read the variables from the designated file, and present them in the Filters panel (just like when using refresh variables with Axiom forms). The user's selected values for the variables will be applied as filters to the Time in Step report.

Refresh variables work as follows in this context:

- The only supported refresh variable type is ComboBox, using either a table column in the plan code table, or a ComboBox data source. All other variable types will be ignored.
- If you are using a column in the plan code table, Axiom Software takes the selected value for the refresh variable and applies it to the web page as a filter. For example, if the plan code table has a column such as RequestType, and the user selects Type1, then Axiom Software applies a filter of `RequestType='Type1'`. The web page is then filtered to only show the results for plan files that have a request type of Type1.
- If you are using a ComboBox data source, the `[Value]` column for the data source must contain valid filter criteria statements based on the plan code table. The selected filter is applied to the web page "as is". The `[Label]` column of the data source can contain "user friendly" text instead of the full filter statement.
- All other refresh variable settings can be used in this context, such as dependent variables or group names. Keep in mind that if you configure a variable as required, then once a user selects a value for that variable and applies it, they will not be able to clear the variable and return to the unfiltered state of the report without reloading the page.

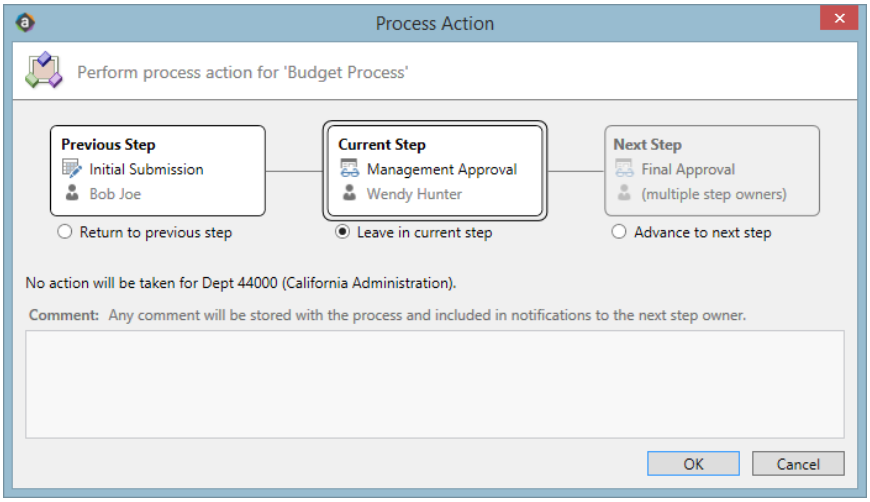
The variables file can use Axiom queries, data lookups, and Axiom functions to define the variable properties or to populate the ComboBox data source. When the file is accessed by the web page, any "refresh on open" queries are executed and formulas are calculated before the variables are read from the file and presented in the Filters panel. When a user applies the variable values, the file is refreshed and calculated again before the final selected values are applied as filters to the web page. The file should not contain any queries or other features that are not necessary to the configuration of the refresh variables.

Prompting users to complete process tasks when saving plan files

When a user is the current step owner of a plan file in a plan file process, then whenever they save the plan file they will be prompted as to whether they want to complete the process task. If the user wants to continue working on the plan file, they can leave it in the current step. If the user is finished with the plan file, they can complete the process task.

NOTE: This behavior only applies to spreadsheet files in the Desktop Client. When using form-enabled plan files, there is no equivalent prompt to complete the current task when saving data.

In the following example, the user is the owner of an Approval step, so the user has the option to advance the plan file to the next step (approve) or return it to a previous step (reject). If the step is an Edit Plan File step, then the user only has the option to advance to the next step.



If you do not want this behavior, you can disable it. If you disable it, then no prompt displays when the plan file is saved.

The prompt behavior is controlled by the system configuration setting **TiePlanFileSaveToWorkflowTaskSubmit**. By default this is set to True, which means that the process prompt displays when saving. If you set this to False, then no prompt displays when saving. For more information on changing system configuration settings, see the *System Administration Guide*.

This system configuration setting applies to all processes defined for the system. Currently, there is no way to enable the prompt for some processes and not others.

Deleting plan file processes

You can delete a plan file process from a file group if it is no longer needed. A process definition cannot be deleted if:

- The process is currently active. If it is active, it must be completed or stopped before it can be deleted.
- The process is designated as the **Plan File Process** for an on-demand file group. The process must be removed from this setting in the file group properties before it can be deleted.

To delete a process definition from a file group:

1. On the **Axiom** tab, in the **Administration** group, click **Manage > Process Management > Process Definitions**.

   TIP: You can also delete a process definition from the file group node in the Explorer task pane.

2. Expand the file group and then select **Process Definitions**.
3. In the right-hand pane, right-click the process definition and then click **Delete**.

Using general processes with file groups

In addition to the special *plan file process definitions*, you can also create general process definitions for a file group. This is the same type of process definition that is available when creating processes in the Process Definition Library, except in this case the process definition is implicitly associated with the file group. For example, you might use a general process definition in a file group to document and manage the rollover procedures for the file group.

General process definitions in file groups have the following special properties:

- The processes are stored in the Process Definitions folder of the file group.
- All step types that require a designated file group are automatically associated with the current file group. There is no option to specify a file group because the current file group is assumed.
- Processes can be copied when the file group is cloned, so that you do not have to create new processes for cloned file groups.
- The ability to create and edit processes for a file group is reserved for administrators and for users with the appropriate file access (as granted on the **Files** tab of the **Security Management** dialog).

When viewing the Process Definitions folder of the file group, you can tell the difference between plan file process definitions and general process definitions by the icon:

 General process definition

 Plan file process definition

For full information on using general process definitions to manage a process, see the *Process Management Guide*.

Plan File Process Steps

The process steps in plan file processes are dedicated to editing and reviewing plan files. This section details the available step types and the type-specific settings.

Edit Plan File Process Step

The Edit Plan File Process Step is intended to be used for steps where you need users to edit plan files in a file group.

Step behavior

When a plan file becomes active in the Edit Plan File Process Step, a task is generated for the step owner to edit that plan file. When the owner has completed their edits, the owner can move the plan file to the next step in the process by using the **Mark step as complete** action.

While the plan file is active in the step, the designated owner has their security permissions "elevated" as necessary so that the user can open the file, and save the file and its data. This elevation occurs if the plan file is included in the user's plan file permission set, and if **Interacts with Process Management** is enabled for the permission set. For more information, see How plan file processes and security interact.

Step-specific settings

Edit Plan File Process Steps have the following step-specific settings:

Item	Description
Save and validate plan file before advancing to next step	Specifies whether plan files must be validated and saved before the process task can be completed. • If enabled, then plan files are validated for save errors and then saved (including a save-to-database) before completing the task. If the validation fails then the task cannot be completed. • If not enabled (default), then the task is completed without performing any validation or save actions on the plan file. **NOTES:** • If the file group uses virtual plan files, then the validation process only performs a save-to-database. The plan file itself is not saved when using virtual plan files. • If **Process Plan Files with Utilities** is enabled in the file group properties, then utility processing is performed instead of validating and saving the plan file. The utility processing must complete without error in order to complete the process task. When performing utility processing for process step validation, Axiom Software first checks for a ProcessPlanFileUtilities data source flagged as the ProcessValidation data source. If no ProcessValidation data source is found, then the data source flagged as the Default data source is used.
Open forms-enabled plan files as	Select one of the following to determine how form-enabled plan files are opened from the Process task pane: • **Form in the client** (default) • **Form in web browser** • **Spreadsheet** This setting only applies if the plan files in the process are form-enabled; otherwise it is ignored. **NOTE:** When using the Axiom Excel Client with Excel 2013 or 2016, Axiom forms will always open in the user's browser instead of within the application, regardless of this setting. The spreadsheet option for this setting is also honored for purposes of generating the document link within process notifications. If **Spreadsheet** is specified, then hyperlinks generated using the `{LinkToPlanFile}` variable will open the plan file as a spreadsheet in the user's default desktop client. However, if **Spreadsheet** is not specified, then the hyperlink always opens any form-enabled plan files as forms in the Web Client. The ability to generate a hyperlink to open the file as a form within the desktop client is not supported.

Approval Process Step

The Approval Process Step is intended to be used for steps where you need users to review plan files in a file group. The reviewer can either approve the plan file to move it on to the next step, or reject the plan file to return it back to the prior step.

Step behavior

When a plan file becomes active in the Approval Process Step, a task is generated for the step owner to review (and optionally edit) that plan file. When the owner has completed their review, they can complete the step by choosing one of the following options:

- **Approve**— Approves the plan file and moves it to the next step.
- **Reject**— Rejects the plan file and moves it back to a prior step for more work. The specific step it is returned to depends on the rejection behavior configured for the step.
- **Deny request**—Aborts the plan file in the process. This option only applies to on-demand processes, and only if **Allow reviewers to abort the plan file process** is enabled for the step.

The Approval Process Step is the only step type that supports moving the process either forward or backward (or to stop it entirely); all other steps only have the option to move forward when completed.

While the plan file is active in the step, the designated owner has their security permissions "elevated" as necessary so that the user can open the file and review it for approval. This elevation occurs if the plan file is included in the user's plan file permission set, and if **Interacts with Process Management** is enabled for the permission set. If the setting **Assignment grants write access to plan files** is enabled for the approval step, then the permission elevation will include the ability to save the file and its data. For more information, see How plan file processes and security interact.

Step-specific settings

Approval Process Steps in plan file processes have the following settings:

Item	Description
Allow reviewers to edit the plan file	Specifies whether the owners of this step are elevated to read/write access to assigned plan files. If this option is enabled, then the "elevation" behavior described in the *Process behavior* section below will also allow the user to save the file and its data.

Item	Description
Allow reviewers to abort the plan file process	Specifies whether the owners of this step have the option to abort the plan file in the process. The intent of this option is to allow users to "deny" a request and thereby stop it from progressing in the process. For more information on using this option, see Enabling the "deny request" option for a plan file process. By default, this option is disabled, which means that users cannot abort the plan file in the process. This option is only available for on-demand file groups, and only if **Enable aborting plan file processes by assigned users at specified review steps** is enabled at the process level.
Save and validate plan file before advancing to next step	Specifies whether plan files must be validated and saved before the process task can be completed. This option is only available if **Allow reviewers to edit the plan file** is enabled. • If enabled, then plan files are validated for save errors and then saved (including a save-to-database) before completing the task. If the validation fails then the task cannot be completed. • If not enabled (default), then the task is completed without performing any validation or save actions on the plan file. **NOTES:** • If the file group uses virtual plan files, then the validation process only performs a save-to-database. The plan file itself is not saved when using virtual plan files. • If **Process Plan Files with Utilities** is enabled in the file group properties, then utility processing is performed instead of validating and saving the plan file. The utility processing must complete without error in order to complete the process task. When performing utility processing for process step validation, Axiom Software first checks for a ProcessPlanFileUtilities data source flagged as the ProcessValidation data source. If no ProcessValidation data source is found, then the data source flagged as the Default data source is used.

Item	Description
Open forms-enabled plan files as	Select one of the following to determine how form-enabled plan files are opened from the Process task pane: • **Form in the client** (default) • **Form in web browser** • **Spreadsheet** This setting only applies if the plan files in the process are form-enabled; otherwise it is ignored. **NOTE:** When using the Axiom Excel Client with Excel 2013 or 2016, Axiom forms will always open in the user's browser instead of within the application, regardless of this setting. The spreadsheet option for this setting is also honored for purposes of generating the document link within process notifications. If **Spreadsheet** is specified, then hyperlinks generated using the `{LinkToPlanFile}` variable will open the plan file as a spreadsheet in the user's default desktop client. However, if **Spreadsheet** is not specified, then the hyperlink always opens any form-enabled plan files as forms in the Web Client. The ability to generate a hyperlink to open the file as a form within the desktop client is not supported.

Step Rejection Behavior	Select one of the following to determine how the plan file is handled if the step is rejected:
	• **Use default process setting** (default): The step uses the default rejection behavior as configured for the process on the **Process Properties** tab. When this option is enabled, the process-level rejection behavior is displayed below the option for reference.
	• **Use step-specific setting**: The step uses the rejection behavior configured for this specific step. The default rejection behavior does not apply. If this option is enabled, use the **When step is rejected** field to specify the step-specific rejection behavior:
	  ◦ **Return to the previous step**: The plan file returns to the previous step, regardless of the step type.
	  ◦ **Return to the previous Edit step**: The plan file returns to the previous Edit Plan File step, bypassing any approval steps that fall in-between.
	  ◦ **Return to a specific step**: The plan file returns to a specified step in the process. Use the **Specific step to return to** field to select the specific step. You can select any step that comes before the current step.
	For more information, see Configuring rejection behavior for a plan file process.
	NOTE: This option does not apply if the approval step is a sub-step of a Multiple Approvals Process Step. In that case, the rejection behavior is configured on the Multiple Approvals Process Step instead.

Multiple Approvals Process Step

The Multiple Approvals Process Step is intended to be used when you want multiple users to approve a plan file concurrently instead of sequentially. The difference in approach is as follows:

- For sequential approvals, use several Approval Process Steps in a sequential order. The plan file is only active in one approval step at a time, and that step must be completed before the plan file 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 the plan file becomes active in all of the approval sub-steps concurrently. All of the sub-steps must be completed before the plan file moves to the next step in the process.

The Multiple Approvals Process Step works the same way as the Parallel Subprocess in general processes, except that the Multiple Approvals Process Step can only contain approval steps.

Step behavior

When the Multiple Approvals Process Step is the active step, then all of its approval sub-steps are also made active. Tasks are generated for the owners of all the approval sub-steps to review the plan file, and approve or reject it. The owners of the approval sub-steps can complete their plan file tasks 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 plan file moves on to the next step. However, if *any* of the sub-steps are rejected, then the entire step is rejected and the plan file is moved back to a previous step. The specific step it is returned to depends on the step rejection behavior configured for the Multiple Approvals Process Step.

Step-specific settings

Multiple Approvals Process Steps in plan file processes have the following settings:

Item	Description
Step Rejection Behavior	Select one of the following to determine how the plan file is handled if the step is rejected: • **Use default process setting** (default): The step uses the default rejection behavior as configured for the process on the **Process Properties** tab. When this option is enabled, the process-level rejection behavior is displayed below the option for reference. • **Use step-specific setting**: The step uses the rejection behavior configured for this specific step. The default rejection behavior does not apply. If this option is enabled, use the **When step is rejected** field to specify the step-specific rejection behavior: ◦ **Return to the previous step**: The plan file returns to the previous step, regardless of the step type. ◦ **Return to the previous Edit step**: The plan file returns to the previous Edit Plan File step, bypassing any approval steps that fall in-between. ◦ **Return to a specific step**: The plan file returns to a specified step in the process. Use the **Specific step to return to** field to select the specific step. You can select any step that comes before the current step. For more information, see Configuring rejection behavior for a plan file process.

Multiple Approvals Process Steps do not have owner assignments or due dates. Owner assignments and due dates are defined individually for each sub-step.

Restrictions and limitations

- A Multiple Approvals Process Step must have two or more sub-steps. The sub-steps can only be Approval Process Steps.
- When an owner of a sub-step in a Multiple Approvals Process Step completes a step, the previous and next steps shown in the Process Action dialog are the top-level steps before and after the Multiple Approvals Process Step. The other sub-steps do not have an order and therefore are not shown in relation to the step being approved or rejected.

Plan File Process Notifications

Plan file processes can send several different types of notifications, all of which can be configured at the process level and at the step level. These notifications are used to inform or remind users about plan file tasks they need to perform, or to inform other interested parties about the current step status.

When setting up notifications for a process, you can determine:

- The types of notifications that are sent for the process and for each step
- The recipients of each notification
- The content of each notification
- The delivery method of each notification (email, Notifications task pane, or both)
- Whether notifications are sent at all, for the entire process or per step
- The frequency and timing of reminder notifications

When defining notifications for a plan file process, you can define default notifications at the process level. These process-level notifications are inherited by the individual steps in the process. At the step level, you can choose to enable or disable the inherited notifications as needed, and you can define custom notifications to be used for that step only.

NOTE: The information in this section does not apply to administrative notifications for a process, which are system-managed notifications intended to inform the process owner about the general operation of the process and any errors encountered. For more information about process ownership and administrative notifications, see Designating the plan file process owner.

Notification types for plan file processes

The following types of notifications can be sent for a plan file process:

Notification Type	Description	Available Recipient Types
Step Activated	Notification that is sent when a plan file is made active in a step. By default, the notification informs the step owner(s) that they have a task to perform in the process. You can customize the default notification as desired. **NOTE:** This notification type is *not* used when a previously active step is reopened due to an approval step rejection. Instead, the Step Reopened notification type is used.	• Task owners • Any named user or role • Process owner • Process initiator
Step Reopened	Notification that is sent when a step is reopened for a plan file, due to a subsequent approval step being rejected. By default, the notification informs the step owner that their task has been reopened. You can customize the default notification as desired.	• Task owners • Any named user or role • Process owner
Step Rejected	Notification that is sent when a plan file is rejected for an approval step. This notification type is not configured by default and is entirely user-definable. This notification type only applies to approval steps and multiple approvals steps. **NOTE:** This notification type is about the step that was rejected, not about the prior step that was reopened as a result of the rejection. It is intended to inform the process owner or other interested parties about the rejection.	• Previous step owners • Any named user or role • Process owner • Process initiator
Step Completed	Notification that is sent when a plan file completes a step. This notification type is not configured by default and is entirely user-definable.	• Previous step owners • Any named user or role • Process owner • Process initiator

Notification Type	Description	Available Recipient Types
Due Date Reminder	Notification that is sent to remind users of an upcoming step due date for a plan file. This notification type is not configured by default and is entirely user definable, including the reminder schedule.	• Task owners • Any named user or role • Process owner
Overdue Reminder	Notification that is sent to remind users of an overdue step for a plan file. This notification type is not configured by default and is entirely user definable, including the reminder schedule.	• Task owners • Any named user or role • Process owner
On Demand Process Aborted	Notification that is sent when a plan file is denied for an approval step, meaning the plan file is aborted in the process. This notification type is not configured by default and is entirely user-definable. This notification only applies to on-demand file groups, and will only be used for approval steps where the ability to abort plan files in the process has been enabled. For more information, see Enabling the "deny request" option for a plan file process. **NOTE:** This notification is not sent when an administrator or process owner chooses to abort a plan file in the process using the **Abort plan files** command in the **Process Status** dialog.	• Previous step owners • Any named user or role • Process owner • Process initiator

NOTE: For more information on the recipient types, see Customizing recipients for plan file process notifications.

Most of these notification types do not apply to parent multiple approvals steps. For example, a Step Activated notification is *not* sent when the parent multiple approvals step is made active; instead the notification is sent for the first sub-step in the subprocess. Similarly, the Due Date Reminder and Overdue Reminder notification types do not apply to multiple approvals steps, because the parent step does not have a due date (only the approval sub-steps have due dates).

The only notification types that apply to parent multiple approvals steps are:

- **Step Completed**: This notification can be sent when all sub-steps in the multiple approvals step are completed.
- **Step Rejected**: This notification can be sent when the multiple approvals step is rejected due to any of its approval sub-steps being rejected.

You can define multiple instances of the same notification type, at any level of the process. If multiple notifications apply when a particular step activity occurs (such as when a step is activated), then all eligible notifications will be sent. For example, you might do this if you want to define different notification content for different recipients of the notification type.

Notification design considerations

Keep in mind the following design considerations when defining notifications for a process.

- **Step Activated / Step Reopened - Sending to recipients other than step owners**

  If you want to send the Step Activated or Step Reopened notification to any recipients other than the step owners, you should consider creating a second instance of the notification type with text that is appropriate for the other recipients.

  The default text for these notification types assumes that the notification is being read by the step owners. The text includes statements such as "You have a new task..." and "Please login to Axiom Software to complete your tasks." It may be confusing for process owners or other recipients to receive this notification because these users do not actually have a new task, they are just being informed of someone else being assigned a new task. The non-owner recipients should have a separate instance of the notification type, with text that better reflects the informational status of the notification. For example: "Plan file 42000 has been activated in Step 3: Manager Approval. The task is assigned to user Jane Doe."

- **Step Activated / Step Reopened - Delivering to the Notifications task pane**

  Because the default delivery method is email, the default text for these notifications contains the sentence "Please login to Axiom Software to complete your tasks." If you decide to deliver notifications to the Notifications task pane instead, this sentence does not apply and should be removed.

- **Step Rejected - Using with multiple approvals steps**

  If you want to use the Step Rejected notification type with a multiple approvals step, you should consider at which level you want the notification to be issued. You can enable Step Rejected for each approval sub-step, which means that the notification will be sent at the level of the individual sub-step that was rejected. Or, you can enable Step Rejected at the parent level (the multiple approvals step), which means that the notification will be sent for the parent step when any of the sub-steps are rejected.

  This choice impacts how the variables are resolved in the notification text and what information is available to the notification. You can also choose to send both levels of notification, but this is probably more notifications than necessary for the same event, unless each notification is for different recipients.

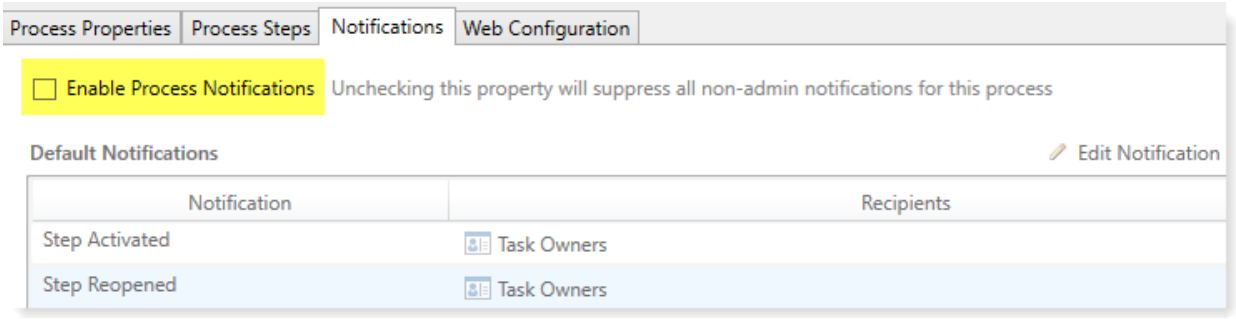
Disabling notifications for a plan file process

By default, each plan file process includes "built-in" notifications intended to inform step owners about new and reopened tasks in the process. You can define additional notifications and customize the built-in notifications as needed. However, if you don't want to send these notifications, then you can disable notifications for the entire process or for specific steps.

Disabling notifications at the process level

Use the **Enable Process Notifications** option on the Notifications tab to enable or disable notifications for the entire plan file process.

- By default, this check box is selected, which means notifications are enabled for the process. Notifications will be sent according to the notification settings defined for each individual step (which may include using the inherited process-level notifications).
- If you clear this check box, then notifications are disabled for the process. No notifications will be sent. The **Default Notifications** section becomes grayed out and cannot be edited. Additionally, any notification settings made at the individual step level will be ignored.



Notifications disabled for a plan file process

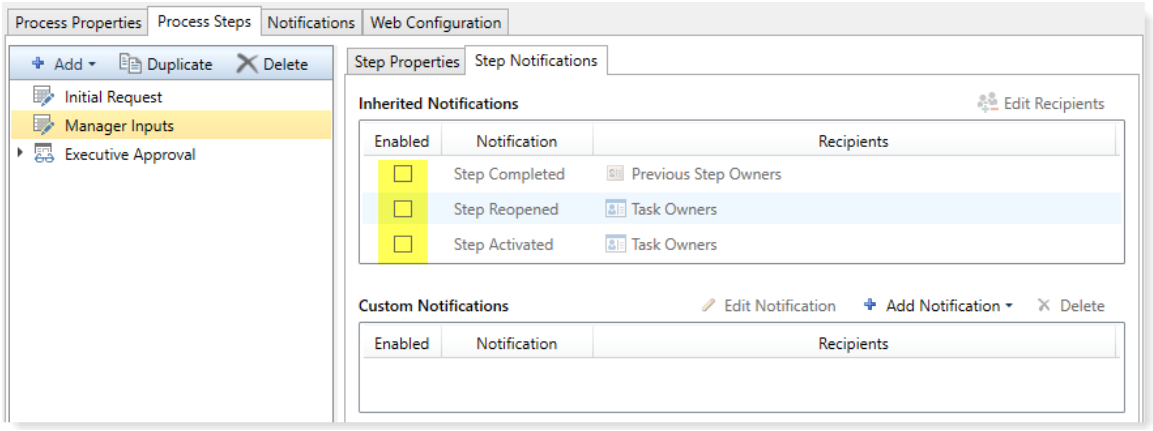
Administrative notifications are always sent and cannot be disabled. For more information on these notifications, see Designating the plan file process owner.

Disabling notifications at the step level

If **Enable Process Notifications** is enabled at the process level, then you can enable or disable notifications at the individual step level.

To disable notifications for a particular step, go to the **Process Steps** tab and then select the desired step. In the **Step Notifications** sub-tab, you can enable or disable notifications by type.

- **Inherited Notifications**: These notifications are inherited from the process-level notifications. To disable the inherited notifications at the step level, clear the **Enabled** check box for each notification.



Inherited notifications disabled for a step

- **Custom Notifications**: These notifications are defined for the current step. To disable a custom notification, clear the **Enabled** check box.

  It would be unusual to define a custom notification for a step and then disable it, unless you are disabling it temporarily for testing purposes or for other transient reasons. If you do not need the custom notification for the step, you can delete it instead of disabling it.

Any inherited or custom notifications that are disabled for the step will not be sent for that step.

If **Enable Process Notifications** is *disabled* at the process level, then any step-level notification settings are ignored and no notifications will be sent for the process. However, you can continue to edit the step-level notification settings so that they are configured as you want them in case you later re-enable notifications at the process level. A warning message displays across the top of the Step Notifications sub-tab to inform you when notifications are disabled at the process level.

Disabling notifications for multiple approvals steps

It is not possible to disable notifications for all sub-steps of a multiple approvals step. If you want to disable notifications for a multiple approvals step, you must disable them for each individual sub-step, using the methodology described in the previous section.

Inherited and custom notifications can also be disabled for the parent step itself, using the methodology described in the previous section.

Defining default notifications for a plan file process

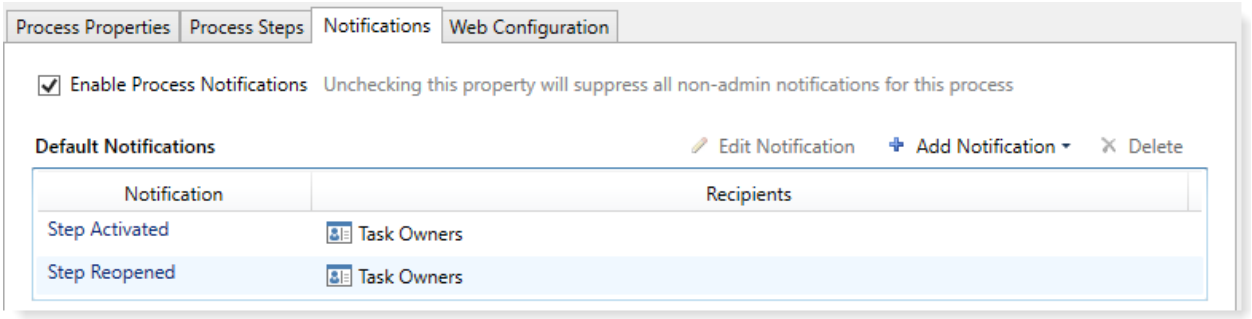
You can define default notifications at the process level. These notifications are inherited by all eligible steps in the process, and can be enabled or disabled for those steps.

Default notifications are best for notifications that you want to use for all or most of the steps in the process. If many steps use the same notification, then it is easier to define it at the process level rather than for each individual step. If you don't want a default notification to apply to a particular step, then you can disable it at the individual step level.

All steps in the process can inherit the default notifications defined at the process level, if the step type is eligible to use the notification type. For example, all steps except parent multiple approvals steps can inherit a Step Activated notification.

Built-in default notifications for plan file processes

All plan file process definitions start with two default notifications at the process level: a Step Activated notification and a Step Reopened notification.



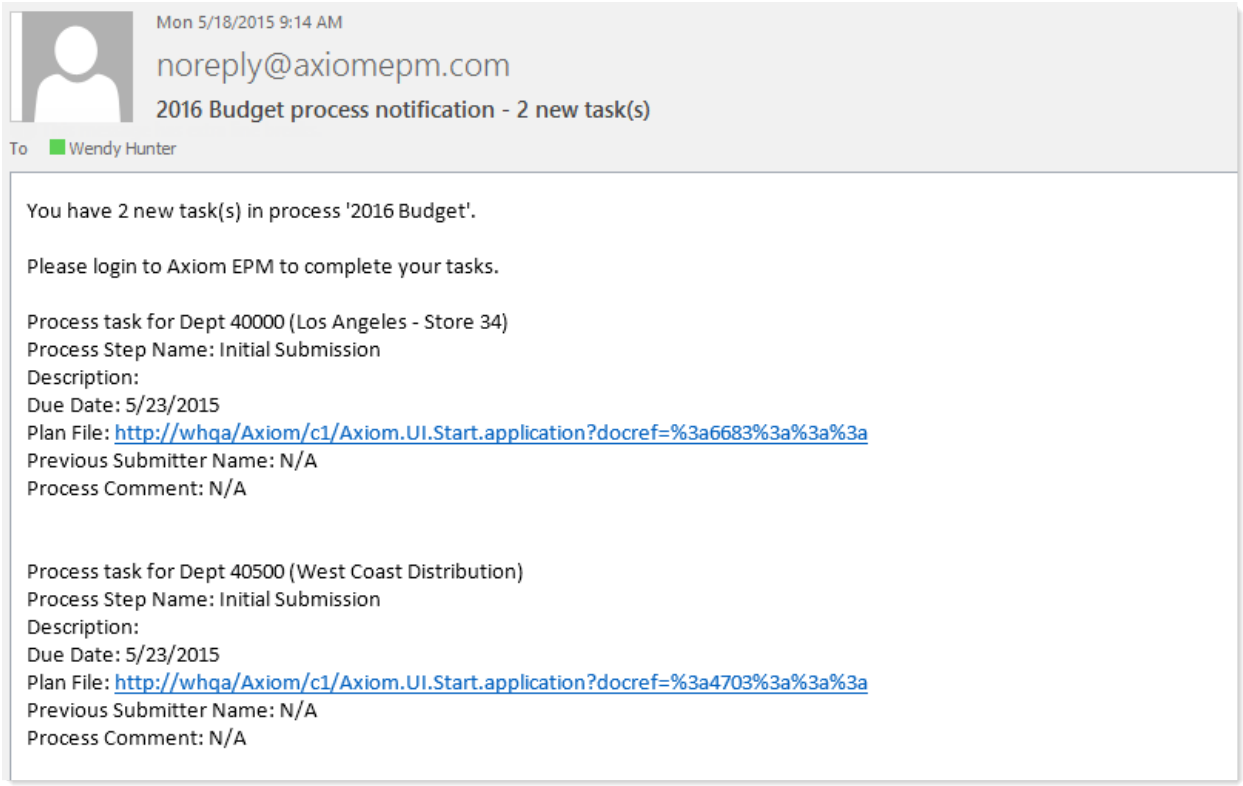
Built-in default notifications for a plan file process

These built-in notifications are configured as follows:

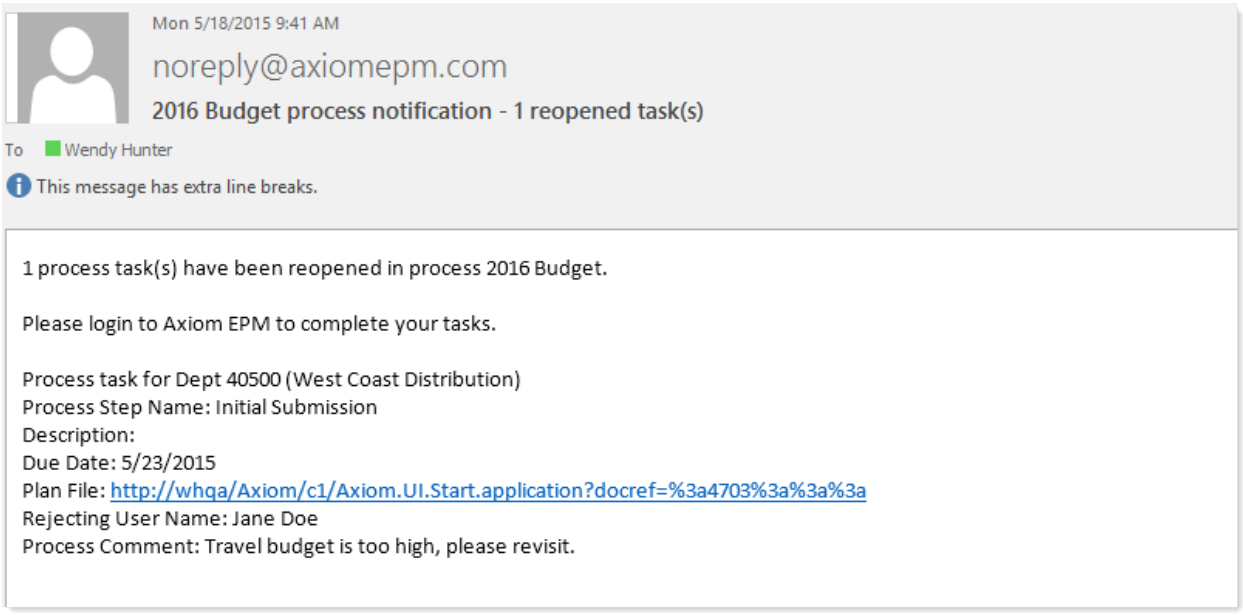
- Notification recipients are set to task owners.
- Notification delivery is set to use the process-level setting (which by default is email delivery).
- The messages contain basic details about the process and the current task.

You can use the built-in notifications as is, or you can customize them as desired. All aspects of the notification are customizable. You can also opt to delete the built-in notifications and create your own from scratch.

The following screenshots show example default notifications for a plan file process definition. Each notification contains the details for one or more plan files.



Step Activated notification



Step Reopened notification

Adding, editing, and deleting default process notifications

You can add, edit, and delete default process notifications using the **Notifications** tab of the **Edit Process** dialog. Any existing default notifications defined for the process (including the built-in notifications) display in the **Default Notifications** grid.

You can define default process notifications at any time. If the process is already active, any changes made will apply to new notifications delivered after that point.

To add a default notification:

1. Click **Add Notification**, then select the notification type that you want to add. For more information on the available notification types, see Notification types for plan file processes.
2. In the **Edit Process Notification** dialog, define the properties for the new notification. For more information, see Notification properties for plan file processes. Note the following:
    - Most newly added notifications do not have any default recipients. You must add the desired recipients before the notification is valid for use. The exception is reminder notification types—these notifications go to task owners by default.
    - Newly added notifications do not have any defined message text. You must define this content before you can save the notification.
3. Click **OK** to save the notification.
4. You are prompted to choose whether you want the new notification to be enabled in existing steps by default. Click **Yes** or **No** as appropriate.

    NOTE: It is not possible to globally enable the notification for all steps after it is saved. If you don't enable the notification at this point, you must manually go to each existing step and enable it as needed.

The notification is added to the grid, and is available to be inherited by all eligible steps. Whether the notification is enabled in existing steps depends on your Yes/No selection when saving the notification. Whether the notification is enabled for newly created steps depends on the **Default Enablement** setting for the notification.

To delete a default notification:

- Select the notification in the grid, and then click **Delete**.

The deleted notification is removed from the process. Any steps that were inheriting the notification can no longer use it.

To edit a default notification:

- Double-click the notification in the grid. You can also select the notification in the grid and then click **Edit Notification**.

Within the **Edit Process Notification** dialog, you can edit notification properties such as:

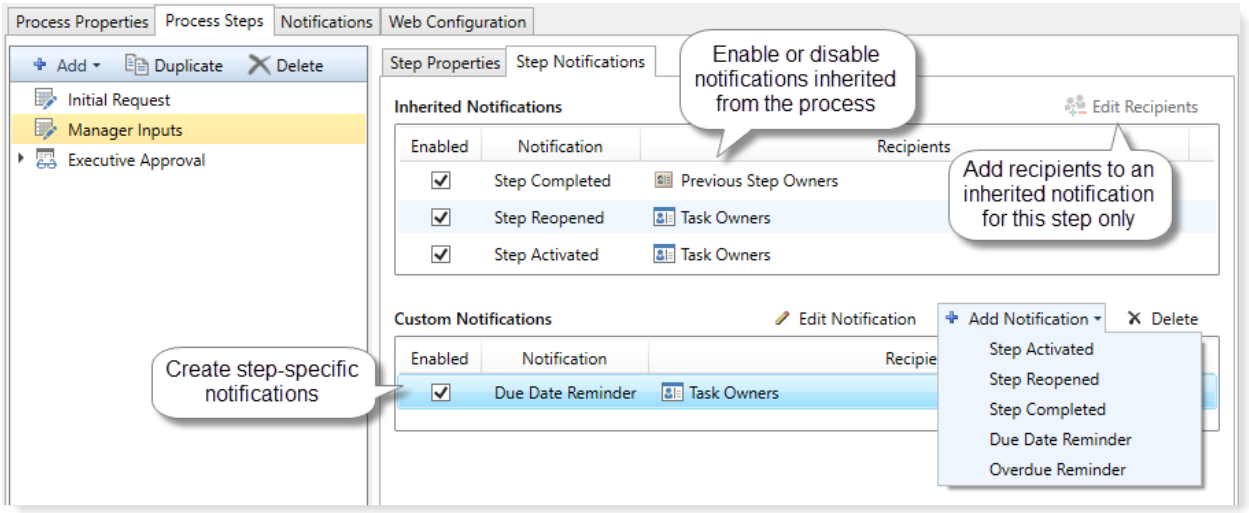
- The delivery method for the notification (email, Notifications task pane, or both)

- The urgency of the notification
- The recipients of the notification
- The notification message contents
- The notification reminder schedule (for reminder notification types only)

Defining notifications at the step level for a plan file process

For each step in a plan file process definition, you can configure notifications as follows:

- You can manage inherited notifications for the step. These are notifications that the step inherits from the default process-level notifications. Inherited notifications can be enabled or disabled, and you can optionally add recipients for the current step.
- You can define custom notifications for the step. These notifications only apply to the current step.



NOTE: If multiple instances of the same notification type apply to a step, then each instance will be sent when the notification is triggered. For example, if a step has an inherited Step Activated notification as well as a custom Step Activated notification, then both notifications will be sent (unless one of the notifications is disabled).

Manage inherited notifications for a step

You can manage inherited notifications for the individual steps in a process. All steps inherit the default notifications defined at the process level. You can enable or disable inherited notifications at the step level, and you can add recipients at the step level.

To manage inherited notifications for a step, go to the **Process Steps** tab in the **Edit Process** dialog. Select the step, then go to the **Step Notifications** sub-tab. Any existing inherited notifications for the step display in the **Inherited Notifications** grid.

- Use the **Enabled** check box to enable or disable an inherited notification. If enabled, the notification will be sent for this step; if disabled, the notification will not be sent.

  Whether an inherited notification is enabled by default for a step depends on the choices made when the notification was created at the process level.

- To add recipients to an inherited notification, select the notification in the grid and then click **Edit Recipients**. For more information, see Adding step-specific recipients to inherited notifications.

The only inherited notification property that can be customized at the step level is the recipients. If you want to customize the text of an inherited notification for use with a specific step only, then you should do one of the following (depending on what you want to accomplish):

- Disable the inherited notification and instead create a custom notification of the same type for the step.

  OR

- Leave the inherited notification enabled and create a custom notification of the same type for the step, but send each notification to different recipients.

Inherited notifications for multiple approvals steps

Multiple approvals steps can only inherit certain types of notifications from the process. This only applies to the parent subprocess step itself. The child steps of the subprocess can inherit all notification types as normal.

The only notification types that a multiple approvals step can inherit are:

- **Step Completed**: When all sub-steps in the multiple approvals step have been completed, the Step Completed notification will be sent.
- **Step Rejected**: If any of the approval sub-steps are rejected, the Step Rejected notification will be sent for the parent multiple approvals step. Note that this type of notification should be defined at either the parent level or the child level, but not both (unless you want to send each notification to different recipients).

Define custom notifications for a step

You can define custom notifications for each step in a process. The custom notifications defined at the step level only apply to that step. If the process is already active, any changes will apply to new notifications delivered after that point.

To define custom notifications for a step, go to the **Process Steps** tab in the **Edit Process** dialog. Select the step, then go to the **Step Notifications** sub-tab. Any existing custom notifications defined for the step display in the **Custom Notifications** grid.

To add a custom notification:

1. Click **Add Notification**, then select the notification type that you want to add. For more information on the available notification types, see Notification types for plan file processes.
2. In the **Edit Process Notification** dialog, define the properties for the new notification. For more information, see Notification properties for plan file processes. Note the following:
    - Most newly added notifications do not have any default recipients. You must add the desired recipients before the notification is valid for use. The exception is reminder notification types—these notifications go to task owners by default.
    - Newly added notifications do not have any defined message content. You must define this content before you can save the notification.
3. Click **OK** to save the notification.

The notification is added to the grid, and by default it is enabled for the step. You can disable it if desired, if you want to temporarily turn off the notification for the step.

To delete a custom notification:

- Select the notification in the grid, and then click **Delete**.

The deleted notification is removed from the step.

To edit a custom notification:

- Double-click the notification in the grid. You can also select the notification in the grid and then click **Edit Notification**.

Within the **Edit Process Notification** dialog, you can edit notification properties such as:

- The delivery method for the notification (email, Notifications task pane, or both)
- The urgency of the notification
- The recipients of the notification
- The notification message contents
- The notification reminder schedule (for reminder notification types only)

Custom notifications for multiple approvals steps

You can define custom notifications for multiple approvals steps. The process is the same as for normal steps. However, only Step Completed and Step Rejected notifications can be defined for the parent step. The child steps of the subprocess can use all notification types as normal.

Customizing notification content for plan file processes

The default Step Activated and Step Reopened notifications for plan file process definitions have default content that you can use as is, or you can customize it as desired. When defining all other notifications, the content is entirely up to you—there is no default content.

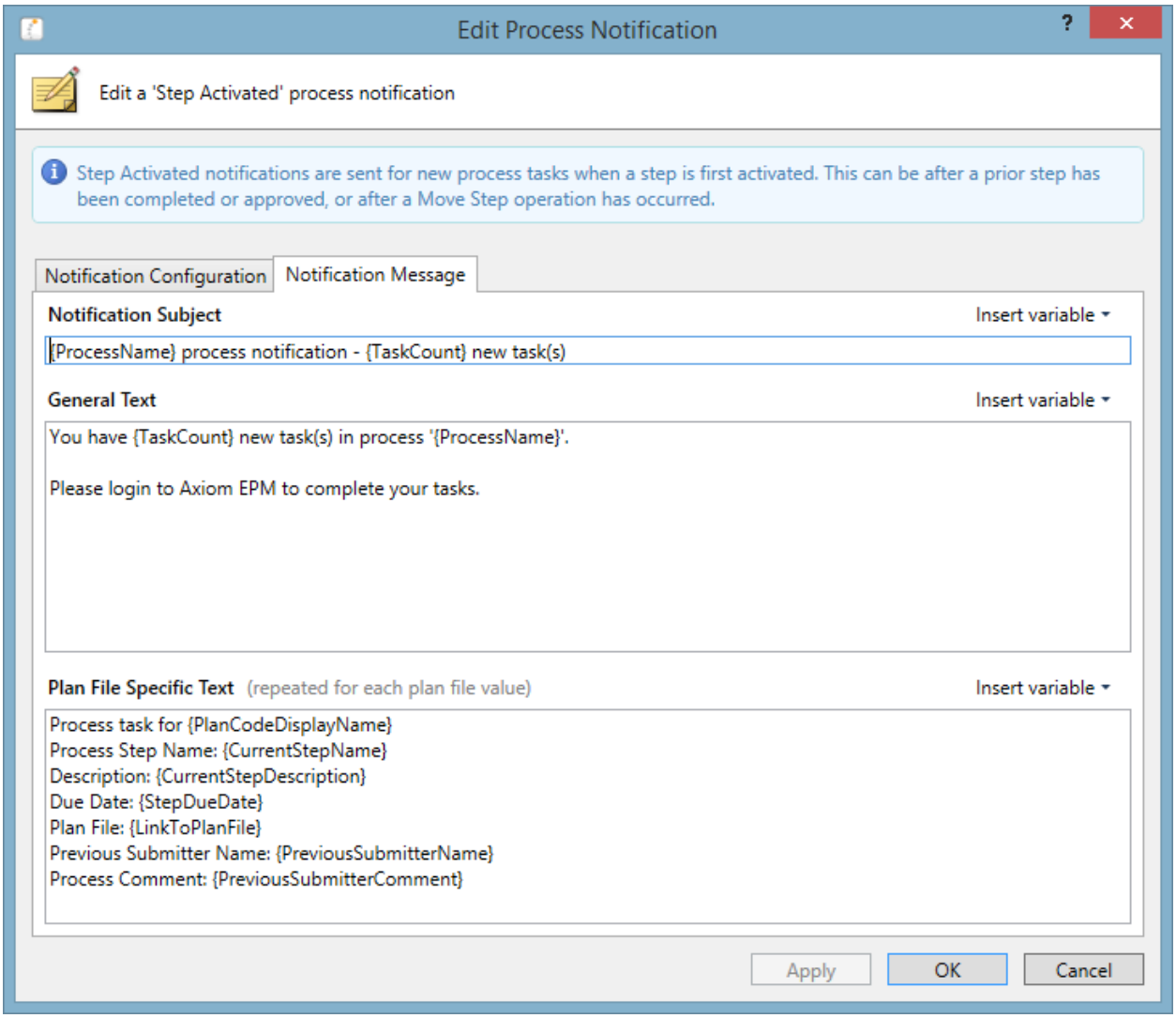
All notification content is defined in the **Notification Message** tab of the **Edit Process Notification** dialog. To access this dialog, go to the **Notifications** tab for the process or the **Step Notifications** tab for a step, and then add or edit a notification.

NOTE: If a step has inherited a notification from the process level, the content of that notification cannot be edited at the step level. You must go to the process level to edit the content of the inherited notification.

Plan file processes support a set of process variables that can be used to include process information and plan file information in notification content. For example, you can return the name of the process, the plan code and description of the plan file, the name of the step, and the due date of the step.

Notification message sections

Each notification message in a plan file process has three sections—the **Notification Subject**, the **General Text**, and the **Plan File Specific Text**. All sections for the notification must have some content in order to be valid.



Example plan file process notification

The subject is rendered as the email subject line and/or as the notification title in the Notifications task pane. The body text consists of the general text followed by one or more blocks of plan file-specific text. This is because plan file process notifications can contain the information for multiple plan files at a time. For example, if a plan file process is activated and a user is assigned to 5 plan files for the first step, then that user will receive one notification for all 5 plan files (instead of receiving 5 separate notifications).

Therefore, when defining notifications for plan file processes, the task-related information should be placed in the **Plan File Specific Text** section instead of in the general text section. This allows the task-related information to be populated with the unique information for each plan file covered by the notification.

Process variables

Process variables can be used in all sections of the notification message, although certain variables can only be used in certain sections. The variables use standard variable syntax in Axiom Software—for example: `{StepDueDate}`.

Use the **Insert variable** menu for the current section to insert a variable into the text. The menu displays only the variables that are currently valid for use, based on the current section and the step type. Although you can manually type the variables, it is recommended to use the menu to ensure that you only use variables that are valid for the current section. When you choose a variable from the menu, it is displayed in plain text—for example, Due Date for `{StepDueDate}`.

General variables

The following variables return general information about the process and its steps.

NOTE: Certain variables may resolve to different values for each plan file included in the notification. In this case, the variable should only be placed in the plan file-specific section and not in the generic text section.

Variable	Description	Notification Types
{CompletingUserComment}	The comment made by the user who completed the step. • This variable resolves to blank if no comment was entered. • If the step that was completed was a multiple approvals step, then this variable resolves as a list of sub-steps, completing users, and comments, such as: Sub-step 1 name - user name - comment Sub-step 2 name - user name - comment	Step Completed
{CompletingUserName}	The name of the user who completed the step. • If the step that was completed was a multiple approvals step, then this variable resolves as a list of sub-steps and completing users, such as: Sub-step 1 name - user name Sub-step 2 name - user name	Step Completed

Variable	Description	Notification Types
{CurrentStepName}	Name of the current step.	All notification types
{CurrentStepDescription}	Description of the current step.	All notification types
{CurrentStepNumber}	Number of the current step.	All notification types
{DaysPastDue}	Number of days past the due date for the current step.	Due Date Reminder, Overdue Reminder
{DaysTilDueDate}	Number of days until the due date for the current step.	Due Date Reminder, Overdue Reminder
{OwnerFullName}	The full name of the current task owner.	Step Activated, Step Reopened, Due Date Reminder, Overdue Reminder
{NextStepDueDate}	The due date of the next step in the process. • If the next step is a multiple approvals step, then this variable resolves as a list of sub-steps and due dates, such as: Sub-step 1 name - due date Sub-step 2 name - due date • If the completed step was a sub-step of a multiple approvals step, and the parent step is still active, then this variable resolves to text such as "N/A - parent step is not complete". • If the completed step was the last step in the process, then this variable resolves to text such as "N/A - the process is complete".	Step Completed, Step Rejected

Variable	Description	Notification Types
{NextStepName}	The name of the next step in the process. • If the next step is a multiple approvals step, then this variable resolves as follows: Multiple Approvals Step Name (Comma-separated list of sub-step names) • If the completed step was a sub-step of a multiple approvals step, and the parent step is still active, then this variable resolves to text such as "N/A - parent step is not complete". • If the completed step was the last step in the process, then this variable resolves to text such as "N/A - the process is complete".	Step Completed, Step Rejected
{NextStepOwner}	The owner of the next step in the process. • If the next step is a multiple approvals step, then this variable resolves as a list of sub-steps and owners, such as: Sub-step 1 name - user name Sub-step 2 name - user name • If the completed step was a sub-step of a multiple approvals step, and the parent step is still active, then this variable resolves to text such as "N/A - parent step is not complete". • If the completed step was the last step in the process, then this variable resolves to text such as "N/A - the process is complete". • If the owner is a role, then this variable resolves as a comma-separated list of all owners in the role.	Step Completed, Step Rejected

Variable	Description	Notification Types
{PreviousStepName}	The name of the previously active step in the process. • This resolves to N/A for the first step in the process when used in Step Activated notifications. • If the previous step was the last-completed step of a multiple approvals step, then this variable resolves as follows: Multiple Approvals Step Name (Comma-separated list of sub-step names)	Step Activated, Step Reopened
{PreviousSubmitterComment}	The comment made by the user who completed the previously active step. • This resolves to N/A for the first step in the process. For other steps, it resolves to blank if no comment was entered. • If the previous step was a multiple approvals step, then this variable resolves as a list of sub-steps, submitters, and comments, such as: Sub-step 1 name - user name - comment Sub-step 2 name - user name - comment	Step Activated
{PreviousSubmitterName}	The name of the user who completed the previously active step. • This resolves to N/A for the first step in the process. • If the previous step was a multiple approvals step, then this variable resolves as a list of sub-steps and submitters, such as: Sub-step 1 name - user name Sub-step 2 name - user name	Step Activated
{ProcessName}	The name of the process (display name if defined, process name if not).	All notification types

Variable	Description	Notification Types
{RecipientFirstName}	The first name of the notification recipient.	All notification types
{RecipientFullName}	The full name of the notification recipient.	All notification types
{RejectingUserComment}	The comment made by the user who rejected the step (or in the case of On Demand Process Aborted, the user who aborted the plan file in the process). This variable resolves to blank if no comment was entered.	Step Reopened, Step Rejected, On Demand Process Aborted
{RejectingUserName}	The name of the user who rejected the step (or in the case of On Demand Process Aborted, the user who aborted the plan file in the process).	Step Reopened, Step Rejected, On Demand Process Aborted
{StepDueDate}	The due date for the step.	Step Activated, Step Reopened, Due Date Reminder, Overdue Reminder
{TaskCount}	The count of tasks covered by this notification.	Step Activated, Step Reopened, Due Date Reminder, Overdue Reminder

Plan file process variables

With the exception of `{FileGroupName}`, these variables will resolve to different values for each plan file task included in the notification, therefore, these variables should only be placed in the plan file-specific section and not in the generic text section.

Variable	Description	Notification Types
{ColumnValue: *ColumnName*}	Return a value from a specified column, for the current plan file. The column can be any column from the plan code table, or from a table that the plan code table links to. For example, imagine that you want to display the assigned region for the current plan code, and Region is a column in the plan code table. You can specify `{ColumnValue:Region}` as a process variable. When you select Column Value from the **Insert Variable** list, you will be prompted to select a column. The variable will then be inserted using the correct syntax for the selected column.	All notification types
{FileGroupName}	The name of the file group for the plan file process.	All notification types
{LinkToPlanFile}	A hyperlink that opens the plan file for the current task. See additional notes following this table.	All notification types
{PlanCode}	The plan code for the current task. For example: `100`.	All notification types
{PlanCodeDescription}	The description of the current plan code. The description is taken from the designated description column(s) for the plan code table.	All notification types
{PlanCodeDisplayName}	The full name of the current plan code, using the dimension name, the code, and the description. For example: `Dept 100 (Development)`.	All notification types

Note the following when using the `{LinkToPlanFile}` variable:

- If the plan file is form-enabled, then the hyperlink will open the file as a form or as a spreadsheet depending on the step-level setting **Open forms-enabled plan files as**. For email notifications, if the step is configured to open the file as a form, then the form will be opened in the Web Client (browser) in all cases. For notifications delivered to the Notifications task pane, the option to open the form in the browser or the Desktop Client will be honored (except in Excel 2013/2016, where the form will always be opened in the browser).
- If the plan file is not form-enabled, the hyperlink opens the plan file as a spreadsheet in the user's default Desktop Client.

- When the plan file is opened as a spreadsheet and the notification is sent via email, the hyperlink uses the same format as hyperlinks generated using GetDocumentHyperlink, including the differing URL format for systems using SAML or OpenID Authentication.
- You can optionally specify a language for the Axiom Software session that the file will open in—for example, to always open the file in English regardless of the regional format of the current operating system. The syntax is as follows: `{LinkToPlanFile;LanguageCode}`. For example: `{LinkToPlanFile;en-US}` to open in English.

Customizing recipients for plan file process notifications

When defining the notifications for a plan file process definition, you can customize the recipients for each notification. You can choose specific users and roles to receive notifications, and you can select defined classes of recipients such as task owners and the process owner.

Recipient types

The following recipient types are available for plan file process notifications. Certain recipients are only available for certain notification types.

Recipient Types	Description
Task Owners	The notification will be sent to the current task owners for the plan file. This recipient type is not available for the Step Completed or Step Rejected notification types, because once the step is completed it has no current owners.
User	Select any named user defined within Axiom Software security to send the notification to that user. This recipient type is available for any notification.
Role	Select any named role defined within Axiom Software security to send the notification to all users in that role. The role recipient is only available for Step Completed and Step Rejected notification types.
Process Owner	The notification will be sent to the process owner. If the process uses a grouping column and has assigned group owners, then the notification will also be sent to the relevant group owner for the plan file. This recipient type is available for any notification.
Previous Step Owners	The notification will be sent to the users who completed all previous steps in the process for the plan file. This recipient type is only available for the Step Completed and Step Rejected notification types. For more information, see Behavior of Previous Step Owners recipient type.

Recipient Types	Description
Process Initiator	The notification will be sent to the user who initiated the process for the plan file. This recipient type is only available for use in plan file processes for on-demand file groups, and only for Step Activated, Step Completed, and Step Rejected notification types. In most cases, the process initiator is the same user who created the on-demand plan file, but it does not have to be. For more information, see Setting the process initiator for plan files.

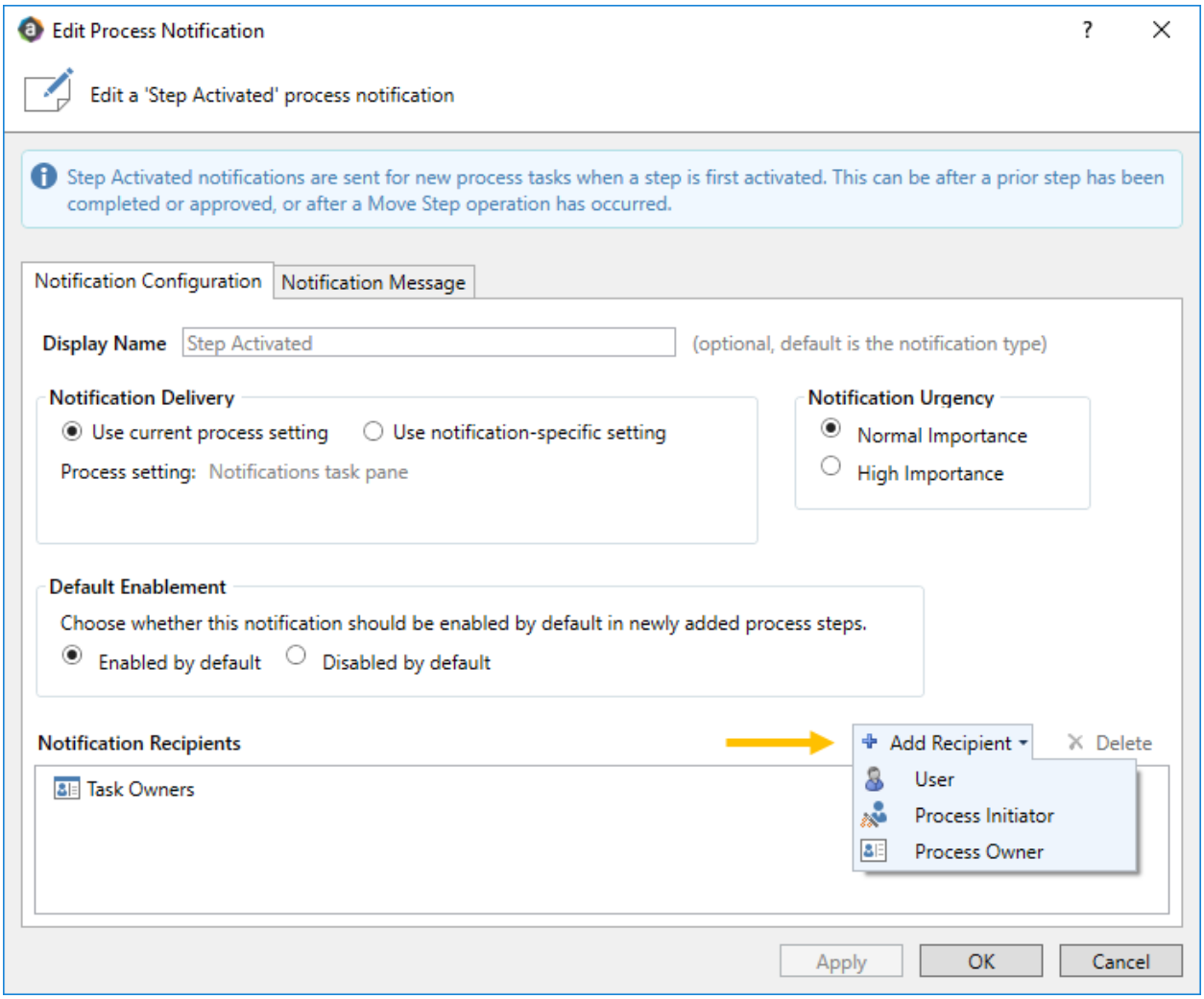
Generally speaking, the Task Owners recipient type is intended to be used when you want to inform a user that they have a task to complete in the process, or to remind the user that they need to complete the task. All other recipient types are intended to inform interested users about what is currently going on with the process. For example:

- A process owner may want to receive a notification as each step in the process is completed, to help them keep tabs on the process. Similarly, there may be a specific user or role who is also interested in receiving this information, for the entire process or perhaps for a specific step.
- The initiator of an on-demand plan file may want to be informed of the status of their submission as it progresses through the steps of process. Similarly, the previous step owners of a plan file may want to be informed of the status of that plan file as it progresses.

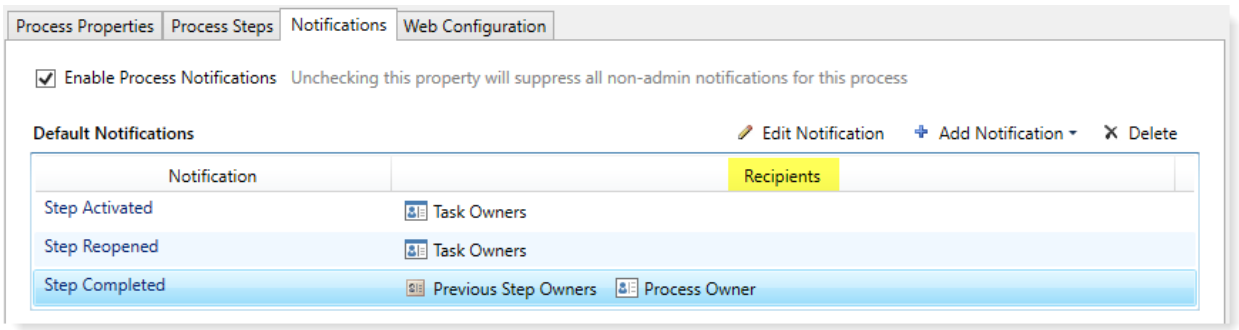
When using different types of recipients for the same notification type, in most cases you should define multiple notifications with different text. The text for task owners should be action-oriented (such as "You have a new task to complete for plan file 3400"), whereas the text for interested parties is more informational ("User jdoe completed step Manager Review for plan file 3400").

Defining recipients for a notification

When you create or edit a notification at any level of the process, you can specify the recipients on the **Notification Configuration** tab of the **Edit Process Notification** dialog. The **Add Recipient** list only shows the recipients that are valid for the current notification type and process type.



Once the notification has been saved, you can see the list of recipients in the notifications grid:

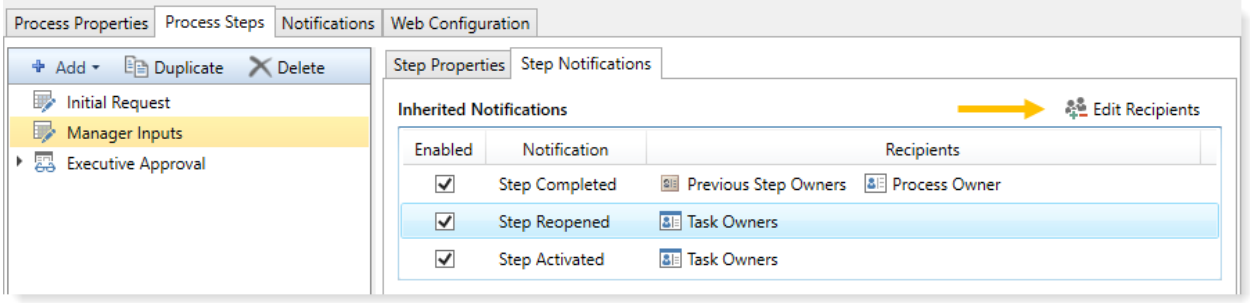


Adding step-specific recipients to inherited notifications

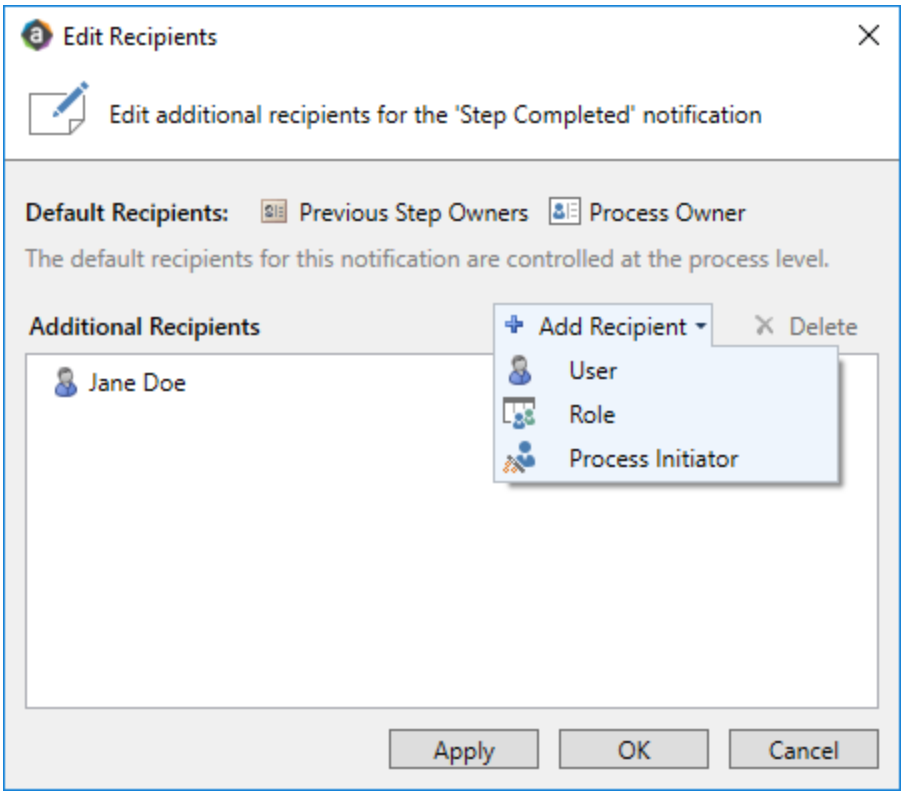
When a step inherits a notification from the process level or the subprocess level, you have the option of adding recipients for that step only.

For example, imagine that you want to notify a specific user when a particular step completes. You can always choose to create a custom notification for that step and send it to that user. However, if an inherited Step Completed notification is already available to the step, then you can just add the user to that notification.

To add the user to the inherited notification, select the step and go to the **Step Notifications** sub-tab. Select the notification in the grid, then click **Edit Recipients**.



In the **Edit Recipients** dialog, you can see the default recipients defined for the inherited notification at the top of the dialog. You cannot remove any of these recipients, but you can add a recipient for this step only. In the following screenshot, the user Jane Doe will be included in the notification when this step is completed.



- To add a recipient, click **Add Recipient** and then select the type of recipient to add. Any recipient types that are already included in the default recipients are not listed here.
- To remove an additional recipient, select the recipient and then click **Delete**.

Any recipients listed in the **Additional Recipients** section will receive the notification for this step only.

Behavior of Previous Step Owners recipient type

The Previous Step Owners recipient type can be used to notify the previous step owners of a plan file about the status of subsequent process steps. For example, users who completed the previous steps of the process for the plan file may want to know when a certain milestone step of the process is completed, or when the final step of the process is completed. This notification type has some special behaviors depending on the particular process configuration.

For purposes of determining the users who are considered "previous step owners" for the plan file, only the users who *completed* previous steps qualify. Note the following:

- Assigned step owners who did not complete a step are not included as a recipient. For example, if the owner of a step was a role with three users, only the user who actually completed the step will receive the notification.
- If a previous step was completed by an administrator or the process owner (overriding step ownership), then that completing user will receive the notification instead of the assigned step owner.
- If a previous step was skipped or not completed (due to a **Move current step** operation), then that step will not have a completing user to receive the notification.

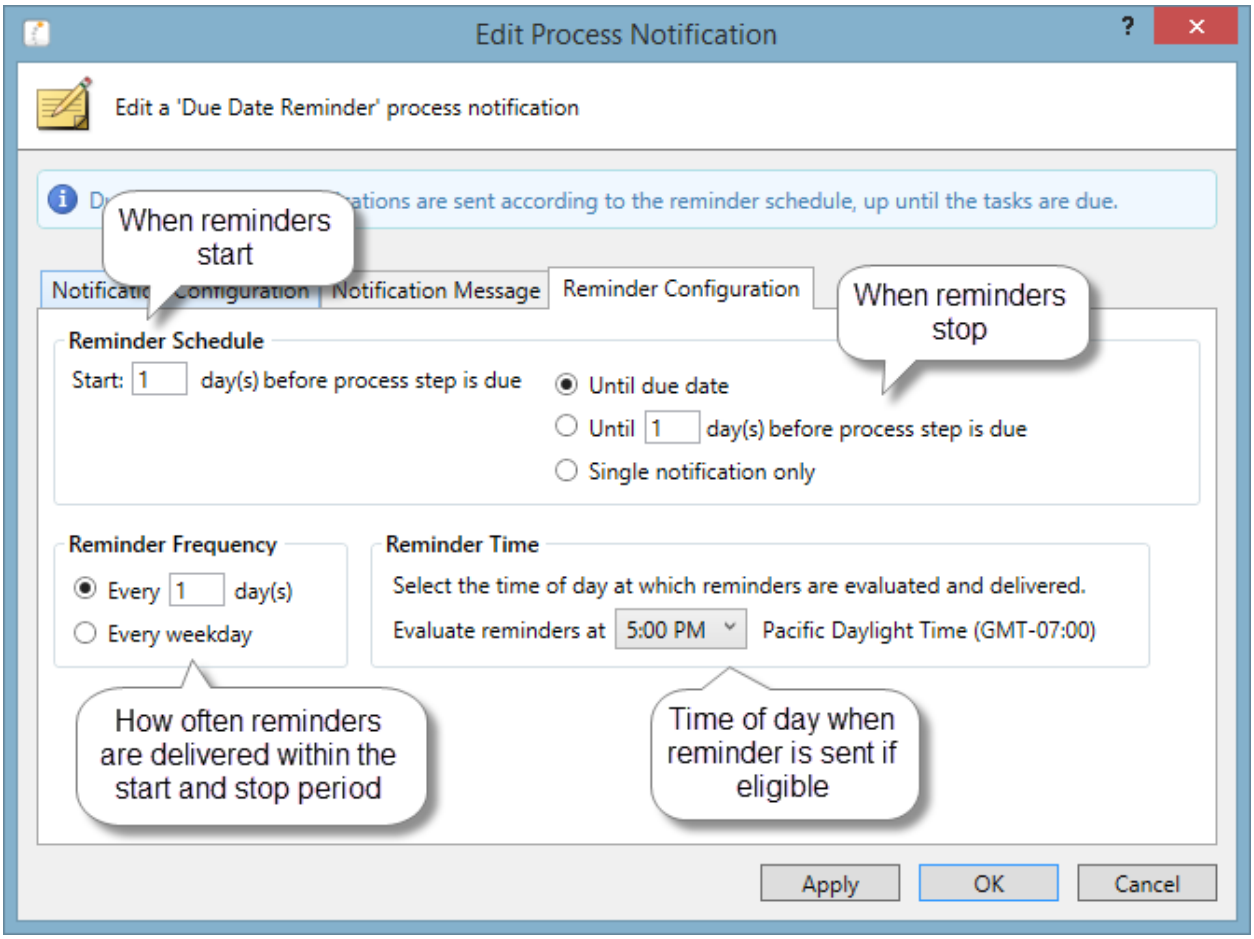
If a process definition contains a multiple approvals step, the previous step owners are treated as follows:

- When a sub-step of the multiple approvals step is completed, the other sub-steps are ignored for purposes of determining previous step owners. This is because the sub-steps do not have an order, so the concept of "previous" does not apply. However, the step owners of steps completed before the multiple approvals step will receive a notification.
- When steps after the multiple approvals step are completed, the previous step owners of all sub-steps will receive a notification.

Setting up schedules for reminder notifications

When defining a Due Date Reminder or Overdue Reminder notification for a process definition, you must set the schedule for these reminders.

Within the **Edit Process Notification** dialog, the schedule is defined on the **Reminder Configuration** tab. This tab is only present for reminder notifications—all other notifications are triggered by step events such as step activation or completion.



Example Reminder Configuration tab

Due Date Reminder schedules

To decide on the appropriate Due Date Reminder schedule, you should consider the following:

- How many days before the due date do you want the reminders to start? This will impact the start of the schedule.
- How many reminders do you want to send / how frequently should the user be reminded? This will impact the reminder frequency and the end of the schedule.
- Do you want to send a reminder on the due date itself?

If you want to send reminders prior to the due date *and* on the due date itself, keep in mind that you may want to use different text for these notifications. For example, when sending reminders before the due date, you probably want to include text such as: "This is a reminder that your task for Step 'Import Data' is due in 3 days." If you use the same text on the due date, it will resolve as "due in 0 days"—which is technically true, but not as clear as saying "this task is due today." You might also want to use stronger wording in the notification on the due date itself. To do this, you can create two Due Date Reminder notifications, one to be sent before the due date, and one to be sent only on the due date. Each notification would have different text, and use a different reminder schedule.

To set the reminder schedule for a Due Date Reminder notification, complete the following settings on the **Reminder Configuration** tab:

1. In the **Reminder Schedule** section, set the start date for the reminder by editing the setting **Start _ _ day(s) before process step is due**. Enter any number of days before the due date. By default, this is set to 1 day before the due date.

   For example, if the step is due on 1/10/2016 and you set the start date to 3 days before the due date, then reminders will start on 1/7/2016.

   You can specify 0 days as the start date if you only want to send a reminder on the due date itself.

2. In the **Reminder Schedule** section, set the stop date for the reminder by selecting one of the following options:
   - **Until due date** (default): Reminders will be sent from the start date until the due date (including the due date itself).
   - **Until __ day(s) before process step is due**: Reminders will be sent from the start date until the number of days specified before the due date. By default this is set to 1 day before the due date.
   - **Single notification only**: The reminder will be sent once, on the start date.
3. In the **Reminder Frequency** section, select the frequency of the notifications:
   - **Every __ day(s)** (default): The reminder notification will be sent according to the specified day interval, from the start date to the end date. By default this is set to send a notification every 1 day, meaning a notification will be sent each day. All days of the week are included when choosing this option, including Saturday and Sunday.
   - **Every weekday**: A reminder notification will be sent each weekday (Monday-Friday), from the start date to the end date. No notifications will be sent Saturday or Sunday.

     NOTE: If **Every weekday** is selected and the configured schedule causes a notification to fall on the weekend, that notification is simply not sent—it is not moved to the nearest weekday. This means that some schedule configurations may not send any notifications if the entire schedule happens to fall on the weekend. Specifically, you should not select this option if you are only sending a single notification, in case that single notification falls on the weekend.
4. In the **Reminder Time** section, select the time of day at which this reminder will be evaluated and delivered. You can select any hour from 12:00 AM to 11:00 PM. By default, this is set to 5:00 PM. See How reminder schedules work for more information.

The following table contains some example schedules and the resulting notifications. The frequency is assumed as every 1 day in these examples.

Example	Start Date	Stop Date	Resulting Notifications
Reminders before and on the due date	3 days before	Until due date	4 - one each on the three days before the due date, and one on the due date
Reminders only before the due date	3 days before	Until 1 days before step is due	3 - one each on the three days before the due date, none on the due date
Reminder only on the due date	0 days before	Single notification	1 - one on the due date

The frequency impacts how many of these notifications are ultimately sent. If the frequency is set to every 2 days in the first example, then only 2 of the 4 eligible notifications will be sent. Similarly if the frequency is set to weekdays only, then the number of notifications sent depends on how many of those days (if any) fall on a weekend.

Overdue Reminder schedules

To decide on the appropriate Overdue Reminder schedule, you should consider the following:

- How many days after the due date do you want the reminders to start?
- How many reminders do you want to send / how frequently should the user be reminded?

Of course, at a certain point, if a task is persistently overdue then some other action should be taken. Your organization may run reports that are intended to inform the process owner about tasks that are overdue, so that they can take action accordingly. Another option in this case would be to create an Overdue Reminder notification that goes to the process owner or to other designated users. For example, your organization may have a rule that if a task is 3 days late, the situation should be escalated to the task owner's manager. You could have two Overdue Reminder notifications—one that goes to the task owners when the task becomes overdue, and another that goes to the process owner when the task is 3 days late.

To set the reminder schedule for an Overdue Reminder notification, complete the following settings on the **Reminder Configuration** tab:

1. In the **Reminder Schedule** section, set the start date for the reminder by editing the setting **Start _ _ day(s) after process step is due**. Enter any number of days after the due date. By default, this is set to 1 day after the due date.

   For example, if the step is due on 1/10/2016 and you set the start date to 1 day after the due date, then reminders will start on 1/11/2016.

2. In the **Reminder Schedule** section, set the stop date for the reminder by selecting one of the following options:
    - **No end date** (default): Reminders will be sent from the start date until the step is completed.
    - **Until __ day(s) after process step is due**: Reminders will be sent from the start date until the number of days specified after the due date. By default this is set to 1 day after the due date.
    - **Single notification only**: The reminder will be sent once, on the start date.
3. In the **Reminder Frequency** section, select the frequency of the notifications:
    - **Every __ day(s)** (default): The reminder notification will be sent according to the specified day interval, from the start date to the end date. By default this is set to send a notification every 1 day, meaning a notification will be sent each day. All days of the week are included when choosing this option, including Saturday and Sunday.
    - **Every weekday**: A reminder notification will be sent each weekday (Monday-Friday), from the start date to the end date. No notifications will be sent Saturday or Sunday.

      NOTE: If **Every weekday** is selected and the configured schedule causes a notification to fall on the weekend, that notification is simply not sent—it is not moved to the nearest weekday. This means that some schedules may not send any notifications if the entire schedule falls on the weekend. Specifically, you should not select this option if you are only sending a single notification, in case that single notification falls on the weekend.
4. In the **Reminder Time** section, select the time of day at which this reminder will be evaluated and delivered. You can select any hour from 12:00 AM to 11:00 PM. By default, this is set to 5:00 PM. See How reminder schedules work for more information.

How reminder schedules work

Reminder notifications are evaluated once per hour using the system Scheduler job **System.ProcessNotifications**.

This job checks all active steps in all active processes to see if these steps have any configured reminder notifications.

- If a step has reminder notifications, the job checks the due date of that step and the schedule of those notifications to see if any are eligible to be sent.
- If the notification is eligible to be sent, and the configured reminder time of the notification falls within the current hour in which the job is running, the notification will be sent.

Under normal circumstances, this setup results in only one reminder being sent per day, for each eligible step / notification combination. However, a reminder notification could be sent multiple times in a day if either of the following occurs:

- The reminder time is edited for an active process.

- The schedule for the system job is changed so that the job runs multiple times in an hour (or the job is manually run again within an hour).

All times for this process are evaluated on the Axiom Application Server. When you select a time, you select it based on your local time zone (shown next to the selected time for your reference). This selected time is converted to Coordinated Universal Time (UTC) when it is saved to the server, so that the reminders will be evaluated relative to your selected local time.

Reminder schedules are evaluated for each individual plan file that is active in the step.

Notification properties for plan file processes

The following properties can be set for each notification defined in a plan file process.

Notification Configuration tab

This tab defines general properties for the notification.

Item	Description
Display Name	Optional. The name of the notification. This name is for use when configuring notifications for the process; it is not displayed anywhere in the actual notification to users. If left blank, the notification type is used as the display name (such as "Step Activated"). If you have more than one of a particular notification type, you should define a unique display name for each to avoid confusion.
Notification Delivery	Specifies how the notification will be delivered to recipients. By default, the option **Use current process setting** is enabled, which means that the notification will be delivered according to the process-level delivery settings on the **Notifications** tab. If you want to override the process-level settings for this particular notification, then select **Use notification-specific setting** instead. If **Use notification-specific setting** is enabled, then select one of the following: • **Notification task pane**: Display the notification in the recipient's Notifications task pane. • **Email notification** (default): Send the notification by email, using the recipient's email address as defined in Axiom Security. • **Both notifications**: Send the notification by email and display it in the Notifications task pane.

Item	Description
Notification Urgency	Specifies the urgency of the notification. Select one of the following: • **Normal Importance**: The notification will not be called out as having any particular importance. • **High Importance**: The notification will be flagged as important. In the Notifications task pane, the notification will display with an exclamation point. For email notifications, the display depends on the recipient's email client configuration.
Default Enablement	Specifies whether the notification will be enabled by default in newly added process steps that are eligible to inherit the notification. Select one of the following: • **Enabled by default** (default): The notification will be enabled by default in newly added process steps. • **Disabled by default**: The notification will be disabled by default in newly added process steps. This setting is only present when defining default notifications for the process. It does not display for step-specific custom notifications. This setting does not impact whether a notification will be enabled in existing steps. When you create a new default notification, you will be prompted to choose whether you want the new notification enabled in existing steps.
Notification Recipients	The recipients of the notification. If recipients have already been selected, they will display in the Notification Recipients box. • To add recipients, click **Add Recipient** and then click the type of recipient to add. • To delete a recipient, select the recipient in the Notification Recipients box and then click **Delete**.

Notification Message tab

This tab defines the message for the notification. All message sections for the notification must have some content in order to be valid. For more information, see Customizing notification content for plan file processes.

Item	Description
Notification Subject	Defines the subject line for the notification.
General Text	Defines the generic message body for the notifications. This text displays at the start of the notification, before any plan file-specific task details.

Item	Description
Plan File Specific Text	Defines task-specific text for the current plan file. This text will be repeated in the notification for each plan file covered by the notification. For example, when a plan file process is started and the first step is made active, one user may be the assigned owner for 5 different plan files. That user would receive one notification with the subject line and general text, followed by 5 different "blocks" of plan file-specific text for the 5 plan files.

Reminder Configuration tab

This tab defines the reminder schedule for the "reminder" notifications. This tab only applies to the following notification types: Due Date Reminder and Overdue Reminder. For more information, see Setting up schedules for reminder notifications.

Item	Description
Reminder Schedule	Specifies when reminder notifications will start, and how long they will continue. To specify when reminder notifications will start (the start date): • For due date reminders, enter the number of days before the due date that you want reminders to start. By default, reminders start 1 day before the step is due. • For overdue reminders, enter the number of days after the due date that you want reminders to start. By default, reminders start 1 day after the step is due. To specify how long reminder notifications will continue (the stop date), select one of the following: • **Until due date** / **No end date** (default): For Due Date Reminders, notifications will continue until the due date is reached. For Overdue Reminders, notifications will continue until the step is completed. • **Until __ day(s) before / after process step is due**: Notifications will continue until the specified number of days before the step is due (for Due Date Reminders) or after the step is due (for Overdue Reminders). By default this is set to 1 day. • **Single notification only**: The notification will only be sent once, on the specified start date.

Item	Description
Reminder Frequency	Specifies the frequency of reminder notifications between the start date and the stop date. Select one of the following: • **Every X days**: A reminder notification will be sent according to the specified day interval. By default this is set to send a notification every 1 day, meaning a notification will be sent each day. All days of the week are included when choosing this option, including Saturday and Sunday. • **Every weekday**: A reminder notification will be sent each weekday (Monday-Friday). No notifications will be sent Saturday or Sunday. This option does not apply if the notification is set to **Single notification only**.
Reminder Time	Specifies the time of day when reminders will be evaluated and delivered. Select any hour from 12:00AM to 11:00PM. By default, this is set to 5:00 PM.

Managing Active Plan File Processes

Once a plan file process has been created, administrators and process owners can perform tasks such as starting or stopping the process, viewing overall process status and process history, and managing step status.

Management tasks can be performed from the following locations:

- On the **Axiom** tab, in the **Administration** group, go to **Manage > Process Management > Current Processes**.
- From the **Process** task pane, click **View status** (only available for active processes).

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

Starting and stopping plan file processes

Once plan file process definitions have been created for a file group, administrators and process owners can perform tasks such as starting or stopping a process.

Starting a plan file process

Once you have created a plan file process definition for a file group and you are ready to begin the process, you can start it.

- If the process is for a standard file group, then starting the process will generate a task for each assigned plan file owner for step 1, and notifications will be sent (if applicable). You should make sure that plan files are ready to be worked on and that all assignments are finalized before starting the process.
- If the process is for an on-demand file group, then you must also designate the process as the **Plan File Process** for that file group (in the file group properties). In order for newly created plan files to be automatically started in the process, the process must be active and it must be designated as the Plan File Process.

When a process is started, all existing codes in the plan code table are started, except for those hidden using a ShowOnList column. The following additional exceptions may apply:

- If the process is for a standard file group, and a **Process Filter** has been specified on the process definition, then only plan files that meet the filter will be started. All other plan files in the file

group are not started in the process and do not display in the Process Status dialog. For more information, see Using a process filter to limit plan files in the process.

- If the process is for a standard file group, and a **Grouping Column** has been specified for the process definition, then you can optionally specify one or more groups of plan files to be started when the process is started. If a group is not started at this time, it can be started in the process later. For more information, see Managing a plan file process by groups.

NOTE: To start a process, you must have security access to all plan files that are eligible to be started in the process. Otherwise, the process is not started and you are informed of the issue. To determine the eligible plan files, the process considers the current ShowOnList status, the process filter (if applicable), and the selected groups to start (if applicable).

A process cannot be started if it contains any missing or invalid settings. If applicable, these validation errors display at the bottom of the dialog. You can click the link at the bottom of the dialog to be taken to the tab or step that contains the error. Once all errors are resolved, you can start the process.

To start a plan file process:

1. On the **Axiom** tab, in the **File Groups** group, click the button for the file group where you want to start the process. In the file group menu, click **Process Definitions** and then click the process definition that you want to start.

   TIP: You can also start processes using the **Process Manager** dialog (**Manage > Process Management > Current Processes**), and using the **Process Status** dialog.

2. In the **Edit Plan File Process** dialog, click **Start Process** in the top right-hand corner of the dialog.
3. At the confirmation prompt, click **OK** to start the process.

For more information on how the process responds to changes in the plan code table after the process is started, see Updating plan file processes for changes to the plan code table.

Stopping a plan file process

When you stop a process, all current tasks are deleted and the process status changes from Active to Aborted. If the process definition is later restarted, a new process instance will be created and the process will start over from the first step. There is no way to restart a particular process instance at the step it was on when it was stopped.

Generally speaking, you should not stop a plan file process except during testing or if the process has a configuration error that cannot be resolved in the active process (and therefore the process needs to be stopped, edited, and started over). For standard file groups, the process should be allowed to fully complete, at which point it will automatically stop. For on-demand file groups, the process should remain active to account for any new plan files added to the file group (unless the file group itself is no longer active and no new plan files will be created for it).

NOTES:

- To stop a process, you must have security access to all plan files in the process. Otherwise, the process is not stopped and you are informed of the issue. To determine the plan files in the process, the process considers the ShowOnList status (as of the point the process was started), the process filter (if applicable), and the selected groups to stop (if applicable).
- If the process uses a **Grouping Column**, then you can optionally stop all plan files in a group without stopping the overall process. This has the same effect as aborting all of the plan files in the group. For more information, see Managing a plan file process by groups. You are still required to have security access to all of the active plan files in the group.

To stop a process:

1. From the **Process** task pane, click **View status** for the applicable process.

   TIP: You can also stop processes using the **Process Manager** dialog (**Manage > Process Management > Current Processes**).

2. In the **Process Status** dialog, on the **Process View** tab, click **Stop process**.
3. At the confirmation prompt, click **OK**.

Completing a plan file process

As each plan file completes all of the steps in the process, the plan file will move to Completed status and will no longer be active in the process.

If the process is for a standard file group, then the process will be automatically completed once all plan files have completed the process. No action is necessary to mark the process as complete.

However, if the process is the designated Plan File Process for an on-demand file group, then the process will never automatically complete. It will stay active so that it is available when users create new on-demand plan files for the file group. If the process is no longer needed because the file group is no longer active, or because you no longer want new plan files to progress through the process, then you can stop the process as described in the previous section.

Axiom Software 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 the *Process Management Guide*.

Editing plan file processes

You can edit a plan file process as desired, regardless of whether it is currently active. The only restrictions are as follows:

- A step cannot be deleted if plan files are currently active in that step.
- A step cannot be moved to a different level in the process if plan files are currently active in that step. For example, if the step is currently a sub-step in a multiple approvals step, you cannot move the step to be a top-level step if plan files are currently active in that step.
- If a grouping column or a process filter is designated for the process, these settings cannot be changed once the process is started.

Note the following editing considerations:

- If you change the step name, description, or action of an active step, and any current step owners currently have the Process task pane open, they will need to refresh it in order to see the changes.
- If you change the step owner or due date of the active step, this will cause active tasks for the step to be regenerated with the new information, including sending a new Step Activated notification to new step owners (if applicable).
- If no plan files are active in a step, you can delete that step. Keep in mind that the deleted step will no longer show in reports or in the Process Status task pane, even if plan files have previously completed that step. If you need the step to continue to show in reports, you can instead configure it so that new plan files skip the step.
- If you add a step to an active multiple approvals step, the new step will be automatically activated in the process when you save the change to the process definition.

You should carefully consider the impacts of any changes before editing an active process, as certain edits may result in confusing or inconsistent process activity. For example, if some plan files have already completed step 3, and then you add a new step in between step 2 and step 3, the process progression and activity will be different for different plan files. This may be acceptable for an ongoing "on demand" plan file process, where you want to modify the process for the benefit of newly created plan files. However, it may not be acceptable for a one-time process for a traditional file group, where you expect all of the plan files to move through the same steps.

Moving plan files to different steps

Administrators and process owners can move one or more plan files to a different step in a plan file process.

There are two different options for moving a plan file to a different step. These options are intended to be used for different circumstances as follows:

- **Complete step** should be used when you need to override step ownership for a plan file, but the

step should be completed as normal and the plan file should move on to the next step. For example, the owner may have forgotten to complete the step before leaving for vacation, so they have asked an administrator to complete it for them. Using the **Reject** and **Approve** options serve the same purpose for approval steps.

- **Move current step** should be used when you need to make administrative adjustments to plan files in the process. When moving a plan file to a different step, the current task for the plan file is aborted instead of completed, and the plan file is made active in the target step. Any steps in between the aborted step and the target step are simply not started for the plan file.

Both of these actions can be performed in the **Process Status** dialog, which is accessible by clicking **View status** for the process in the Process task pane. The process definition also contains a link to open this dialog.

NOTE: This topic discusses the specialized behavior involved in moving plan files in a plan file process. If you have a general process definition within a file group, the behavior for that process is the same as for general process definitions within the Process Definition Library.

Completing steps for plan files (overriding step ownership)

As necessary, you can override step ownership and mark the active step as completed for one or more plan files. The process history will track both the original ownership assignment and the user who actually completed the step.

For example, imagine that the assigned user for a plan file performed the necessary task for the active step, but forgot to mark the step as complete before leaving on vacation. In this case, an administrator can mark the step as complete so that the plan file can continue in the process.

To complete a step for one or more plan files:

1. In the **Process Status** dialog, in the left-hand pane, select the step that you want to complete.
2. In the right-hand pane, in the **Plan File Details** section, select the plan files that you want to complete for the step.
   - You can use the Shift key or the CTRL key to select multiple plan files.
   - To select all plan files shown in the grid, click the **Select All** link at the top right-hand corner of the grid. If you have selected all plan files and now you want to clear this selection, click on any plan file in the grid.

   To find a particular plan file, you can use the filter box at the top of the grid, or you can sort and filter the grid using standard Axiom grid functionality.

   NOTE: The Process Status dialog is limited to showing the first 500 plan files that meet the current display criteria. If all plan files are not currently showing, a message displays at the bottom of the plan file grid. If you need to perform an action on all plan files, you can click **Retrieve all** in this message to load all plan files.

3. With the desired plan files highlighted in the dialog, click the appropriate button to complete the step:
    - For Edit Plan File steps, click **Complete step**.
    - For Approval steps, click **Approve step** to move the plan files forward to the next step, or **Reject step** to move the plan files back to a prior step.

      If the process is for an on demand file group, and if the ability to abort the plan file in the process has been enabled for the step, then the **Deny request** action is also available. The text of this action is customizable and may be different.
4. In the **Process Action** dialog, enter a comment to associate with the step completion (if desired), and then click **OK**.

The step is completed for the selected plan files just as if the owner had completed it (including any resulting notifications), except that you will be recorded as the completing user instead of the original owner.

NOTE: If **Save and validate plan file before advancing to next step** is enabled for the step you are completing, then plan files will be saved before the step is completed. If a plan file has any save errors, the step will not be completed for that plan file.

Moving plan files to different steps

As necessary, you can move plan files from their currently active step to a different step. The currently active step will be aborted instead of completed, and the plan files will become active in the target step.

Plan files can be moved as follows:

- If a plan file is active in a top-level step, then the plan file can be moved to any other top-level step.
- If a plan file is active in a multiple approvals step, then you can select the parent multiple approvals step and choose to move the plan file to any other step that is at the same level as the parent step. In this case, all sub-steps of the multiple approvals step are aborted for the plan file, and the plan file is moved to the selected step.

Plan files that have completed all steps are no longer active in the process and cannot be moved to any step. If a completed plan file needs to be placed back in a prior step, then you must first activate the plan file in the process (which starts it over at step 1) and then move it to the desired step. For more information on activating a plan file, see Starting new plan files in a plan file process.

To move one or more plan files to a different step:

1. In the **Process Status** dialog, do either of the following:
    - On the **Process View** tab, in the left-hand pane, select the step that you want to move plan files out of. From here, you can move any plan file that is currently active in this step.

      OR

- Go to the **Plan File View** tab. From this tab, you can see all plan files in the process, and you can move plan files that are active in different steps (as long as you want to move all of them to the same target step).

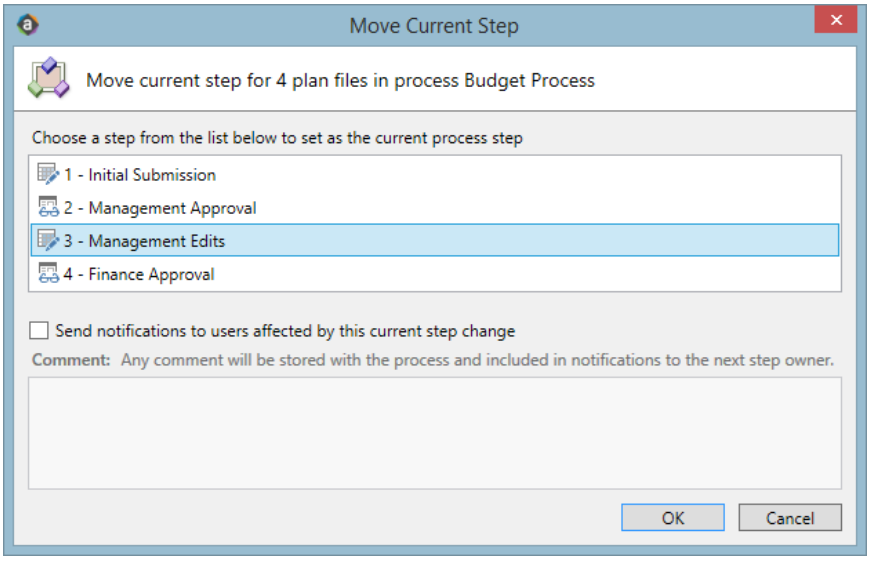
2. Select the plan files that you want to move to a different step.
   - You can use the Shift key or the CTRL key to select multiple plan files.
   - To select all plan files shown in the grid, click the **Select All** link at the top right-hand corner of the grid. If you have selected all plan files and now you want to clear this selection, click on any plan file in the grid.

   To find a particular plan file, you can use the filter box at the top of the grid, or you can sort and filter the grid using standard Axiom grid functionality.

   NOTE: The Process Status dialog is limited to showing the first 500 plan files that meet the current display criteria. If all plan files are not currently showing, a message displays at the bottom of the plan file grid. If you need to perform an action on all plan files, you can click **Retrieve all** in this message to load all plan files.

3. With the desired plan files highlighted in the dialog, click **Move plan files**.

4. In the **Move Current Step** dialog, select the step that you want to move to. The dialog only displays eligible steps as described previously in this section.



   The number of plan files that will be moved is listed at the top of the dialog. This is based on the eligible plan files that you selected in step 2.

5. By default, notifications are *not* sent to new step owners when moving plan files to a different step. If you want to send notifications as part of the move, then select **Send notifications to users affected by this current step change**. If this check box is selected, then you can also optionally enter a comment to be included in the notification and stored with the process.

   If enabled, the notification sent when a step is moved will always be the Step Activated notification for the target step. Because the currently active step is aborted instead of completed, no Step Completed notifications will be sent.

6. Click **OK** to move the step.

The current step is aborted for the selected plan files, and the target step is activated.

NOTE: Plan files are not saved as part of moving steps, because the current step is aborted instead of completed. If **Save and validate plan file before advancing to next step** is enabled for the step you are moving from, that setting is ignored.

Regenerating tasks for plan file processes

While a plan file process is active, administrators and process owners can regenerate tasks for plan files. You may need to regenerate tasks if:

- One or more plan files have become stalled in the process
- Changes have been made to security permissions or to process assignments, and these changes need to be reflected in currently active steps

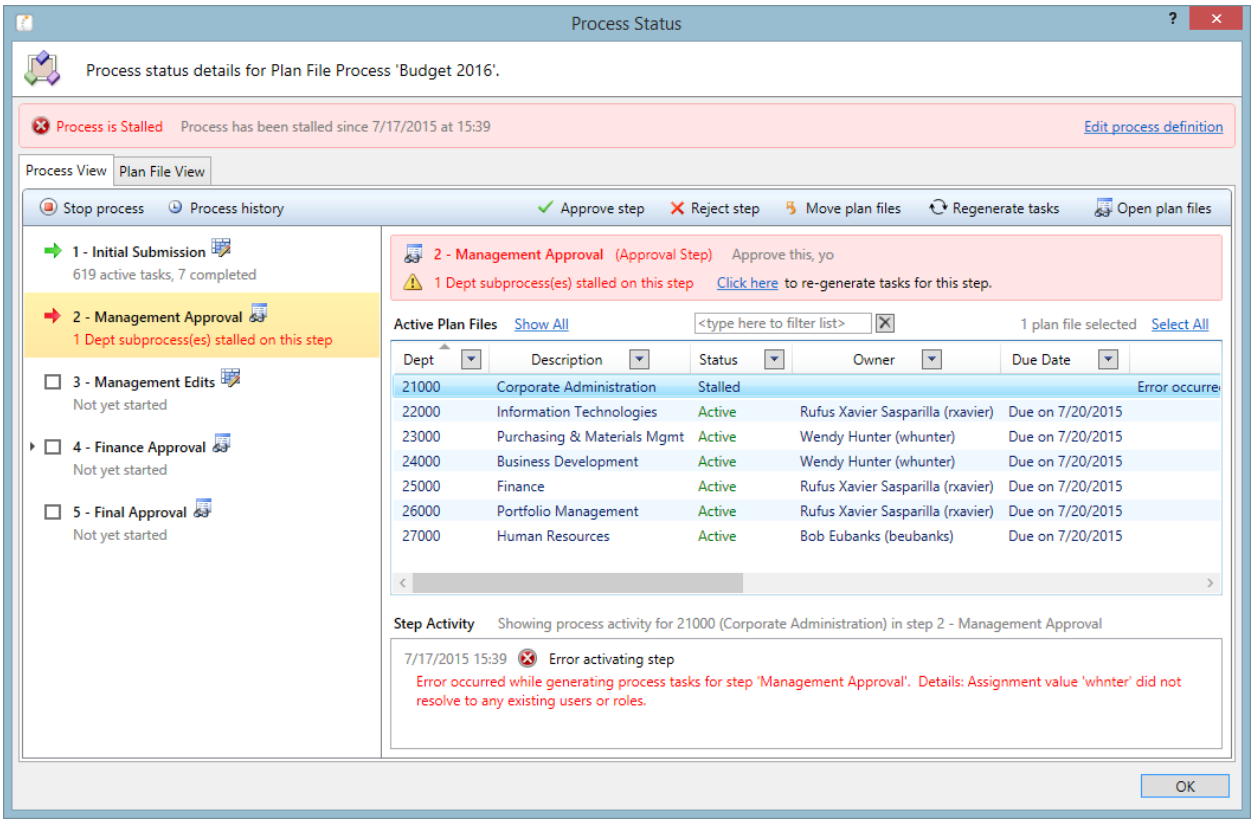
All of these actions can be performed in the **Process Status** dialog, which is accessible by clicking **View status** for the process in the Process task pane. The process definition also contains a link to open this dialog.

Regenerating tasks for stalled plan files

If an issue occurs that prevents a plan file from becoming active in a step, the plan file will stall in the process. For example, a plan file may stall if:

- The plan file's assigned user has been disabled or deleted in security
- The plan file's assigned user does not have the appropriate security permissions to become the step owner
- The user assignment is made via a role, but no users in the role have access to the plan file
- The user assignment is made via an assignment column or an assignment workbook, and the plan file's assignment is blank or invalid

While the plan file is stalled, it cannot progress in the process. To see more information about what caused the plan file to stall, go to the **Process Status** dialog and select the applicable step, then select the affected plan file in the grid. The specific error is listed in the **Step Activity** details for the plan file, as well as in the **Details** column of the grid. A notification about the error is also sent to the process owner.



The first step to addressing the stalled status is to fix the condition which caused the plan file to stall. For example, if the plan file's assignment is blank or invalid within an assignment column, you would update the column with the correct assignment for the plan file.

Once the condition that caused the stalled status has been fixed, go back to the Process Status dialog and the applicable step, and click **Click here to regenerate tasks for this step**.

Axiom Software will attempt to regenerate tasks for the stalled plan file. If the task generation is successful, the plan file will be made active and the process can continue as normal.

NOTE: In some cases, it is not necessary to manually regenerate tasks after addressing the issue that caused the plan file to stall. For example, if the issue is resolved by editing the process definition (for example, by changing the user assignment within the definition), then when you save the change to the definition the tasks will be automatically regenerated.

Regenerating tasks to reflect process or security changes

In certain cases, you may need to regenerate tasks for plan files in an active step in order to incorporate changes made to the process assignments or to security. For example:

- If the owner assignment is an assignment column or an assignment workbook, and the assignments in the column or workbook have been changed since the plan file became active in the step.
- If the owner assignment is a role, and the members of the role have changed since the plan file became active in the step.
- If security permission changes have been made that would affect the ownership of the plan file for the current 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.

For multiple approvals steps, you can regenerate tasks at the sub-step level or at the parent step level. If you regenerate tasks for the parent step, then Axiom Software regenerates tasks for all active or skipped sub-steps. At the sub-step level, you can regenerate tasks for any active or skipped steps. Skipped steps are included in case the assignment has changed and the step should no longer be skipped.

To regenerate tasks for plan files in a plan file process:

1. In the **Process Status** dialog, do either of the following:
   - On the **Process View** tab, in the left-hand pane, select the step where you want to regenerate tasks. From here, you can regenerate tasks for any plan file that is currently active in this step.

     OR

   - Go to the **Plan File View** tab. From this tab, you can see all plan files in the process, and you can regenerate tasks for plan files that are active in different steps.
2. Select the plan files for which you want to regenerate tasks.
   - You can use the Shift key or the CTRL key to select multiple plan files.
   - To select all plan files shown in the grid, click the **Select All** link at the top right-hand corner of the grid. If you have selected all plan files and now you want to clear this selection, click on any plan file in the grid.

   To find a particular plan file, you can use the filter box at the top of the grid, or you can sort and filter the grid using standard Axiom grid functionality.

NOTE: The Process Status dialog is limited to showing the first 500 plan files that meet the current display criteria. If all plan files are not currently showing, a message displays at the bottom of the plan file grid. If you need to perform an action on all plan files, you can click **Retrieve all** in this message to load all plan files.

3. With the desired plan files highlighted in the dialog, click **Regenerate tasks**.
4. Axiom Software prompts you to confirm that you want to regenerate tasks for the selected plan files. Click **OK** to continue.

The current tasks for the selected plan file are deleted, and new tasks are regenerated.

Updating plan file processes for changes to the plan code table

Plan file processes look to the plan code table of the file group to determine the list of plan files to include in the process, and to obtain the description for each plan file.

While a plan file process is active, changes may be made to the plan code table. The process responds to some of these changes automatically, while other changes require manual intervention. These types of changes include:

- Adding new codes to the plan code table, resulting in new plan files to be started in the process
- Deleting existing codes from the plan code table, requiring existing process tasks to be stopped and deleted
- Changing the ShowOnList status for an existing code
- Changing plan code descriptions or the designated description columns for the plan code table

This topic does not discuss changes made to assignment column values within the plan code table. For more information on how these changes are handled, see Regenerating tasks for plan file processes.

Starting new plan files in a plan file process

For standard file groups, if a new code is added to the plan code table, the corresponding plan file is not automatically started in an active plan file process. You must manually activate the new plan file in the process.

NOTE: This requirement does not apply to on-demand file groups. On-demand file groups are explicitly designed to handle the constant creation of new codes and new plan files. If the process is designated as the **Plan File Process** for the file group, then newly created plan files are automatically started in the process.

To activate a new plan file in an already-started process:

1. From the **Process** task pane, click **View status** for the applicable process.
2. In the **Process Status** dialog, go to the **Plan File View** tab.
3. In the list of plan files, select the plan file and then click **Activate plan files**.

   To locate the inactive plan file, the grid must be showing all plan files, not just active plan files. For newly added plan files, the status is **Never started**. You can use the filter box at the top of the grid to find the plan file, or you can sort and filter the grid using standard Axiom grid functionality.

   If needed, you can select multiple plan files to activate by using the SHIFT or CTRL key. If the selection includes any already-active plan files, those plan files will be ignored.
4. At the confirmation prompt, click **OK**.

The plan file is started in the process.

Stopping existing plan files in a plan file process

In some cases, you may need to stop an existing plan file in the process because the plan file and its corresponding code were created in error and need to be deleted.

This scenario is most likely to occur for on-demand file groups. Because new plan files are being created constantly by many users, there is a greater likelihood of plan files being created in error. The best way to handle this is to use the **Delete Plan Files** command to automatically delete the plan file and all related data and system artifacts, including any existing process tasks.

For standard file groups, the plan file must be manually stopped in the process if you intend to delete the plan file and the corresponding code. The plan file must be stopped in the process *before* the code is deleted, or else it is possible for the plan file to become stalled in the process with no way to fix it (other than stopping and restarting the entire process).

Generally speaking, there is no need to stop a plan file in an active process unless the plan file is no longer needed. If you need to "restart" an existing plan file in a process, you can simply move that plan file back to the first step rather than stopping it and re-starting it. The process activity is retained regardless of whether the plan file is stopped or moved.

To stop a plan file in an already-started process:

1. From the **Process** task pane, click **View status** for the applicable process.
2. In the **Process Status** dialog, go to the **Plan File View** tab.
3. In the list of plan files, select the plan file and then click **Abort plan files**.

   You can use the filter box at the top of the grid to find the plan file, or you can sort and filter the grid using standard Axiom grid functionality.

   If needed, you can select multiple plan files to abort by using the SHIFT or CTRL key. If the selection includes any already-aborted plan files, those plan files will be ignored.

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

All existing process tasks for the plan file are deleted, and the plan file is stopped in the process.

NOTE: The On Demand Process Aborted notification (if enabled for the process) is not sent when a plan file is aborted using the **Abort plan files** action. This is to reflect the difference between an administrator aborting a process that was started in error, versus the owner of an approval step choosing to "deny" the request and stop the plan file in the process.

Changing the ShowOnList status for existing plan files

If a ShowOnList column has been defined for a file group, then when a plan file process is started, only those codes where ShowOnList is True will be started in the process. If ShowOnList is False for a code, then that code will be hidden from the process and not started.

If the ShowOnList status is changed for a particular code while the process is still active, the code is treated as follows:

- If ShowOnList is changed from False to True, then the code is no longer hidden from the process but its plan file is not automatically started. If you want to start the plan file in the process, you must manually activate it as discussed previously in this section.
- If ShowOnList is changed from True to False, then the code is hidden from the process but its plan file is not automatically stopped. The process task for the plan file will remain active in the background. Generally speaking, this does not cause any issues because no users can interact with the process task, but it is not the most efficient way to handle the situation. Instead, the plan file should be stopped in the process first (as discussed previously in this section) and then the ShowOnList status can be changed.

Determining the description values for plan file process tasks

When plan file process tasks are displayed in the Process task pane, each task is identified as follows:

PlanCodeColumnName PlanCodeValue (DescriptionColumnValue)

Where the *PlanCodeColumnName* is the name of the key column of the plan code table, and the *PlanCodeValue* is the key column value. The *DescriptionColumnValue* is the value of any column in the plan code table that has been designated as a description column (the **DescribesKey** property is set to **True**). If multiple columns have been designated as description columns, then the values display in a comma-separated list.

For example, if the key column of the plan code table is Dept, and the current process task is for department 500, and a single column has been designated as a description column, then the task would display as follows:

Dept 500 (Finance)

If the description values change or if the columns designated as description columns change, these changes will be reflected in the tasks for the current process. However, users may need to refresh the Process task pane or log out and log back in before they see a change that was made during the current session.

Viewing the status of plan file processes

Administrators and process owners can view the status of an active plan file process by clicking the **View status** link in the Process task pane. You can also access the process status from the process definition, or from the Process Manager dialog (**Manage > Process Management > Current Processes**).

In the **Process Status** dialog, you can see the following:

- Status of each individual step, including which plan files are active, completed, or stalled in the step
- Status of each individual plan file in the process—per step and for the overall process
- Details of all step and plan file 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, completing steps (overriding step ownership), moving plan files, and regenerating tasks.

Status details for plan file processes

For plan file processes, the Process Status dialog is split into two tabs:

- **Process View**: This tab shows the steps in the process and the current status of each step. This tab contains what normally takes up the full Process Status dialog for general processes.
- **Plan File View**: This tab shows the current status of each plan file in the process. It provides an at-a-glance look at the overall process from a plan file perspective rather than a per-step perspective.

When viewing process status and performing certain administrative actions, you can choose to do this at the per step level or at the plan file level. For example, if you want to see which plan files have not yet completed step 2, it is easiest to review this at the step level on the Process View tab. But if you want to trace a plan file's overall progression in the process, including all comments for steps completed, then it is easiest to review this on the Plan File View tab.

NOTES:

- The list of plan files for any specific step or for the Plan File View tab is limited to showing the first 500 plan files that meet the current display criteria. If the plan file you are looking for is not within the first 500 displayed, then you must further filter the list in order to see it. A message displays at the bottom of the grid to inform you when this limit is being applied. You can click **Retrieve all** in this message to ignore the limit and load all plan files into the dialog. This should only be done if you need to perform an action on all plan files.
- If the process is configured to use groups, then a third tab may be present: Process Groups. You can use this tab to start and stop groups in the process, and to view the overall status of each group. For more information, see Managing a plan file process by groups.

Step-specific details

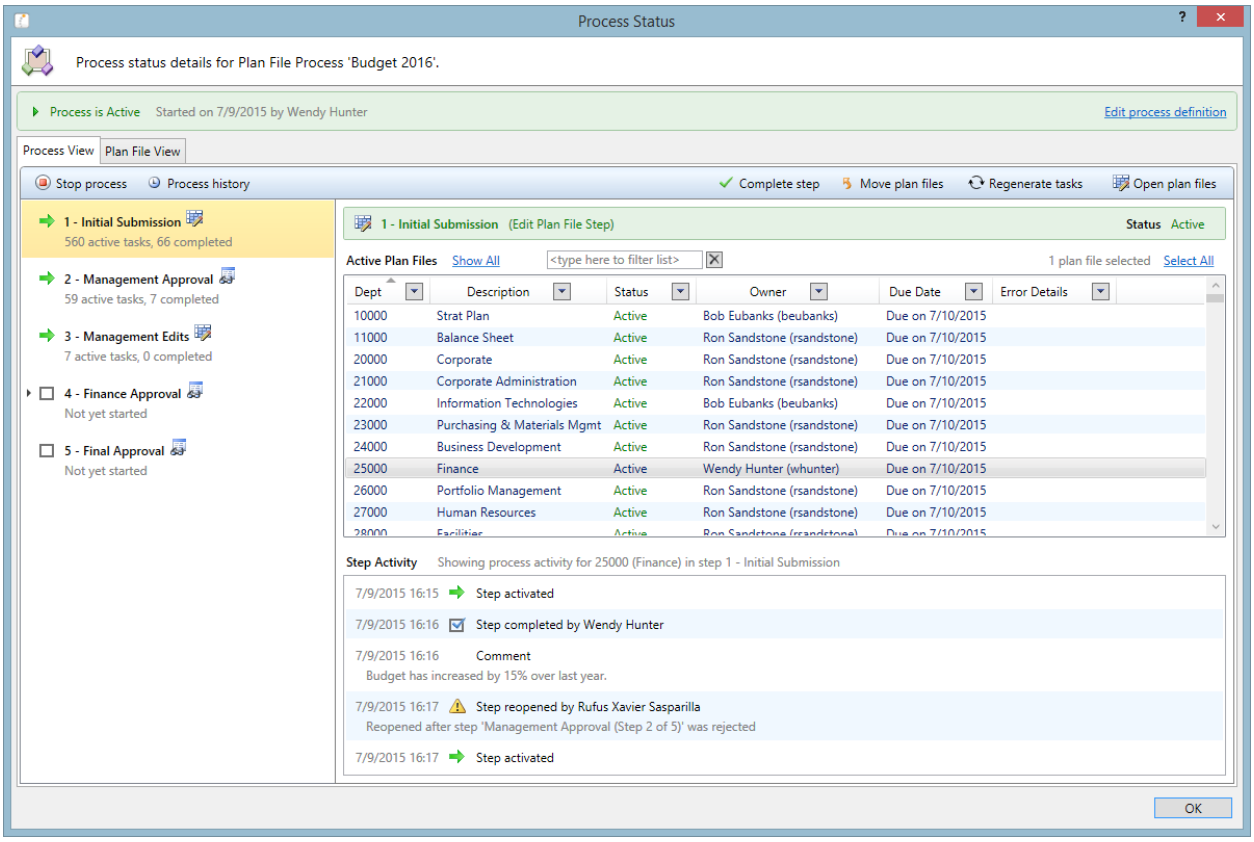
On the Process View tab, the plan file details display as follows per step:

- If no plan files have yet been made active in the step, then the dialog shows the step properties such as the user assignment configuration and the due date.
- If any plan files have been made active in the step, then the dialog shows a grid of plan files. The grid contains information such as the plan code, the plan file's status in the step, the plan file owner, and the due date.

If any plan files are currently active in the step, the grid defaults to showing only active plan files. You can toggle the grid between showing all plan files and active plan files by clicking **Show All** and **Show Active Only**. If no plan files are currently active in the step, then all plan files are shown.

You can search for a particular plan file using the filter box at the top of the grid. Additionally, you can use standard Axiom grid functionality to sort, filter, and group the list.

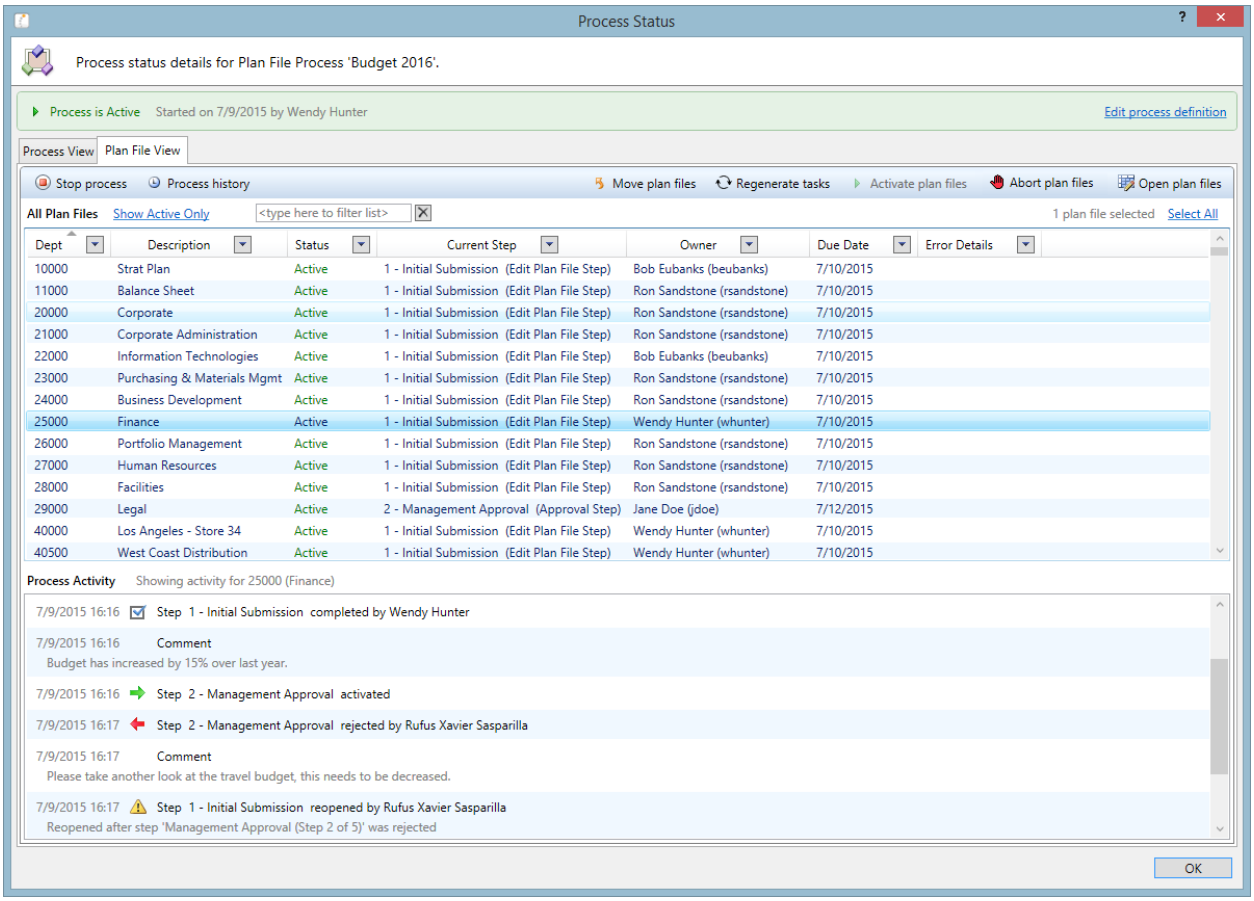
You can select a plan file in the grid to view the step activity for that plan file, shown at the bottom of the dialog. The grid must be showing all plan files in order to view the step activity for plan files that have already completed the step (or were aborted due to a **Move current step** action).



Example step-specific activity and comments

Overall process details

The Plan File View tab contains a grid of all plan files in the process, showing the current status and currently active step (if applicable). You can search for a particular plan file using the filter box at the top of the grid. Additionally, you can use standard Axiom grid functionality to sort, filter, and group the list. You can select a plan file in the grid to view the full process activity for that plan file, shown at the bottom of the dialog.



Example full-process activity and comments

Configuring display settings for lists of plan files

You can specify which file group columns display in lists of plan files within the Process Status dialog, as well as their order. For example:

- You may be working with an on-demand file group with an alternate code column, and you want that column to display prominently instead of the identity column.
- You may frequently perform process actions based on a particular grouping, such as Region, so you want that column to always display for sorting and filtering purposes.

Process columns are defined on a per file group basis, on the **Process Columns** tab of the **Edit File Group** dialog. For more information, see Configuring display columns for the Process Status dialog.

Configuring display columns for the Process Status dialog

When using the Process Status dialog to view a plan file process, the dialog displays lists of plan files and their current status (overall and per step). You can configure display settings for this dialog on a per file group basis to determine the following:

- Which columns are included in the dialog, and certain attributes about those columns
- Which column is used to sort the list

These settings are defined in the file group properties, on the **Display Columns** tab > **Process Columns** sub-tab. Only administrators and users with one of the following security permissions can edit file group properties: **Administer File Groups** and **Modify File Group**.

To access the display column settings:

1. On the **Axiom** tab, in the **Administration** group, click **Manage > File Groups**.
2. Navigate to the file group that you want to edit, then right-click the file group and select **Edit**.

   TIP: You can also do this from the file group node in the Explorer task pane.

3. In the **Edit File Group** dialog, select the **Display Columns** tab, then select the **Process Columns** sub-tab.

Defining the display columns

You can configure the columns to display in the Process Status dialog for this file group, as well as certain attributes about those columns. You can specify which columns are searchable, define alternate header text, and define the column width.

The current display columns are listed in the **Display Columns** box. By default, the following columns are selected to display:

- The key column of the plan code table
- Designated description columns for the plan code table
- Various process status columns, such as Status and Due Date

You can include any column from the plan code table, from a data table that directly looks up to the plan code table, or from a reference table that the plan code table looks up to. You can also include various system columns relating to the process status.

To configure which columns are included and in what order, click **Select Columns**. In the **Select Columns** dialog:

- To add a column, select the column in the left-hand pane of the dialog and then click **Add** to move it to the **Selected Columns** box.
- To remove a column, select the column in the **Selected Columns** box and then click **Remove**.
- To change the order of a column, select the column in the **Selected Columns** box and then click **Up** or **Down** to move it to the desired location.

Display attributes for each column are configured after the column has been added to the **Display Columns** box. To configure the display attributes for a column, select the column in the list and then click **Edit Column**. You can edit the following display properties:

Item	Description
Header	The header text for the column. By default, this is the column name. You can customize this text if desired. If the column is not on the plan code table, the fully qualified name is used by default. For example, if the plan code table is Dept, then if you add the `Dept.Region` column the default header value is just Region. But if you add the `CapData.Total` column, then the default header value is CapData.Total.
Width	The width of the column. By default, the display columns attempt to auto-size to a reasonable width for the column contents. If desired, you can enter a different width in pixels, up to a maximum of 500. If you want to go back to using the default width, you can clear this field.
Searchable	Specifies whether the column is searchable. Select this check box if you want the contents of this column to be included in the search. If no columns are flagged as searchable, then the search uses the key column and the designated description columns by default. Additionally, if the first display column is not the key column, it is also included in the search by default.
Custom Formatting	If the column values are numeric—meaning column data types of Integer (all types) or Numeric—then you can optionally define a custom display format for the values. To define a display format, enter a valid Excel formatting string. These strings can be obtained as follows: • Format a cell in a spreadsheet to use the desired display format. • In the **Format Cells** dialog, on the **Number** tab, select the **Custom** category and copy the string in the **Type** box. For example, this is the formatting string for a Currency format that shows the negative numbers in parentheses: `$#,##0.000_);($#,##0.000)` Colors (such as red font for negative numbers) are not supported. Additionally, text replacement strings are only supported for zero values. Other advanced or unusual formats may not display as expected, so be sure to verify the column display. If you do not define a custom display format, then the default formatting for the column's specified numeric type will be used.

Defining the sort columns

You can configure the default sort order for lists of plan files in the Process Status dialog. The sort order is specified based on one or more columns in the plan code table. If multiple columns are selected, then the primary sort is the top column, the secondary sort is the next column, and so on.

The current sort columns are listed in the **Sorting Columns** box. By default, the key column of the plan code table is selected as the sort column. For example, if the plan code table is DEPT, then the plan files will be sorted in order of department codes, in ascending order.

To define the sort columns, click **Select Columns**. In the **Select Columns** dialog:

- To add a column, select the column in the left-hand pane of the dialog and then click **Add** to move it to the **Selected Columns** box.
- To remove a column, select the column in the **Selected Columns** box and then click **Remove**.
- To change the order of a column, select the column in the **Selected Columns** box and then click **Up** or **Down** to move it to the desired location.

By default, the sort is ascending order. Once a column has been added to the **Sorting columns** box, you can change the order by using the drop-down list next to the column name.

Reporting on plan file processes

In addition to the standard methods of reporting on process information, special options are available to report on plan file processes.

Including process columns in a report

You can include process columns in an Axiom query in order to display plan file process information in a report. When creating an Axiom form, you can also include process columns in a Data Grid component or a Fixed Report component.

Using the process columns, you can include information such as the current step status for each plan file, previous step statuses, and time spent in each step. This approach is often easier and more performant than using the Axiom function GetProcessInfo to return process information.

For more information on how to set up this type of report, see Including process columns in a report.

View process routing information for a plan file

For users who need to see information on the process status of a particular plan file, you can direct them to the Process Routing page in the Axiom Web Client. This page shows the following details for a particular plan file:

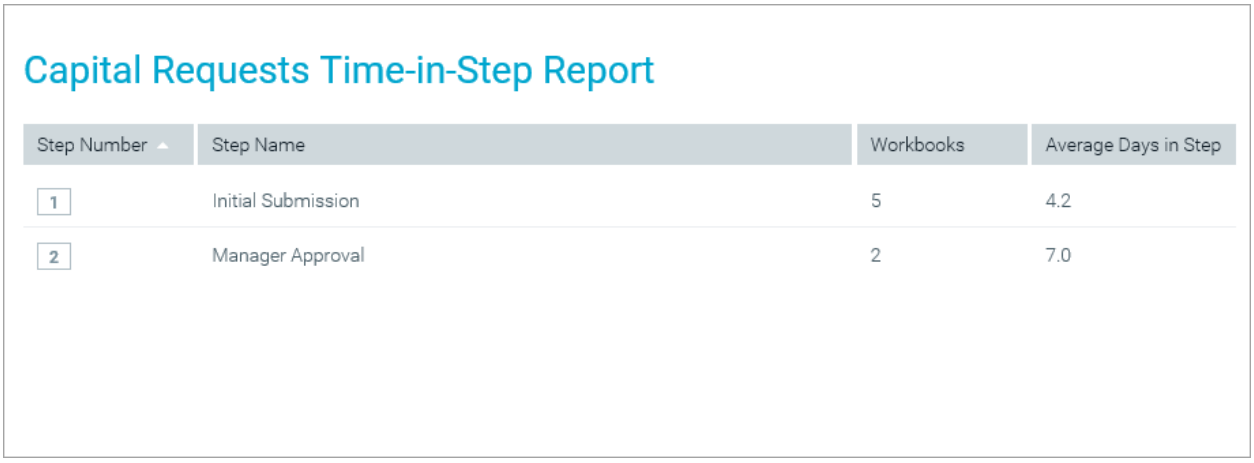
- The plan file's current status in the process
- The plan file's progression in the overall process, including completed steps and upcoming steps

- The plan file's process activity details, such as when steps were started and completed, as well as comments made by completing users

This page can be accessed from the Process Summary component in Axiom forms, or you can provide your users with hyperlinks to the page for their relevant plan files. For more information, see Completing process tasks using the Process Tasks page.

Reporting on average time in step for plan files

Using the Time-in-Step page of the Web Client, process administrators can report on the average time each plan file spent in each step. This report can assist in identifying bottlenecks in the process.



Example time-in-step report

For each step in the process, the report shows the number of plan files that have spent time in the step, and the average number of days the files spent in the step.

To access this page, use the following URL:

`<baseURLtoAxiom>/process/processID/metrics`

For example, if the process ID is 5988, the URL would look as follows:

`https://CustomerName.axiom.cloud/process/5988/metrics`

There is no built-in way to access this page; you must manually create the URL.

In most cases, you will generate the URL and then include it in a home page for process administrators or a similar landing page, so that they can simply click a link to be taken to the page.

If desired, you can set up filtering for this page, so that you can filter based on any column in the plan code table. To do this, you can set up a utility file with a RefreshVariables data source, and then configure the process definition to read the variables from this file. The variables will then be available in the Filters panel when you access this page.

To configure the time-in-step report to use the refresh variables, use the **Web Configuration** tab in the process definition. For more information, see Configuring process web pages for plan file processes.

Including process columns in a report

You can include process columns in an Axiom query in order to display plan file process information in a report. When creating an Axiom form, you can also include process columns in a Data Grid component.

Using the process columns, you can display information such as the current step status for each plan file, previous step statuses, and time spent in each step. This can be done using a single query and without needing a separate function to return the information. This option can improve the performance of process reports by eliminating or reducing the number of GetProcessInfo functions necessary to return the desired information.

Requirements to create a process Axiom query

In order to use process columns in an Axiom query, the query must be set up as follows:

- Set the **Process Definition ID** of the query to the ID of the plan file process. This setting is not available in the Sheet Assistant, so you must enter the ID directly into the Control Sheet. The setting is located in the Axiom query settings, in the **Query Details** section.

Axiom Query - [AQ1]	
Name (used in Plan Refresh utility)	**Process AQ**
Active	**On**
Query Details	
Primary Table	**capitalrequest**
Sum data by these columns (e.g. Table.field;Table.field)	**capitalrequest.capitalid**
Sort by database columns (e.g. Table.field asc;Table.field desc)	
Sort results by these columns (e.g. C asc;D desc)	
Filters	
Data Filter	
Limit query data based on another table (advanced)	
Post Query Filter (advanced)	
Post Query Sum By (advanced)	
Suppress records with zero values	**Off**
Max row warning threshold (leave blank for system default)	
Limit query to top "n" results	
Process Definition ID	**5996**

The process definition ID is the document ID of the process definition. To find the ID of a process, you can use the GetProcessInfo function. The ID is also listed in the tooltip when you hover your cursor over the process definition in Axiom Explorer or the Explorer task pane.

NOTE: If the process has a process filter, then the query is automatically limited using the same filter. Plan codes that are not part of the process will not be returned by the query.

- Set the **Primary Table** of the query to one of the following:
  - The plan code table of the file group where the specified process definition ID is active.
  - A data table with a lookup to the plan code table.

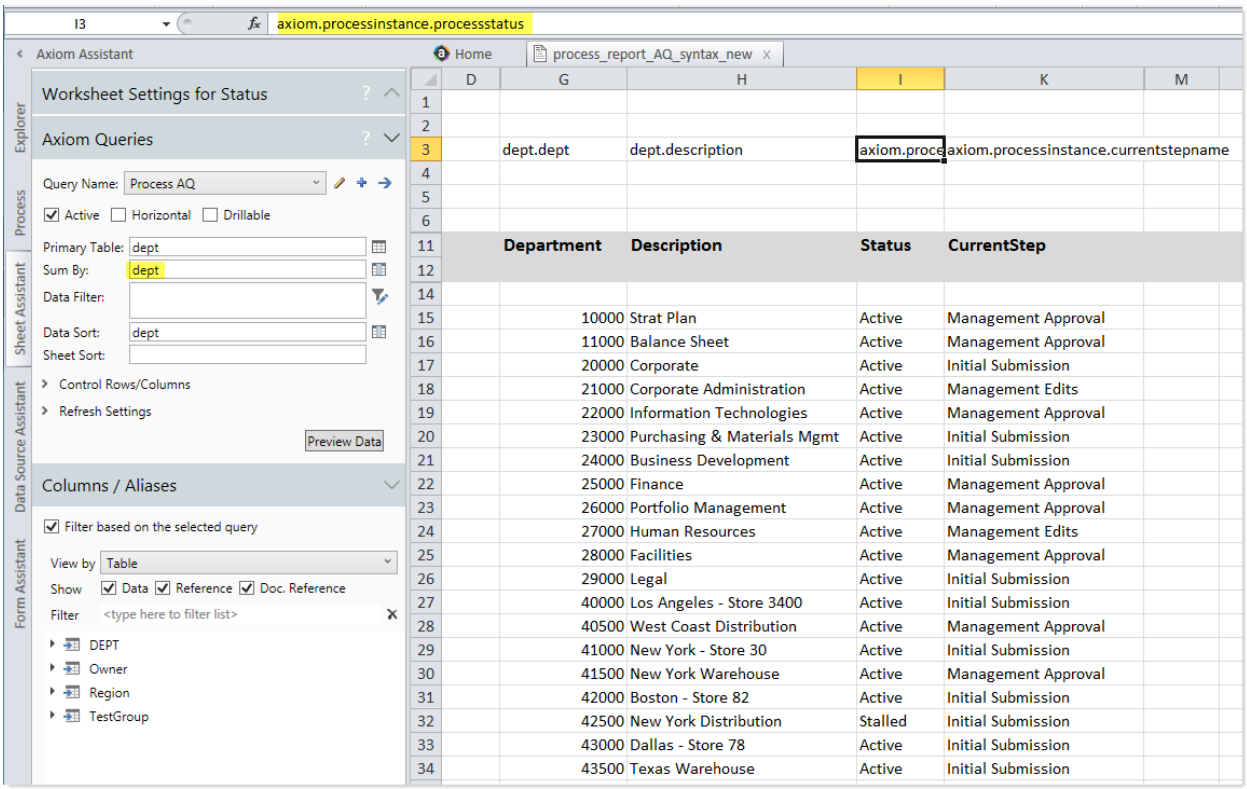
  For example, if the plan file process is for the Budget 2018 file group, and the plan code table for that file group is the Dept table, then the primary table can be Dept or a data table that looks up to Dept (such as BGT2018). If you use a data table, then the data returned will only be for plan codes that are referenced within that table.

Once these requirements are met, you can use process columns from the system tables Axiom.ProcessInstance and Axiom.ProcessStatus in the Axiom query. The columns can be used in the following Axiom query settings:

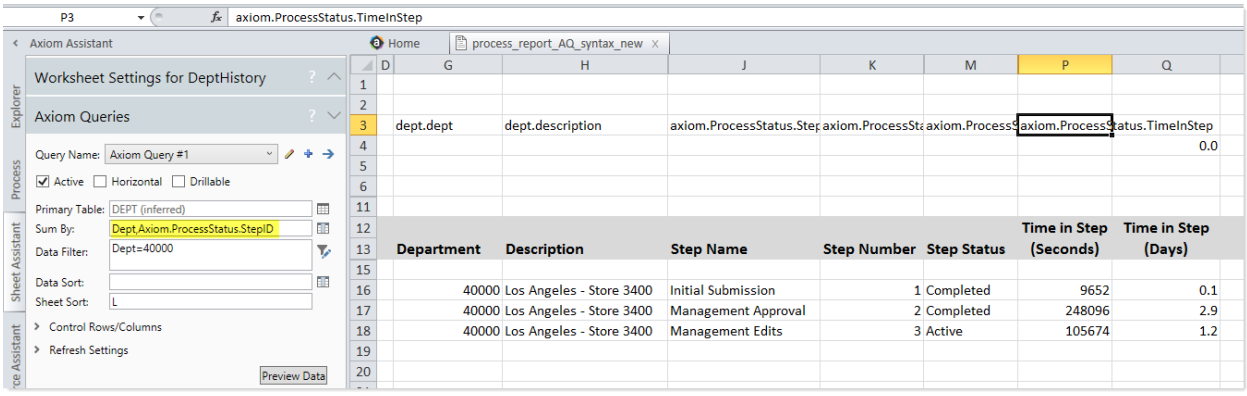
- Field definition
- Sum by
- Data filter
- Data sort

NOTE: When using a process column to sort an Axiom query, the Sheet Assistant may indicate that the column is invalid. However, as long as the column name is correct, you can ignore this message and the query will be sorted as expected.

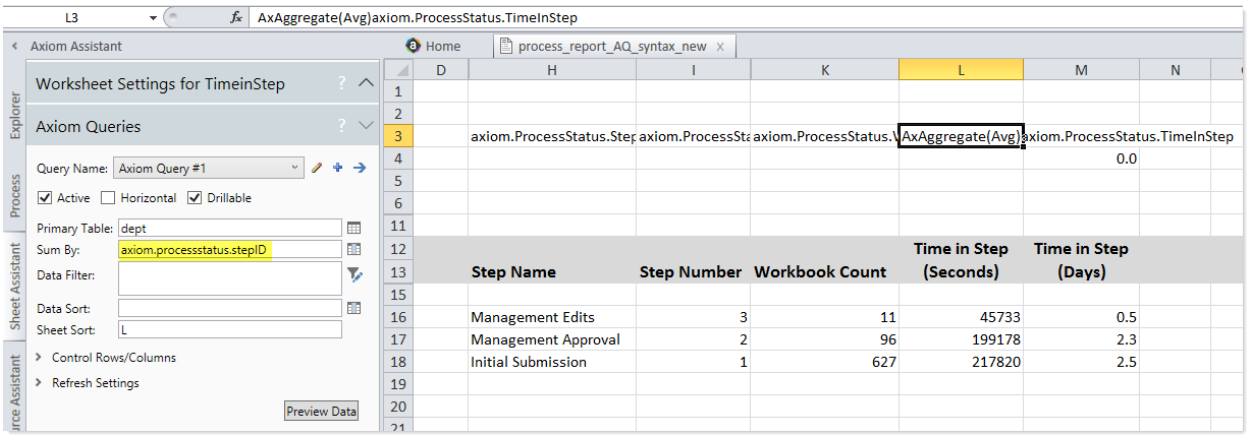
The following screenshot shows a simple example to report on the current status of all plan files, by plan code (Dept). The desired columns from Axiom.ProcessInstance are simply added to the field definition, using the special column syntax.



The next screenshot shows an example of using the Axiom.ProcessStatus columns to return step information for a specific plan file. The sum level for the query has been set to the Dept key and the step ID, in order to show the department and step level of detail.



The last screenshot shows an example of setting the sum level of the query to just the step ID, to return information grouped by step (such as the average time in step).



Requirements to create a process Data Grid

In order to use process columns in a Data Grid component (in an Axiom form), the component properties must be set up as follows:

- Set the **Selected File Group** to the file group of the plan file process that you want to report on. You can specify a file group directly or use a file group alias. The component automatically uses the process designated as the **Plan File Process** for that file group (in the file group properties).

  NOTE: If the process has a process filter, then the query is automatically limited using the same filter. Plan codes that are not part of the process will not be returned by the query.

- Set the **Primary Table** of the component to one of the following:
  - The plan code table of the selected file group.
  - A data table with a lookup to the plan code table.

  For example, if the plan file process is for the Budget 2018 file group, and the plan code table for that file group is the Dept table, then the primary table can be Dept or a data table that looks up to Dept (such as BGT2018). If you use a data table, then the data returned will only be for plan codes that are referenced within that table.

Once these requirements are met, you can use process columns from the system tables Axiom.ProcessInstance and Axiom.ProcessStatus in the grid. The columns can be used as follows:

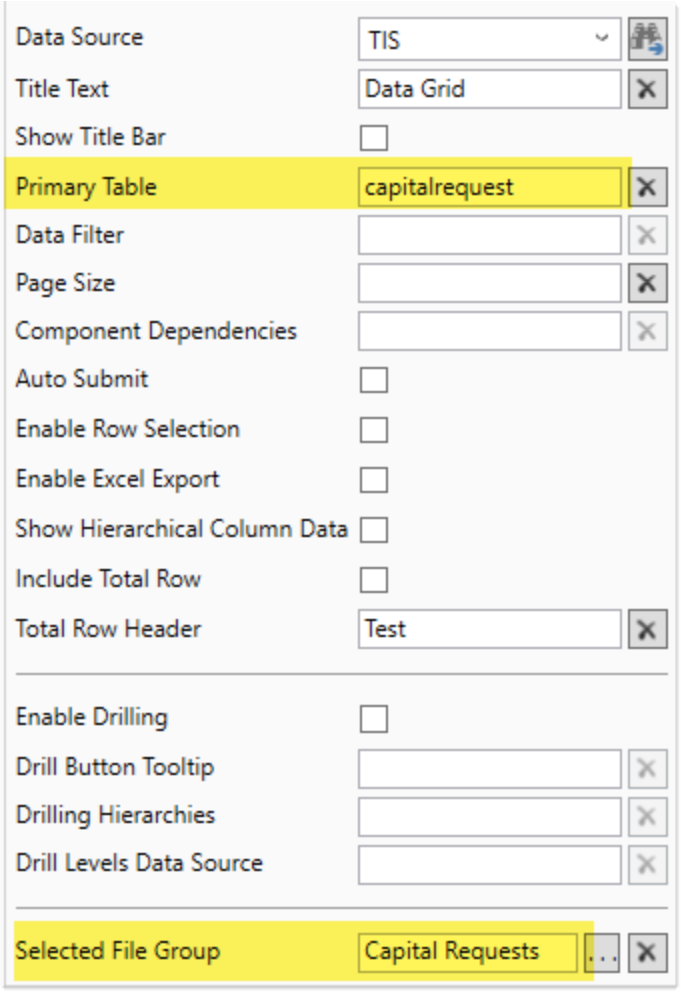
- Any of the process columns can be used as `[Column]` rows in the data source, so that the columns display in the grid. The columns can also be designated as sum by columns for the grid, and used to sort the grid.
- Process columns can be used in the data filter for the grid. You can also enable `[IsFilterable]` for any of the columns.
- Process columns that return numeric data can be used in `[CalculatedColumn]` rows. Practically speaking, this is only useful with the Axiom.ProcessStatus.TimeinStep column—for example, to use a calculation to convert the seconds to hours or days.

All other grid features, including grouping, drilling, and row selection, can all be used when the grid contains process columns.

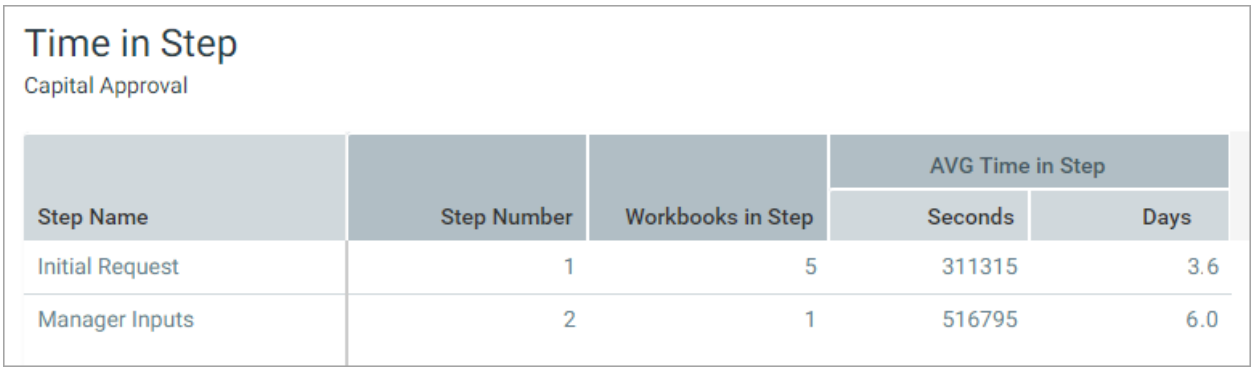
The following screenshot shows an example DataGridColumns data source that is set up to show time-in-step information for a process. The grid uses several process columns and also includes a calculated column to convert the time-in-step from seconds to days.

	A	B	C	D	E	F	G	H	I
3									
4		[DataGridColumns;TIS]	[ColumnName]	[IsVisible]	[Header]	[IsSumBy]	[Aggregation]	[Calculation]	[NumericFormat]
5		[Column]	axiom.ProcessStatus.StepName	TRUE	Step Name	TRUE			
6		[Column]	axiom.ProcessStatus.OrdinalStepNumber	TRUE	Step Number				
7		[Column]	axiom.ProcessStatus.WorkbookCount	TRUE	Workbooks in Step				
8		[ColumnGroup]			AVG Time in Step				
9		[Column]	axiom.ProcessStatus.TimeInStep;TIS	TRUE	Seconds		AVG		
10		[CalculatedColumn]	TISDays	TRUE	Days			TIS/86400	0.0
11		[EndGroup]							

The file group for the process is specified in the component properties, and the primary table is set to the plan code table.



When the form is rendered, the grid looks as follows:



Time in Step

Capital Approval

Step Name	Step Number	Workbooks in Step	AVG Time in Step	
			Seconds	Days
Initial Request	1	5	311315	3.6
Manager Inputs	2	1	516795	6.0

Axiom.ProcessInstance columns

The Axiom.ProcessInstance table can be used to return information on the overall process instance, such as the current status and step for each plan file. To include a column, use the syntax `Axiom.ProcessInstance.ColumnName`.

Column Name	Description
CurrentStepID	Returns the database ID of the current step. Note that this is not the step number; this is a unique numeric value that identifies each step.
CurrentStepName	Returns the name of the current step of the plan file.
ProcessInitiatorName	Returns the process initiator for the plan file. By default, this is the user who started the plan file in the process.
ProcessInitiatorID	Returns the user ID for the process initiator.
ProcessInstanceID	Returns the ID of the process instance for the plan file.
ProcessStatus	Returns the current process status for each plan code. For example: Active, Stalled, Completed, or Aborted.
ProcessStatusCD	Returns the numeric ID that corresponds to the current status of the plan file. The IDs map as follows: 1=Aborted, 2=Active, 3=Completed, 5=Stalled.

Axiom.ProcessStatus columns

The Axiom.ProcessStatus table can be used to return process information for each step that a plan file has been active in. To include a column, use the syntax `Axiom.ProcessStatus.ColumnName`.

When using columns from Axiom.ProcessStatus, you should set the "sum by" for the query as follows, depending on the goal of the query:

- If the goal of the query is to see step detail by plan code, then the sum level for the query should be set to both the key of the plan code table and the `Axiom.ProcessStatus.StepID` column. This ensures that the query data will show each combination of plan code and step. For example, you might use these columns and filter by a specific plan code to return the step history for that plan file.
- If the goal of the query is to see grouped information about the step, then the sum level for the query should be set to just `Axiom.ProcessStatus.StepID`. This is useful to see information such as average time in step, and the count of workbooks that have been active in the step.

Column Name	Description
OrdinalStepNumber	Returns an ordinal step number showing the overall step order, including sub-steps. This column can be used to sort steps in the correct order. For example, step 4.1 has an ordinal step number of 5. The StepNumber column returns the number as a string, so sorting on StepNumber will not always sort the steps in the current order (for example, step 10 would come directly after step 1).
StepID	Returns the database ID of the step. Note that this is not the step number; this is a unique numeric value that identifies each step.
StepName	Returns the name of the step.
StepNumber	Returns the number of the step.
StepStatus	Returns the current status of the step. Note that this is not the same as the plan file status. For example, a plan file may be at a status of Stalled, whereas the step where the plan file stalled is at a status of Error.
StepStatusCD	Returns the numeric ID that corresponds to the current status of the step. The IDs map as follows: 2=Active, 3=Completed, 4=Skipped, 5=Rejected, 6=Aborted, 7=Error.
TimeInStep	Returns the time spent in each step, in seconds. You can divide this value as desired to show the time at the desired level—for example, divide by 86400 to show time in days. If the sum level for the query is just Axiom.ProcessStatus.StepID, you can see the average time in step by using the AVG alternate aggregation on this column. For example, use the following syntax in an Axiom query: `AxAggregate(AVG)Axiom.ProcessStatus.TimeInStep`

Column Name	Description
WorkbookCount	Returns the count of workbooks that have been active in the step. This column is only useful when the sum level for the query is just Axiom.ProcessStatus.StepID (or similar), so that you can see the count for all plan codes that have been active in the step. If the sum level includes the plan code key, then the WorkbookCount will always return 1 for each plan code / step combination. This column always uses Count aggregation. You do not need to use alternate aggregation to return the count. **NOTE:** This column cannot be used in the Data Filter of either Axiom queries or Data Grid components. In an Axiom query, it can be used in the advanced **Post Query Filter** setting instead (which is only available on the Control Sheet). For Data Grid components, the only way to filter by the workbook count is to enable `[IsFilterable]` for the column.

NOTES:

- The syntax `Axiom.TableName.ColumnName` is only supported for use in this specific context. When creating standard queries that use system tables such as Axiom.Aliases or Axiom.Columns as the primary table, this syntax cannot be used.
- The system tables Axiom.ProcessInstance and Axiom.ProcessStatus can only be used in this specific context. It is not possible to create a query that uses either of these tables as the primary table.

Plan File Process Definition Properties

The following properties are available for plan file process definitions. These properties are managed in Axiom Explorer: **Administration > Manage > File Groups**, in the **Process Definitions** folder per file group.

Process Properties tab

This tab defines the basic properties of the plan file process definition.

Item	Description
Process Name	The name of the process. This name defines: • The name of the process definition file. • The process name displayed in process dialogs and web pages, if no separate display name is defined.
Display Name	Optional. The display name of the process. By default, the process name is used as the display name. If a display name is defined, then the process displays in process dialogs and web pages using the display name instead of the process name. The process definition file continues to use the process name. You can use file group variables such as `{FileGroupYear}` in the display name. You must manually type any variable that you want to use, enclosed in curly brackets—there is no helper tool available to insert these variables for you.
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, etc.).

Configuration Properties

The following configuration properties can be set for the process:

Item	Description
Allow step owners to see all steps in the process task pane	Specifies whether the assigned step owners can see all steps in the process when they interact with tasks in the Process task pane. By default, this option is disabled, which means that step owners only have access to Task View in the Process task pane, which shows the currently active task. If this option is enabled, then step owners gain access to Process View, which shows all steps in the process. Users can toggle between each view. This setting is only applicable to non-admin step owners. Administrators and process owners can always see all steps of any process.
Default Process Assignment	The user to be used as the default step owner if no specific user assignment is made for a particular step. The default assignment only applies to steps where the **Assignment Type** is set to **User**.
Default Rejection Behavior	Specifies the default rejection behavior for Approval and Multiple Approvals steps. Select one of the following: • **Return to the previous step** (default): When a plan file is rejected, it is returned to the previous step (regardless of what type of step it is). • **Return to the previous Edit step**: When a plan file is rejected, it is returned to the previous Edit Plan File step. If there are any approval steps in-between the rejected step and the previous edit step, they are bypassed. The default rejection behavior applies to all approval steps unless it is overridden at the step level. For more information, see Configuring rejection behavior for a plan file process.

On Demand Properties

If the plan file process definition is for an on-demand file group, the following additional options are available on this tab:

Item	Description
Enable aborting plan file processes by assigned users at specified approval steps	Specifies whether the process allows approval step owners to abort the plan file in the process. By default, this is disabled, which means that approval steps only allow the standard options of approve / reject. If enabled, then approval step owners can optionally abort the plan file in the process instead of approving or rejecting. This is intended as a way to "deny" a request by stopping it in the process. For more information, see Enabling the "deny request" option for a plan file process.

Item	Description
Abort process command text	Optional. If **Enable aborting plan file processes by assigned users at specified approval steps** is enabled, then you can optionally customize the command text that displays on the abort option. By default, the command is named **Deny request**.
Process Initiator Column	Optional. Specifies a column that defines the process initiator for plan files when the plan files are started in the process. You can select any column in the plan code table. For more information, see Setting the process initiator for plan files.

Process Steps tab

This tab defines the steps for the process. Steps are managed in the left-hand pane. Step properties are defined in the right-hand pane using the following sub-tabs: **Step Properties**, **Assignments**, and **Step Notifications**.

Step Properties

This sub-tab defines basic properties for the selected step.

Item	Description
Display Text	The display text for the step. If left blank, the display text is the step type (for example, "Approval Step" or "Generic Process Step"). It is strongly recommended to define display text that clearly identifies the specific purpose of this step.
Description	Optional. The description of the step. You can use this field to further explain the purpose of the step or to provide additional instruction to the step owner. Users can see the step description in a tooltip when mousing over the step in the Process task pane.
Process Step Configuration	Some step types have additional properties that only apply to that particular step type. For more information about each step type and its unique configuration properties, see Plan File Process Steps.

Assignments

This sub-tab defines ownership assignments and due dates for the selected step. This tab does not apply to parent Multiple Approvals steps.

Item	Description
Assignment Type	Specifies the type of ownership assignment. The following assignment types are available: • **User**: A specific user will be assigned to the step. • **Role**: A specific role will be assigned to the step. • **Assignment Column**: A table column will be specified as the assignment. Specific user or role names will be looked up from the column, based on the plan file code. • **Workbook**: A workbook file and sheet will be specified as the assignment. Specific user or role names will be looked up from the workbook, based on the plan file code. • **Process Initiator**: The user who started the plan file in the process will be assigned to the step. Additional inputs are required, depending on the selected type. For example, if the type is User, then you must specify the assigned user. For more information, see Assigning owners to plan file process steps.
Due Date	The date when the step must be completed. This can be a specific calendar date, or the due date can be relative based on a number of days after either of the following: the date the process was started, or the date this particular step was started. The due date can also be left blank if the step does not have a specific due date. For more information, see Defining the due date for plan file process steps.
Reset relative due date when step is reopened	Specifies whether the due date is reset when the step is reopened. This option is only available if the step uses a relative due date that is based on the step start date. By default, the step due date is calculated when the step is started, and that due date persists if the step is reopened. If instead you want the due date to be reset (recalculated) based on the date the step is reopened, select this option.
Role Assignment Options	If the Assignment Type is Role, Assignment Column, or Workbook, then you can specify options to determine how role ownership assignments are handled. For more information, see Assigning owners to plan file process steps.

Step Notifications

This sub-tab defines notification properties for the selected step. The settings on this tab are only used if notifications are enabled at the process level. If notifications have been disabled for the entire process, a note displays across the top of the tab.

This tab has the following sections:

- **Inherited Notifications**: Use this section to manage the inherited notifications for this step.

Inherited notifications are notifications defined at the process level. You can optionally enable or disable the inherited notifications on a per step basis, and you can edit the recipients for this step.

- **Custom Notifications**: Use this section to manage custom notifications for this step. You can add new notification types, or you can add custom versions of the inherited notification types.

For more information on customizing notifications for steps, see Defining notifications at the step level for a plan file process.

Notifications tab

This tab defines email notification settings for the entire process.

Item	Description
Enable Process Notifications	Specifies whether notifications will be sent for the process. These notifications are typically sent to step owners, but can also be sent to other recipients. This option is enabled by default. When this option is enabled, you can also optionally enable or disable notifications for individual steps, using the **Step Notifications** sub-tab for the steps. If this option is disabled, then no notifications will be sent for the process. Any step-level notification settings will be ignored. This setting does not affect administrative notifications, which are always sent to the process owner (and any other recipients designated in **Admin Notification Recipients**).
Default Notifications	Defines the default notifications to apply to each step in the process. Each process starts with two notification types by default: Step Activated and Step Rejected. By default, these notifications are enabled for all eligible steps. You can define additional default notification types as desired and customize the existing default notifications. For more information, see Defining default notifications for a plan file process.

Item	Description
Notification Delivery	Specifies the default delivery setting for all notifications in this process. Select one of the following: • **Notification task pane**: Display the notification in the recipient's Notifications task pane. • **Email notification** (default): Send the notification by email, using the recipient's email address as defined in Axiom Security. • **Both notifications**: Send the notification by email and display it in the Notifications task pane. All notifications defined for the process will use the default delivery setting, unless you choose to specify a different delivery setting on a per notification basis. Administrative notifications always use the default delivery setting.
Notification Email From Address	Specifies the "from" email address for all notifications sent for the process. By default, the "from" address is the default "from" address defined for Scheduler in the system configuration settings (for example, `noreply@axiomepm.com`). If desired, you can override this default and type in a different email address to be used for the process.
Admin Notification Recipients	Specifies the recipients of administrative notifications for the process. By default, the process owner receives all administrative notifications, but you can designate other users or roles to receive these notifications as appropriate. For more information, see Designating the plan file process owner.

Web Configuration tab

This tab defines configuration options for process web pages in the Web Client. If the plan files in a plan file process are form-enabled, then these web pages provide ways for task owners to review and complete their tasks.

This tab is separated into sub-tabs. All settings are optional. For more information on configuring these options, see Configuring process web pages for plan file processes.

Tasks Page

Defines configuration settings for the Process Tasks page of the Web Client, which can be used to view and complete process tasks.

Routing Page

Defines configuration settings for the Process Routing page of the Web Client, which can be used to view the process details for a plan file.

Information Panel

Defines the contents of the plan file information panel that displays on the Process Routing page. This panel is an optional feature. If you do not want to use it, leave the **Panel Contents** blank and then the information panel icon will not be available.

Time in Step Page

Specifies a report that contains refresh variables to be used with the Time in Step report in the Web Client. Using variables with this report is optional. If no variable report is specified, then the Time in Step report cannot be filtered and only the total average time in step will display.

Advanced Properties tab

This tab defines advanced properties for plan file process definitions. These options are only available if the file group is a standard file group. On-demand file groups cannot use these options.

Process Grouping Options

The following options are available to enable managing a process by groups. For more information, see Managing a plan file process by groups.

Item	Description
Grouping Column	Optional. Specifies a grouping column to enable starting and managing the process based on groups. You can select any column in the plan code table.
Group Owner Column	Optional but strongly recommended. Specifies a column that contains owner names for each group. In order to use this option, the specified grouping column must be a validated column. You can then select any string column on the lookup table. The column must contain text that can be resolved to valid user or role names.

Process Filter Options

Item	Description
Process Filter	Optional. Specifies a filter to limit the process to a subset of plan files in the file group. When the process is started, only plan files that meet the filter are eligible to be started. For more information, see Using a process filter to limit plan files in the process.

File Group Web Pages

The Axiom Web Client provides several built-in web pages that allow users to:

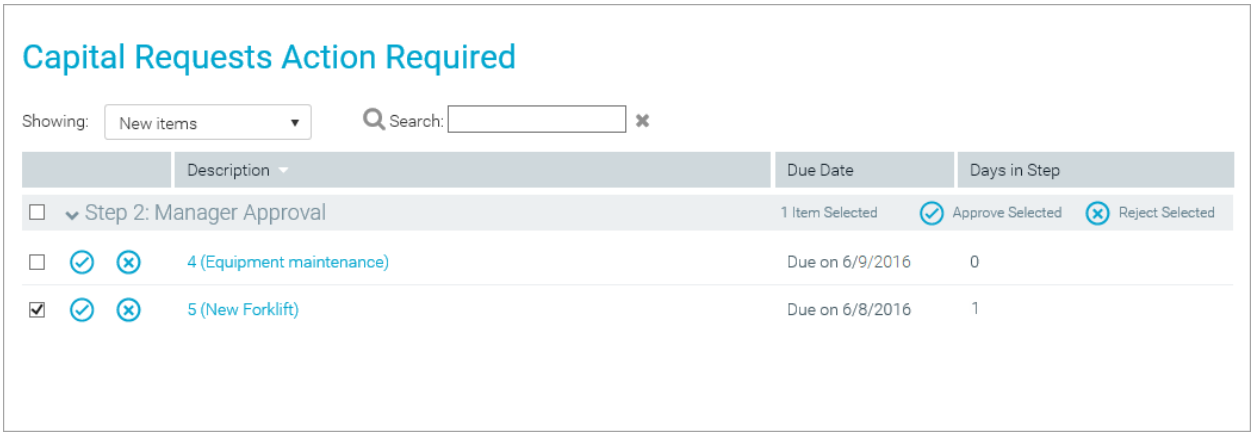
- View the process status of plan files using the Web Client
- Complete process tasks using the Web Client

These web pages are primarily intended to be used when plan files are form-enabled and the main client for end users is the Web Client. For more information about creating form-enabled Axiom files, see the *Axiom Forms and Dashboards Guide*.

However, the process web pages can also be used with spreadsheet Axiom files if desired. In this case, the web pages provide an alternate means of opening plan files and working with process tasks (in addition to the features available in the Desktop Client). For example, you may want end users to use the Web Client as their primary client to access form-enabled reports, and only launch the Desktop Client when they need to edit the spreadsheet plan file.

Completing process tasks using the Process Tasks page

Using the Process Tasks page of the Web Client, users can view all of their current process tasks, and can complete tasks individually or in batch. The following screenshot shows an example of this page.



The primary use case for this page is when plan files are form-enabled, and the main client for end users is the Web Client. The page can also be used with spreadsheet plan files, but in this case you must consider the user experience between the Web Client and the Desktop Client. For example, if users

normally access the Web Client and only use the Desktop Client when they need to open a spreadsheet plan file, then it makes sense to provide users with access to this page so that users can complete tasks without needing to launch the Desktop Client. However, if the Desktop Client is the main client for end users, then it may be confusing for users to be directed to the Web Client to complete their process tasks.

Accessing the page

There is no built-in way to access this page; you must manually create the URL. In most cases, you will generate the URL and then include it in a home page (or a similar landing page), so that users can simply click a link to be taken to the page.

To access this page, use the following URL:

`<baseURLtoAxiom>/process/processID/user?login=loginname`

The login parameter can be omitted, and the page will show the tasks for the currently logged in user. If a login name is specified, then Axiom Software verifies that the current user is the specified user, or that the current user is an administrator or an owner of the process.

For example, if the process ID is 5988 and you want the page to show tasks for the current user, the URL would look as follows:

`https://CustomerName.axiom.cloud/process/5988/user`

If you want the page to show tasks for user jdoe, then the URL would look as follows

`https://CustomerName.axiom.cloud/process/5988/user?login=jdoe`

In this example, the URL will only work for user jdoe, an administrator, or a process owner. Any other user will see an error if they attempt to use the link.

You can find the ID for a process by using the GetProcessInfo function, or by hovering over the process definition in the Explorer task pane.

Viewing process status using process web pages

The Web Client provides two built-in web pages to view the process status of plan files:

- **Process Directory**: Using this page, users can view the process status for all plan files they have access to within a file group.
- **Process Routing**: Using this page, users can view the process status and details for an individual plan file.

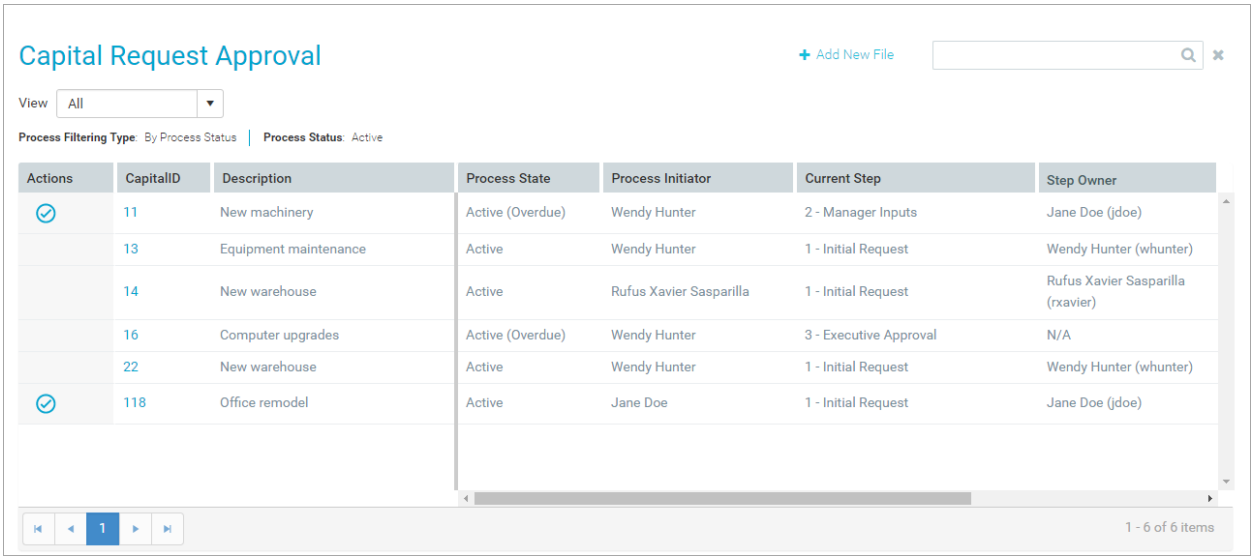
These web pages are primarily intended to be used when plan files are form-enabled, and the main client for end users is the Web Client. The pages can also be used with spreadsheet plan files, but in this case you must consider the user experience between the Web Client and the Desktop Client. For example, if users normally access the Web Client and only use the Desktop Client when they need to open a

spreadsheet plan file, then it makes sense to provide users with access to the pages so that users can review process status without needing to launch the Desktop Client. However, if the Desktop Client is the main client for end users, then it may be confusing for users to be directed to the Web Client for this information.

Using the Process Directory page

Using the Process Directory page of the Web Client, users can view the process status of all plan files that they have access to.

- You can customize this page to specify which columns are shown, the initial sort level of the list, and other formatting options.
- To open the Process Routing page for a particular plan file, users can click the hyperlink in a designated column. In the following example screenshot, the CapitalID column is the designated hyperlink column.
- Users who are step owners of one or more plan files can complete the associated process tasks. Administrators and process owners can also complete tasks from this page.
- Users can use the search box at the top to locate a particular plan file. You can configure which columns are included in the search.
- Using the View options, users can see all of the plan files they have access to, or just the plan files for their current process tasks. If the file group is an on-demand file group, users can also see all of the plan files where they are the process initiator.
- Using the **Filters** panel, users can filter the page by process status, step status, and current owner. You can also optionally provide users with a set of predefined options to filter the list by plan code groupings, using refresh variables.



Example Process Directory page

The process details shown on this page are from the designated plan file process for the file group, as defined in the file group properties.

If the file group is an on-demand file group, users can also create new on-demand plan files by clicking the plus button in the top right-hand corner. This button uses the Add File Message text, and it only displays if the file group has a designated Add File Form (both as defined in the file group properties). Clicking the button launches the form. This is equivalent to the functionality in the Open Plan Files dialog to create a new on-demand plan file.

For more information on configuring this page, see the *File Group Administration Guide*.

Accessing the page

There are two ways to access this page:

- Users can click the totals links in the Process Summary component to be taken to this page. This is the only "built-in" way for users to navigate to the page.
- Alternatively, you can provide users with a hyperlink to the page, using the following syntax:

  `<baseURLtoAxiom>/filegroups/filegroupID/process`

For example, if the file group ID is 50, the URL would look as follows:

`https://CustomerName.axiom.cloud/filegroups/50/process`

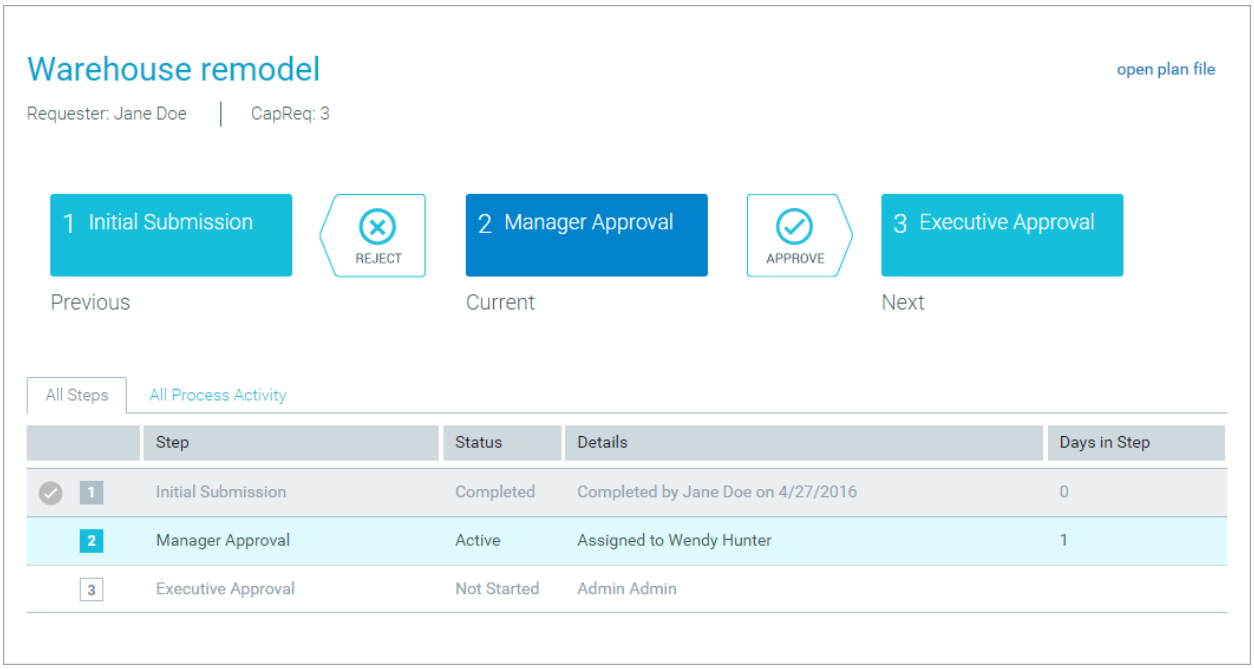
You can use the GetFileGroupID function to return the ID for a file group. To make the link dynamic, you can use a file group alias in the function. For example:

```
=GetFileGroupID("Current Budget")
```

Where Current Budget is the name of a file group alias that always points to the file group for the current budget cycle.

Using the Process Routing page

Using the Process Routing page of the Web Client, users can view the process progression of a particular plan file and open that plan file. If the user is also the current step owner, they can complete the current task from this page as well.



The availability of this page depends on the following setting in the plan file process definition: **Make routing page visible to anyone with read access to the plan file**. If enabled, then any user with at least read-only access to the plan file can access this page and view the process progression and activity details for the plan file. If disabled, only administrators and process owners can access this page.

If the user is not the current step owner, or an administrator, or a process owner, then the Process Routing page is for information only. The user can still see the current status of the plan file at the top of the page, but the user cannot complete the task.

Accessing the page

There are several ways to access the Process Routing page:

- Users can click any of the individual task links in the Process Summary component or in the Process Tasks page to be taken to the Process Routing page.
- Users can click on any hyperlinked column in the Process Directory page (see previous section).
- Alternatively, you can provide users with a hyperlink to the page, using the following syntax:

  `<baseURLtoAxiom>/process/processID/planfile?planvalue=code`

  The code is the plan file's dimension value from the key column of the plan code table. For example, if the plan code table is Dept, then the codes are department codes.

For example, if the process ID is 5988 and the plan file is for Dept 42000, the URL would look as follows:

`https://CustomerName.axiom.cloud/process/5988/planfile?planvalue=42000`

You can find the ID for a process by using the GetProcessInfo function, or by hovering over the process definition in the Explorer task pane.

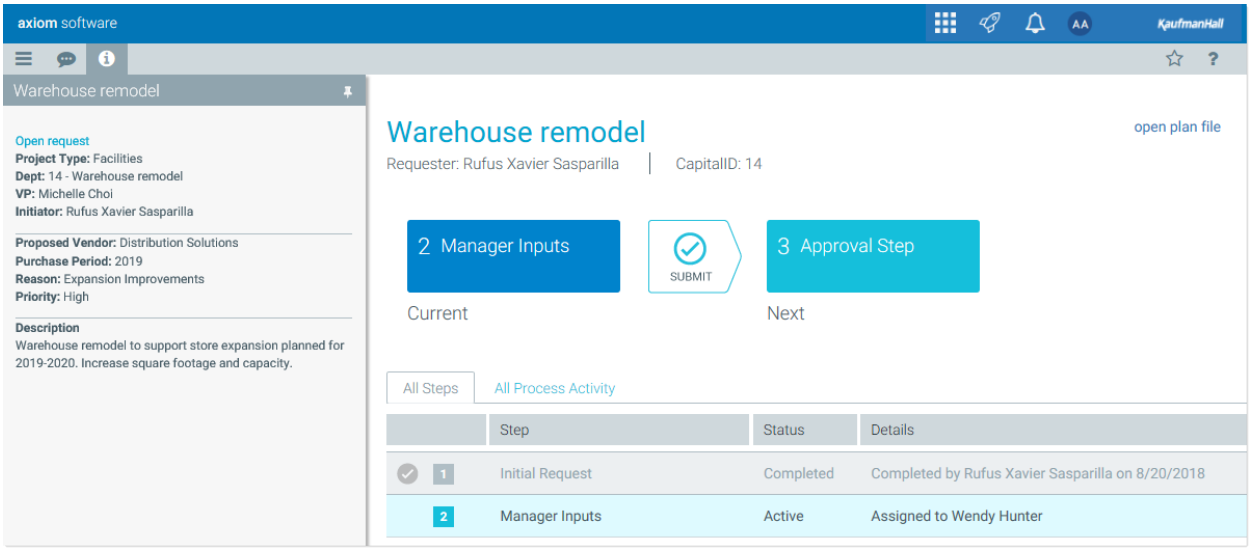
You may want to provide users with hyperlinks to this page so that they can continue to view the process details even when they are not the current step owner. For example, if the process is for capital requests, you may want the initial requester to be able to view the routing details for the plan file for the duration of the process, so that they can see the current status of their request.

To do this, you could display hyperlinks to each user within a Formatted Grid component as follows:

- Use an Axiom query to bring in the plan codes for which the current user is the initial requester.
- Use a formula in the query's in-sheet calc method to build up the necessary URL for each plan file.
- Use another formula in the query's in-sheet calc method to wrap the resulting URL in an HREF content tag, to display the URL as a clickable hyperlink in the form.

Information panel

You can also optionally configure an information panel that users can access from this page. This customizable panel can display details about the plan file, to help users decide if they are ready to complete the process task for the plan file. For more information on how to configure this panel in the plan file process definition, see the *File Group Administration Guide*.



Example information panel

Configuring display settings for the Process Directory web page

You can optionally configure various display settings for the Process Directory web page. You can configure the following on a per file group basis:

- The header text that displays on the top of the page
- Which columns are included in the directory, and certain attributes about those columns—including which column contains the links to the corresponding plan files
- Which column is used to sort the directory
- Whether users can filter the directory based on refresh variable selections

- The text for the "add new file" button (on-demand file groups only)

These settings are defined in the file group properties. Only administrators and users with one of the following security permissions can edit file group properties: **Administer File Groups** and **Modify File Group**.

To access the Plan File Directory properties:

1. On the **Axiom** tab, in the **Administration** group, click **Manage > File Groups**.
2. Navigate to the file group that you want to edit, then right-click the file group and select **Edit**.

   TIP: You can also do this from the file group node in the Explorer task pane.

Most of the properties that affect the Plan File Directory page are defined on the **Web Configuration** tab, in the **Process Directory** sub-tab. After making and saving any changes to the file group properties, you must reload the web page to see the effects of these changes.

NOTE: The process details displayed in the Process Directory web page are for the designated **Plan File Process** for the file group. This is defined in the **Edit File Group** dialog, on the **Options** tab. It is not currently possible to display the process details for more than one plan file process in a file group.

Customizing the directory header text

You can optionally customize the header text that displays at the top of the Process Directory web page. By default, the header text is the process display name.

To customize the header, type the desired text into the **Directory Header Text** box on the **Process Directory** tab. If you later want to revert back to using the default text, you can clear the contents of this box.

You can use file group variables such as `{FileGroupYear}` in the header text. You must manually type any variable that you want to use, enclosed in curly brackets—there is no helper tool available to insert these variables for you.

Configuring the display columns for the directory

You can optionally configure the columns that display in the directory, as well as certain attributes about those columns. You can specify which columns are searchable, which are frozen for scrolling, and the column width. You can also customize the header text for the column.

IMPORTANT: The display column properties determine which column contains links to the Process Routing page for each plan file. By default, no column contains these links. If you do not enable **Link to Process page** for at least one column, then users cannot open the Process Routing page from the Process Directory page.

The current display columns are listed in the **Display Columns** box. By default, the following columns are selected to display:

- The key column of the plan code table
- Designated description columns for the plan code table
- Various process status columns, such as Status and Due Date

You can include any column from the plan code table, from a data table that directly looks up to the plan code table, or from a reference table that the plan code table looks up to. You can also include various process columns relating to the process status.

To configure which columns are included and in what order, click **Select Columns**. In the **Select Columns** dialog:

- To add a column, select the column in the left-hand pane of the dialog and then click **Add** to move it to the **Selected Columns** box.
- To remove a column, select the column in the **Selected Columns** box and then click **Remove**.
- To change the order of a column, select the column in the **Selected Columns** box and then click **Up** or **Down** to move it to the desired location.

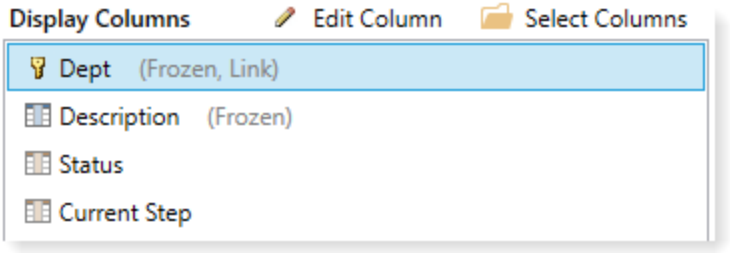
Display attributes for each column are configured after the column has been added to the **Display Columns** box. To configure the display attributes for a column, select the column in the list and then click **Edit Column**. You can edit the following display properties:

Item	Description
Header	The header text for the column. By default, this is the column name. You can customize this text if desired. If the column is not on the plan code table, the fully qualified name is used by default. For example, if the plan code table is Dept, then if you add the `Dept.Region` column the default header value is just Region. But if you add the `CapData.Total` column, then the default header value is CapData.Total.
Width	The width of the column. By default, all display columns use the same width. If desired, you can enter a different width in pixels, up to a maximum of 500. If you want to go back to using the default width, you can clear this field.

Item	Description
Column Alignment	The alignment of the column values. By default, the alignment is set to **Default** and determined as follows: • Values in frozen columns are left-aligned. • Values in non-frozen columns are left-aligned for strings and right-aligned for numbers. If desired, you can override this behavior and specify the alignment as **Left**, **Right**, or **Center**. If you change the alignment and then you later want to return to the default behavior, specify Default. **NOTE:** The alignment only affects the values in the column. Column header text is always left-aligned.
Searchable	Specifies whether the column is searchable on the web page, using the search box on the top of the page. Select this check box if you want the contents of this column to be included in the search. If no columns are flagged as searchable, then the search uses the frozen columns. **NOTE:** This option is only available for columns on reference tables.
Frozen	Specifies whether the column is "frozen" on the page for scrolling purposes. Select this check box if you want this column to remain fixed when the user scrolls to the side.
Link to Process page	Specifies whether the values in this column contain hyperlinks to the corresponding Process Routing page for each plan file. Users can use these hyperlinks to navigate to this page and see the specific process details for individual plan files. This must be enabled on at least one column in order to allow users to access the Process Routing page from the Process Directory. Typically this option is enabled for the key column (such as Dept) or for another column that holds identifying values for plan files. For example, if the file group is an on-demand file group, you may be using an alternate key column that contains meaningful codes for each plan file, and you may be using that column instead of the identity column as the primary identifier for plan files.

Item	Description
Custom Formatting	If the column values are numeric—meaning column data types of Integer (all types) or Numeric—then you can optionally define a custom display format for the values. To define a display format, enter a valid Excel formatting string. These strings can be obtained as follows: • Format a cell in a spreadsheet to use the desired display format. • In the **Format Cells** dialog, on the **Number** tab, select the **Custom** category and copy the string in the **Type** box. For example, this is the formatting string for a Currency format that shows the negative numbers in parentheses: `$#,##0.000_);($#,##0.000)` Colors (such as red font for negative numbers) are not supported. Additionally, text replacement strings are only supported for zero values. Other advanced or unusual formats may not display as expected, so be sure to verify the column display. If you do not define a custom display format, then the default formatting for the column's specified numeric type will be used.

If you edit the attributes for a column, some of these changes display in parentheses after the column name in the Display Columns box. This is so that you can see certain attributes at a glance without having to open the Edit Columns dialog for each column. For example, in the following screenshot you can easily see which columns are frozen and which column contains the link to the Process Routing page.



Defining the sort column for the directory

You can optionally configure the column used to initially sort the directory. The user can change the sort by clicking on the column header of any column displayed in the directory.

The current sort column is displayed in the **Initial Sort Column** box on the **Process Directory** tab. By default, the directory is sorted by the key column of the plan code table, in ascending order. You can select any column in the plan code table, or in a reference table that the plan code table looks up to.

To configure the sort column, click **Select**. Then in the **Column Chooser** dialog, select the column that you want to use to sort the directory.

Defining refresh variables for the directory

You can optionally set up refresh variables for the directory, so that users can filter the plan files shown in the directory based on these predefined variables.

The Process Directory page already provides built-in variables that allow users to filter by process status. Any additional refresh variables that you define must be based on the plan code table, just like the variables that can be defined for the Plan File Directory. If you define additional refresh variables, then the built-in variables will be grouped under the heading **Process Variables**, and your custom variables will be grouped under the heading **Plan File Variables** (unless you define a different group name in the variable properties).

To enable filtering for the directory, do the following:

- Create a file group utility file with a RefreshVariables data source, and define the variables to be used with the directory.
- Then, designate this file as the **Refresh Variable Workbook** for the file group.

When the Process Directory page is accessed, Axiom Software reads the variables from the designated file, and presents them in the Filters panel (just like when using refresh variables with Axiom forms). The user's selected values for the variables are applied as filters to the directory.

Refresh variables work as follows in this context:

- The only supported refresh variable type is ComboBox, using either a table column in the plan code table, or a ComboBox data source. All other variable types will be ignored.
- If you are using a column in the plan code table, Axiom Software takes the selected value for the refresh variable and applies it to the web page as a filter. For example, if the plan code table has a column such as RequestType, and the user selects Type1, then Axiom Software applies a filter of `RequestType='Type1'`. The web page is then filtered to only show the results for plan files that have a request type of Type1.
- If you are using a ComboBox data source, the `[Value]` column for the data source must contain valid filter criteria statements based on the plan code table. The selected filter is applied to the web page "as is". The `[Label]` column of the data source can contain "user friendly" text instead of the full filter statement.
- All other refresh variable settings can be used in this context, such as dependent variables or group names. Keep in mind that if you configure a variable as required, then once a user selects a value for that variable and applies it, they will not be able to clear the variable and return to the unfiltered state of the report without reloading the page.

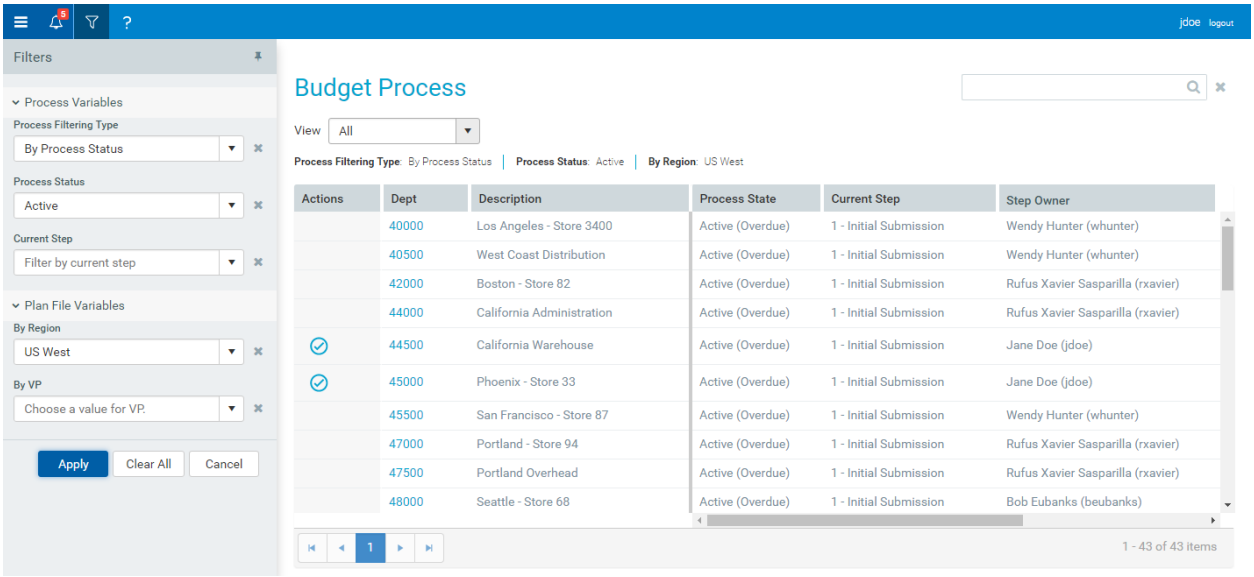
The variables file can use Axiom queries, data lookups, and Axiom functions to define the variable properties or to populate the ComboBox data source. When the file is accessed by the web page, any "refresh on open" queries are executed and formulas are calculated before the variables are read from the file and presented in the Filters panel. When a user applies the variable values, the file is refreshed

and calculated again before the final selected values are applied as filters to the web page. The file should not contain any queries or other features that are not necessary to the configuration of the refresh variables.

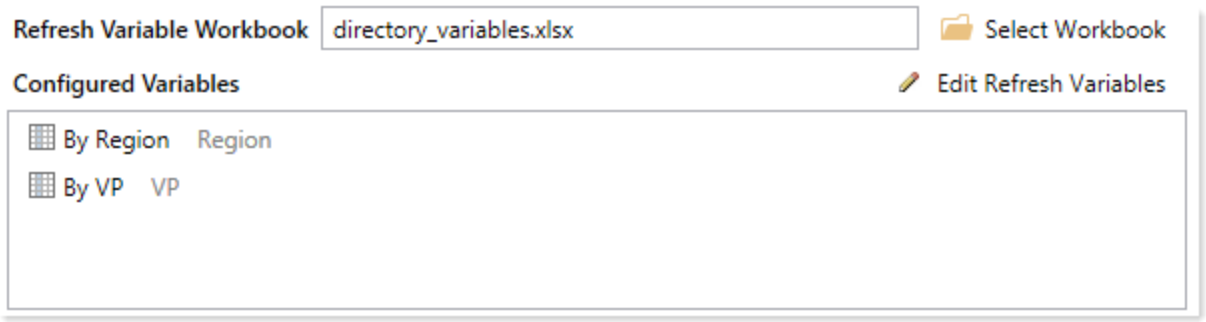
For example, the following variables could be defined in the utility file:

	A	B	C	D	E	F	G	H	I	J
3										
4			[RefreshVariables]	[Name]	[DisplayName]	[VariableType]	[IsEnabled]	[SelectedValue]	[IsRequired]	[ColumnName]
5			[Variable]	Region	By Region	ComboBox	TRUE		False	Dept.Region
6			[Variable]	VP	By VP	ComboBox	TRUE		False	Dept.VP

When a user views the Process Directory page, they can use the Filters panel to filter the list by the variables:



To designate a file as the **Refresh Variable Workbook**, click **Select Workbook** on the **Process Directory** tab. You can select any utility file for the file group. Once a file has been selected, the variables defined in that file display in the **Configured Variables** box for your reference. If you want to edit the refresh variables, clicking **Edit Refresh Variables** opens the file.



Defining text for the "add new file" button

If the file group is an on-demand file group, the Process Directory page contains a button for users to create new plan files. This button is only present if an **Add File Form** has been specified on the **Options** tab of the file group properties. When the user clicks the button, the designated form opens so that the user can create a new plan file.

You can customize the text that displays next to this button, by using the **Add File Message** field on the **Options** tab of the file group properties. This text is used in the Open Plan Files dialog for the Desktop Client, and in the directory pages for the Web Client.

Save Type 4 for plan file processes

Save Type 4 can be used to modify plan file process tasks from within a spreadsheet. This allows you to modify process tasks based on queries, calculations, and inputs in a spreadsheet, rather than using the software interface. Additionally, Save Type 4 utilities can be scheduled for processing using Scheduler's Process Document List task.

Managing process tasks using Save Type 4

Using Save Type 4, you can perform various actions on plan file process tasks within a spreadsheet, rather than using the Process task pane or the Process Status dialog. You might use this to:

- Provide end users with a custom utility to review and complete multiple plan file tasks at a time.
- Provide administrators and process owners with a custom utility to move plan files to different steps in the process.

This functionality can only be used on plan file process definitions. Standard process definitions cannot use Save Type 4 to complete tasks.

Save Type 4 depends on the placement of save-to-database tags within the sheet. There are three components:

- The primary SaveStructure2DB tag, which defines the locations of the save-to-database control row and control column, and specifies the desired operation.
- Column tags in the save-to-database control row, to specify the columns which hold the properties for the process action.
- Row tags in the save-to-database control column, to flag rows to be saved.

Save-to-database tag summary

Tag Type	Tag Syntax
Primary tag	`[SaveStructure2DB; Axiom.ProcessActions; CustomSaveTag=`*`Name`*`]`
Row tags	`[Save]`

Column tags	`ProcessDefinitionID`
	`PlanCode`
	`Action`

Tag Type	Tag Syntax
	StepNumber
	TargetStepNumber
	GenerateNotifications
	Comment

NOTE: Save Type 4 must be enabled for the sheet on the file's Control Sheet in order for the save process to occur.

Placing the primary save-to-database tag in the sheet

To define the save-to-database process, place the following tag in any cell in the sheet, within the first 500 rows:

```
[SaveStructure2DB;Axiom.ProcessActions]
```

The row containing this tag becomes the control row for the process, and the column containing this tag becomes the control column for the process.

You can also optionally use the custom save tag parameter. For example:

```
[SaveStructure2DB;Axiom.ProcessActions;CustomSaveTag=SaveTask]
```

NOTES:

- The primary SaveStructure2DB tag must be located in the first 500 rows of the sheet.
- The SaveStructure2DB tag can be placed within a formula, as long as the starting bracket and identifying tag are present as a whole within the formula.

Defining the process action properties in the control row

Within the control row for the save-to-database process, specify the columns that define the process action properties. These properties can be placed in any column.

Column Tag	Description
ProcessDefinitionID	The database ID of the process definition. The specified process definition must be a plan file process definition.
PlanCode	The code of the plan file associated with the task. Save Type 4 is only supported for use with plan file process definitions, therefore, every task is associated with a plan code.

Column Tag	Description
`Action`	The action to take on the task. The following actions are supported: • `Submit`: Complete the task for an Edit Plan File step. • `Approve`: Approve the task for an Approval step. Submit can also be used for this case. • `Reject`: Reject the task for an Approval step. • `Move`: Move the plan file to a different step. • `Regenerate`: Regenerate tasks for the plan file, for the current step. Administrators and process owners can perform any of these actions on any task. Other users can submit / approve / reject tasks that they currently own. **IMPORTANT:** Non-admin process owners are not limited by their plan file filter, like they are in the Process Status dialog. They can perform actions on any task. Group owners, if applicable, cannot perform actions on all tasks in their group. They can only perform actions on tasks that they currently own. The Move and Regenerate actions follow the same rules as the corresponding actions in the Process Status dialog. For example, Move cannot be used on a sub-step of a multiple approvals step; it can only be used on the parent step. Regenerate can be used on either the parent step (to regenerate all active or skipped sub-steps) or a specific sub-step.
`StepNumber`	The current step number of the plan file. Required for all actions except Move.
`TargetStepNumber`	The target step number for the action. Required for Move actions; ignored otherwise. The target step must be a top-level step. The plan file will be moved from its current step to the target step.
`Comment`	Optional. A comment to store in the process history about the action. In most cases, this comment will be included in the notification email to the next step owner (if applicable). If the action is Submit / Approve / Reject, the notification settings in the process definition determine whether notifications will be sent. If the action is Move, then by default notifications are not sent unless the GenerateNotifications property is used to enable them. The comment does not apply if the action is Regenerate.

Column Tag	Description
`GenerateNotifications`	Optional; only applies if the action is Move. Specifies whether a notification email will be sent to the next step owner as part of the move (True/False). If blank or omitted, notifications will not be sent.

The column tags can be placed to either the right or the left of the primary tag. All column tags are required except as noted above.

The control row must be dedicated to containing only valid column names for the Save Type 4 operation to the target table. Any invalid entries in the control row will cause an error when saving.

Flagging the rows to be saved

Within the control column for the save-to-database process, mark each row that you want to be saved with a `[Save]` tag. This is the only valid tag for the process save.

If you have defined a custom save tag in the SaveStructure2DB tag, then you must mark the rows with that tag instead of the default tag. For example, if your primary tag is `[SaveStructure2DB; Axiom.ProcessActions; CustomSaveTag=SaveTask]` then you would place the tag `[SaveTask]` in the rows that you wanted to be saved.

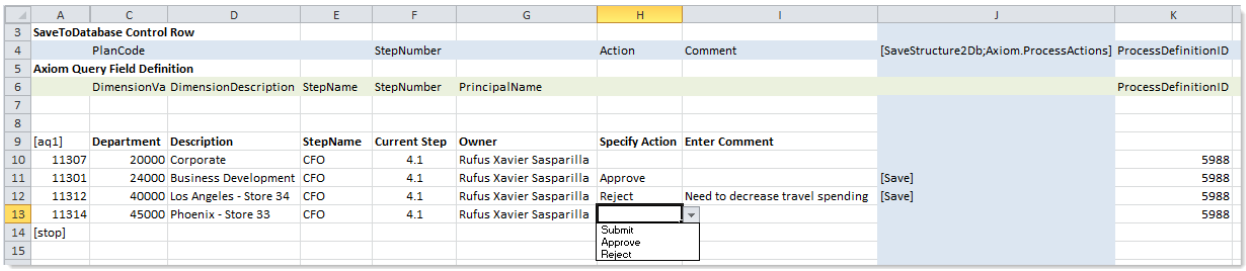
Only rows that are marked with a valid tag are processed; all other rows are ignored, even if there is content in the property columns. If a row contains a valid tag but no content exists in the required property columns, a save error will occur.

NOTE: The row tag can be placed within a formula if desired.

Populating task properties into the spreadsheet

The easiest way to populate the spreadsheet with the current task properties is to use an Axiom query to the Axiom.ProcessTasks table. For end users, this query is automatically filtered to only show the user's current tasks. For administrators and process owners, this query brings in all current tasks for all users. You can use the CurrentUserIsOwner column to filter the query for administrators and process owners if needed. For more information on the Axiom.ProcessTasks system table, see Axiom Software Help (search on **AX1401** in your help system to go to the topic).

The following screenshot shows an example of how a workbook might be set up to provide end users with a utility to complete their process tasks in bulk:



	A	C	D	E	F	G	H	I	J	K
3	SaveToDatabase Control Row									
4		PlanCode			StepNumber		Action	Comment	[SaveStructure2Db;Axiom.ProcessActions]	ProcessDefinitionID
5	Axiom Query Field Definition									
6		DimensionVa	DimensionDescription	StepName	StepNumber	PrincipalName				ProcessDefinitionID
7										
8										
9	[aq1]	Department	Description	StepName	Current Step	Owner	Specify Action	Enter Comment		
10	11307	20000	Corporate	CFO	4.1	Rufus Xavier Sasparilla				5988
11	11301	24000	Business Development	CFO	4.1	Rufus Xavier Sasparilla	Approve		[Save]	5988
12	11312	40000	Los Angeles - Store 34	CFO	4.1	Rufus Xavier Sasparilla	Reject	Need to decrease travel spending	[Save]	5988
13	11314	45000	Phoenix - Store 33	CFO	4.1	Rufus Xavier Sasparilla				5988
14	[stop]									
15										

Submit
Approve
Reject

When an end user opens the file, the Axiom query is refreshed to show the user's current tasks. The user can fill out the Action column to specify the action to perform on the plan file. The save-to-database control column is set up with a formula so that once an action is selected in the Action column, the save tag is automatically populated. When the user saves, the actions are performed via the Save Type 4 setup. The Axiom query should be set up to refresh after save, so that it is repopulated with the latest tasks after saving.

This example shows the control columns and rows to illustrate how the spreadsheet would be set up. Before rolling out this utility to end users, these work areas would be hidden via freeze panes and/or by using a view. Report headers and instructional text would also be added.

This utility could also be form-enabled, so that users could complete their tasks in bulk from a form. For example, the current tasks could be displayed to the user in a Formatted Grid component with Select tags to present the available actions. A Button component could be used to trigger the save-to-database.

Changing the process initiator using Save Type 4

Using Save Type 4, you can change the recorded process initiator for a plan file in a plan file process. This may be necessary when you are using the process initiator as a step owner assignment or as the recipient of notifications, and the original process initiator for the plan file has left the organization (or should no longer be the process initiator for other reasons).

Save Type 4 depends on the placement of save-to-database tags within the sheet. There are three components:

- The primary SaveStructure2DB tag, which defines the locations of the save-to-database control row and control column, and specifies the system table that you want to update.
- Column tags in the save-to-database control row, to specify the columns holding the process properties.
- Row tags in the save-to-database control column, to specify the rows to include in the save process.

Save-to-database tag summary

Tag Type	Tag Syntax
Primary tag	`[SaveStructure2DB; Axiom.ProcessInstances; CustomSaveTag=`*`Name`*`]`

Tag Type	Tag Syntax
Row tags	`[Save]`
Column tags	`ProcessInstanceID` `ProcessInitiatorName`

NOTES:

- Save Type 4 must be enabled for the sheet on the file's Control Sheet in order for the save process to occur.
- The user performing the save must be an administrator or the process owner.

Placing the primary save-to-database tag in the sheet

To define the save-to-database process, place the following tag in any cell in the sheet, within the first 500 rows:

```
[SaveStructure2DB;Axiom.ProcessInstances]
```

The row containing this tag becomes the control row for the process, and the column containing this tag becomes the control column for the process.

You can also optionally use the custom save tag parameter. For example:

```
[SaveStructure2DB;Axiom.ProcessInstances;CustomSaveTag=ChangeInitiator]
```

NOTES:

- The primary SaveStructure2DB tag must be located in the first 500 rows of the sheet.
- The SaveStructure2DB tag can be placed within a formula, as long as the starting bracket and identifying tag are present as a whole within the formula.

Placing the process property tags in the control row

Within the control row for the save-to-database process, specify the columns that define the process properties. These properties can be placed in any column, to either the right or the left of the SaveStructure2DB tag.

Column Tag	Description
`ProcessInstanceID`	The ID of the process instance for the plan file. Each plan file that is active in the process has a unique process instance ID.
`ProcessInitiatorName`	The login name of the process initiator.

All columns are required.

The control row must be dedicated to containing only valid column names for the Save Type 4 operation to the target table. Any invalid entries in the control row will cause an error when saving.

Indicating the rows to save

Within the control column for the save-to-database process, mark each row that you want to be processed with the appropriate row tag:

Row Tag	Description
`[Save]`	Updates the process initiator name with the name specified in the spreadsheet. **NOTE:** If you have defined a custom save tag in the SaveStructure2DB tag, then you must mark the rows with that tag instead of the default tag. For example, if your primary tag is `[SaveStructure2DB; Axiom.ProcessInstances; CustomSaveTag=ChangeInitiator]` then you would place the tag `[ChangeInitiator]` in the rows that you wanted to be saved.

Only rows that are marked with a valid tag are processed; all other rows are ignored, even if there is content in the property columns. If a row contains a valid tag but no content exists in the property columns, a save error will occur.

When the save occurs and the process initiator is changed for a process instance, if the instance has any active tasks that are currently assigned to the previous process initiator, those tasks will be automatically regenerated for the new process initiator.

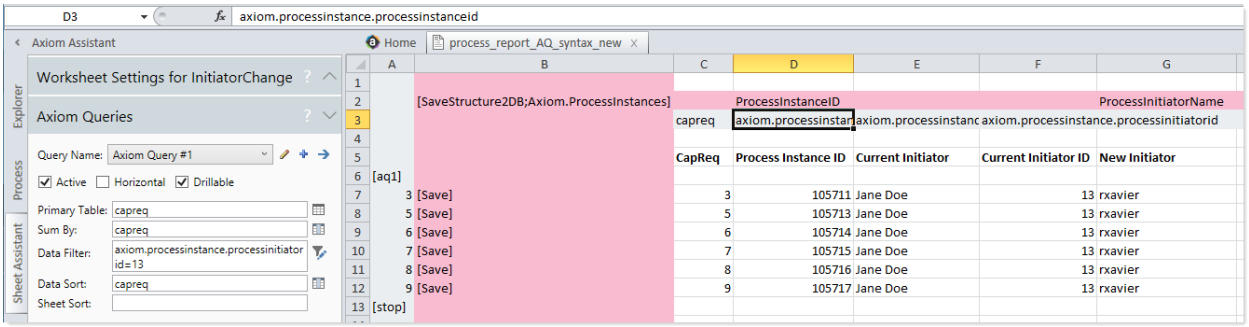
NOTE: The row tag can be placed within a formula if desired. For example, you might want to use a formula to determine whether a particular row should be saved or deleted.

Populating the process properties in the spreadsheet

You can manually type the process properties within the spreadsheet, or you can use an Axiom query to populate the spreadsheet with the necessary process instance IDs. You can then assign user names as necessary, and then save the changes back to the database.

It is not possible to query the Axiom.ProcessInstances table directly. Instead, you must create a query to the plan code table for the process, and then include the `Axiom.ProcessInstance.ProcessInstanceID` column in the field definition. You can also include the `Axiom.ProcessInstance.ProcessInitiatorName` and `Axiom.ProcessInstance.ProcessInitiatorID` columns to bring in the current process initiator for the plan file. For more information on how to create this type of report, see Reporting on plan file processes.

The following screenshot shows an example of how a utility could be set up to change the process initiator. An Axiom query to the plan code table is being used to bring in the process instance IDs for the plan codes that need to be updated. The query is filtered to only bring in the codes and IDs where a certain user, Jane Doe, is the process initiator. (Note that the query must filter by the ProcessInitiatorID column, not the ProcessInitiatorName column.) The login name for the new initiator would then be added to the save column for ProcessInitiatorName (column G in this example). When the save-to-database is executed, the existing initiator user for the listed process instance IDs would be changed to the new initiator user.



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