File Processing Guide

Axiom

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Introduction

The File Processing feature in Axiom can be used to automate the process of various file utilities, such as:

- Generating report snapshots for automated distribution
- Processing data and saving it to the database
- Generating an export file
- Processing alerts
- Collecting multiple report snapshots into report packages
- Processing multiple reports in batch

Intended audience

This guide is intended for administrators and other power users who are responsible for managing report utilities and publishing report output.

What is covered in this guide?

This guide covers the following aspects of file processing:

- How to enable a file for file processing
- Configuring file processing settings for various processing types
- Setting up multipass processing
- File processing design considerations
- Using special file processing features: file collect and batch

What is not covered in this guide?

The following related topics are not covered in this guide:

- Setting up the report contents to be processed, such as setting up Axiom queries or save-to-database. For information on these file features, see the *Axiom File Setup Guide*.

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

Axiom 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 functionality is virtually identical in both environments.

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File Processing

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

File processing can be used to perform the following actions:

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

Although all of these activities are performed using the file processing feature, the setup and requirements differ for each processing type. In all cases, the file that you want to process must have a File Processing Control Sheet (Control_FileProcessing) with a selected processing type. Some processing types then require additional file processing settings (such as snapshot and export), while other types require an additional control sheet where the settings specific to that operation are defined (such as file collect and batch).

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

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

- A report configured for batch processing to run everything at once. For example, the batch would contain an entry for each report configured for snapshot processing, and then finish with the file collect report.

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

Once the file has been configured to use file processing, you can process it by using **File Output > File Processing**. From this menu, you can choose to **Process File** or **Process File Multipass**. File processing can also be performed via Scheduler, and from a task pane.

Enabling file processing for an Axiom file

In order to use file processing on an Axiom file, the file must have a File Processing Control Sheet. Once the control sheet has been added, you can complete the file processing settings by using the File Processing task pane.

To enable file processing for an Axiom file:

1. Open the file for which you want to enable file processing. File processing can be set up for report files, templates/plan files, and driver files.

   IMPORTANT: Before enabling file processing for a plan file, make sure that the plan file design can accommodate ongoing data refreshes. When file processing is initiated, a full refresh occurs, including all enabled Axiom queries in the file. For more information, see Considerations for using file processing in plan files.

2. On the **Axiom** tab, in the **File Output** group, click **File Processing > Enable file processing in this workbook**.

   NOTE: In systems with installed products, this feature may be located on the **Main** tab (either directly on the tab, or on the **Publish** menu).

The **File Processing** pane opens, and a sheet named **Control_FileProcessing** is added to the file. You can now set up file processing using either the task pane or the control sheet. For more information on configuring each type of file processing, see the detailed topics in this section.

You can also enable file processing in the following ways:

- Right-click in a file and then click **File Processing > Enable File Processing in this workbook**.
- On the **Axiom Designer** tab, in the **Developer** group, click **Tools > Add a Control Sheet > File Processing**. This option is only available to administrators.

Setting up file processing: Snapshot

Using file processing, you can set up an Axiom file to take a snapshot copy according to defined settings, and then save that copy to a file location and/or email it. "Snapshot" is a process that converts an Axiom file to a regular Microsoft Excel spreadsheet, so that it can be accessed outside of Axiom.

Taking snapshot copies via file processing has the following advantages over using the regular snapshot features (**Snapshot File** and **E-Mail Workbook**):

- If you have a standard set of snapshot and delivery options that you use with a file, these options are saved in the file processing settings so that you do not need to select them each time you take a snapshot of the file.
- Using the multipass features of file processing, you can process a file multiple times for different dimensions, saving or emailing the snapshot copy after each pass.

NOTE: File processing always performs a refresh of the file, in addition to taking the snapshot copy. If you want to take a snapshot copy of the file without performing a refresh first, you must use one of the regular snapshot features.

TIP: You can use snapshot file processing in conjunction with batch reporting and file collect. For example, you can automatically process multiple files, save snapshot copies of the various results, and then collect those copies into "report packages" to be emailed to recipients or saved to a designated file location.

Snapshot file processing is intended for spreadsheet Axiom files. If you have a form-enabled file where you want to process the form to create snapshot PDF copies, use the separate option Save Snapshot of Form.

To set up file processing to take and deliver snapshot copies:

1. Open the file where you want to set up file processing, and enable it as follows: On the **Axiom** tab, in the **File Output** group, click **File Processing > Add File Processing control sheet to active workbook**.

   NOTE: In systems with installed products, this feature may be located on the **Main** tab (either directly on the tab, or on the **Publish** menu).

   The **File Processing** pane opens, and a sheet named **Control_FileProcessing** is added to the file.

2. In the **File Processing** pane, for **Processing Type**, select **Save Snapshot of File**.
3. In the **Sheets to Process** box, enter the name(s) of the sheet(s) to process. You can include any sheet except control sheets and hidden sheets. Control sheets and hidden sheets are not included in snapshot copies.

You can click the **Select worksheets** button to select sheet names from a list, or you can type the sheet names. Separate multiple sheet names with semicolons.

The sheets to process will be included in the snapshot copy when the file is processed. This setting does not determine which sheets will be refreshed before the snapshot is taken; the refresh always applies to all sheets in the file when using file processing.

4. In the **Snapshot Settings** section, complete the following settings for the snapshot:

Item	Description
File Type	Select one of the following to determine the file type for the snapshot: **XLSX** (default), **XLSM**, **XLS**, or **PDF**. **NOTE:** If you select XLS, and the spreadsheet contains features that are not supported by the XLS format, the compatibility warning is not displayed during file processing. You may want to test saving the file to XLS to ensure that the end result will be as expected.
Formula Conversion	Select one of the following to determine how formulas are handled in the snapshot: • **Convert All Formulas** (default): All formulas are converted to values. • **Retain Excel Native Formulas**: Axiom formulas are converted to values, but Excel formulas are left as is. Note that if an Excel formula references a sheet that is not included in the snapshot, that formula will be converted to a value. **NOTE:** If the file contains a pivot table, this option must be selected in order for the pivot table to work in the snapshot copy. This option does not apply if PDF is the selected file type.

Item	Description
Sheet Name	Specify how the sheets to process should be named in the snapshot. You can do one of the following: • You can use file processing variables to generate dynamic sheet names. • You can type a "hard-coded" sheet name. The sheet name setting cannot be left blank. By default the sheet name uses file processing variables, and is set to `[Current_Value]_[Current_SheetName]`. If you do not plan to use multipass processing on the file, you should change this to just `[Current_SheetName]`, which means that all sheets in the snapshot will use their current sheet names. The sheet name setting takes a single entry that applies to all sheets being processed. Therefore the option to use a "hard-coded" sheet name only applies when processing a single sheet. If you are processing multiple sheets, this setting must use file processing variables. If you want to use a file processing variable, you can type the variable or you can click the pencil icon to open a text editor. From the **Insert Variable** list, select the variable that you want to use. For more information, see Defining sheet names for file processing.

5. In the **Output File Settings** section, complete the following settings to determine the delivery of the output file (or files):

Item	Description
Output To	Select one of the following: • **Local File System** (default): The output location is outside of Axiom, to either your local computer or a network share. The specific path is detailed in the **Output Folder** setting. Access to output files is not controlled by Axiom. • **Axiom Repository**: The output location is the Axiom file system, within the Reports Library. The specific path is detailed in the **Output Folder** setting. Access to output files is controlled by security access to the designated folder within Axiom.

Item	Description
Output file name	Specify how the output file (or files) should be named. You can do one of the following: • You can use file processing variables to generate dynamic file names. • You can type a "hard-coded" file name. The file name setting cannot be left blank. By default the file name uses file processing variables, and is set to `[Current_Value]_Report`. You can change "_Report" to something more specific to the file contents (or omit it to use only the current value). If you do not plan to use multipass processing on the file, then you can delete the current value variable and just type the desired file name. If you want to use a file processing variable, you can type the variable or you can click the pencil icon to open a text editor. From the **Insert Variable** list, select the variable that you want to use. For more information, see Defining the file name for file processing.
Output folder	Specify the folder location for the output file (or files). You can type a folder path, or you can click the folder icon to browse to the folder location. The browse dialog will display either your local file system or the Axiom file system, depending on what you selected for **Output To**. This setting does not apply if you are *only* emailing files. For more information, see Defining the output folder for file processing.
File Generation	This option only applies when using multipass processing. Select one of the following: • **Create a Single Output File** (default): The results of each pass are collected into a single output file. For example, if you specified 1 sheet to process, and the multipass settings result in 10 passes, then one output file is created, containing 10 sheets (one sheet for each pass). • **Create an Output File for Each Pass**: The results of each pass are saved as individual output files. For example, if the multipass settings result in 10 passes, then 10 output files are created (one file for each pass). For snapshot, standard (non-multipass) processing always produces a single output file.

Item	Description
Save or Email Files	Select a delivery option for the output file (or files): • **Save Files**: The output files are saved to the specified output folder. • **Email Files**: The output files are emailed to the specified recipients. The output files are not saved anywhere on the file system. • **Save and Email Files**: The output files are both saved and emailed. If you select an option that includes emailing, then the **Email Settings** section displays in the **File Processing** pane.
Purge Setting	This option only applies when the file output is being saved to the Axiom Repository. If you want the file output to be automatically deleted after a specified period of time, then click the pencil icon to open the **Choose Date** dialog. • **Static purge date**: Select a specific date, after which the output will be deleted. • **Relative purge date**: Specify a number of days to keep the output after it has been generated. The output will be deleted after the specified number of days have passed. For more information, see Automatically deleting file output generated by file processing.
Remote Data Connection	This option only applies when the file output is being saved to your local file system, and only for Axiom Cloud systems that are using remote data connections. Select the name of the remote data connection to use for the file processing operation. The designated remote data connection will be used to access the local file system and save output file(s) to the designated location. A remote data connection is required to save files locally from an Axiom Cloud system. For more information, see the section on remote data connections in the *Scheduler Guide*.

Microsoft Sharepoint support: You can specify a Sharepoint URL for the folder location, to save the output files to a Sharepoint portal. This feature is only available when running file processing locally via the Excel Client, and when the processing type is snapshot. The user executing the processing must have the appropriate permissions to the target folder in Sharepoint. Note that if the specified folder does not already exist in Sharepoint, this will not be detected by Axiom during the file processing, but a Microsoft error will report the location as not found.

Opening the file after processing: If desired, you can opt to automatically open the output file within Axiom after the processing is complete. This option is only available if the result of the processing is a single file. If you want to use this option, it must be manually configured on the Control Sheet. In the **File Settings** section, set **Open Output File after Processing** to **On**. For more information, see File Processing Control Sheet.

6. If you chose to email the output file (or files), complete the **Email Settings**:

Item	Description
To Bcc	Enter the email addresses to receive the output file via email. Separate multiple addresses with a semicolon. If the file will be processed using multipass processing, to multiple output files, then you should use formulas to dynamically generate the appropriate email recipients for each pass (otherwise each pass will be sent to the same recipients). See Using dynamic email addresses with file processing.
From	Select one of the following to specify the From address: • **System User**: The From address is the default From address specified for Axiom in the system configuration settings. • **Current User**: The From address is the email address for the user who performs the file processing, as defined in Security.
Subject Line	Enter a subject line for the email. **NOTE:** If you want to use bracketed text in the subject line, you must escape this text with an additional set of brackets, so that Axiom does not try to evaluate the bracketed text as a file processing variable. For example, if you want the text "[Axiom Message]" in the subject line of the email, you must enter `[[Axiom Message]]` in the Subject Line field. The extra set of brackets is removed when the email is generated.
Body Text	Enter body text for the email. **NOTE:** If you want to use bracketed text in the body text, you must escape this text with an additional set of brackets, so that Axiom does not try to evaluate the bracketed text as a file processing variable. For example, if you want the text "[Sent from Axiom]" in the body text of the email, you must enter `[[Sent from Axiom]]` in the Body Text field. The extra set of brackets is removed when the email is generated.

For more information, see How email is delivered for file processing.

7. Optional. If you want to use multipass processing on the file, then complete the **MultiPass Settings**.

For **Source Column**, click the column icon to select the source column for multipass processing. For example, if you select DEPT.VP as the source column, then the file will be processed once for each VP, and the data in the file will be automatically filtered to show only the data for that VP.

To confirm that the file will be processed using your desired list of items, click **Preview Multipass List**. A dialog opens, displaying the total number of items to process, as well as the list of individual items.

For more information on multipass processing, and for details on advanced settings, see Configuring multipass settings for file processing.

8. When you are finished configuring the file processing settings, click **File Options > Save** to save the settings in the file.

Results

Users can now use **File Output > File Processing** to process the file. The following actions will occur:

- When using **Process File**, the file will be refreshed "as is," the snapshot copy will be taken, and the snapshot copy will be saved and/or emailed according to the file processing settings.
- When using **Process File Multipass**, the file will be refreshed using a multipass filter to limit the data to the current multipass item (for example, for the current VP if processing by DEPT.VP). This process will occur for each unique multipass item being processed, with a different multipass filter being applied for each pass.

  If the file generation is to multiple output files, then a snapshot copy is taken after each pass, and then saved and/or emailed according to the file processing settings.

  If the file generation is to a single output file, then the results of each pass are collected into a single file. When all of the passes are complete, the snapshot copy is taken, and then saved and/or emailed according to the file processing settings.

Snapshot settings for deleting rows and columns and for workbook/worksheet protection are honored as normal.

Setting up file processing: Snapshot Forms

Using file processing, you can set up a form-enabled file to generate a PDF "snapshot" of the form, and then save that copy to a file location and / or email it. The "snapshot" process converts an Axiom form to a stand-alone PDF file, so that it can be accessed outside of Axiom. When used with multipass processing, snapshot form provides a production reporting feature for Axiom forms, where the form can be processed multiple times over a specified dimension, saving and/or emailing the PDF generated for each pass.

When you use the snapshot form option, Axiom processes the form-enabled source file and renders the web form, then generates a PDF copy of it. This PDF generation is the same process that occurs when using **Tools > Generate PDF** on an Axiom form in the Web Client. The Axiom form should be set up as needed for optimal PDF generation. For more information, see the *Axiom Forms and Dashboards Guide*.

Special design considerations may apply to certain forms, especially if the target form contains Embedded Form components. For more information, see Design considerations for snapshot form processing.

IMPORTANT: Snapshot form processing can only be executed by Scheduler. It cannot be executed locally on the Desktop Client. You must create a Scheduler job, add a File Processing task, and configure that task to process the form-enabled file that has been configured for snapshot form processing. For more information, see the *Scheduler Guide*.

To set up file processing to create and deliver snapshot PDF copies of an Axiom form:

1. Open the file where you want to set up file processing, and enable it as follows: On the **Axiom** tab, in the **File Output** group, click **File Processing > Add File Processing control sheet to active workbook**.

   NOTE: In systems with installed products, this feature may be located on the **Main** tab (either directly on the tab, or on the **Publish** menu).

   The **File Processing** pane opens, and a sheet named **Control_FileProcessing** is added to the file.

2. In the **File Processing** pane, for **Processing Type**, select **Save Snapshot of Forms**.
3. In the **Output File Settings** section, complete the following settings to determine the delivery of the output file (or files):

Item	Description
Output To	Select one of the following: • **Local File System** (default): The output location is outside of Axiom, to either your local computer or a network share. The specific path is detailed in the **Output Folder** setting. Access to output files is not controlled by Axiom. • **Axiom Repository**: The output location is the Axiom file system, within the Reports Library. The specific path is detailed in the **Output Folder** setting. Access to output files is controlled by security access to the designated folder within Axiom.

Item	Description
Output file name	Specify how the output file (or files) should be named. You can do one of the following: • You can use file processing variables to generate dynamic file names. • You can type a "hard-coded" file name. The file name setting cannot be left blank. By default the file name uses file processing variables, and is set to `[Current_Value]_Report`. You can change "_Report" to something more specific to the file contents (or omit it to use only the current value). If you do not plan to use multipass processing on the file, then you can delete the current value variable and just type the desired file name. If you want to use a file processing variable, you can type the variable or you can click the pencil icon to open a text editor. From the **Insert Variable** list, select the variable that you want to use. For more information, see Defining the file name for file processing.
Output folder	Specify the folder location for the output file (or files). You can type a folder path, or you can click the folder icon to browse to the folder location. The browse dialog will display either your local file system or the Axiom file system, depending on what you selected for **Output To**. This setting does not apply if you are *only* emailing files. For more information, see Defining the output folder for file processing.
File Generation	This option only applies when using multipass processing. Select one of the following: • **Create a Single Output File** (default): The results of each pass are collected into a single output file. For example, if the multipass settings result in 10 passes, then one output file is created, containing the output of all 10 passes. • **Create an Output File for Each Pass**: The results of each pass are saved as individual output files. For example, if the multipass settings result in 10 passes, then 10 output files are created (one file for each pass). For snapshot, standard (non-multipass) processing always produces a single output file.

Item	Description
Save or Email Files	Select a delivery option for the output file (or files): • **Save Files**: The output files are saved to the specified output folder. • **Email Files**: The output files are emailed to the specified recipients. The output files are not saved anywhere on the file system. • **Save and Email Files**: The output files are both saved and emailed. If you select an option that includes emailing, then the **Email Settings** section displays in the **File Processing** pane.
Purge Setting	This option only applies when the file output is being saved to the Axiom Repository. If you want the file output to be automatically deleted after a specified period of time, then click the pencil icon to open the **Choose Date** dialog. • **Static purge date**: Select a specific date, after which the output will be deleted. • **Relative purge date**: Specify a number of days to keep the output after it has been generated. The output will be deleted after the specified number of days have passed. For more information, see Automatically deleting file output generated by file processing.
Remote Data Connection	This option only applies when the file output is being saved to your local file system, and only for Axiom Cloud systems that are using remote data connections. Select the name of the remote data connection to use for the file processing operation. The designated remote data connection will be used to access the local file system and save output file(s) to the designated location. A remote data connection is required to save files locally from an Axiom Cloud system. For more information, see the section on remote data connections in the *Scheduler Guide*.

4. If you chose to email the output file (or files), complete the **Email Settings**:

Item	Description
To Bcc	Enter the email addresses to receive the output file via email. Separate multiple addresses with a semicolon. If the file will be processed using multipass processing, to multiple output files, then you should use formulas to dynamically generate the appropriate email recipients for each pass (otherwise each pass will be sent to the same recipients). See Using dynamic email addresses with file processing.
From	Select one of the following to specify the From address: • **System User**: The From address is the default From address specified for Axiom in the system configuration settings. • **Current User**: The From address is the email address for the user who performs the file processing, as defined in Security.
Subject Line	Enter a subject line for the email. **NOTE:** If you want to use bracketed text in the subject line, you must escape this text with an additional set of brackets, so that Axiom does not try to evaluate the bracketed text as a file processing variable. For example, if you want the text "[Axiom Message]" in the subject line of the email, you must enter `[[Axiom Message]]` in the Subject Line field. The extra set of brackets is removed when the email is generated.
Body Text	Enter body text for the email. **NOTE:** If you want to use bracketed text in the body text, you must escape this text with an additional set of brackets, so that Axiom does not try to evaluate the bracketed text as a file processing variable. For example, if you want the text "[Sent from Axiom]" in the body text of the email, you must enter `[[Sent from Axiom]]` in the Body Text field. The extra set of brackets is removed when the email is generated.

For more information, see How email is delivered for file processing.

5. If you want to use multipass processing on the file, then complete the **MultiPass Settings**.

   For **Source Column**, click the column icon to select the source column for multipass processing. For example, if you select DEPT.VP as the source column, then the file will be processed once for each VP, and the data in the file will be automatically filtered to show only the data for that VP.

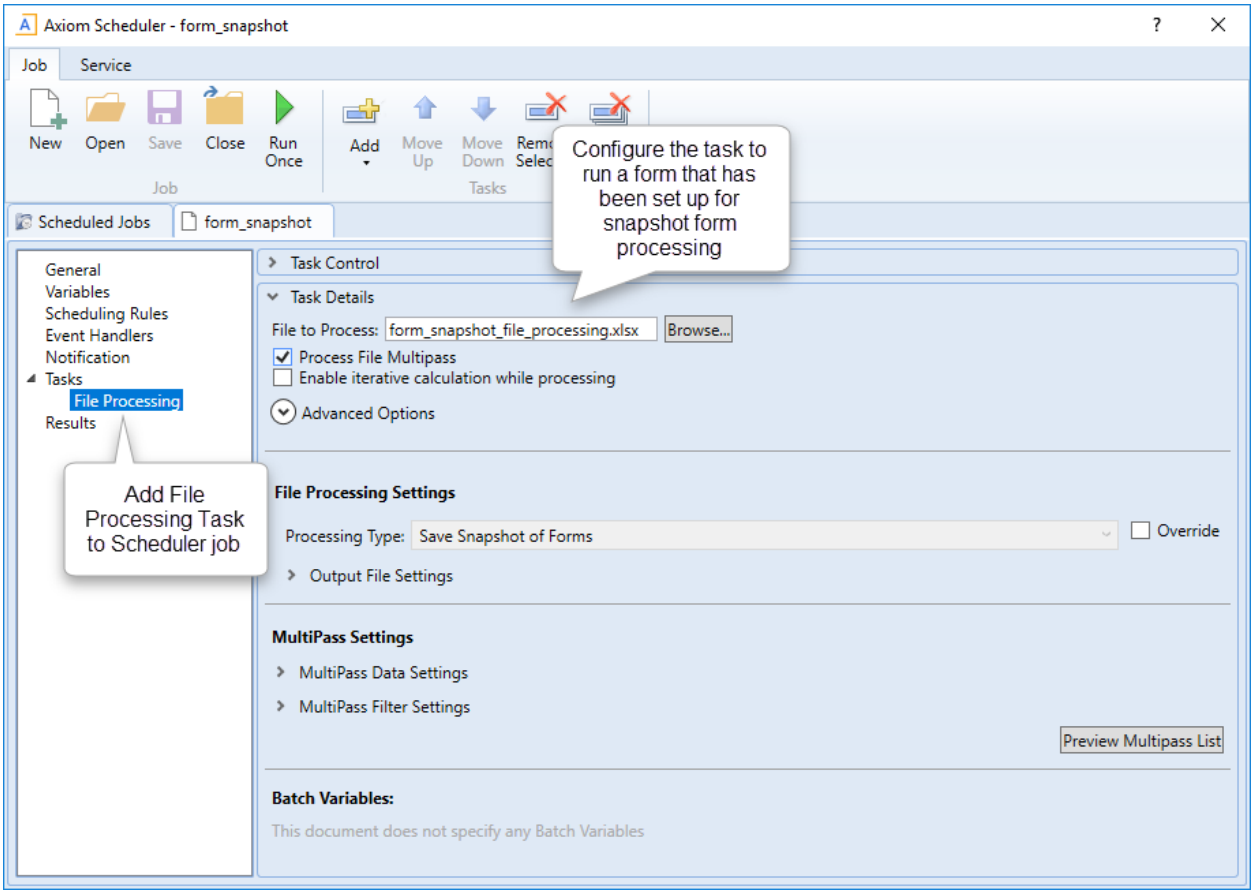
   To confirm that the file will be processed using your desired list of items, click **Preview Multipass List**. A dialog opens, displaying the total number of items to process, as well as the list of individual items.

   For more information on multipass processing, and for details on advanced settings, see Configuring multipass settings for file processing.

6. When you are finished configuring the file processing settings, click **File Options > Save** to save the settings in the file.

Results

The file can now be scheduled for execution using Scheduler. As noted previously, snapshot form processing can only be executed via Scheduler, using a File Processing task.



Example Scheduler job configured to run snapshot form processing

When the Scheduler job is run, the following actions will occur, depending on whether **Process File Multipass** is enabled for the job:

- If Process File Multipass is not enabled, the file will be refreshed "as is," the PDF snapshot copy will be taken, and the PDF will be saved and/or emailed according to the file processing settings.

- If Process File Multipass is enabled, the file will be refreshed using a multipass filter to limit the data to the current multipass item (for example, for the current VP if processing by DEPT.VP). This process will occur for each unique multipass item being processed, with a different multipass filter being applied for each pass.

  If the file generation is to multiple output files, then the PDF snapshot copy is taken after each pass, and then saved and/or emailed according to the file processing settings.

  If the file generation is to a single output file, then the results of each pass are collected into a single PDF file. When all of the passes are complete, the PDF is saved and / or emailed according to the file processing settings.

Design considerations for snapshot form processing

When designing a form to be used with snapshot form processing, keep in mind the following design considerations.

Executing Axiom queries

Axiom queries in the form document are executed according to the normal file processing requirements. If you are performing multipass processing and you want an Axiom query to be executed for each pass, that query must be active and must be enabled for **Refresh during document processing**. For more information on executing Axiom queries during file processing, see:

- Refreshing Axiom queries during file processing
- Dynamic settings for multipass processing

These Axiom query rules only apply to the target form being processed. If the target form uses Embedded Form components, the child forms displayed as embedded forms are refreshed as normal and are not considered to be part of the document processing. Any Axiom queries that would be run in the Axiom forms environment when the child form is first loaded will be run for each pass of file processing. For more information, see the *Embedded forms* section of this topic.

PDF settings in the form

During snapshot form processing, the PDF form settings apply as normal to generate the PDF:

- The **Is PDF** property on the Form Control Sheet is set to **On** for each pass. This means that you can dynamically show or hide certain components in the form during the snapshot form processing.
- The **PDF Size** and **PDF Orientation** settings on the Form Control Sheet are honored when generating the PDF.

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

Embedded forms

When executing file processing on a form, only the target form is manipulated by the file processing. If the target form contains an Embedded Form component to a display child form, the child form is "unaware" of the file processing and it is rendered and refreshed within the target form as normal. This means:

- The GetCurrentValue and IsRunningMultipass functions only resolve in the target (parent) form. These functions will not return any values in the child form.
- The multipass filter is only applied to the target (parent) form. The child form is not automatically filtered for each pass.
- As noted previously, Axiom queries in the child form are run as normal and do *not* depend on having **Refresh during document processing enabled** (since the child form is not aware of the document processing context).

If you want to filter the child form by the same dimension element for each pass, you can use shared variables to pass the value to the child form. For example, imagine that you are multipass processing by Dept.Region, and you want the child form to be filtered by the current region value as well. You can:

- In the parent form, use the GetCurrentValue function to return the multipass filter for the current pass. For example:

  ```
  =GetCurrentValue("Filter")
  ```

  When processing for the West region, the multipass filter would be `Dept.Region='West'`
- In the parent form, use the SetSharedVariable function to set a variable to the current filter value. For example:

  ```
  =SetSharedVariable("FPFilter",GetCurrentValue("Filter"))
  ```

  This sets the shared variable FPFilter to the current pass filter.
- In the child form, use the GetSharedVariable function to return the current filter value. For example:

  ```
  =GetSharedVariable("FPFilter")
  ```

  This will return the value of FPFilter filter as set in the parent form for the current pass.
- In the child form, set up Axiom queries to be filtered as needed based on the value of the FPFilter variable.

This is just an example of how to pass information about the current multipass value to the child form. The GetCurrentValue function has several options that you can use to return different values in the parent form and then use SetSharedVariable to pass those values to the child form.

Additionally, keep in mind that snapshot form processing does not provide support for sequentially processing multiple child forms within a parent form. If the target parent form uses a Menu component to change which child form displays in the Embedded Form component, only the initially visible child form will be included during snapshot form processing.

Setting up file processing: Export to file

Using file processing, you can export data from an Axiom file to a delimited text file, and then save that file to a file location and/or email it.

The following file formats / delimiters are supported for data export files:

- CSV: Comma-delimited text file
- TXT: Text file delimited by space, period, pipe, tab, semicolon, or colon

In order to use file processing to export data, two setup steps must occur:

- The file must be set up with export-to-file tags, to specify the data to be exported. For more information, see Placing data export tags in a sheet.
- The file must be enabled for file processing, and configured to export to a file. This process is discussed in this topic.

To set up file processing to export data to a file:

1. Open the file where you want to set up file processing, and enable it as follows: On the **Axiom** tab, in the **File Output** group, click **File Processing > Add File Processing control sheet to active workbook**.

   NOTE: In systems with installed products, this feature may be located on the **Main** tab (either directly on the tab, or on the **Publish** menu).

   The **File Processing** pane opens, and a sheet named **Control_FileProcessing** is added to the file.

2. In the **File Processing** pane, for **Processing Type**, select **Export to Delimited Text File**.

3. In the **Sheets to Process** box, enter the name(s) of the sheet(s) to process.

   You can click the **Select worksheets** button  to select sheet names from a list, or you can type the sheet names. Separate multiple sheet names with semicolons.

   The sheets to process are the sheets from which data will be exported. This setting does not determine which sheets will be refreshed before data is exported; the refresh always applies to all sheets in the file when using file processing.

   Any sheet included here must be set up with export-to-file tags, or else no data will be exported from that sheet when the file is processed.

4. From the **Export File Type** list, select the type of file to create for the data export. You can select CSV (comma-delimited), or a variety of different TXT formats using different delimiters.

   NOTE: If text in a cell contains the delimiter, that text will be qualified using double quotation marks in the export file.

5. By default, the export file will include a header row that uses the tags in the export-to-file control row. If you do not want a header row in the export file, then set **Include Column Headers** to **Off**.

6. In the **Output File Settings** section, complete the following settings to determine the delivery of the output file (or files):

Item	Description
Output To	Select one of the following: • **Local File System** (default): The output location is outside of Axiom, to either your local computer or a network share. The specific path is detailed in the **Output Folder** setting. Access to output files is not controlled by Axiom. • **Axiom Repository**: The output location is the Axiom file system, within the Reports Library. The specific path is detailed in the **Output Folder** setting. Access to output files is controlled by security access to the designated folder within Axiom.
Output file name	Specify how the output file (or files) should be named. You can do one of the following: • You can use file processing variables to generate dynamic file names. • You can type a "hard-coded" file name. The file name setting cannot be left blank. By default the file name uses file processing variables, and is set to `[Current_Value]_Report`. You can change "_Report" to something more specific to the file contents (or omit it to use only the current value). If you do not plan to use multipass processing on the file, then you can delete the current value variable and just type the desired file name. If you want to use a file processing variable, you can type the variable or you can click the pencil icon to open a text editor. From the **Insert Variable** list, select the variable that you want to use. For more information, see Defining the file name for file processing.
Output folder	Specify the folder location for the output file (or files). You can type a folder path, or you can click the folder icon to browse to the folder location. The browse dialog will display either your local file system or the Axiom file system, depending on what you selected for **Output To**. This setting does not apply if you are *only* emailing files. For more information, see Defining the output folder for file processing.

Item	Description
File Generation	Select one of the following: • **Create a Single Output File** (default): The results of each pass are collected into a single output file. Note that if you selected multiple sheets to process, you will get a single output file for each sheet. In the latter case, the sheet name is automatically appended to the output file name. • **Create an Output File for Each Pass**: The results of each pass are saved as individual output files. For example, if the multipass settings result in 10 passes, then 10 output files are created (one file for each pass). Note that if you selected multiple sheets to process, you will get an output file for each sheet / pass combination.
Save or Email Files	Select a delivery option for the output file (or files): • **Save Files**: The output files are saved to the specified output folder. • **Email Files**: The output files are emailed to the specified recipients. The output files are not saved anywhere on the file system. • **Save and Email Files**: The output files are both saved and emailed. If you select an option that includes emailing, then the **Email Settings** section displays in the **File Processing** pane.
Purge Setting	This option only applies when the file output is being saved to the Axiom Repository. If you want the file output to be automatically deleted after a specified period of time, then click the pencil icon to open the **Choose Date** dialog. • **Static purge date**: Select a specific date, after which the output will be deleted. • **Relative purge date**: Specify a number of days to keep the output after it has been generated. The output will be deleted after the specified number of days have passed. For more information, see Automatically deleting file output generated by file processing.

Item	Description
Remote Data Connection	This option only applies when the file output is being saved to your local file system, and only for Axiom Cloud systems that are using remote data connections. Select the name of the remote data connection to use for the file processing operation. The designated remote data connection will be used to access the local file system and save output file(s) to the designated location. A remote data connection is required to save files locally from an Axiom Cloud system. For more information, see the section on remote data connections in the *Scheduler Guide*.

Opening the file after processing: If desired, you can opt to automatically open the output file within Axiom after the processing is complete. This option is only available if the result of the processing is a single file. If you want to use this option, it must be manually configured on the Control Sheet. In the **File Settings** section, set **Open Output File after Processing** to **On**. For more information, see File Processing Control Sheet.

7. If you chose to email the output file (or files), complete the **Email Settings**:

Item	Description
To Bcc	Enter the email addresses to receive the output file via email. Separate multiple addresses with a semicolon. If the file will be processed using multipass processing, to multiple output files, then you should use formulas to dynamically generate the appropriate email recipients for each pass (otherwise each pass will be sent to the same recipients). See Using dynamic email addresses with file processing.
From	Select one of the following to specify the From address: • **System User**: The From address is the default From address specified for Axiom in the system configuration settings. • **Current User**: The From address is the email address for the user who performs the file processing, as defined in Security.

Item	Description
Subject Line	Enter a subject line for the email. **NOTE:** If you want to use bracketed text in the subject line, you must escape this text with an additional set of brackets, so that Axiom does not try to evaluate the bracketed text as a file processing variable. For example, if you want the text "[Axiom Message]" in the subject line of the email, you must enter `[[Axiom Message]]` in the Subject Line field. The extra set of brackets is removed when the email is generated.
Body Text	Enter body text for the email. **NOTE:** If you want to use bracketed text in the body text, you must escape this text with an additional set of brackets, so that Axiom does not try to evaluate the bracketed text as a file processing variable. For example, if you want the text "[Sent from Axiom]" in the body text of the email, you must enter `[[Sent from Axiom]]` in the Body Text field. The extra set of brackets is removed when the email is generated.

For more information, see How email is delivered for file processing.

8. If you want to use multipass processing on the file, then complete the **MultiPass Settings**.

   For **Source Column**, click the column icon to select the source column for multipass processing. For example, if you select DEPT.VP as the source column, then the file will be processed once for each VP, and the data in the file will be automatically filtered to show only the data for that VP.

   To confirm that the file will be processed using your desired list of items, click **Preview Multipass List**. A dialog opens, displaying the total number of items to process, as well as the list of individual items.

   For more information on multipass processing, and for details on advanced settings, see Configuring multipass settings for file processing.

9. When you are finished configuring the file processing settings, click **File Options > Save** to save the settings in the file.

Results

Users can now use **File Output > File Processing** to process the file. The following actions will occur:

- When using **Process File**, the file will be refreshed "as is," the data will be extracted to the specified file format, and the export file will be saved and/or emailed according to the file processing settings.

- When using **Process File Multipass**, the file will be refreshed using a multipass filter to limit the data to the current multipass item (for example, for the current VP if processing by DEPT.VP). This process will occur for each unique multipass item being processed, with a different multipass filter being applied for each pass.

  If the file generation is to multiple output files, then the data is extracted to the specified file format after each pass, and then saved and/or emailed according to the file processing settings.

  If the file generation is to a single output file, then the data from each pass is extracted and stored in memory until all passes are complete. When all of the passes are complete, the data is placed in the specified file format, and then saved and/or emailed according to the file processing settings.

Placing data export tags in a sheet

Using file processing, you can export data from an Axiom file to a CSV or TXT file. You may want to export data to one of these file formats in order to import the data into another application.

In order to export data to a file, you must set up the sheet with ExportToFile tags. These tags work in a similar manner as the Save2DB tags used for Save Type 1, except that instead of flagging data to be saved to the database, they flag data to be exported to a file.

There are three components:

- The primary ExportToFile tag, which enables data export and defines the control row and control column.
- Column tags in the control row, which flag columns of data to be exported and define the contents of the header row in the export file.
- Row tags in the control column, which flag rows of data to be exported.

Once a file has been set up with ExportToFile tags, you can create the export file using the File Processing feature. When setting up file processing for a file, you can choose to export to a specific file format. You can also use multipass processing to generate multiple export files, one for each pass.

Export-to-file tag summary

Tag Type	Tag Syntax
Primary tag	`[ExportToFile; CustomSaveTag]`
Row tags	`[Save]` `[CustomSaveTag]`
Column tags	`HeaderName`

Defining the export-to-file control row and control column

To define the location of the export-to-file control row and control column, place the following tag in any cell in the sheet, within the first 500 rows:

```
[ExportToFile; CustomSaveTag]
```

CustomSaveTag is optional, and defines a custom save tag to place in the control column, to determine rows to be saved. If you want to use the default save tag, `[Save]`, then this parameter should be omitted. The primary purpose of this optional feature is to allow you to use the same export-to-file control column with multiple export-to-file control rows.

The row containing ExportToFile becomes the export-to-file control row, and the column containing ExportToFile becomes the export-to-file control column.

NOTES:

- The primary tag must be placed in the first 500 rows of the sheet.
- Formulas can be used to create the tags, as long as the initial bracket and identifying keyword are whole within the formula.

Marking columns to export in the control row

Within the export-to-file control row, for each column of data that you want to export, enter a header tag for that column.

The header tags can be anything you like. When the data is exported to a file, the text in the export-to-file control row becomes the first row in the file, and defines the header row.

The header tags do not need to be enclosed in brackets. For example, the header tag can be just `ACCT`, not `[ACCT]`.

Header tags are required. A column of data is only exported if it is marked with a header tag in the export-to-file control row.

NOTES:

- If desired, you can exclude the header row from the export file. When configuring the file processing settings for the export, set **Include Column Headers** to **Off**.
- Reserved Axiom tags are ignored by the export process. For example, if the export-to-file control row also contains a `[DeleteColumn]` tag for the purposes of deleting the column in snapshot copies, that column is ignored when exporting.

Marking rows to export in the control column

Within the export-to-file control column, for each row of data that you want to export, enter the save tag. By default, the save tag is `[Save]`. If you defined a custom save tag in the ExportToFile tag, use that tag instead.

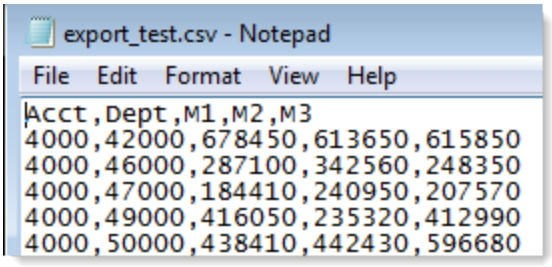
NOTE: If you defined a custom save tag for the export process, that export process *only* recognizes that unique save tag. For example, if you have defined a custom save tag of `[SavePayroll]`, only rows flagged with `[SavePayroll]` will be exported. You cannot also use the default `[Save]` tag for that export process.

Export file example

The following sheet is set up with ExportToFile tags. The entries in row 1 (the control row) mark the columns to be exported, and define the contents of the header row. The `[save]` tags in column G (the control column) mark the rows to be exported.

	A	B	C	D	E	F	G
1		Acct	Dept	M1	M2	M3	[ExportToFile]
2							
3		4000	42000	678450	613650	615850	[save]
4		4000	46000	287100	342560	248350	[save]
5		4000	47000	184410	240950	207570	[save]
6		4000	49000	416050	235320	412990	[save]
7		4000	50000	438410	442430	596680	[save]

When the file is processed, the resulting output file would look like this, if saved as a CSV file:



Setting up file processing: Printing

Using file processing, you can print the current file. In most cases this would be used with multipass processing, so that you would print the file multiple times, using the data for each pass—for example, to print an income statement once for each region. However, you could also use the print option with non-multipass processing, simply to save your desired print view and preferred printer for convenience.

NOTE: File processing always performs a refresh of the file before performing the file processing action (in this case, printing). If you want to print the file without performing a refresh first, you must use regular printing features.

TIP: You can use print file processing in conjunction with batch reporting. For example, you can use batch to specify multiple files to process, and print them all at once by processing the batch.

To set up file processing to print the file:

1. Open the file where you want to set up file processing, and enable it as follows: On the **Axiom** tab, in the **File Output** group, click **File Processing > Add File Processing control sheet to active workbook**.

   NOTE: In systems with installed products, this feature may be located on the **Main** tab (either directly on the tab, or on the **Publish** menu).

   The **File Processing** pane opens, and a sheet named **Control_FileProcessing** is added to the file.

2. In the **File Processing** pane, for **Processing Type**, select **Print**.

3. In the **Print Views** box, enter the name(s) of the print views to process. This setting also defines the sheets to process.

   Print views are specified using the following syntax: *SheetName*:*ViewName*. You can type the view names, or click the **Select Print Views** button to select print views from a list. Separate multiple view names with semicolons.

   You can specify multiple print views for a single sheet if applicable. If a sheet does not have any defined print views, select the Default view, which uses the native spreadsheet print settings. You can print any sheet except control sheets and hidden sheets.

4. In the **Printer** box, enter the name of the printer to use, or leave this setting blank to use the default printer. Use the **Select Printer** button to select a printer other than the default printer.

5. If you want to use multipass processing on the file, then complete the **MultiPass Settings**.

   For **Source Column**, click the column icon to select the source column for multipass processing. For example, if you select DEPT.VP as the source column, then the file will be processed once for each VP, and the data in the file will be automatically filtered to show only the data for that VP.

   To confirm that the file will be processed using your desired list of items, click **Preview Multipass List**. A dialog opens, displaying the total number of items to process, as well as the list of individual items.

   For more information on multipass processing, and for details on advanced settings, see Configuring multipass settings for file processing.

6. When you are finished configuring the file processing settings, click **Save** to save the settings in the file.

Results

Users can now use **File Output > File Processing** to process the file. The following actions will occur:

- When using **Process File**, the file will be refreshed "as is" and then printed using the specified print view(s) and printer.
- When using **Process File Multipass**, the file will be refreshed using a multipass filter to limit the data to the current multipass item (for example, for the current VP if processing by DEPT.VP). This process will occur for each unique multipass item being processed, with a different multipass filter being applied for each pass. Each pass will be printed using the specified print view(s) and printer.

Setting up file processing: Alerts

You can process alerts using file processing. The primary reason to use file processing for alerts is so that you can set up one set of alert conditions, and then leverage multipass processing to evaluate those conditions for all members of a particular grouping level—such as for each department, each region, or each VP.

For example, imagine that you want to alert the department manager if their department exceeds a variance threshold for a particular area. While you could set up a report that brings in each department and calculates the variance, and then define an alert for each individual department value. However, it would be much more streamlined to set up a report that brings in the consolidated value and then define one dynamic alert against that value, and then process the report using multipass processing by department. For each pass, it will automatically apply the department-specific filter for the data and then process the alert against that data. The alert settings would need to dynamically change for each pass—for example you could set up the alert ID, message title, etc., using GetCurrentValue() so that the current department number is reflected for each pass of alerts.

In order to use file processing to process alerts, two setup steps must occur:

- Alerts must be defined in the file, on the Alert Control Sheet (Control_Alert). For more information on this process, see the *System Administration Guide*.
- The file must be enabled for file processing, and configured to process alerts. This process is discussed in this topic.

To set up file processing to process alerts:

1. Open the file where you want to set up file processing, and enable it as follows: On the **Axiom** tab, in the **File Output** group, click **File Processing > Add File Processing control sheet to active workbook**.

   NOTE: In systems with installed products, this feature may be located on the **Main** tab (either directly on the tab, or on the **Publish** menu).

   The **File Processing** pane opens, and a sheet named **Control_FileProcessing** is added to the file.

2. In the **File Processing** pane, for **Processing Type**, select **Alerts**.

   This is the only setting to complete in the File Processing Settings section of the task pane. No other settings apply. You do not need to specify a sheet to process because it is always Control_Alert.

3. In the **MultiPass Settings** section, click the column icon to select the source column for multipass processing.

   For example, if you select DEPT.VP as the source column, then the file will be processed once for each VP, and the data in the file will be automatically filtered to show only the data for that VP.

   To confirm that the file will be processed using your desired list of items, click **Preview Multipass List**. A dialog opens, displaying the total number of items to process, as well as the list of individual items.

   For more information on multipass processing, and for details on advanced settings, see Configuring multipass settings for file processing.

   NOTE: The only reason to use File Processing to process alerts is to apply multipass settings. If you do not need to use multipass processing, then you can process alerts by using the Process Document List task in Scheduler; you do not need to set up File Processing.

4. When you are finished configuring the file processing settings, click **File Options > Save** to save the settings in the file.

Results

You can now use **File Output > File Processing > Process File Multipass** to process the alerts, or you can schedule processing using the File Processing Scheduler task. The following actions will occur:

- The file will be refreshed using a multipass filter to limit the data to the current multipass item (for example, for the current VP if processing by DEPT.VP). This process will occur for each unique multipass item being processed, with a different multipass filter being applied for each pass.
- For each pass, alert conditions will be evaluated. If an alert evaluates to True and does not match an existing alert (based on alert ID), then an alert notification will be created for that alert. All the specified recipients will see the alert notification in their Notifications task pane.
- If the alert points to the source document as the supporting file, then when the user clicks on the link to open the file from the Notifications task pane, the multipass filter will automatically be applied to the file. This way the user can see the file using the same context that generated the alert.

Saving data to the database using file processing

You can use file processing to refresh the file and then perform a save-to-database. Multipass processing can be used to iterate this action over many passes, processing different data in each pass.

There are two different file processing types for saving data:

- **Save Data**: Save data to the database as part of regular or multipass processing. All normal multipass settings and behaviors apply. This is the standard option for saving data using file processing.
- **Save Data in Batches**: This is a specialized multipass processing option that uses an Axiom query to define the records to process, and then processes those records in batches—meaning, multiple records are included in each pass. Although the processing iterates over many passes, normal multipass settings and behaviors do not apply. This option is intended for specialized use cases where many records are being processed but processing does not depend on filtering each pass for a particular dimension element.

Save-to-database setup for file processing

The relevant sheets in the file must be enabled for Save Type 1, and set up with save-to-database tags. For more information on setting up save-to-database, see the *Axiom File Setup Guide*.

Only Save Type 1 processes are performed when using file processing. If sheets in the file are enabled for other save-to-database processes, those processes are ignored.

All sheets in the file will be processed. If the file has multiple sheets that are enabled and configured for Save Type 1, all those sheets will save data to the database during this process.

NOTE: The `[Delete]` tag for Save Type 1 is not supported for use with multipass file processing.

Setting up file processing: Saving data

Using file processing, you can save data from an Axiom file to the Axiom database. The most typical use of this feature is to save data via multipass processing.

NOTE: This topic discusses the standard option for saving data to the database using file processing. Another specialized option is available to process many records per pass. For more information on this option, see Setting up file processing: Saving data in batches.

To set up file processing to save data to the database:

1. Open the file where you want to set up file processing, and enable it as follows: On the **Axiom** tab, in the **File Output** group, click **File Processing > Add File Processing control sheet to active workbook**.

   NOTE: In systems with installed products, this feature may be located on the **Main** tab (either directly on the tab, or on the **Publish** menu).

   The **File Processing** pane opens, and a sheet named **Control_FileProcessing** is added to the file.

2. In the **File Processing** pane, for **Processing Type**, select **Save Data**.

3. From the **Save Data Mode** list, specify how data should be saved:

   - **Save After Each Pass**: A save-to-database occurs after each pass.
   - **Save Once at the End**: The data from each pass is saved in memory until all passes are complete, and then the save-to-database occurs.

     You should save at the end if the process could result in multiple rows of data with the same key codes, so that the rows are summed before saving to the database, rather than having the data from one pass overwrite the other.

   - **Save to Output Sheet**: The data from each pass is collected and saved to an "output sheet" within the file being processed. No data is saved to the database. The output sheet is named **SaveData_*SheetName***, where sheetname is the name of the sheet set up to save to the database.

     This option is primarily intended for testing the file setup, so that you can review the data that would be saved without actually saving it.

4. Optional. Select **Save data tags are static for all passes** if your save-to-database setup is static and will not dynamically adjust for each pass.

   This option assumes that your data is brought in using functions or update-only Axiom queries, so that the number of rows and the placement of the save-to-database tags remain static for each pass. Enabling this option allows Axiom to read the save-to-database tags once at the start of the process. The File Processing Control Sheet settings and the default Control Sheet settings are also cached at the start of the process and will not be refreshed for each pass. Eliminating the need to refresh these settings speeds up processing for each individual pass.

   If instead you are using rebuild Axiom queries to bring in your data, or if you are dynamically enabling or disabling save-to-database tags or other settings for each pass, then you should not select this option.

5. Complete the **MultiPass Settings**. Although it is not required to perform save data using multipass processing, this is the most typical use of the feature.

   For **Source Column**, click the column icon to select the source column for multipass processing. For example, if you select DEPT.VP as the source column, then the file will be processed once for each VP, and the data in the file will be automatically filtered to show only the data for that VP.

   To confirm that the file will be processed using your desired list of items, click **Preview Multipass List**. A dialog opens, displaying the total number of items to process, as well as the list of individual items.

   For more information on multipass processing, and for details on advanced settings, see Configuring multipass settings for file processing.

6. When you are finished configuring the file processing settings, click **File Options > Save** to save the settings in the file.

Results

Users can now use **File Output > File Processing** to process the file. The following actions will occur:

- When using **Process File**, the file will be refreshed "as is," and the data will be saved according to the specified save mode.
- When using **Process Multipass**, the file will be refreshed using a multipass filter to limit the data to the current multipass item (for example, for the current VP if processing by DEPT.VP). This process will occur for each unique multipass item being processed, with a different multipass filter being applied for each pass. Data will be saved according to the specified save mode.

Setting up file processing: Saving data in batches

Using file processing, you can save data to the database from an Axiom file. The processing type **Save Data in Batches** is intended for specialized use cases where multipass processing is desired but many records can be processed per pass.

The Save Data in Batches processing type works as follows:

- You create an Axiom query to define the list of records to be processed. This query is then specified as the source query for the file processing action. The query should be set up as normal within the sheet, where it will serve as the main driver for processing records.
- When file processing is initiated, Axiom runs the designated Axiom query in memory first to obtain the full list of records. The number of passes for the process is determined by dividing the total number of records by the specified batch size. For example, if the Axiom query returns 7,000,000 records and the batch size is 7,000, then there will be 1000 passes (each pass processing 7,000 records).
- Multipass processing then begins. For each pass of the process, Axiom refreshes the file but only returns a subset of records (a "batch") to the Axiom query in the sheet. This process continues, iterating over multiple passes, until all of the records that were retrieved in memory have been processed.
- Data is saved to the database according to the save options specified in the file processing setup. You can save data after each pass, or save data once at the end of the process, or save data to an output sheet (for testing).
- Although the process is iterative and therefore considered "multipass processing," none of the normal multipass settings apply and will be ignored if set. No dimension filter is applied to each pass as when using normal multipass processing, because each pass encompasses multiple records.

NOTE: When using Save Data in Batches, the only valid use of the GetCurrentValue function is the PassNumber option to return the number of the current pass. All other options are inapplicable in this context. For example, GetCurrentValue() is inapplicable because there is no single current value to return; instead multiple values (records) are being processed in each pass.

To set up file processing to save data in batches:

1. Open the file where you want to set up file processing, and enable it as follows: On the **Axiom** tab, in the **File Output** group, click **File Processing > Add File Processing control sheet to active workbook**.

   NOTE: In systems with installed products, this feature may be located on the **Main** tab (either directly on the tab, or on the **Publish** menu).

   The **File Processing** pane opens, and a sheet named **Control_FileProcessing** is added to the file.

2. In the **File Processing** pane, for **Processing Type**, select **Save Data in Batches**.
3. From the **Save Data Mode** list, specify how data should be saved:

   - **Save After Each Pass**: A save-to-database occurs after each pass.
   - **Save Once at the End**: The data from each pass is saved in memory until all passes are complete, and then the save-to-database occurs.

     You should save at the end if the process could result in multiple rows of data with the same key codes, so that the rows are summed before saving to the database, rather than having the data from one pass overwrite the other.

   - **Save to Output Sheet**: The data from each pass is collected and saved to an "output sheet" within the file being processed. No data is saved to the database. The output sheet is named **SaveData_*SheetName***, where sheetname is the name of the sheet set up to save to the database.

     This option is primarily intended for testing the file setup, so that you can review the data that would be saved without actually saving it.

4. For **Source Worksheet**, specify the worksheet that contains the Axiom query to use for the process.
5. For **Source Axiom Query ID**, specify the Axiom query to use for the process.

   TIP: You can use the **Preview Axiom Query Data** button to see the number of records that will be processed and to preview the data to be returned by the query.

6. Optional. For **Batch Size**, specify the number of records to include in each pass. By default this is set to 7,000.

   In most cases, you can leave the default batch size. However, you might consider making the batch size smaller if your in-sheet calc method uses many rows.

For example, if your calc method is 1 row and the batch size is 7,000, that means the Axiom query will return and process 7,000 rows of data per pass. However, if the calc method is 20 rows and the batch size is 7,000, that means the Axiom query will return and process 140,000 rows of data per pass. In the latter case, the processing performance may be improved if you lower the batch size to lower the overall rows of data to be processed per pass.

7. When you are finished configuring the file processing settings, click **File Options > Save** to save the settings in the file.

Users can now process the file. Although the traditional multipass settings do not apply, the file must be processed using **Process File Multipass** in order to enable the iterative pass behavior. This can also be initiated using the **Process Save Data in Batches** action in the File Processing task pane.

3

Using Multipass Processing

The File Processing feature supports the ability to iterate processing over a specified dimension, such as by departments or by regions. This feature is known as "multipass processing."

When using multipass processing, the file is processed for each item in the dimension. For example, if you have 100 departments then the file is processed 100 times, once for each department. Each pass is automatically filtered by the current dimension item, so that data queries only include the applicable data for the current pass.

This section discusses how to set up multipass processing for file processing.

NOTES:

- Multipass processing does not apply if the processing type is **Batch**. Batch processing is a special processing type that simply kicks off file processing for each file listed in the batch. (The individual files in the batch may use multipass processing or not, depending on the batch configuration settings.)
- Multipass settings do not apply if the processing type is **Save Data in Batches**. Although this processing type iterates over multiple passes and therefore is considered "multipass," it does not use the standard multipass settings to define the process.

Configuring multipass settings for file processing

To set up multipass processing, you specify a "source column" to define the list of items to process. For example, to process by region, the source column would be `DEPT.Region`. If your organization is divided into four regions (North, South, East, West), then the file would be processed using four different passes, with each pass being filtered for a particular region.

Any file can use multipass processing once the multipass settings have been defined using the **File Processing** task pane (or the File Processing Control Sheet). You do not have to do any special setup in the worksheets, although you will likely want to use the GetCurrentValue function to create dynamic settings such as dynamic titles. For example, if you are processing a report by region, you can use this function to create a title that displays the region for the current pass.

Multipass settings have a basic mode and an advanced mode. The basic mode settings should be sufficient for most multipass use cases. When using basic mode, you can define one setting, the source column, and Axiom takes care of all supplementary settings automatically. However, the advanced multipass settings are available if your file requires a different multipass configuration.

This topic assumes that you have already set up the file processing settings for the desired process, such as saving snapshot copies for distribution, or saving data to the database.

When you open the **File Processing** pane, the **Multipass Settings** section displays the basic mode by default. If you see more than one setting in this section, then the advanced mode has been opened. To return to basic mode, click **Hide Advanced View**.

To specify a source column for multipass processing:

1. In the **File Processing** pane, in the **Multipass Settings** section, click the column icon to the right of the **Source Column** box.

   The **Column Chooser** dialog opens. By default, this dialog only displays reference tables, which is the most common use case for multipass processing. If you want to use a data table, you must use the advanced mode settings.

2. Select the column that you want to use for multipass processing, and then click **OK**.

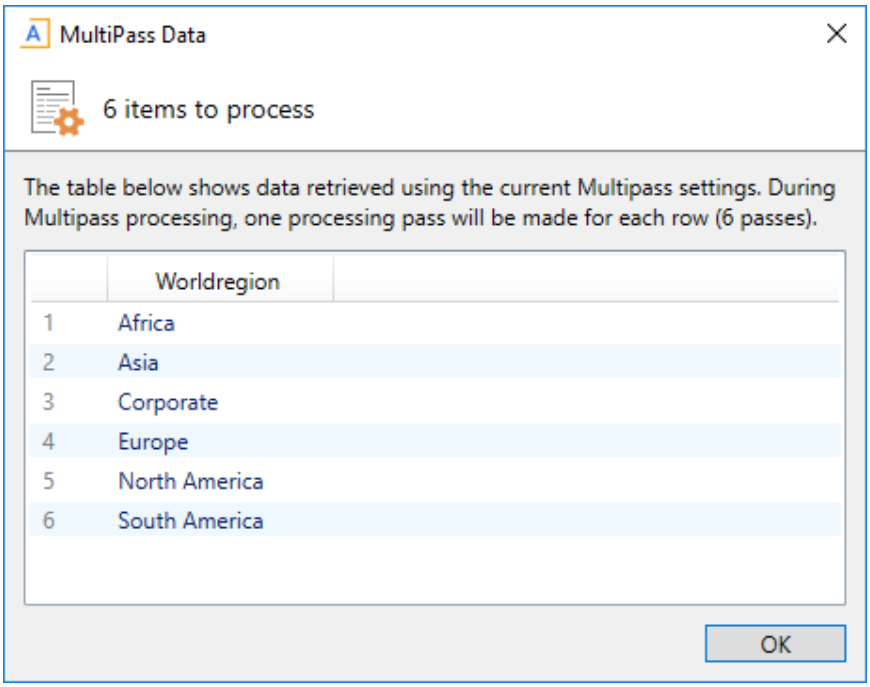
   For example, you may want to process by `DEPT.DEPT` or `ACCT.ACCT`, or by a grouping column in a reference table, such as `DEPT.VP` or `ACCT.Category`.

The selected column is entered into the **Source Column** box. When multipass processing is performed, it will include a pass for every unique item in the selected column. If you want to filter the list of items to a subset, or use only the items that exist in a particular data table, you can use the advanced mode settings.

If the basic multipass settings are not sufficient for this particular file, then you can use the advanced settings. For more information, see Configuring advanced multipass settings.

Previewing the multipass list

You can check the list of items to be processed by clicking the **Preview Multipass List** button. The **MultiPass Data** dialog opens, displaying the total number of items to be processed, as well as the list of individual items. For example, if the source column is DEPT.WorldRegion and your organization is divided into six regions, then the preview returns six items to be processed, and shows you what those six items are.



Example preview

In the case of large multipass lists, this dialog only displays the first 100 items in the list. However, the number displayed at the top of the dialog is always the total number of items.

Multipass data filtering

When multipass processing is performed, for each pass Axiom automatically applies a filter to the report. If a data query is made to any data table that links to the reference table, then the filter will be applied. If you want different filter behavior for the multipass processing, you can use the advanced mode settings.

NOTES:

- The multipass filter is only applied during multipass processing, and is not visible in the file itself. The multipass filter is applied in addition to any filters defined in the file (sheet filters, Axiom query data filters, etc.), and in addition to the current user's security filters.
- The IgnoreSheetFilter parameter for the GetData function can be used to prevent the multipass filter from being applied to a particular GetData function in the file.

For more details, see How data is filtered during multipass processing.

Configuring advanced multipass settings

When using multipass processing, you can use the basic settings and allow Axiom to automatically apply all supplementary settings, or you can use the advanced settings to configure advanced properties such as:

- Specify a data table as the source table
- Specify additional source columns to return pass-specific information during the multipass process
- Specify grouping and sorting settings other than the default settings
- Specify a subset of items to be processed instead of processing all items
- Apply different multipass filter settings than the default filter settings, to explicitly control which tables are filtered by the multipass filter in the report

To access the advanced multipass settings on the **File Processing** pane, click the **Show Advanced View** link in the **Multipass Settings** section. (You can also use the File Processing Control Sheet.)

If you show the advanced mode settings after already completing the **Source Column** in basic mode, you will see that some settings have been automatically determined by Axiom based on your source column selection. You can edit any of these settings as desired in advanced mode, as well as define additional settings.

NOTE: If you return to basic mode after making advanced mode changes, and then you change the **Source Column** in basic mode, the advanced mode settings are cleared. Once you have used the advanced mode settings, any future changes should also be made in advanced mode (or on the File Processing Control Sheet).

Multipass settings are validated as you complete them. If an entry is invalid, a red outline appears around the box of the invalid entry. To get more information about the error, hover your cursor over the box, and the error message will display in a tooltip.

Multipass Data Settings

The multipass data settings determine the list of items to be processed. For more information, see How the multipass list of items is determined. After making any changes to the multipass data settings, click **Preview Multipass List** to make sure that the list of items to process is as you expect.

IMPORTANT: If a report uses advanced multipass data settings, and you want to process that report using batch processing, then you cannot set a multipass source column for the report in the batch settings. When a multipass source column is specified in the batch settings, it overwrites the current multipass settings in the target report (as if you had gone back to "basic mode" and selected a new multipass source column). However, the report can be run using batch processing if you use the native multipass settings defined in the report (meaning, leave **Multipass Source Column** blank in the batch settings).

Item	Description
Source Table	The source table for the multipass processing. The source table is similar to the primary table for Axiom queries. All other data settings for the multipass process must be valid in the context of the source table. • If the source table is a reference table, then the data settings can only be columns in the reference table. • If the source table is a data table, then the data settings can be columns in the source table, or columns in a lookup reference table, or columns from other data tables that share the same key columns. You can type a table name, or click the table icon to the right of the box to select a table. If you use basic mode, the source table is automatically set to the table of your specified source column.
Source Columns	The source column or columns for the multipass processing. Source columns provide information about the current pass. You can type a column name, or you can click on the column icon to the right of the box to select a column. Separate multiple columns with semicolons. In basic mode, you specify a source column, which also determines the **Group By** and **Source Table** settings, and therefore determines the multipass list of items. In advanced mode, it is not required to specify a source column. You only have to specify source columns in advanced mode if you want to: • Return the current pass value for a related column, using the GetCurrentValue function. For example, you may be processing the report by department, but you also want to dynamically display the name of the department's VP in the report titles. If you include DEPT.VP as a source column, then you can use GetCurrentValue("DEPT.VP") to return the relevant VP name for each pass. • Define a current value default for a column, to be returned by the GetCurrentValue function during non-multipass processing. These current value defaults can be defined on the File Processing Control Sheet.

Item	Description
Group By	The column or columns to group by, to determine the multipass list of items. For example, if you want to process by department, the group by column should be `DEPT.DEPT`. You can type a column name, or you can click on the column icon to the right of the box to select a column. Separate multiple columns with semicolons. Although this setting is not technically required, it should be specified in most cases. If left blank, the multipass list is grouped by the key columns of the source table. If you use basic mode, the grouping level is automatically set to your specified source column.
Sort By	The column or columns by which to sort the multipass list of items, to determine the order in which the list of items is processed. Separate multiple columns with a semicolon. The sort is always ascending order. You can type a column name, or you can click on the column icon to the right of the box to select a column. Separate multiple columns with semicolons. If left blank, the multipass list is sorted by the **Group By** column(s).
Source Filter	If desired, you can specify a filter criteria statement to limit the multipass list of items to be processed. For example, if you are processing by department, you could specify `DEPT>2000` to process the departments greater than 2000, or `DEPT.Region='North'` to process only the departments that belong to the North region. You can type a filter criteria statement, or you can use the Filter Wizard. The only purpose of this filter is to limit the multipass list of items to be processed. It does not impact any data queries in the report.

NOTE: Alias names and column-only syntax can be used in the multipass data settings.

Multipass Filter Settings

Using this section, you can override the default filter behavior for multipass processing. For more information on how the filter is applied by default, see How data is filtered during multipass processing.

Item	Description
Override Default Filter Behavior	Select this check box if you want to override the default filter behavior for the multipass process. Once this check box is selected, the other settings in this section become available. If you do not select a table type or a table to be affected by the multipass filter, then the default filter behavior continues to apply. The default filter behavior is only overridden once you specify a different filter behavior.
Affected Table Types	Click the table icon to select table types to be affected by the multipass filter. The **Select Table Types** dialog lists all table types defined in the system. To select a table type, click the folder for the table type and then click **Add**. You can expand the table type folders to see that tables that belong to the table type. **NOTE:** Tables that do not have a table type are listed under a **(No Type)** folder; that folder cannot be added as an affected table type. If you want to filter tables that do not belong to a table type, use the **Affected Tables** setting. The multipass filter will be applied to any table that belongs to a table type listed in this field.
Affected Tables	Click the table icon to select individual tables to be affected by the multipass filter. The **Select Tables** dialog lists all data tables defined in the system. To select a table, click the table name and then click **Add** (or double-click the table name). The multipass filter will be applied to any table listed in this field.

How the multipass list of items is determined

When you use multipass processing, the file is processed multiple times, using a different item for each pass. This topic explains how the multipass list of items is generated based on the multipass settings.

Behind the scenes, a system-controlled Axiom query is used to generate the multipass list of items. When you click **Preview Multipass List**, you are viewing the rows returned by this Axiom query.

When using the multipass "basic mode" settings, you specify a single source column from a reference table, such as DEPT.DEPT. This setting creates an Axiom query as follows:

Primary Table:	DEPT
Sum data by:	DEPT.DEPT
Field definition row:	DEPT.DEPT

By default this data is sorted by the key column of the primary table, so no sort level is explicitly set. This basic setting would return the full list of departments in the DEPT table, and therefore the multipass process would result in one pass per department.

When using advanced mode, you can define more of the system-controlled Axiom query settings, to explicitly control how the multipass list is generated.

The multipass advanced mode settings correspond to Axiom query settings as follows:

Advanced Mode Multipass Setting	Corresponding Axiom Query Setting
Source Table	Primary Table
Source Columns	Entries in the Field Definition Row
Group By	Sum data by these columns Entries in the Field Definition Row
Sort By	Sort by database columns Entries in the Field Definition Row
Source Filter	Data Filter

You can adjust these settings as needed to result in the desired multipass list of items to process. Whatever results would be returned by an equivalent Axiom query will be returned by the multipass query. For example, if you want to process by department, and the source table is DEPT, then you will get one pass for each department defined in the DEPT table. On the other hand, if the source table is GL2020, then you will get one pass for each department that has data in the GL2020 table.

How data is filtered during multipass processing

When multipass processing is performed, Axiom automatically applies a filter to the report, to limit the data returned by the item currently being processed. For example, if you are processing by department, then the pass for Dept 1000 has a filter applied to limit the data in the report to Dept 1000.

By default, the multipass filter for each pass works as follows:

- The filter criteria statement for the multipass filter is determined by the **Group by** column(s) defined for the multipass settings.

  In basic mode, the group by column is automatically set to the selected source column. In advanced mode, you can manually specify a group by column, including multiple columns if desired. If **Group by** is left blank, then the key columns of the source table are the group by columns.

For example, if the group by column is DEPT.VP, then each pass is filtered by VP (such as `DEPT.VP='Jones'`).

- In the report, the multipass filter is applied as follows:
  - If the source table is a reference table, the filter is applied to any Axiom query or GetData function that queries a data table that links to the reference table (or the reference table itself).
  - If the source table is a data table, the filter is applied to any Axiom query or GetData function that queries a data table that belongs to the same table type as the source table. (If the source table does not have a table type, then only the source table is filtered.)

If desired, you can use the advanced mode settings to define different behavior for the multipass filter. Although the filter criteria statement is always defined by the **Group by** columns, you can override the default filter behavior and explicitly specify which tables or table types the filter should be applied to in the report. See Configuring advanced multipass settings.

NOTES:

- The multipass filter is only applied during multipass processing, and is not visible in the file itself. The multipass filter is applied in addition to any filters defined in the file (sheet filters, Axiom query data filters, etc.), and in addition to the current user's security filters.
- The IgnoreSheetFilter parameter for the GetData function can be used to prevent the multipass filter from being applied to a particular GetData function in the file.
- When performing snapshot form processing, if the target form contains an Embedded Form component to display a child form, the multipass filter is not applied to the child form. For more information, see Design considerations for snapshot form processing.

Using a data table as the source table for multipass processing

When using "basic mode" to define multipass settings, the source table is determined automatically based on your selected source column. Because basic mode only allows selecting columns from reference tables, the source table is always a reference table, such as ACCT or DEPT. However, in some cases you may want to use a data table as the source table.

For example, imagine that you want to perform multipass processing by department. In basic mode you select DEPT.DEPT as the source column, which means that the report will be processed once for each department in the DEPT table. Depending on the data in the data tables that the report queries, this may result in processing the report for departments that have no data.

Imagine that the report queries data in the BGT2020 table. The DEPT table contains department 3200, but this is a newly-added department that was not part of the 2020 planning process, and therefore has no records of data in the BGT2020 table. When department 3200 is processed as part of the multipass process, it will return no data for that report.

This may be the desired result—you may want to process the full list of departments, even if a few departments may not have data in the current context. Reference tables are used by default in basic mode so that you can be certain that every item was included, and because this is the most common use case. However, if you only want to process the items that are relevant to the data being queried, you can specify a data table as the source table instead.

Continuing the example, you could use advanced mode settings to specify BGT2020 as the source table instead of DEPT. Although the source column and grouping level is still DEPT.DEPT, because the multipass list of items is now being generated from the data table, the multipass process will only process departments that are found in the BGT2020 table. While the DEPT table might have 100 departments, the BGT2020 table might have data for only 90 of those departments. When BGT2020 is the source table, the multipass process will result in 90 passes instead of 100 passes.

TIP: You can see exactly how many items will be processed based on the current multipass settings by using **Preview Multipass List**.

Now imagine that the report queries two tables, GL2020 and GL2019, and you want to use multipass processing on this report by department. The easiest and most common way to ensure that the report is processed for all relevant items is to use DEPT as the multipass source table. However, if you do not want any no-data passes, but you want to ensure that the report is processed for every department that has data in *either* GL2020 or GL2019, then you can do the following:

- Set the source table to one of the data tables. For example: GL2019.
- Specify two columns for the source columns. For example: DEPT.DEPT and any data column from the GL2020 table.

DEPT.DEPT is evaluated against the source table by default, and includes all of the departments that have data in the GL2019 table. By including any data column from the GL2020 table, the multipass list also includes any departments that have data in the GL2020 table.

IMPORTANT: If the source table is a data table, then by default the multipass filter is only applied to Axiom queries and GetData functions that query a data table from same table type as the source table. If your file uses tables from multiple table types, then either the source table should be a reference table instead, or you should override the default filter behavior using the advanced multipass settings. For more information, see How data is filtered during multipass processing and Configuring advanced multipass settings.

Returning related values for each pass

When performing multipass file processing, you may need to bring in related values for each pass. For example, if you are multipass processing by Dept, you may also want to return the VP associated with each department, or the Region associated with each department.

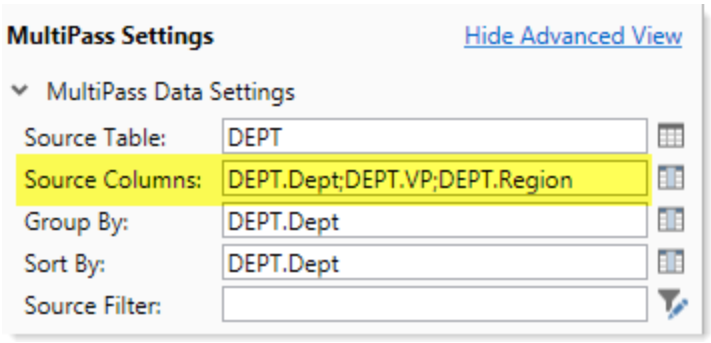
It is not necessary to use the GetData function to query these values. Instead, you can use the GetCurrentValue function to dynamically bring in the related information for each pass. In order to do this, you must first add the desired columns as source columns in the multipass settings.

Adding source columns

To add source columns to the multipass settings, click **Show Advanced View** in the File Processing task pane. This exposes the full set of advanced multipass settings.

By default, the **Source Columns** field lists the column that you selected for multipass processing in the simple view. In this example, we are processing by department, so `Dept.Dept` is listed in the Source Columns.

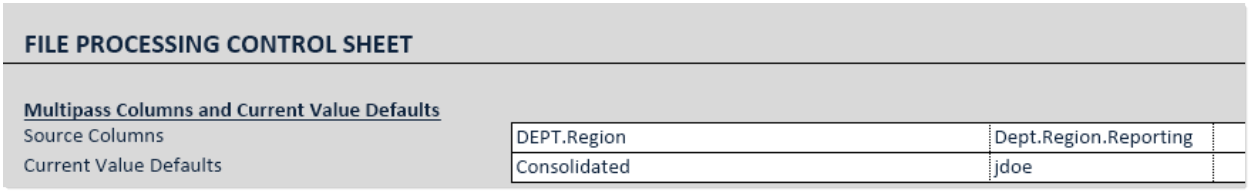
The Source Columns field determines which values from the source record will be available for each pass. You can list any number of columns in addition to the main multipass column (`Dept.Dept`), to make those values available as well. In this example, we have added `Dept.VP` and `Dept.Region` to the Source Columns list. You can type additional column names manually (separated by semicolons), or you can click the columns icon to open the **Select Columns** dialog.



Using multiple source columns does not affect the overall list of values to be processed, as that is determined by the **Group By** field.

If the source table is a reference table, then you can list any column in that table, or any column in a lookup reference table. If the source table is a data table, then you can list any column in that table, any column in a lookup reference table, or any column from another data table that would be eligible to join with the source table. Basically, if you could include the column in the field definition of an Axiom query if the source table were the primary table of the query, then you can list it in the source columns.

Alternatively, you can add source columns directly in the File Processing Control Sheet (Control_FileProcessing), in the **Multipass Columns and Current Value Defaults** section at the top of the sheet. Any columns added here will automatically be listed in the advanced multipass settings, and vice versa.



IMPORTANT: If additional source columns are used in the report, and you want to process that report using batch processing, then you cannot set a multipass source column for the report in the batch settings. When a multipass source column is specified in the batch settings, it overwrites the current multipass settings in the target report, including any additional source columns. However, the report can be run using batch processing if you use the native multipass settings defined in the report (meaning, leave **Multipass Source Column** blank in the batch settings).

Returning values using GetCurrentValue

Once additional columns have been listed in the Source Columns, you can return those values by using the GetCurrentValue("*ColumnName*") function. For example:

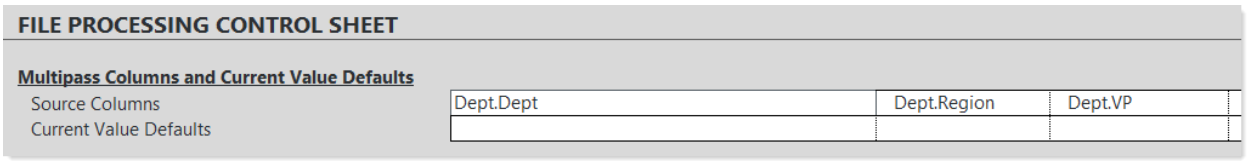
```
=GetCurrentValue("Dept.VP")
```

During multipass processing, this function returns the VP name associated with the department for the current pass.

The column must be listed in the Source Columns in order for the GetCurrentValue function to return a value. If it is not, then GetCurrentValue returns #ERR during multipass processing.

This is the most efficient way to return related values during multipass processing. Axiom is already querying the source table to gather the list of values for processing, and can obtain the necessary related values as part of that query. If you instead use GetData functions or data lookups to return related values, that introduces additional data queries which can impact performance.

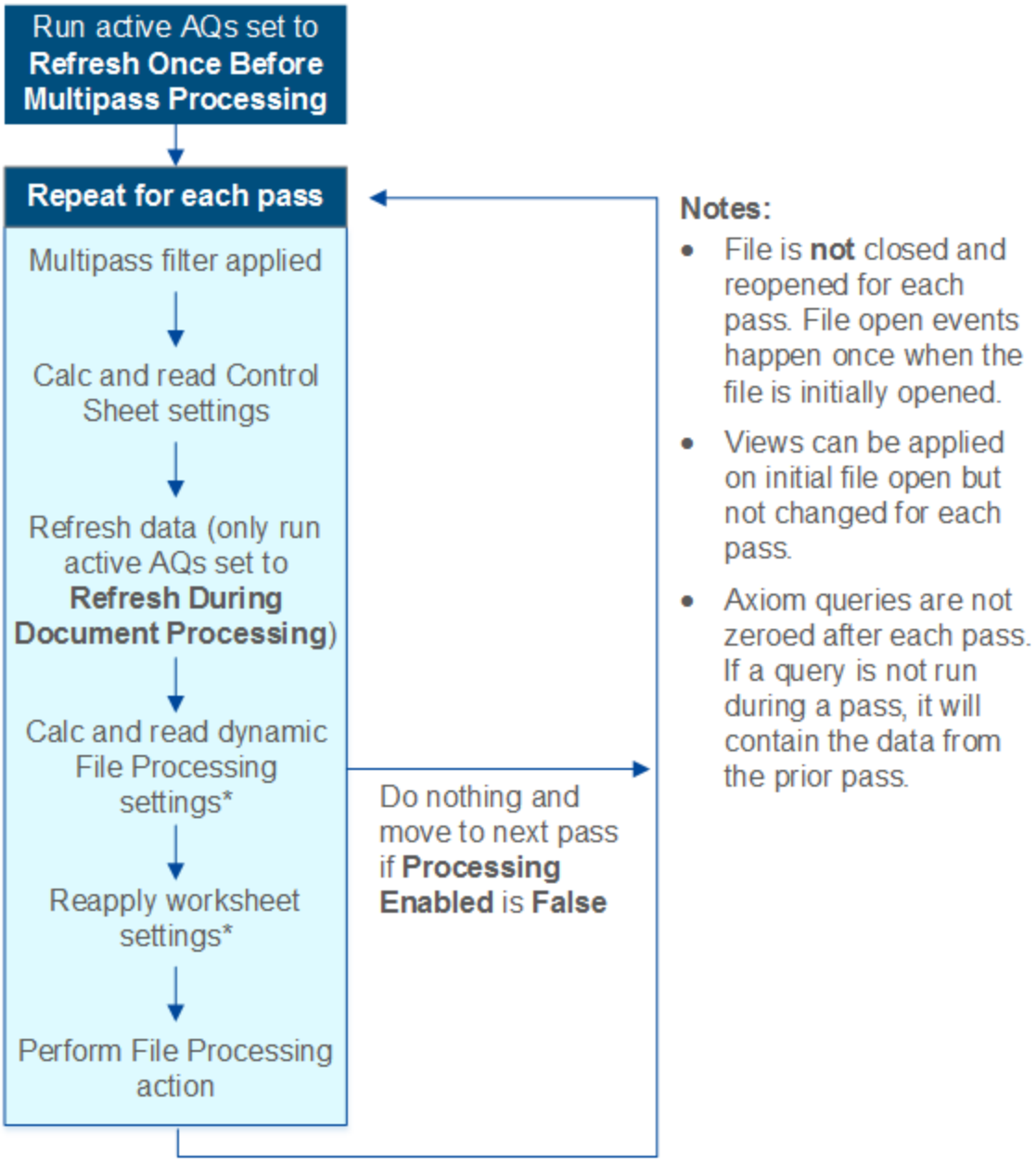
When multipass processing is *not* occurring, the GetCurrentValue function will return the values defined in the **Current Value Defaults** section of the File Processing Control Sheet. If the cell underneath the column name is blank, then GetCurrentValue("*ColumnName*") will return blank. Otherwise, it will return the value defined here.



Dynamic settings for multipass processing

As you perform multipass processing on a file, you may want certain settings to change for each pass. A classic example is the email address for file delivery—in most cases you want each pass to be emailed to different email recipients. However, you may also want to dynamically skip certain passes or adjust other settings per pass. This topic explains how multipass file processing executes and which settings can be dynamically adjusted for each pass.

The following diagram indicates the general processing steps that occur during multipass processing. Understanding the process can assist in setting up dynamic file processing.



* Only certain file processing settings are re-read for each pass, and only certain worksheet settings are reapplied for each pass. See the following sections for more information.

It is important to understand that the file is not closed and reopened for each pass. All passes are performed in the same file instance, and the starting point for each pass is the ending point of the prior pass.

Most importantly, data is not zeroed between passes. This means that you should not dynamically enable or disable an Axiom query per pass, because this means that the query will still contain the data from the previous pass. Depending on what you are trying to accomplish, you should do one of the following instead:

- Dynamically use an "empty" filter in the Axiom query, such as 1=2. This will effectively zero the query for the pass, because the filter does not match any data.
- Dynamically disable the pass, using the **Processing Enabled** setting.

NOTES:

- If you are performing snapshot form processing, and the form uses an Embedded Form component to display a child form, keep in mind that the child form is rendered normally and is not impacted by the file processing filter or Axiom query requirements. For more information, see Design considerations for snapshot form processing.
- The discussions in this topic generally do not apply to multipass file collect processing, because the purpose of file collect processing is not to refresh data, and the majority of file collect settings are defined on the File Collect Configuration sheet. All of the settings on the File Collect Configuration sheet can be dynamic per pass.

Dynamic file processing settings

The following file processing settings are refreshed during each pass and therefore can be dynamic. The report worksheets are refreshed with data first, then the file processing settings are refreshed, and then the file processing action occurs. See the diagram in the previous section for more information.

When the file processing action is snapshot or export, the dynamic settings only apply if the file generation option is **Multiple Output Files**. If you are using **Single Output File**, then there is only one file to save and/or email, and therefore only one file name, file folder, list of email recipients, etc. The exception is sheet names—these can be dynamic in all cases (and must be dynamic if using **Single Output File**).

All other file processing settings that are not listed here are evaluated once, at the start of the process. For example, you cannot change settings such as the file processing type or the file type on a per pass basis.

Setting	Description	More Information
Output File Name	The file output name can change to reflect the contents of each pass. For example, if you are multipass processing by region, you may want to include the region name on the file name. You can use the [Current_Value] variable or the GetCurrentValue function to achieve this.	Defining the file name for file processing
Output folder	The output folder name and/or path can change for each pass. For example, you might have folders on your network that are designated to hold reports for certain regions or managers. You can use the [Current_Value] variable or the GetCurrentValue function to read the current value and save the file to the appropriate location. Remember that Axiom will attempt to create the folder if it does not already exist.	N/A
Sheet Names	The sheet name can change to reflect the contents of each pass. For example, if you are multipass processing by region, you may want to include the region name on the sheet name. You can use the [Current_Value] variable or the GetCurrentValue function to achieve this.	Defining sheet names for file processing
To	The list of email recipients can change for each pass. In this case you are likely to use GetData to look up email addresses stored in a table, but you can use any variable or function in a formula to resolve to valid email addresses.	Using dynamic email addresses with file processing
Subject Line	The subject line of the email can change for each pass. For example, if you are multipass processing by region, you may want to include the region name in the subject line. You can use the [Current_Value] variable or the GetCurrentValue function to achieve this.	N/A
Body Text	The body text of the email can change for each pass. For example, you could set up an IF formula to use different body texts depending on information in the report. If the variance in the report is over a certain amount, you could send one version, otherwise send the other version.	N/A

Setting	Description	More Information
Processing Enabled	You can turn the file processing action on and off for each pass. For example, you could set up an IF formula so that if the contents of the report is all zeros, the report is not saved or emailed.	Setting up conditions for file processing
Sheets to Process	The sheets to process can dynamically change for each pass. For example, if you are multipass processing by department, some department types might use 3 sheets to process, while other department types use 2 sheets. You could use a formula to change the list of sheets to process based on the department type of the current pass. **NOTE:** There must be at least one sheet to process for each pass. If a pass has no designated sheets to process, then no action will occur for that pass.	N/A

Dynamic Axiom query settings

Axiom query settings are read at the start of each pass and can be dynamic—for example, to dynamically change the data filter applied to a query.

Generally speaking, you should not dynamically enable or disable an Axiom query on a per pass basis. If a query runs for pass A, and then does not run for pass B, then the data for pass A will still be present in the query when pass B is performed. Because the query is inactive for pass B, the query is not rebuilt or updated and therefore the data for pass A remains. Alternatively, you can leave the query active but dynamically set a filter that will result in no data (such as 1=2). This approach will result in the query being rebuilt or updated to reflect no data for that pass.

Dynamic worksheet settings

The sheet options from the default Control Sheet are also applied for every pass of a multipass process. This means that settings such as freeze panes, sheet visibility, and the active cell can be dynamic for each pass.

NOTE: It is not possible to dynamically change the view applied during file processing. Whatever view is applied when the process begins will be used for the duration of the process. If you are manually performing file processing, you can apply the desired view before initiating the process. If processing is performed via Scheduler or Batch processing, then the process will use the Initial Dynamic View if defined (otherwise it will use whichever view was applied when the file was last saved).

This does not apply during snapshot form processing, because the form is not affected by these spreadsheet display settings.

Using dynamic email addresses with file processing

When you are emailing the results of multipass file processing, in most cases you will want to dynamically determine the email address for each pass. If instead the email address is hard-coded, then all passes of the process will be sent to the same email address.

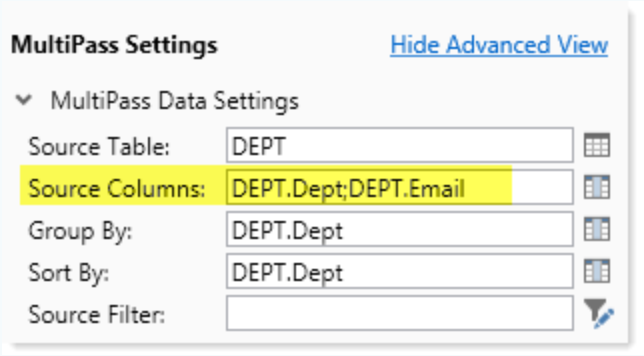
NOTE: This discussion does not apply to file collect processing, because the email settings for file collect are defined on the special File Collect Configuration sheet. For more information, see File Collect Configuration sheet and Using multipass processing with file collect.

There are a variety of ways to obtain the appropriate email address for each pass. The method you use will depend on how you have stored email addresses within the system and what dimension you are using to perform the multipass processing. This topic details some examples that you may be able to use directly, or the examples may get you started in the right direction for your particular system.

Example 1: Obtaining email addresses from a reference table

Imagine that you are performing multipass processing by department, and you want to send the output to the "owner" of each department. If the Dept table contains a column that lists the appropriate email address for each department (such as Dept.Email), then you can return this email address using GetCurrentValue.

In this example, you can use GetCurrentValue by itself if you list Dept.Email as an additional source column for the multipass process. In order to do this, you must switch the file processing task pane to Advanced View, and then add Dept.Email as a second source column (assuming the primary source column is Dept.Dept). The multipass settings would look like the following:



For the **To** field of the Email Settings, you could then enter the following formula:

```
=GetCurrentValue("Dept.Email")
```

When multipass processing is performed, this function will return the email address associated with the department for the current pass.

Alternatively, you could use GetCurrentValue to return the department code, and then use GetData to return the email address. When using this approach, you do not need to add any additional source columns to the multipass settings.

```
=GetData("Dept.Email","Dept="&GetCurrentValue())
```

Example 2: Obtaining email addresses from security

In order to obtain email addresses from security as part of a multipass process, a user login name must be associated with the multipass source column in some way. For example, you may be performing multipass processing by department, and the Dept table contains a column lists the user name of the department "owner" (such as Dept.Owner). You can return the user name using GetCurrentValue, and then return the email address from security using GetSecurityInfo.

As discussed in the first example, you must first add Dept.Owner as an additional source column for the multipass process (again we are assuming that Dept.Dept is the primary source column for the process). Then in the To field of the Email Settings, you could enter the following formula:

```
=GetUserInfo("UserEmail",GetCurrentValue("Dept.Owner"))
```

When multipass processing is performed, the GetCurrentValue function will return the user name from the Owner column for the current department, and then GetUserInfo will return the email address for that user name.

Alternatively you could use GetCurrentValue() with GetData to look up the owner name based on the department code, instead of using Dept.Owner as an additional source column.

4

Additional Setup Considerations

This section contains detailed setup information for various aspects of file processing. File processing can be configured to handle many different use cases.

File processing variables

File processing variables can be used in file processing settings, to return information such as the current pass value. These variables are valid when entered into one of the following areas:

- File Processing task pane
- File Processing Control Sheet

File processing variables are typically used to generate dynamic values when during multipass processing. For example, if you are using multipass processing to create a snapshot copy of a file, and all of the sheets are being combined into one output file, you can use file processing variables to dynamically generate unique sheet names for each pass.

NOTE: File processing variables cannot be used on the special File Collect Configuration Sheet or the Batch Control Sheet. If you need to create dynamic settings for file collect multipass processing, you can use the GetCurrentValue function and other special settings. For more information, see Using multipass processing with file collect.

The following rules apply to file processing variables:

- File processing variables only return values when they are used in file processing settings. They can be entered into the setting field directly, or referenced via a cell reference.

  When used anyplace else, file processing variables do not return a value. If you want to return the current value or current pass number for use within a report sheet (for example, to create a dynamic report title), then you can use the GetCurrentValue function instead.

- File processing variables only return values during file processing. When viewing the variables within the file processing settings, they will always display just the variable name.

- File processing variables use the following syntax: `[VariableName]`. The variables must be placed in brackets in order to be recognized during file processing.

Variable	Description
[Current_PassNumber]	Returns the number of the current pass. • When multipass processing, the first pass returns 1. Subsequent passes are incremented by 1. If the multipass settings result in 10 passes, then this variable will return 1-10, with the sort order determining which item is the first pass. • When non-multipass processing, the variable always returns 1.
[Current_SheetName]	Returns the name of the current sheet being processed. This variable is for use in generating sheet names for snapshot copies. For example, you could use `[Current_Value]_[Current_SheetName]` when using multipass processing and combining all results into a single file. If the multipass processing was by VP, the sheets would have names such as Jones_IncomeStmt, Smith_IncomeStmt (where the sheet being processed is named IncomeStmt). If you are doing standard (non-multipass) processing, or if you are multipass processing to separate files, then you can use just `[Current_SheetName]` to replicate the original sheet name in the snapshot copies. This variable is only valid within the Sheet Name setting for file processing. It cannot be used in other settings.
[Current_Value]	Returns the item being processed in the current pass. For example, if the multipass process is by VP, this variable would return "Jones" when VP Jones is being processed, "Smith" when VP Smith is being processed, etc. This variable returns nothing (blank) during standard (non-multipass) processing, unless a default current value is defined for the column that defines the multipass list of elements. Default current values can be defined on the File Processing Control Sheet.

File processing variables are not case sensitive.

If you want to use a file processing variable within a formula, the formula must be constructed so that the file processing variable is returned as text within the file processing setting. For example:

Valid formula: `=Sheet1!B5&"_IS_[Current_Value]"`

Invalid formula: `=Sheet1!B5&"_IS_"&[Current_Value]`

Defining sheet names for file processing

When you use file processing to save a snapshot copy of a file, you must specify how the sheet names are determined in the snapshot. This setting is called **Sheet Names** in the **File Processing** pane, and applies to all snapshot file types except PDF.

The sheet name setting cannot be left blank. You must use file processing variables to dynamically generate sheet names, or type a "hard-coded" sheet name.

NOTE: The sheet name setting takes a single entry that applies to all sheets being processed. Therefore if you are processing more than one sheet (as specified in the **Sheets to Process** setting), you must use file processing variables to define the sheet name. "Hard-coded" sheet names can only be used when processing a single sheet.

How you define the sheet name primarily depends on whether you plan to use multipass processing on the file, and whether the multipass output is to a single file or multiple files.

Sheet names for standard processing

If the file will be primarily processed using standard (non-multipass) processing, you can do one of the following:

- Use the file processing variable `[Current_SheetName]`. The sheets in the snapshot copy will use the same names as the original file.
- Type a sheet name. The sheet in the snapshot copy will use this "hard-coded" file name. This option only applies when processing a single sheet (otherwise you will have multiple sheets with the same name). Formulas can also be used to create sheet names.

`[Current_Value]` primarily applies to multipass processing and is typically not used in this context. However, if you have a file that you process using both standard and multipass processing, you can define a default current value for the multipass source column on the File Processing Control Sheet, and that value will be returned by `[Current_Value]` during standard processing.

Sheet names for multipass processing

If the file will be primarily processed using multipass processing, then how you define the sheet name depends on whether you are outputting to a single file or multiple files (the **File Generation** setting).

- If you are outputting to a single file, then the sheet (or sheets) resulting from each pass must have unique sheet names, so that you can tell which sheets are associated with each pass. In this case, you should use the default setting of `[Current_Value]_[Current_SheetName]`. This will append the current pass value to the original sheet name.

For example, if you are using multipass processing to process by VP, you will get sheet names like the following: "Jones_IncomeStmt", "Smith_IncomeStmt", etc. If you are processing multiple sheets, then you will get sheet names like the following: "Jones_IncomeStmt", "Jones_Analysis", "Smith_IncomeStmt", "Smith_Analysis", etc. (where you are processing two sheets named IncomeStmt and Analysis).

- If you are outputting to multiple files, then you have the option of whether to use the `[Current_Value]` variable in the sheet name or not.

  In this case, the current value variable is most likely being used in the file name, so you could have a file named "IncomeStatement_Jones.xlsx", with a sheet name of simply "IncomeStmt". However, you may want to leave the current value variable in the sheet name anyway, so that the sheet name will work regardless of whether you output to a single file or multiple files.

  In this case, you also have the option of using a "hard-coded" sheet name instead of using the current sheet variable (as long as you are processing only one sheet).

Formulas can also be used to create sheet names.

Defining the file name for file processing

When you use file processing to create an output file (either a snapshot or an export file), you must specify how the file name is determined. This setting is called **Output File Name** in the **File Processing** pane.

The file name setting cannot be left blank. You must use file processing variables to dynamically generate file names, or type a "hard-coded" file name.

How you define the file name primarily depends on whether you plan to use multipass processing on the file, and whether the multipass output is to a single file or multiple files.

NOTE: This discussion does not apply to file collect processing, because the output file settings for file collect are defined on the special File Collect Configuration sheet. For more information, see File Collect Configuration sheet.

File names for standard processing

If the file will be primarily processed using standard (non-multipass) processing, then you can type the desired file name, without using any file processing variables. When you process the file, the output file will use the specified file name. Formulas can also be used to create file names.

By default, the file name is set to `[Current_Value]_Report`. If you never plan to process this file using multipass processing, then you can delete the default text and enter the desired file name, such as: `Income_Statement`.

If you leave the `[Current_Value]` variable in the file name, then it will return nothing during standard processing unless you have: 1) configured multipass settings for the file, and 2) defined a default current value for the source column on the File Processing Control Sheet.

File names for multipass processing

If the file will be primarily processed using multipass processing, then how you define the file name depends on whether you are outputting to a single file or multiple files (the **File Generation** setting).

- If you are outputting to a single file, you can use the `[Current_Value]` variable, or you can type the desired file name, such as `Income_Statement_by_VP`. Formulas can also be used to create file names.

  If you use the `[Current_Value]` variable, make sure to define a default current value for the multipass source column on the File Processing Control Sheet. In this context, the `[Current_Value]` variable returns the default value. If no default value is defined, the variable will return nothing.

- If you are outputting to multiple files, then the file name for each pass must be unique, so that you can tell which file is associated with each pass. You can use the `[Current_Value]` variable, or you can use formulas and the GetCurrentValue function to create a file name.

  For example, if the file name is set to `Income_Statement_[Current_Value]` then each pass will create file names such as Income_Statement_Jones.xlsx, Income_Statement_Smith.xlsx, etc.

Defining the output folder for file processing

When you use file processing to create an output file (either a snapshot or an export file), you must specify where the file is to be saved. This setting is called **Output Folder** in the **File Processing** pane. This setting does not apply if you are *only* emailing files.

You can use file processing variables or formulas to generate the output folder name (for example, if you are multipass processing and you want to save the file for each pass to a different location). If the specified folder does not already exist, Axiom attempts to create it.

The valid entries for the output folder depends on whether **Output To** is set to **Local File System** or **Axiom Repository**:

NOTE: This discussion does not apply to file collect processing, because the output folder settings for file collect are defined on the special File Collect Configuration sheet. For more information, see File Collect Configuration sheet.

Local file system

If you are outputting to your local file system, then the folder location should be entered as a UNC path instead of a mapped drive. If you browse to the folder, it is automatically entered as a UNC path.

You can use a folder on your local drive, but it will only be valid when running file processing interactively from your own computer. If you want to process this file using Scheduler, the output folder should be a shared network drive (or you can override the output folder in the Scheduler task). For Axiom Cloud systems, a remote data connection is required to save a file locally when processing via Scheduler.

The ability to save files to the specified location and to create new folders (if necessary) depends on the network permissions for the user processing the file. Access to the files after they are created is also dependent on your network permissions.

Axiom repository

The specified location in the Axiom file system must be within the Reports Library, and the location must use the full path (meaning: `\Axiom\Reports Library\...`). The ability to save files to the specified location and to create new folders (if necessary) depends on the Axiom security permissions for the user processing the file. Users can only create new folders if they have read/write permissions to the parent folder, and they can only create new files if they have read/write permissions to the target folder.

Once the files are created within the Axiom file system, access to those files is dependent on the user's permissions to the output folder. Typically you should create the output folder in advance (or if you want to create output folders on-the-fly, create a parent folder to hold the output folders), and then set permissions for that folder as appropriate in Axiom security, so that the appropriate users will be able to access the files after they are created.

Defining default values for current value

Axiom has two ways to return the current value during multipass processing: the file processing variable `[Current_Value]`, and the function GetCurrentValue.

During multipass processing, these features return information relating to the current item being processed. For example, if processing by region, they would return "North" when North is the region being processed.

You may want to process the same report using "standard," non-multipass file processing. In this case, you must decide what you want the current value to return when not using multipass processing.

On the File Processing Control Sheet, you can define a default value to use when using non-multipass processing. For example, if your multipass setting is DEPT.VP, you can define a default value that is something like "Consolidated" or "All VPs". When you process the file using multipass processing, the current value will return the VP name. When you process the file using non-multipass processing, the current value will return "All VPs". This way you can use the same settings for both processing contexts.

If you do not define a default value, then the current value will return nothing (blank) during non-multipass processing. This may be the desired effect. However, if you have set up file names or other

settings using constructions such as "[Current_Value]_IncomeStatement," then you should define a default value, otherwise you will get the following when non-multipass processing: "_IncomeStatement". (This may not matter if the file is *only* for use with multipass processing.)

To define a default value for the current value:

1. In the file, go to the File Processing Control Sheet (**Control_FileProcessing**).

   You must use the control sheet to set default values. The task pane does not contain settings for this feature.

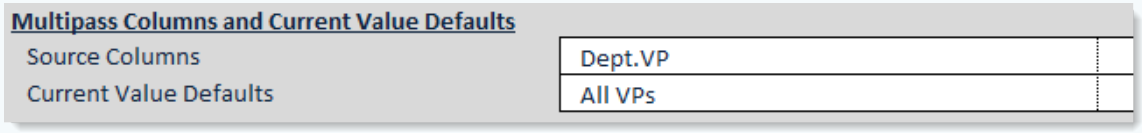
2. At the top of the control sheet, under **Source Columns and their Current Value defaults**, locate the source column for which you want to define a default value.

   If you used "basic mode" to set up the multipass settings, this area lists only one column: the column you selected as the source column. If you used advanced mode settings, then this area may list multiple columns. Each column listed here can have a corresponding default value.

3. In the cell directly underneath the source column, type the value that you want to use as the default value.

Example

This file has been set up to use "All VPs" as the default value for the DEPT.VP source column:



When using **Process File** to process the file, the current value is "All VPs". When using **Process File Multipass** to process the file, the current value is whichever VP is being processed for the current pass (for example, "Jones").

Setting up conditions for file processing

When using file processing, you may want to conditionally determine whether the file processing action occurs, depending on information within the file. This can be especially useful when using multipass processing, and you want the action to occur on some passes but not others.

The **Processing Enabled** setting on the File Processing Control Sheet enables conditional processing. By setting up a formula in this field that conditionally returns either **True** or **False**, you can turn the file processing action on or off for each individual pass.

When file processing is initiated, the file is always refreshed. After the refresh occurs, Axiom checks the **Processing Enabled** setting to see if the file processing action (snapshot, export, save data) should be performed.

- If **True**, the file processing action is performed as normal.

- If **False**, the file processing action is not performed.

In both cases, the process moves on to the next pass (if using multipass processing), refreshes the file again, and checks the **Processing Enabled** setting again. This continues until all passes are complete.

For example, you may want to configure file processing so that a snapshot is not sent if a particular pass results in zero data. You can set up a formula in the report sheet that totals all of the data columns. Then you can set up a formula in the **Processing Enabled** setting that checks this total, and returns **False** if the total results in zero, or **True** if it doesn't. Snapshots will be created for passes that have data, and passes without data will be skipped.

The **Processing Enabled** setting is only available on the File Processing Control Sheet. You cannot turn file processing on and off from the File Processing pane.

Using batch variables with file processing

When you set up file processing for a report, you can define one or more batch variables to be used when processing the report via Scheduler's File Processing task, or via batch processing.

Batch variables can be used to change the report in some way as part of file processing. When you set up a file processing task for Scheduler, or when you list the report in a batch, you can define values for the variables. When the report is processed, the variable values are temporarily placed in designated cell locations in the report. If the report is configured to reference those cells, then the report will change based on the variable values.

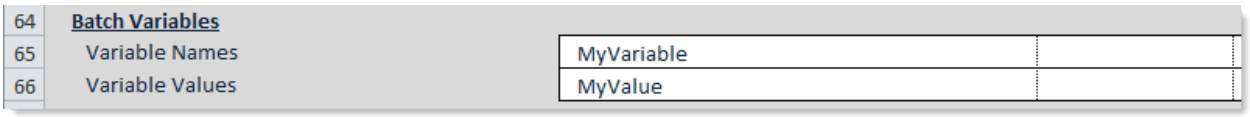
The batch variables can be used for virtually anything within the report. You could reference them in report titles, or in data query settings, or within the file processing settings. The usage of the variables is entirely user-definable.

NOTE: Batch variables cannot be used to change the Initial Dynamic View of the report for processing. The Initial Dynamic View is already applied by the time the variables are passed in, and it is not applied again. There is no way to dynamically determine the view to be applied for file processing; it will use whatever view is already applied in the file when the processing begins.

Defining a batch variable

Batch variables are defined on the File Processing Control Sheet. This is an advanced file processing setting that is not available in the File Processing pane.

To define a batch variable, go to the **Batch Variables** section at the bottom of the File Processing Control Sheet, and type a value into any empty cell in the **Variable Names** row. The name can be anything you want, but it should reflect what the variable value is used for.



To use the batch variable in the report, you would reference the cell in the **Variable Values** row directly below the variable name (in this case, cell D66).

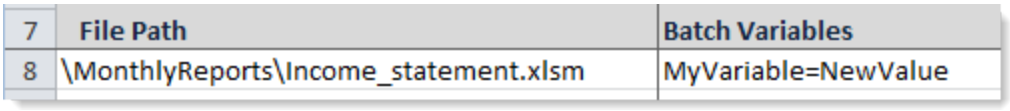
You can leave the value blank, or you can type in a value to be used by default. When the file is processed, it will be replaced by whatever value is specified in the Scheduler task settings or the batch settings. (If no value is specified, then the default value in the file is used.)

Using a batch variable

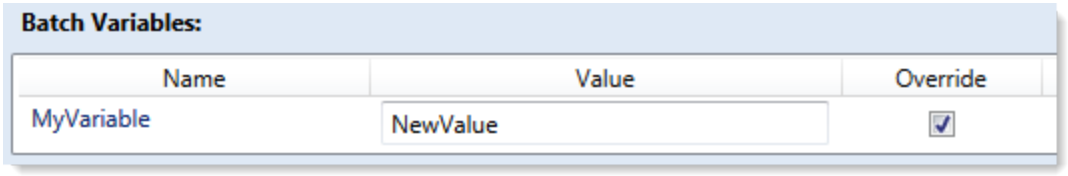
Batch variables can be used when the file is processed by a batch report, or when it is processed by Scheduler's File Processing task.

- To specify a variable value in a batch report, use the Batch Variables column. Enter each variable/value pair using the following syntax: *variablename=variablevalue*

  If you want to define values for multiple variables, separate each variable/value pair with a semicolon.

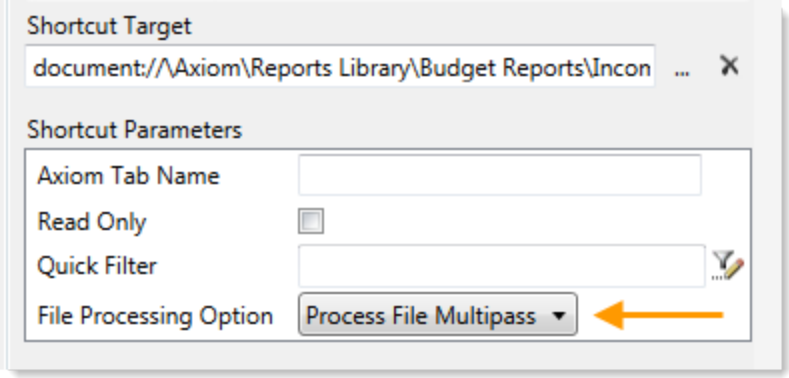


- To specify a variable value for a Scheduler File Processing task, use the Batch Variables section of the task. Select the **Override** check box and then type the desired value.



Executing file processing from a custom task pane or ribbon tab

You can perform file processing on a report file directly from a custom task pane or ribbon tab, by linking to the file and then using shortcut parameters to trigger file processing. You can choose to perform either regular file processing or multipass file processing.



If file processing is enabled for the shortcut target, double-clicking the item executes the file processing action. The file itself is opened in the background and is not visible to the user.

When using this option, you may want to configure the file processing report so that the output file opens in Axiom after processing instead of being saved or emailed (or in addition to that). You can use the **Open Output File after Processing** option on the File Processing Control Sheet . If the output folder is left blank, then the output file will open as a temporary file within Axiom, and the user will need to manually save it if they want to keep it. (Note that this feature is not supported when using file collect or batch.)

NOTES:

- If the file is already open when this command is executed, it will be closed at the end of the process, regardless of whether the file contains any unsaved changes.
- The user does not need to have the **Allow File Processing** permission for the file in order to initiate file processing from a task pane, the user only needs access to the file.

For more information on using custom task panes or ribbon tabs, see the *System Administration Guide*.

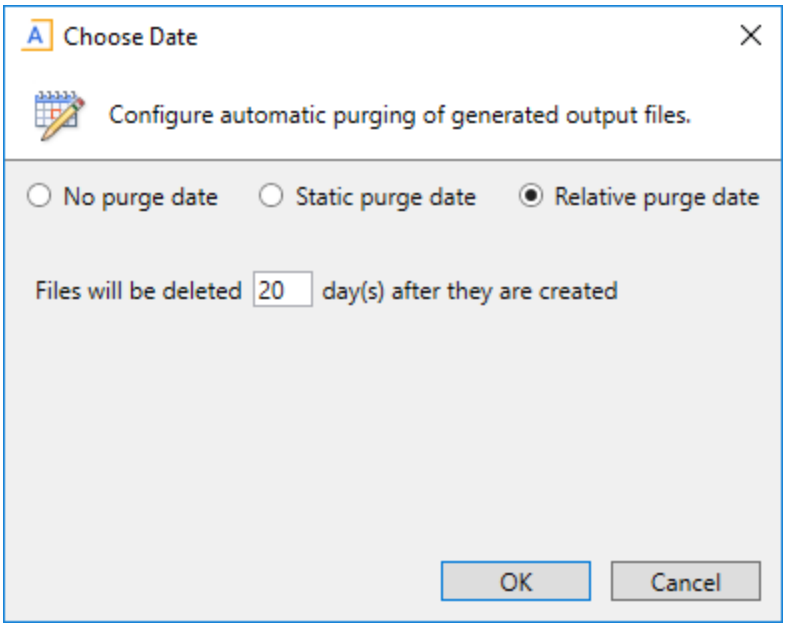
Automatically deleting file output generated by file processing

If file processing creates an output file—such as when using snapshot or export file processing—then you can configure the file processing settings so that the output file is automatically deleted after a certain period of time. Using this feature can help prevent a buildup of outdated files from regular executions of file processing.

NOTE: This feature only applies when saving output files to the Axiom repository. Axiom cannot automatically delete files that are saved to a file share outside of Axiom.

In the File Processing task pane, you can use the **Purge Setting** to configure output files for automatic deletion. Clicking the pencil icon brings up the **Choose Date** dialog, where you can select either of the following:

- **Static purge date**: Select the purge date from a calendar. Files will be deleted after the specified date has passed.
- **Relative purge date**: Specify the number of days to keep the output after it has been generated. The output will be deleted after the specified number of days have passed.



Example Choose Date dialog

How the file output is purged

When file processing is executed, the output files are stamped with a purge date according to the configured purge setting. For example, if the purge setting is 20 days and file processing is executed on 12/1/2020, then the stamped purge date is 12/21/2014. Files are eligible to be purged *after* that date, in this case starting on 12/22/2014.

The file deletion is performed by the System Data Purge job in Scheduler. This is a system job that runs periodically to purge old data and files from the Axiom database. When the job runs, if it finds files that are eligible to be deleted based on the stamped purge date, then it will delete those files.

File processing using Scheduler

Using the **File Processing** Scheduler task, you can schedule a report for processing. The report must already be configured for file processing in order to process it using Scheduler.

Once you have a Scheduler job set up, you can run it on demand, or you can schedule it for future execution. For example, you may have a set of reports that you want to run every week, every month, or every quarter. For more information on using Scheduler, see the *Scheduler Guide*.

Requirements and limitations

Note the following requirements when running file processing using Scheduler:

- The **Output Folder** location must be accessible by the Scheduler service user account. If you specify a network folder location using the Browse button, the location is automatically entered as a UNC path. If you specify a C: drive location, that location will be evaluated as the C: drive of the Scheduler server.
- If the file processing type is **Print**, the Scheduler server(s) must be configured to access the specified printer. This may require the assistance of your IT department.

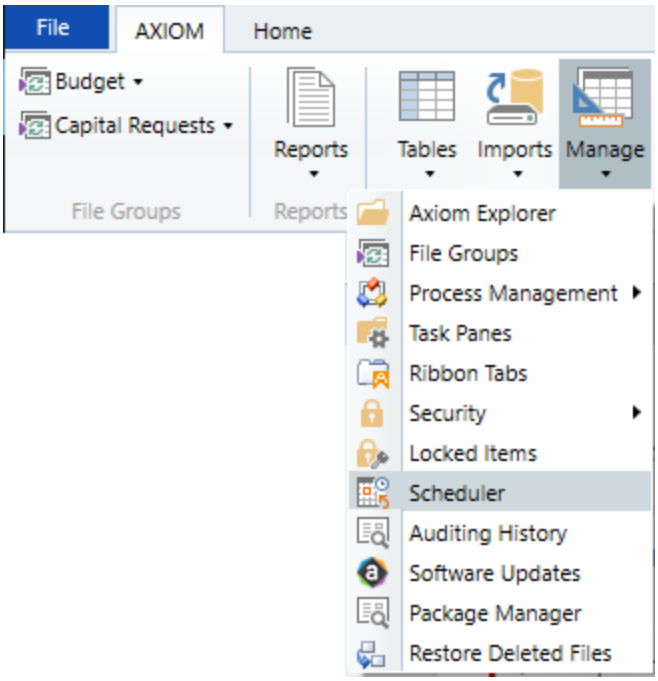
Creating the Scheduler job

In order to create a Scheduler job, you must be an administrator or have the **Scheduled Jobs User** security permission. Non-admin users must also have read/write access to at least one folder in the Scheduler Jobs Library.

Scheduler jobs can only be created in the Desktop Client. Although you can view the status of existing jobs in the Web Client, you cannot create new jobs in that environment.

To create a File Processing job in Scheduler:

1. On the **Axiom** tab, in the **Administration** group, click **Manage > Scheduler**.

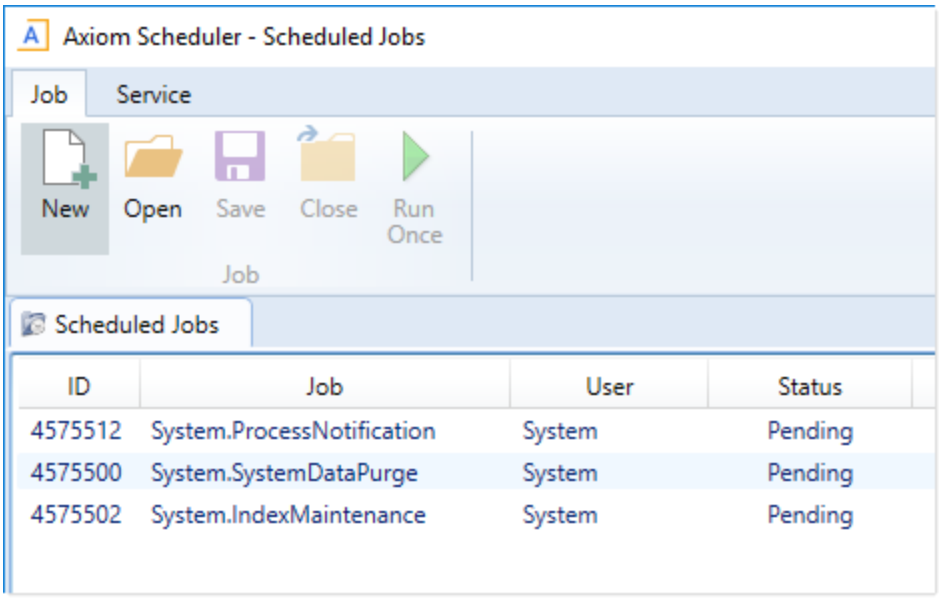


Scheduler on default Axiom ribbon tab

In systems with installed products, this feature may be located on the **Admin** tab. In the **System Management** group, click **Scheduler**.

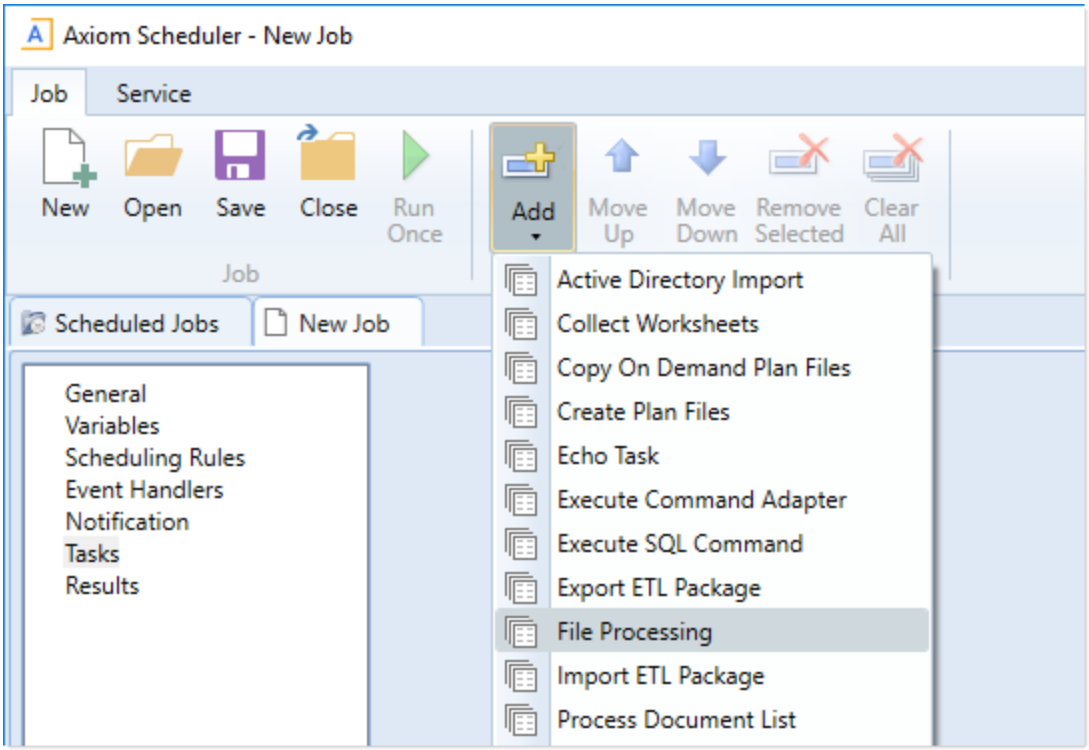
Scheduler on Admin tab (example product ribbon)

2. In the **Scheduler** dialog, click **New**.



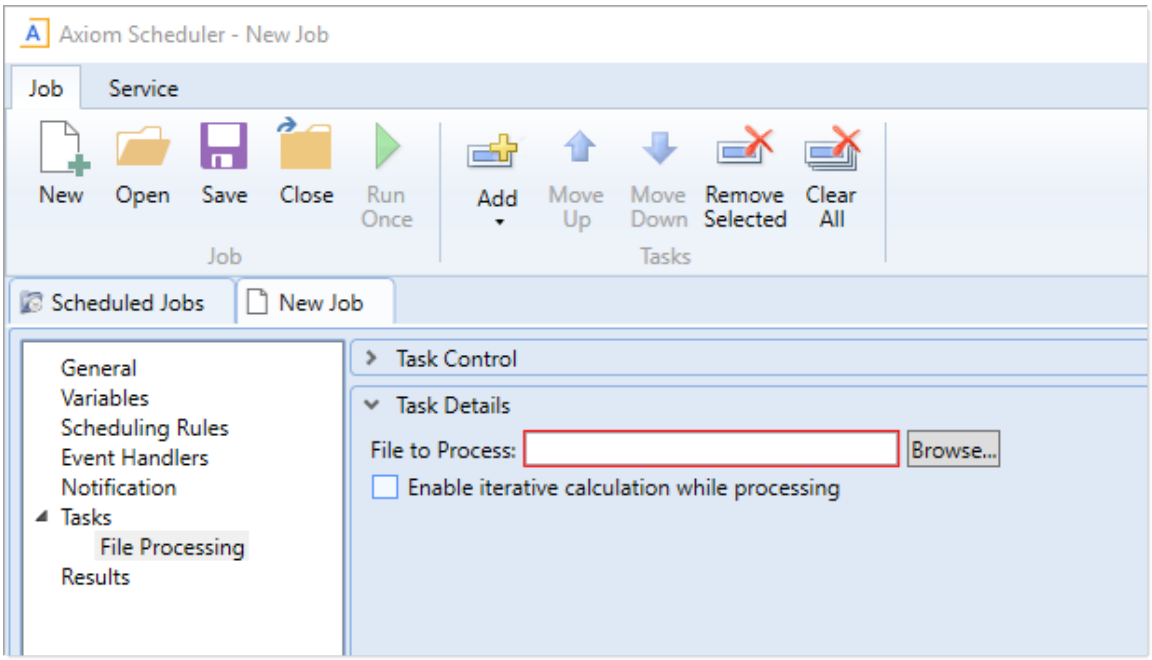
A new job is opened in the dialog, with a tab name of **New Job**.

3. Click **Add > File Processing** to add the task to the new job.



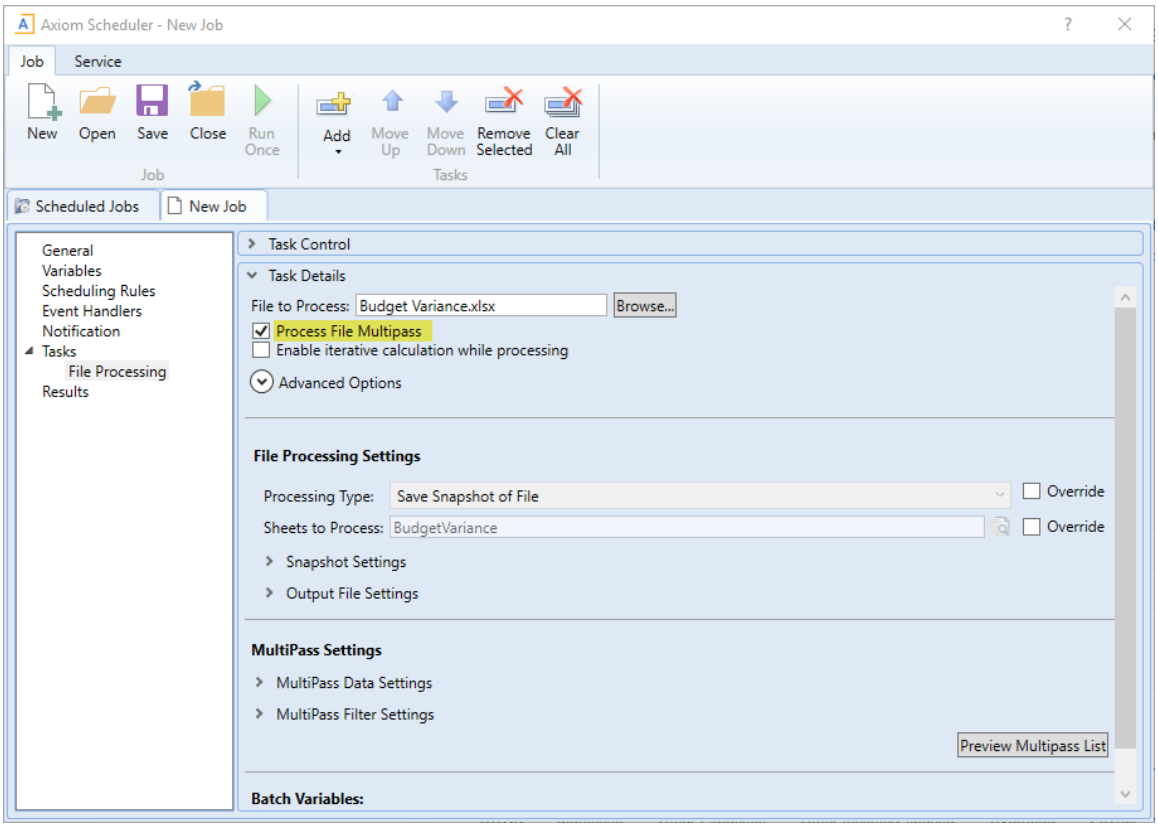
The task is added to the job, and you can now configure the task properties.

4. In the **Task Details** section, click **Browse** to select the **File to Process**.



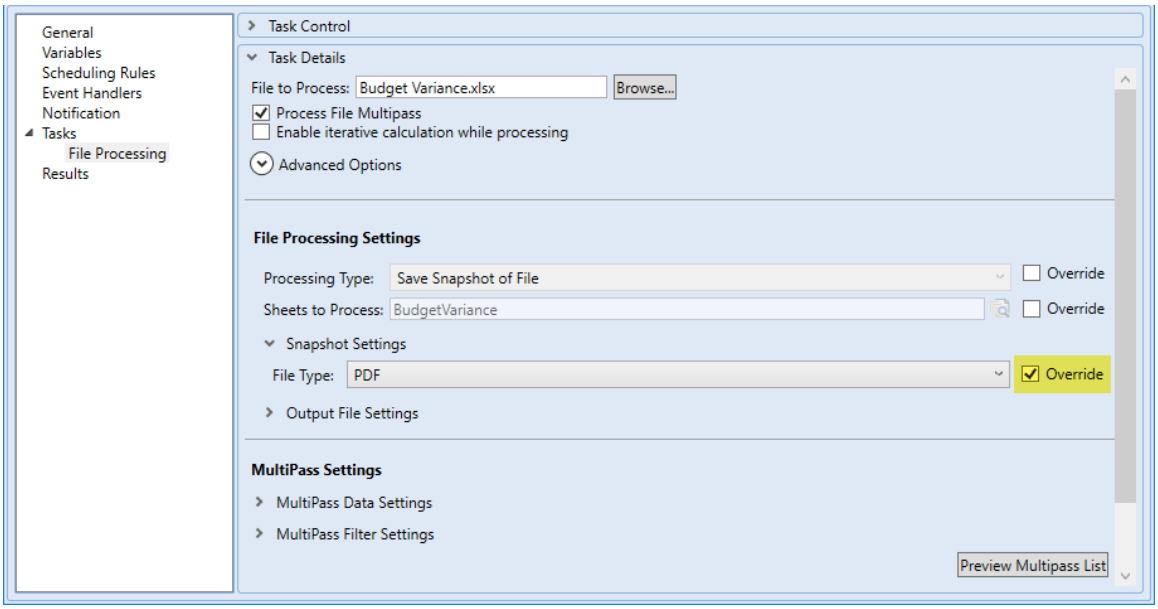
You can select any file that you have access to in the Reports Library, or in the Utilities folder of a file group. The file must already be enabled for file processing in order to be processed using Scheduler. If you select a file that is not enabled for file processing, the task will display a configuration error.

5. If you want to process the file using multipass processing, make sure that **Process File Multipass** is selected. It is selected by default for most file processing files. However, if you do not want to perform multipass processing, then you should clear this option.

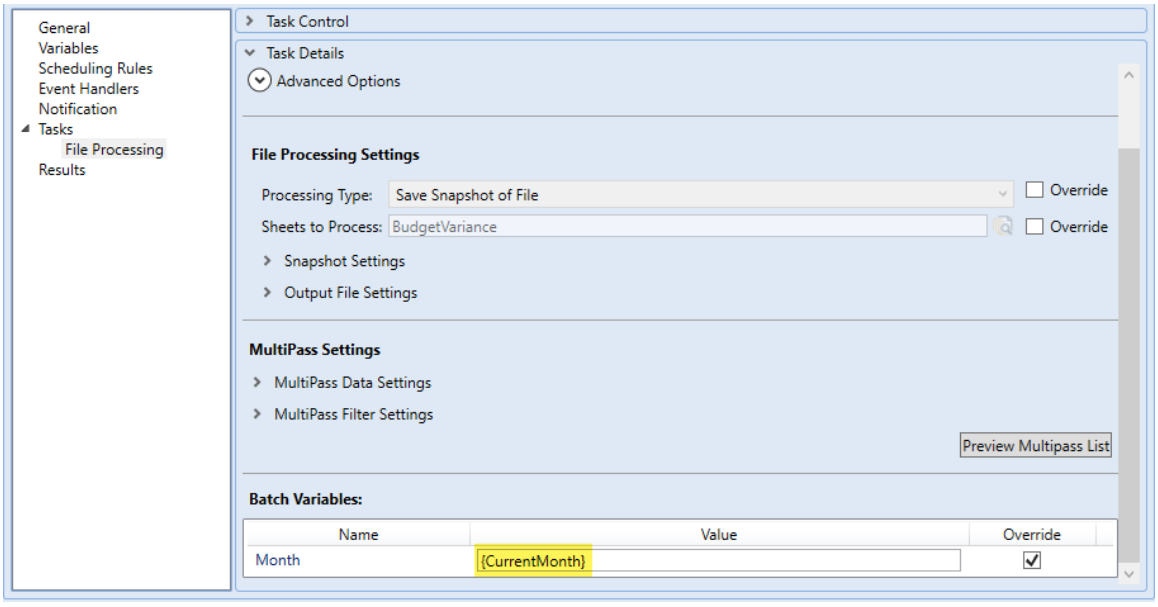


6. If needed, you can override certain file processing settings defined in the file (including batch variables), so that the override value is used when the file is processed by Scheduler. In order to override a setting, select the **Override** check box for that setting and then enter the override value into the field.

   In the following example, the file type of the output file has been overridden and changed to PDF output for the Scheduler execution.



When overriding values, Scheduler job variables can be used in fields that accept typed input. The following example shows a Scheduler job variable being used to set the value of a batch variable.



7. Complete any other job or task properties as needed. For example, you may want to configure the following:
    - **Scheduling Rules**: You can create a scheduling rule to execute the job according to a predefined schedule.
    - **Notification**: You can edit the notification settings to send emails to designated recipients when the job executes successfully and/or when it errors.

    For the remaining properties, in most cases the default settings are sufficient.

8. Click **Save**. You can define a name for the job and save it to the desired location in the Scheduler Jobs Library.

Once the job is saved, you can run it as needed by clicking **Run Once**. If the job has a defined scheduling rule, then it will be automatically placed on the schedule for future execution according to that rule.

File Processing Behavior Notes

This section details how certain features behave during file processing. It is important to understand this behavior so that you can set up file processing appropriately.

Refreshing Axiom queries during file processing

When you perform file processing, the file is refreshed before the processing action occurs. If you are using multipass processing, the file is refreshed for each pass of the multipass operation.

Axiom queries have several different refresh options that dictate when they are refreshed. These options are configured in the **Refresh behavior** section for the query on the Control Sheet. The following details which Axiom queries are refreshed as part of file processing.

- When the file is opened, any queries set to **Refresh on file open** are run. This occurs before file processing begins.

  NOTE: When performing file processing, the file is *not* closed and reopened for each pass. If you open a file and then initiate file processing, the "refresh on open" queries are not run again because the file is not being opened again. For more information on how file processing is executed, see Dynamic settings for multipass processing.

- If multipass processing is being performed, then any queries set to **Refresh once before multipass processing** are run. This occurs before the file processing begins.
- When the file processing begins, any queries set to **Refresh during document processing** are run. If non-multipass processing is performed, then this refresh occurs once, before the file processing action. If multipass processing is performed, then the refresh occurs for each pass, before the file processing action is performed for that pass.

These refresh options are configured independently—multiple options can be enabled for a single query. So if a query is set to refresh on open *and* to refresh during document processing, then it will be refreshed multiple times when the file is processed—once when the file is opened, and then one or more times during file processing (depending on whether you are performing multipass processing or not). If you have a query that is set to refresh on open or to refresh before multipass processing, and you do not want that query to run again during processing, then you should disable refresh during document processing for that query.

NOTE: File processing does not support the ability to run Axiom queries in parallel. If a **Batch Number** is specified for an Axiom query, it will be ignored during file processing and the queries will be processed in sequential order as normal.

How email is delivered for file processing

When you select to email the output file for file processing, the email operation is handled by Axiom Scheduler. This means:

- Email is processed by the **SMTP Message Delivery** task set up in Scheduler for the current Axiom system. This task must be configured to point to a valid SMTP server and set up to run at regular intervals, or else email will not be delivered.
- The email resulting from file processing will be delivered the next time the message delivery task is run by Scheduler.

The email client on the local machine is not used and will not open when file processing is initiated.

When you define the email settings for file processing, you specify whether to send the email as the **Current User** (the user initiating the file processing), or as the **System User**. The system user is the user defined as the default "From" address for Scheduler, in the system configuration settings for the database.

You may want to use the system user so that it is clear that the emails are coming from Axiom, regardless of which user happens to perform the file processing.

If you use the current user, the email address is the address defined for that user in Axiom security.

Considerations for using file processing in plan files

File processing can be used in plan files. In the plan file environment, the primary use case is standard (non-multipass) processing, for the purposes of snapshot file delivery.

It is very important to understand that file processing always performs a full refresh of the file, including refreshing all enabled Axiom queries. If plan files are being used for typical financial planning purposes, such as budgeting and forecasting, the files may be designed so that after the plan files are initially created, the files are not intended to be refreshed again. Or, they may be designed to be refreshed by administrators at specific intervals, such as after a new month of actuals has been imported into the database.

If your plan files are designed this way, then you should *not* set up plan files to use file processing, because the act of file processing will refresh the file and may update data that is intended to remain static, such as a YTD value.

Plan files are extremely flexible and can be used for many different purposes. With other plan file designs, it may be perfectly fine to refresh the file periodically. If your plan files are designed to accommodate ongoing data refreshes, then you can use file processing in those files if desired.

Considerations for using feature tags with file processing

Axiom supports several features that are defined using tags in a sheet. You may want to use some of these features in conjunction with file processing, such as:

- Action codes
- Print views
- Sheet views

When file processing is initiated, Axiom checks the worksheets for any instances of the primary tags for these features (for example, the ActionCodes tag or the View tag). If these tags are not found, Axiom does not check for them again during the file processing. This is to optimize the performance of file processing.

This means that primary tags cannot be inserted into the sheet by use of Axiom queries, because Axiom will not check for them again after failing to find them initially. However, once Axiom has found the primary tags, the system knows to continue to scan the sheet for tags during file processing, so supporting row and column tags such as Copy and HideRow can be brought in by Axiom query.

In most cases, primary tags are "hard-coded" into the sheet and do not need to be brought in by Axiom query. However, if you have a setup where this is required, and you want these features to be applied during file processing, you can set up "dummy" tags in the file, for the sole purpose of forcing Axiom to continue to scan for the "real" tags during file processing.

Considerations for using refresh variables with file processing

Refresh variables are ignored during file processing and therefore cannot be used to impact file processing data. However, you may have a report that you want to set up for both end user access ("on-demand reporting") and for use with file processing. If you use refresh variables in a report that is also enabled for file processing, you need to be careful to configure the report to handle both use cases.

For example, imagine that you have a refresh variable that prompts the user to select a region. The Axiom query in the report is then filtered by the user's selected region. If a user runs the report, selects a region, and then saves the report, that region filter is now saved in the Axiom query settings.

This isn't an issue for the "on-demand reporting" use case, because the next time a user opens the file and refreshes it, the refresh dialog will prompt the user to select a region. The previous region will be selected by default, but the user can still select any region they want at this point. However, the file processing use case is broken now. The region filter that got saved in the file from use of the refresh

variable will now be applied during file processing. When performing multipass file processing, every pass of the process will now be filtered by that region filter (in addition to the automatically applied filter for the current pass).

To prevent this situation, you can use the function IsRunningMultipass to "toggle" the refresh variable filter on and off depending on whether multipass file processing is being performed. For example, the data filter for the Axiom query could be defined using a formula like the following:

```
=IF(IsRunningMultipass()=True,"",Variables!C3)
```

Where Variables!C3 indicates the location in the file where the result of the refresh variable is used to construct a filter.

When the file is refreshed by an end user, IsRunningMultipass will return False, so the value in Variables!C3 will be used to define the Axiom query filter. When multipass file processing is being performed, IsRunningMultipass will return True, which means that the Axiom query filter will be left blank (thereby ensuring that no additional unintended filter will be appended to the automatic multipass filter).

NOTE: IsRunningMultipass only returns True for multipass file processing. If you process the file using non-multipass file processing, then IsRunningMultipass will return False, which in this example means the refresh variable filter would still be applied. Currently there is no way to toggle between all three use cases (end user refresh, non-multipass file processing, and multipass file processing).

5

File Collect

Using the "file collect" feature, you can combine multiple Microsoft Excel spreadsheets into a single file, and then deliver the file.

For example, you might have several reports that are set up to use multipass file processing to save snapshot copies to various folders. After running all of those reports, you could use file collect to combine the various snapshot copies into a single "report package." You can process these packages with different settings to impact which files are collected and how they are delivered—for example, you could use a file filter to collect all of the "North" reports into one package, and all of the "West" reports into another package, and send them to the appropriate department managers.

File collect allows you to:

- Combine multiple Excel spreadsheets into one output file, and then save that file to a designated file location and/or deliver it via email to one or more recipients.
- Define "common files" to be automatically added to each package, such as a cover page, or a supporting document, or a consolidated top-level report.
- Automatically refresh file lists based on source folder locations, so that the list of files to collect can be determined dynamically. Source files can also be "hard-coded" as needed.
- Define multiple packages for processing and/or use multipass processing to dynamically change package settings such as the output file name, file filter, and target email recipient.

File collect is a special feature of file processing. Unlike other file processing types, where you are refreshing sheets in the file with data and then performing actions on those sheets, file collect uses a special configuration sheet to define the settings of the collect operation. Although the file can contain other sheets, these sheets are essentially ignored for the file collect operation (unless the configuration sheet references the other sheets to determine file collect settings). In most cases, the only purpose of the file is to contain the file collect configuration settings.

When you set up file processing for file collect, you specify the processing type, the sheets to process, and optional multipass settings. All other file processing settings do not apply to file collect. All file collect settings are managed within the special File Collect Configuration sheet.

Setting up file collect

Using file collect, you can combine multiple Microsoft Excel spreadsheets into a single output file and then save and/or email the file. To set up file collect, you must enable the file for file processing, and then complete one or more special File Collect Configuration sheets.

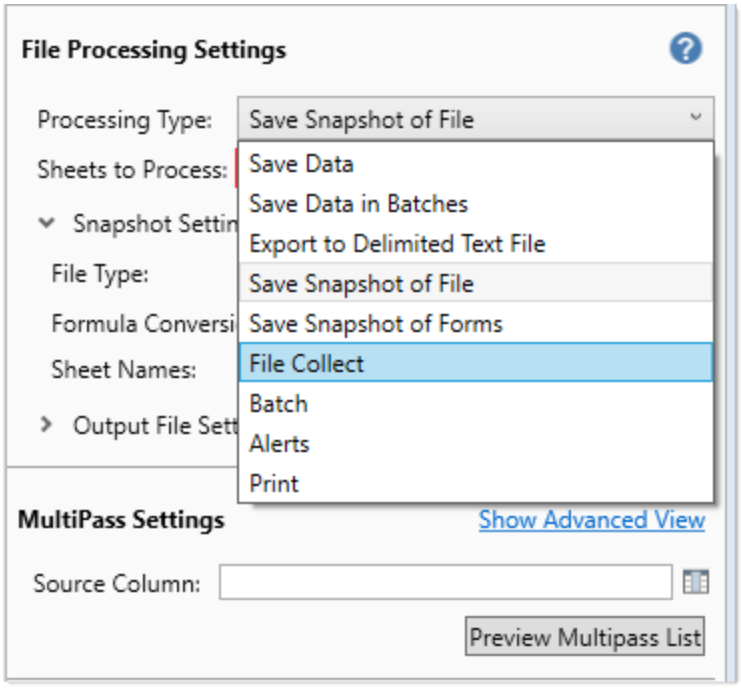
Enabling file collect within a file

It is recommended to use a dedicated report file to hold the file collect settings. Using a report file allows the file to be scheduled using Scheduler's File Processing task.

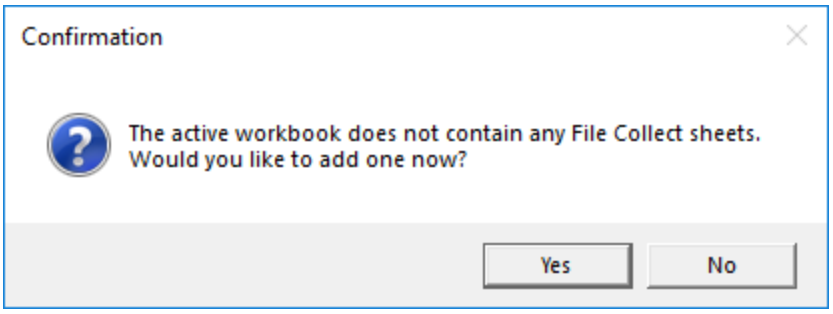
1. Open or create a report to contain the file collect settings, and enable the report for file processing:
   - On the **Axiom** tab, in the **File Output** group, click **File Processing > Enable File Processing in this workbook**.

     NOTE: In systems with installed products, this feature may be located on the **Main** tab (either directly on the tab, or on the **Publish** menu).

   The **File Processing** task pane opens, and a sheet named **Control_FileProcessing** is added to the file.
2. In the **File Processing** task pane, for **Processing Type**, select **File Collect**.

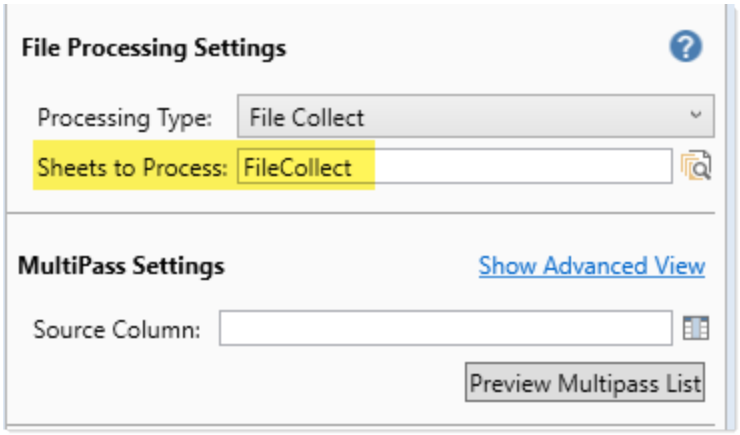


3. A message box prompts you to add a file collect sheet to the file. Click **Yes**.



A File Collect Configuration sheet, named **FileCollect**, is added to the file. The File Collect Configuration sheet is where you define the configuration settings for the file collect option.

4. By default, the newly added FileCollect sheet is automatically set as the **Sheets to Process**. There is no need to change this unless you want to rename the sheet or add more File Collect Configuration sheets.



5. Optional. If you want to use multipass processing for the file collect operation, then complete the **MultiPass Settings**.

   For **Source Column**, click the column icon to select the source column for multipass processing. For example, if you select DEPT.VP as the source column, then the file collect operation will be processed once for each VP. You can use the GetCurrentValue function in the File Collect Configuration sheet to dynamically change certain settings per pass, such as the email address or the output file name. Additionally, the file filter can use special syntax to filter the file list based on a column relating to the multipass column.

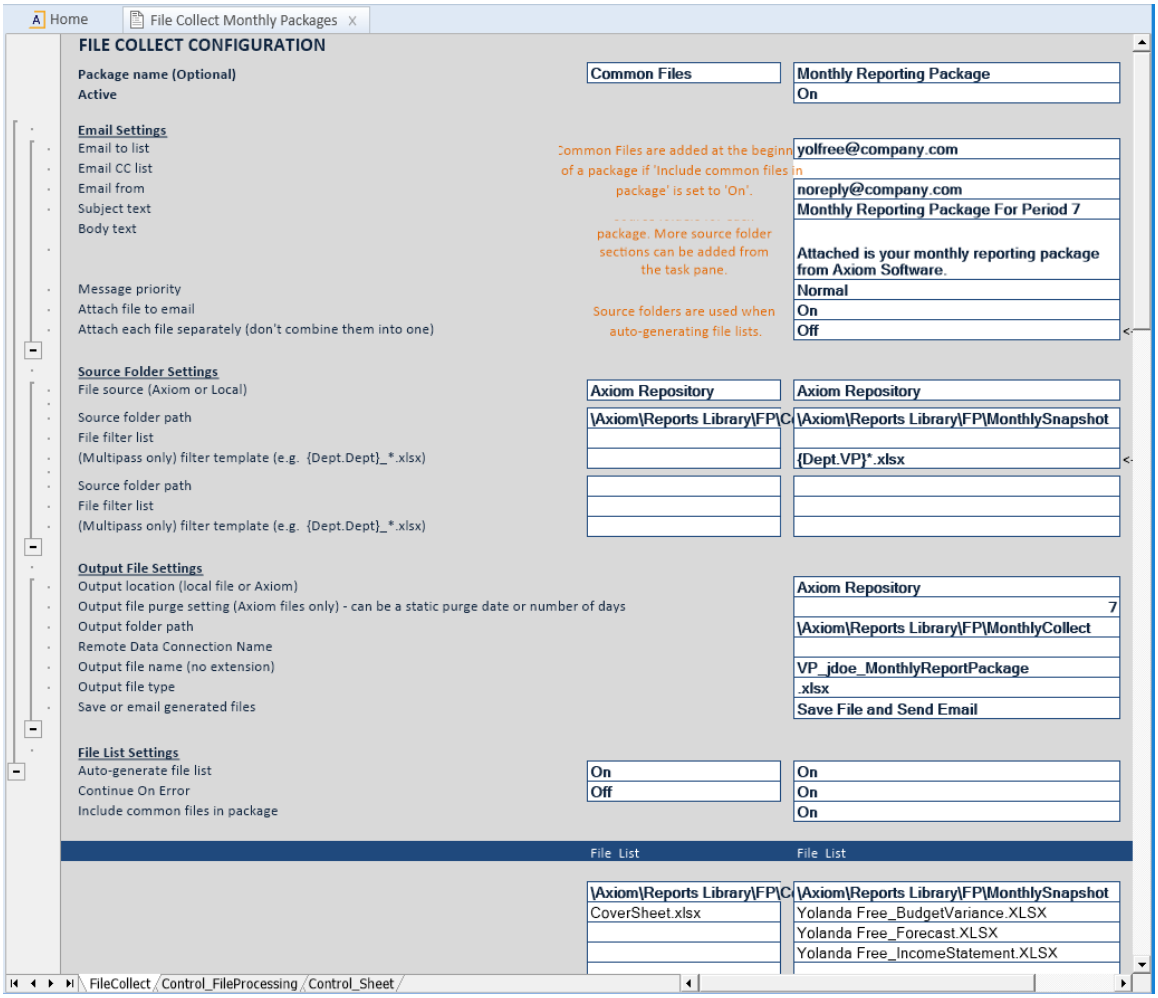
   For more information, see Using multipass processing with file collect.

6. Define one or more file collect packages on the File Collect Configuration sheet (FileCollect). Each package column defines a set of files to collect and delivery settings, such as:
   - An optional package name, such as "Monthly Report Package".
   - Whether to save and/or email the collected files
   - A source folder and other related settings to generate a list of files to collect
   - Email settings such as the recipient, subject, and body text

- Output file settings such as the file name, file type, and target folder location

For more information on setting up a file collect package, see:

- File Collect Configuration sheet
- Creating and refreshing file lists for file collect



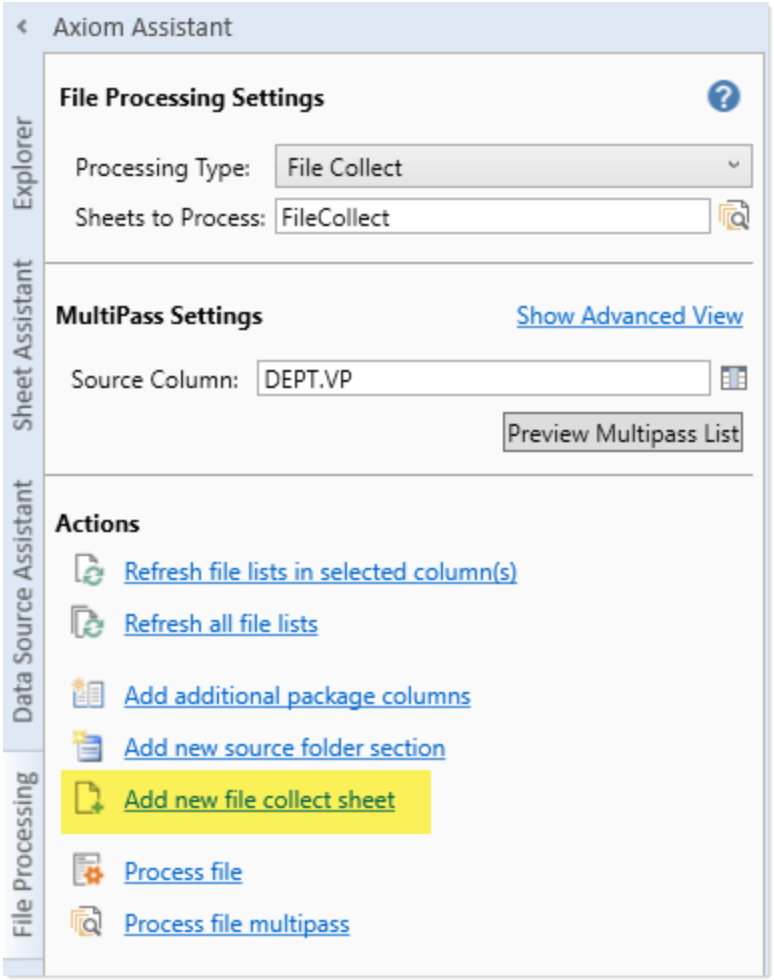
Example File Collect Configuration sheet

NOTE: On the File Processing Control Sheet (Control_FileProcessing), the only settings that apply to file collect are the **Processing Type**, the **Sheets to Process**, and the multipass settings. All information relating to the file collect packages, including the output file and email details, are defined on the File Collect Configuration sheet instead of the File Processing Control Sheet.

Using multiple File Collect Configuration sheets

If desired, you can add multiple File Collect Configuration sheets to the file, and process them in the same operation.

- To add more File Collect Configuration sheets to the file: In the **Actions** section of the **File Processing** task pane, click **Add new file collect sheet**. If you are using multiple File Collect Configuration sheets, it is recommended to rename the sheets to something that indicates the purpose of each sheet.



- To process multiple File Collect Configuration sheets: In the **File Processing Settings** section of the **File Processing** task pane, click the **Select worksheets** icon to the right of the **Sheets to Process** box, and then select the desired sheets. Only File Collect Configuration sheets are eligible for processing.

However, since there are many different options to process different file collect packages, it is typically not necessary to use multiple sheets. You can define multiple packages in a single sheet (all using

different settings), and/or you can process the sheet using multipass to dynamically change key settings for each pass. You can also process the same sheet using different multipass settings by use of batch processing and batch variables.

One reason you might add a new File Collect Configuration sheet is if you need to make changes to the existing sheet, or if you need to get an updated copy of the File Collect Configuration sheet. You can add a new sheet to the file, copy and update the existing file collect settings from the old sheet to the new one, and then update the file processing settings to use the new sheet. You can then keep the old sheet as an archive or remove it if you no longer need it.

File Collect Configuration sheet

The File Collect Configuration sheet defines settings for the **File Collect** action of file processing.

- The first column of the sheet, titled **Common Files**, can be used to maintain a list of common files to be automatically added to each package when file collect is processed.
- Each subsequent column in the sheet can be used to define a file collect package. By default, the sheet contains one package column. In many cases, you can meet your file collect and delivery needs by defining one package column with dynamic settings and then processing that column using multipass processing. However, if you need more package columns, you can add them by using the **Add additional package columns** action in the **File Processing** task pane.

File Collect Configuration sheets can only be added to a file that is enabled for file processing and where **File Collect** has been specified as the processing type. When you initially select the processing type, you will be prompted to add a configuration sheet to the file. You can add more configuration sheets to the file by using the **Add new file collect sheet** action in the **File Processing** pane.

The File Collect Configuration sheet is only visible to administrators or to users with the **Allow File Processing** permission to the file. Otherwise, it is hidden by default.

General Settings

The following general settings are defined for each package:

Item	Description
Package name	Optional. The name for the file collect package, such as "Monthly Report Package".

Item	Description
Active	Specifies whether the package is included when the file is processed. By default, this is set to **Off**. Change this to **On** if you want the package to be included in processing. This setting can be used to dynamically enable or disable certain packages based on a condition. For example, you may have certain packages that you run monthly and others that you run quarterly. You could define these packages in different files and run the files at different times, or you could define them in the same file and disable the packages that you do not need to run currently.

Email Settings

These settings only apply if **Save or email generated files** is set to **Email File** or **Save File and Send Email**.

Item	Description
Email to list	The email addresses to include on the To line of the email. Separate multiple addresses with a semicolon. When performing multipass processing, this setting should be determined dynamically so that the results of each pass are emailed to a different recipient. For example, if the email addresses are stored in a table column, you can use the GetCurrentValue function to return an email address relating to the current pass.
Email CC list	The email addresses to include on the CC line of the email. Separate multiple addresses with a semicolon.
Email from	The email address to include on the From line of the email.
Subject text	The subject line of the email. When performing multipass processing, you can optionally use formulas such as GetCurrentValue to dynamically change the subject text for each pass.
Body text	The body text of the email. When performing multipass processing, you can optionally use formulas such as GetCurrentValue to dynamically change the body text for each pass.
Message priority	The priority of the message, either **Normal** (default) or **Urgent**.

Item	Description
Attach file to email	Specifies whether the output file is attached to the email. By default, this option is set to **On**. You can set this option to **Off** to exclude the output file from the email. For example, you might want to save the file to a network location and then send an email to recipients to let them know the file is available for viewing, without attaching the file to the email.
Attach each file separately (don't combine them into one)	Specifies whether to attach the individual files from the file list to the email directly. By default, this is set to **Off**, which means that "normal" file collect processing applies—the files in the file list are collected into a single output file, and that single file is attached to the email. If this option is set to **On**, then the files in the file list are attached to the email as individual files instead of being collected into a single output file. This option is useful when there is not a one-to-one correlation between the desired email recipients and the package output. For example, imagine that you need to generate one report package per region and then deliver those packages to the appropriate VPs. If each region has a unique VP, then this can easily be done in one file collect operation. But if some VPs are responsible for multiple regions, then normal file collect processing will result in the VPs getting multiple emails (one for each region). If instead you want those VPs to get one email with multiple region attachments, then you can perform file collect processing in two phases: • Phase one to collect and create the report packages for each region, and save them to a file location. • Phase two to attach the relevant region packages to an email for each VP. In this phase, **Attach each file separately** is enabled, so that all files in the file list are attached as individual files rather than being collected together. For a detailed example of using this feature, see Two-phase file collect example. **NOTE:** In order to use this option, **Save or email generated files** must be set to **Email File**. This option is ignored otherwise.

▶ Source Folder Settings

In order to automatically generate the file list for a package, you must specify one or more source folders. By default, each package has settings for two source folders. If you need more source folders, use the **Add new source folder section** action in the **File Processing** pane.

Source folders are only used when **Refresh file list** is set to **On**.

Item	Description
File source	Specifies the location of the source folder or folders: • **Local File System**: The source folders are located outside of Axiom—on a shared network drive or on your local machine. • **Axiom Repository**: The source folders are located in the Axiom file system, within the Reports Library. This setting applies to all source folders for this package.

Source folder path	The path to the desired source folder. This folder contains the source files that you want to include in the file collect operation. What you enter here depends on the file source.
	
	Local File System
	The path should be entered as a UNC path. For example:
	`\\ServerName\Reports\MonthlyReports`
	
	If you use a folder on your local drive, it will only be valid when running file processing interactively from your own computer. If you want to process this file using Scheduler, the output folder should be a shared network drive.
	
	If your system is an Axiom Cloud system, then you must also specify a **Remote Data Connection Name** in order to collect files from a local location.
	
	Axiom Repository
	Specify the full path to the folder within the Reports Library. For example:
	`\Axiom\Reports Library\File_Processing`
	
	To browse to the desired location, right-click this cell and select **Select Reports Library Folder**. In the **Choose Folder** dialog, select the desired folder and then click **OK**.

Item	Description
File filter list	Optional. File filter(s) to specify which files in the source folder to add to the file list. Only Excel files can be collected (XLS, XLSX, or XLSM). If the filter is left blank, then Axiom will include all valid files in the folder. You can use wildcard characters (* or ?) to include groups of files that share naming conventions. For example: `North*.xls` to collect all XLS files where the file name starts with "North". You can also exclude files using the ! operator—such as `!*Branch*` to exclude all files that contain the word "Branch". If *only* exclusion filters are used, then it is assumed that all files are included except those that match the exclusion filters. If inclusion filters are used, then only the files that match the inclusion filters are included (minus any files that also match any exclusion filters). Separate multiple filters with commas. For example, the following filter would include XLS files and XLSX files, but exclude XLSM files: `*.xls, *.xlsx`
(Multipass only) Filter template	Optional. A filter template to apply during multipass processing, to specify which files in the source folder to add to the file list. The filter template serves the same purpose as the **File filter list**, but it can change dynamically during multipass processing by using a column value. For example, imagine that the source folder contains files where the file name starts with a department code. If you are multipass processing by `Dept.VP`, you want to collect all files where the department is assigned to that VP. To do this, you can set a filter template such as `{Dept.Dept}*.xlsx`. When multipass processing is performed, the `{Dept.Dept}` portion of the filter is resolved using the department codes that belong to the current pass VP. If departments 200, 300, and 600 belong to the current pass VP, then the filter list will be resolved as: `200*.xlsx, 300*.xlsx, 600*.xlsx` The filter template can use any Table.Column that can be resolved in the context of the multipass **Source Column**. The Table.Column name must be placed in curly brackets, such as `{Dept.Dept}` or `{Dept.VP}`. If the **File filter list** and the **Filter template** are both defined, then the file filter list is combined with the resolved filter template for each pass. The filter template only applies when performing multipass processing. When performing non-multipass processing, or when manually refreshing file lists, it is ignored.

Output File Settings

These settings define the output file to be created for the package. The output file is the file that contains the collected results of the source files.

Item	Description
Output location	The location for the output file, either: • **Local File System** (default): The output location is outside of Axiom, to either your local computer or a network share. The specific path is detailed in the **Output Folder** setting. Access to output files is not controlled by Axiom. • **Axiom Repository**: The output location is the Axiom file system, within the Reports Library. The specific path is detailed in the **Output Folder** setting. Access to output files is controlled by security access to the designated folder within Axiom.
Output file purge setting	Specifies whether and when the output file will be automatically purged by Axiom. This only applies if the output file is saved to the Axiom Repository. If blank, then the output file is not purged. Otherwise, specify either of the following: • A date, to delete the output file after that date. For example, specify `12/10/2020` (or the appropriate date format for your locale) to delete the output file after that date is passed. • A number representing the number of days to keep the output file after it is generated. For example, specify `20` to keep the output for 20 days and then delete it. The file deletion is performed by the System Data Purge job in Scheduler.

Item	Description
Output folder path	The folder location in which to save the output file. This setting only applies if **Save or Email Generated Files** is set to **Save File** or **Save File and Send Email**. Local File System The path should be entered as a UNC path. For example: `\\ServerName\Reports\ReportPackages` If you use a folder on your local drive, it will only be valid when running file processing interactively from your own computer. If you want to process this file using Scheduler, the output folder should be a shared network drive. The ability to save the output file to the specified location and to create a new folder (if necessary) depends on the network permissions for the user processing file collect. Access to the file after it is created is also dependent your network permissions. If your system is on the Axiom Cloud, then you must also specify a **Remote Data Connection Name** in order to save the output file to a local location. Axiom Repository The specified location in the Axiom file system must be within the Reports Library, and the location must use the full path (meaning: `\Axiom\Reports Library\...`). To browse to the desired location, right-click this cell and select **Select Reports Library Folder**. In the **Choose Folder** dialog, select the desired folder and then click **OK**. The ability to save the output file to the specified location and to create a new folder (if necessary) depends on the Axiom security permissions for the user processing file collect. Users can only create a new folder if they have read/write permissions to the parent folder, and they can only create a new file if they have read/write permissions to the target folder. Once the file is created within the Axiom file system, access to the output file is dependent on the user's permissions to the output folder. Typically you should create the output folder in advance (or if you want to create output folders on-the-fly, create a parent folder to hold the output folders), and then set permissions for that folder as appropriate in Axiom security, so that the appropriate users will be able to access the file after it is created.

Item	Description
Remote Data Connection Name	Specifies the name of the remote data connection to use for the file collect operation. Enter the name of any defined remote data connection in your system. This option only applies to Axiom Cloud systems. A remote data connection is required to save files locally from the Axiom Cloud, or to collect files stored on a local file system. For more information, see the section on remote data connections in the *Scheduler Guide*. By default, this setting uses the function GetSystemInfo ("DefaultRemoteDataConnection"), so that the field is automatically populated with the name of your default remote data connection. If you do not have any remote data connections, the field is blank. If you want to use a different remote data connection, you can simply delete the function and enter the desired name.
Output file name	The name of the output file, without a file extension. For example, enter "MonthlyReports" (*not* "MonthlyReports.xlsx"). When performing multipass processing and saving files, this setting should be determined dynamically so that each pass results in a unique output file name (or alternatively, a unique output folder path). For example, if you are multipass processing by VP, you can use the GetCurrentValue function to include the current VP name in the output file name.
Output file type	The file type of the output file: **XLS**, **XLSX**, **XLSM**, or **PDF**.
Save or email generated files	Specifies the action to take after the output file has been created: • **Save File**: The output file is saved to the output folder path. • **Email File**: The output file is emailed to the specified recipients. • **Save File and Send Email**: The output file is saved and emailed. **NOTES:** • If you want to save the file to a folder and then send a notification email to recipients (without attaching the file to the email), then select **Save File and Send Email**. In the email settings, set **Attach file to email** to **Off**. • If you want to use the **Attach each file separately** option, then select **Email File**.

File List Settings

These settings impact the file list for the package.

Item	Description
Auto-generate file list	Specifies whether the file list for the package is automatically generated: • If **On** (default), then the file list is automatically generated based on the source folder settings defined for the package. The auto-generation occurs when the file lists are refreshed manually, and whenever file collect is processed. Any existing content in the file list is cleared when the list is auto-generated. • If **Off**, then the file list is not automatically-generated. Only the files that are currently listed in the column will be included when processed.
Continue on error	Specifies whether the file collect process will continue or cancel if an error relating to the file list occurs—for example, if a listed file is missing or if the file list is empty. • If **On**, then errors will be ignored and the file collect process will continue. Errors will be listed in the confirmation dialog shown at the end of the process. • If **Off** (default), then any errors will cancel the process. This setting should be set to On if you want packages to be created even if some or all of the source files cannot be found.
Include common files in package	Specifies whether common files are included in the package: • If **On** (default), then when file collect is processed, any files listed in the **Common Files** column will be added to the beginning of the package. If the Common Files column uses auto-generation to create its file list, that auto-generation will occur before any of the packages are processed. • If **Off**, then common files are ignored and will not be added to the package.

File List

The file list section contains the list of source files to be collected within the output file. This list can be generated automatically (using the source folder settings), or it can be created manually. For more information, see Creating and refreshing file lists for file collect.

When file collect processes the file list and collects the contents of each file into the output file, it takes a snapshot of each file. The result of each snapshot is the same as if you had manually snapshot the file and selected to **Retain Excel Native Formulas** while including **All Sheets in File**. The snapshot version of the file is what gets included in the output file.

NOTE: If **Attach each file separately** is enabled, then the files in the file list are not transformed in any way. The files are simply attached to the email as is.

Creating and refreshing file lists for file collect

When you create a file collect package, you specify the source files to be combined into the output file. The list of source files for a package can be created in the following ways:

- You can automatically generate the list of files, given a source folder and optional file filter. When you refresh the file list, Axiom checks the source folder, finds all of the files that match the file filter, and then creates the list of files to collect. Each file collect package can have multiple source folders.
- You can manually type file names and folder paths, to create a fixed list of files.

In addition to the file lists for each defined package, you can specify "common files" that are automatically added to the beginning of each package. For example, if you have a cover sheet or a supporting document that you want added to each package, you can define these as common files. The list of common files can be generated in the same way as for packages—dynamically generated from a source folder, or manually typed.

Setting up source folders to automatically generate file lists

Each package has a **Source Folder Settings** section that can be used to specify source folders to automatically generate file lists. By default, the File Collect Configuration sheet contains settings for two source folders per package. If you need more source folders, click **Add new source folder section** in the **Actions** area of the **File Processing** pane.

Complete the following settings to define a source folder:

Item	Description
File source	Specifies the location of the source folder or folders: • **Local File System**: The source folders are located outside of Axiom—on a shared network drive or on your local machine. • **Axiom Repository**: The source folders are located in the Axiom file system, within the Reports Library. This setting applies to all source folders for this package.

Item	Description
Source folder path	The path to the desired source folder. This folder contains the source files that you want to include in the file collect operation. What you enter here depends on the file source. Local File System The path should be entered as a UNC path. For example: `\\ServerName\Reports\MonthlyReports` If you use a folder on your local drive, it will only be valid when running file processing interactively from your own computer. If you want to process this file using Scheduler, the output folder should be a shared network drive. If your system is an Axiom Cloud system, then you must also specify a **Remote Data Connection Name** in order to collect files from a local location. Axiom Repository Specify the full path to the folder within the Reports Library. For example: `\Axiom\Reports Library\File_Processing` To browse to the desired location, right-click this cell and select **Select Reports Library Folder**. In the **Choose Folder** dialog, select the desired folder and then click **OK**.
File filter list	Optional. File filter(s) to specify which files in the source folder to add to the file list. Only Excel files can be collected (XLS, XLSX, or XLSM). If the filter is left blank, then Axiom will include all valid files in the folder. You can use wildcard characters (* or ?) to include groups of files that share naming conventions. For example: `North*.xls` to collect all XLS files where the file name starts with "North". You can also exclude files using the ! operator—such as `!*Branch*` to exclude all files that contain the word "Branch". If *only* exclusion filters are used, then it is assumed that all files are included except those that match the exclusion filters. If inclusion filters are used, then only the files that match the inclusion filters are included (minus any files that also match any exclusion filters). Separate multiple filters with commas. For example, the following filter would include XLS files and XLSX files, but exclude XLSM files: `*.xls, *.xlsx`

Item	Description
(Multipass only) Filter template	Optional. A filter template to apply during multipass processing, to specify which files in the source folder to add to the file list. The filter template serves the same purpose as the **File filter list**, but it can change dynamically during multipass processing by using a column value. For example, imagine that the source folder contains files where the file name starts with a department code. If you are multipass processing by `Dept.VP`, you want to collect all files where the department is assigned to that VP. To do this, you can set a filter template such as `{Dept.Dept}*.xlsx`. When multipass processing is performed, the `{Dept.Dept}` portion of the filter is resolved using the department codes that belong to the current pass VP. If departments 200, 300, and 600 belong to the current pass VP, then the filter list will be resolved as: `200*.xlsx, 300*.xlsx, 600*.xlsx` The filter template can use any Table.Column that can be resolved in the context of the multipass **Source Column**. The Table.Column name must be placed in curly brackets, such as `{Dept.Dept}` or `{Dept.VP}`. If the **File filter list** and the **Filter template** are both defined, then the file filter list is combined with the resolved filter template for each pass. The filter template only applies when performing multipass processing. When performing non-multipass processing, or when manually refreshing file lists, it is ignored.

When the file list is refreshed, Axiom checks each source folder, finds all of the valid files that match the filter (if defined), and then creates the list of files to collect (overwriting anything that is listed there currently). The files will be listed in alphabetical order per source folder. There is no way to specify an alternate file order when auto-generating the file list.

▶ Manually defining source files

If desired, you can manually define source files for a file collect package. To do this, go to the **File List** section for the package and type in each source file to be collected. If you do this, make sure to set **Auto-generate file list** to **Off**, so that file collect processing will not overwrite your manual list.

If the File Source is Local File System, then you can enter the source files using the full path and file name, or you can enter a folder path followed by one or more file names. For example:

```
\\server\folder\myfile.xlsx
```

or

```
\\server\folder
myfile1.xlsx
myfile2.xlsx
```

However, if the File Source is Axiom Repository, then you must use the second approach of a folder path followed by one or more file names. Full paths and file names on the same line will not be recognized.

Each entry in the list must resolve to a valid path and file name. Wildcard characters cannot be used in this list—if you want to include files by using wildcards, then you must automatically generate the list using source folders. Only Excel files (XLS, XLSX, or XLSM) can be listed here—if other file types are listed, an error will result when file collect is processed.

If a folder path is listed without any subsequent file names, then that folder path will be ignored as long as the package has other valid files to include.

When using a manual list of source files, the order of the files is honored during file collect processing.

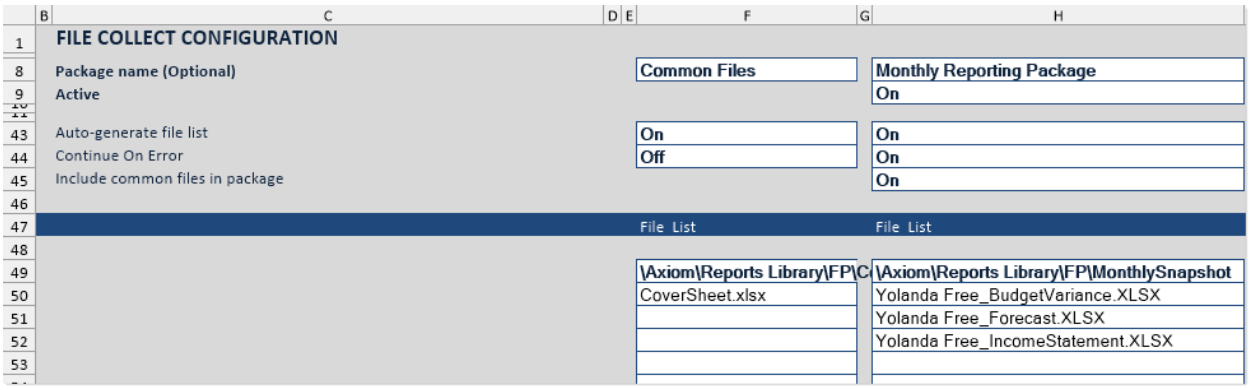
Using common files

Using the "common files" feature, you can specify one or more files to automatically add to the beginning of each package when file collect is processed.

- The common files are defined in the first column of the File Collect Configuration sheet. If you do not want to use common files, then you can simply ignore this column.
- You can specify the list of common files just like you would for a regular file collect package. You can define one or more source folders to automatically generate the file list, or you can manually type the file list.
- By default, the common files are added to all packages in the sheet when file collect is processed. If you have a package that you do not want to add the common files to, you can disable common files for that package by setting **Include common files in package** to **Off**.
- When file collect is processed, the common file list is refreshed first (if **Auto-generate file list** is **On**), before any of the packages are processed.

NOTE: If the file list for a package is blank, but common files have been defined, then the package will be created and only the common files will be added. However, if the file list for a package is blank and no common files are defined, then a file collect error occurs and processing stops (unless **Continue On Error** is enabled, in which case the package is skipped).

The following screenshot shows an example File Collect Configuration sheet using common files. When this package is processed, the output file will first collect CoverSheet.xlsx from the Common Files column, then collect the files in the Monthly Reporting Package column.



	B	C	D	E	F	G	H
1		**FILE COLLECT CONFIGURATION**					
8		**Package name (Optional)**			**Common Files**		**Monthly Reporting Package**
9		**Active**					**On**
43		Auto-generate file list			**On**		**On**
44		Continue On Error			**Off**		**On**
45		Include common files in package					**On**
46							
47					File List		File List
48							
49					**\Axiom\Reports Library\FP\C**		**\Axiom\Reports Library\FP\MonthlySnapshot**
50					CoverSheet.xlsx		Yolanda Free_BudgetVariance.XLSX
51							Yolanda Free_Forecast.XLSX
52							Yolanda Free_IncomeStatement.XLSX
53							

Refreshing file lists

When file collect processing is performed, the file lists are automatically refreshed for any package column (and common files) where **Auto-generate file list** is set to **On**. When a file list is refreshed, the following occurs:

- Any existing content in the list is cleared.
- The file list is updated with files from the designated source folders for the package, limited by any file filter.

You can also refresh file lists manually using the File Processing task pane. Generally speaking, there are two reasons to do this:

- For testing purposes, to help verify that you have set the source folder and file filters correctly.
- To generate an initial list of files that you plan to convert to a manual list. You can refresh the file list, then disable **Auto-generate file list**, then make further manual updates to the file list.

NOTE: If you intend to use multipass processing and have defined a multipass filter template, the filter template is not applied when refreshing file lists manually. It cannot be applied because it has no current pass value to resolve any columns referenced in the template.

To manually refresh file lists:

- Click **Refresh file lists** to refresh all lists in the workbook.
- Click **Refresh file lists in selected column(s)** to refresh only selected columns. You must select one or more package columns in a File Collect Configuration sheet (or place your cursor in a single package column) before performing this action. Note that the common files list will be refreshed along with the selected columns.

Processing file collect

When you process file collect, Axiom creates all active packages in the specified sheets to process. If **Auto-generate file list** is set to **On** for a package, then the file list is refreshed before processing occurs.

This topic discusses how to process file collect within the file itself. You can also process file collect as part of a File Processing Scheduler task. For more information, see Using Scheduler to perform file collect.

To process file collect:

1. Open the file that you want to process. The file must already be set up for file collect and at least one package must be active.
2. In the **File Processing** task pane, in the **Actions** section, click one of the following options to start processing:
    - **Process File**: File collect processing is performed without multipass settings. All enabled package columns are processed once.
    - **Process File Multipass**: File collect processing is performed multiple times, with a unique value applied to each pass. For example, if the file is set up to process by DEPT.VP, then file collect processing is performed once per VP. The function GetCurrentValue and the multipass filter template are resolved using values relating to the current pass VP. All enabled package columns are processed per pass.

    TIP: You can also process the file using the **File Processing** menu on the Axiom tab. (In systems with installed products, this feature may be located on the **Main** tab.)

All active packages in the specified sheets to process are created. When the process is complete, a confirmation message displays information about the created output files.

When file collect processes the file list and collects the contents of each file into the output file, it takes a snapshot of each file. The result of each snapshot is the same as if you had manually snapshot the file and selected to **Retain Excel Native Formulas** while including **All Sheets in File**. The snapshot version of the file is what gets included in the output file.

NOTE: If **Attach each file separately** is enabled, then the files in the file list are not transformed in any way. The files are simply attached to the email as is.

Using multipass processing with file collect

File collect can use multipass processing to iteratively generate report packages over a designated dimension, such as by Facility, Region, or VP. This can streamline the setup and maintenance necessary to perform file collect. Instead of needing to define multiple file collect packages for different recipients, in many cases you can define one file collect package and use multipass processing to dynamically adjust the package settings per pass.

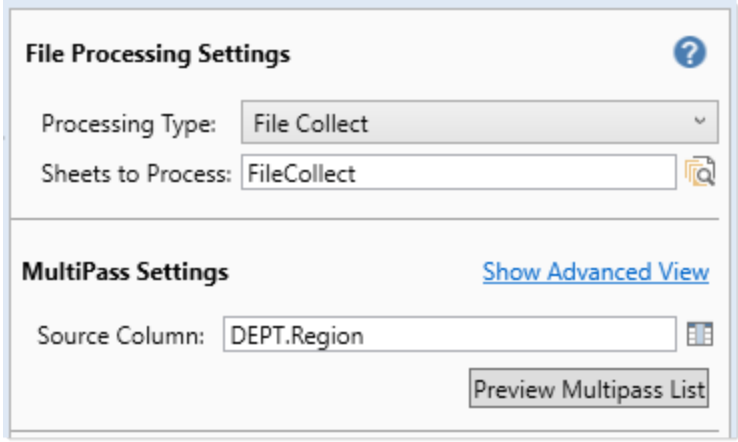
For example, imagine that your organization has six regions and you want to create and deliver a report package for each region. When using non-multipass processing, this requires you to define six different

package columns in the File Collect Configuration Sheet—one for each region. Each package column needs to use different settings such as email addresses, output file names and/or locations, and file filters in order to generate a unique report package for each region.

When using multipass processing, you can define just one package column in the File Collect Configuration sheet. If the source column for multipass processing is Region, then this single package column will be evaluated six times, using a different region for each pass. Assuming that the package column uses dynamic settings, then each pass in multipass processing is resolved differently to generate a unique report package for each region. The function GetCurrentValue can be used in the file collect settings to dynamically return information about the current pass, and a special multipass filter template can be used to dynamically generate the list of files to collect.

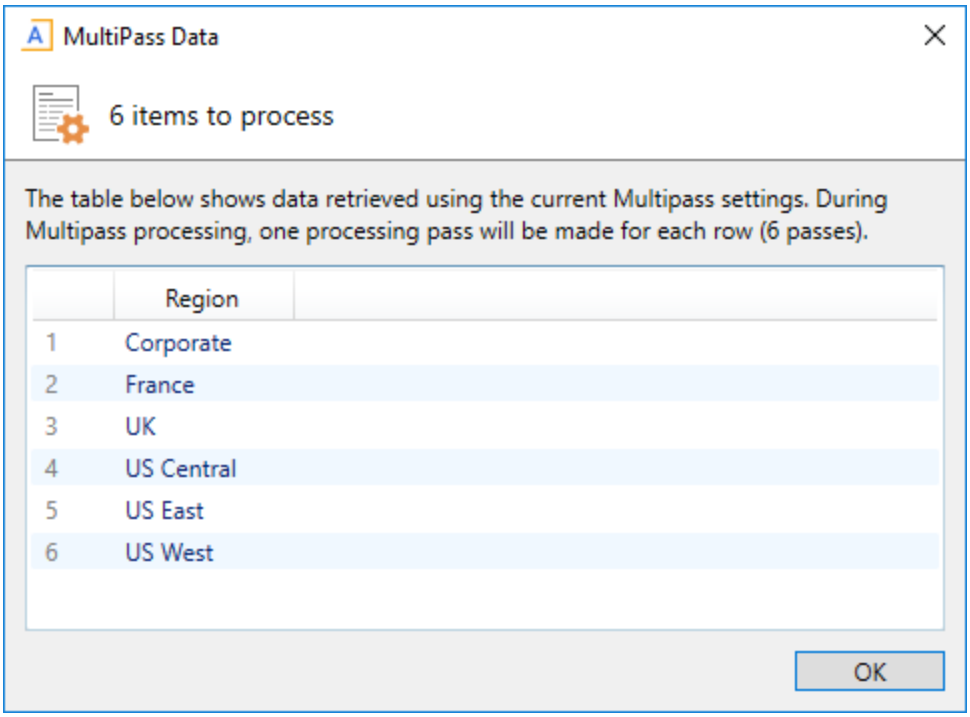
Multipass settings

The easiest way to define multipass settings is to designate a **Source Column**. In this example, the source column is Dept.Region. When multipass processing is performed, the File Collect Configuration sheet will be iteratively processed over the values in the designated column (once per region). All enabled package columns will be processed once per pass.



This works in a similar manner as normal multipass processing, but the goal is slightly different. For example, when performing snapshot multipass processing on a report, you are filtering the report data per pass. When performing multipass processing for file collect, the goal is not to filter report data but simply to dynamically change the package settings per pass.

To confirm that the file will be processed using your desired list of items, click **Preview Multipass List**. A dialog opens, displaying the total number of items to process, as well as the list of individual items.



If you need to configure advanced multipass settings, you can click **Show Advanced View** to expose the advanced settings. For example, you may want to define a **Source Filter** to limit the list of items. For more information, see Configuring advanced multipass settings.

Using GetCurrentValue in file collect settings

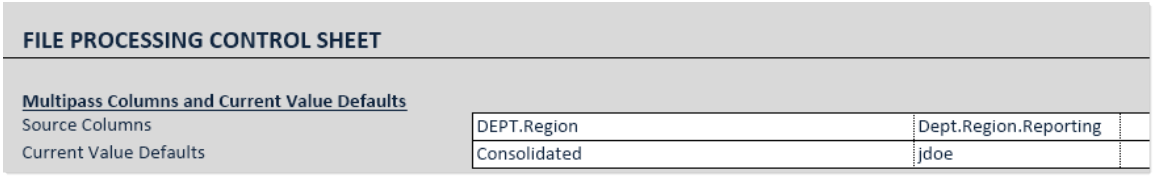
You can use the GetCurrentValue function in various file collect settings to dynamically change the settings per pass. The most common use case is in the output file name and/or folder path, and in the email settings to determine the recipient's email address. You might also use the function in the source folder path, if the source files for each path were saved to unique folder locations.

The two most common ways to use the GetCurrentValue function are as follows:

- The syntax `GetCurrentValue()` returns the name of the current pass value. If you are multipass processing by Dept.Region, and the current pass is for region US West, the function returns "US West".

- The syntax `GetCurrentValue("ColumnName")` returns the value in that column for the current pass. For example, the column Dept.Region looks up to the Region table, and the Region table contains a column named Reporting that holds the target user to receive the report package for each region. If the current pass is for region US West, the function `GetCurrentValue ("Dept.Region.Reporting")` returns the name of the user to receive the report package for that region.

  In order for GetCurrentValue to return a value for a particular column, that column must be used in the multipass settings, typically as a secondary source column. To add more source columns, you can use the advanced multipass settings in the File Processing task pane, or you can go to the File Processing Control Sheet (Control_FileProcessing) and add the additional source columns to the multipass section at the top of the sheet. When editing the File Processing Control Sheet directly, you can also specify default values that the GetCurrentValue function will return when multipass processing is not occurring.

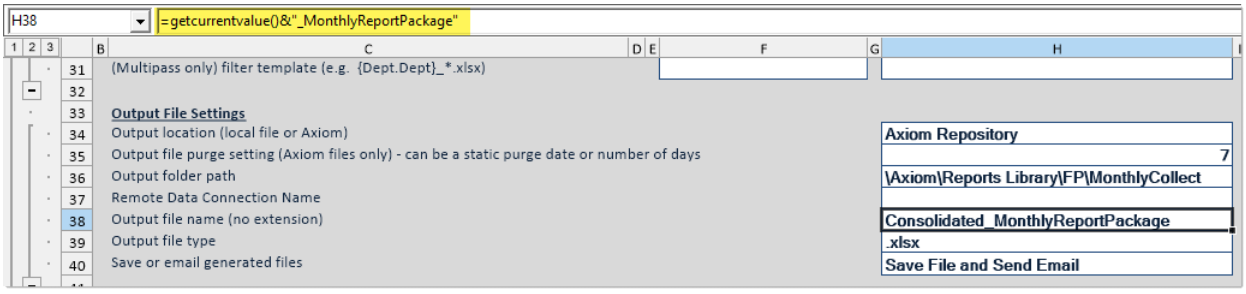


For more information, see GetCurrentValue function and Returning related values for each pass.

NOTE: It is *not* possible to use the file processing variables such as `[Current_Value]` in the File Collect Configuration Sheet. File processing variables are only valid for use in the File Processing Control Sheet.

Output file name and/or folder

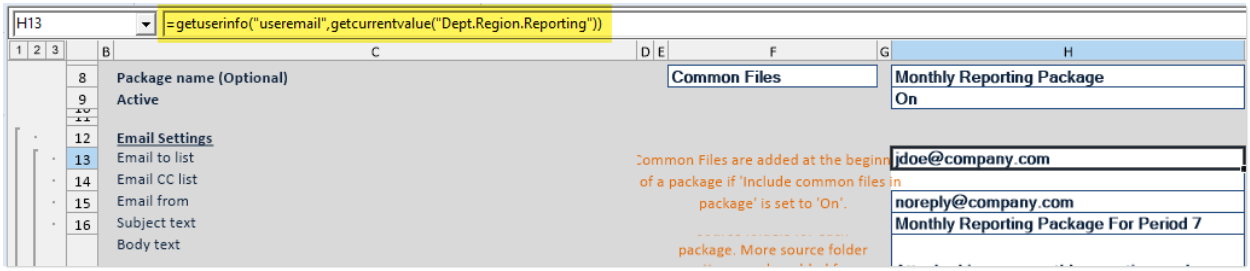
The following example shows GetCurrentValue being used to set the output file name, so that the file name changes for each pass. For example, when the pass is performed for region "US West", the name of the file will be resolved as "US West_MonthlyReportPackage". The function returns "Consolidated" when multipass processing is not occurring, because that is the current value default set on the File Processing Control Sheet (as seen on the previous screenshot).



The same concept could be used to change the output folder path per pass, if desired.

Email recipients

The following example shows GetCurrentValue being used to return the name of the user who should receive the report package for each region. In this example, the column Dept.Region looks up to the Region table, and the Region table contains a column named Reporting that holds the target user. If the current pass is for region US West, the function GetCurrentValue("Dept.Region.Reporting") returns the name of the user to receive the report package for that region. The GetUserInfo function is then used to look up the user's email address from security.



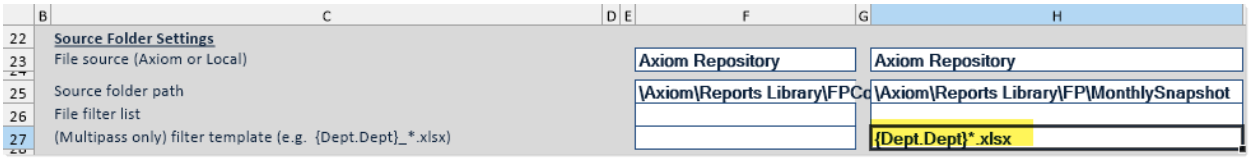
The GetCurrentValue function returns user "jdoe" when multipass processing is not occurring, because that is the current value default set on the File Processing Control Sheet.

If the target email addresses were stored in the table directly (instead of looking them up from security), then GetCurrentValue could be used on its own to return the email address.

Using a file filter template

When performing multipass processing with file collect, you can use the **(Multipass only) Filter template** setting to dynamically filter the files to collect per pass. Although you could use GetCurrentValue in the file filter, the multipass filter template is a more flexible option to set the file filter for multipass processing. The multipass filter template can use a table.column name that will be resolved during each pass to dynamically set the file filter.

For example, imagine that you are performing multipass file collect processing by region, and you want to collect all files that contain a department code that belongs to the current region. Using GetCurrentValue doesn't work in this case, because there are multiple departments per region, and GetCurrentValue("Dept.Dept") would only return one of these values (the max department). Instead you can set a file filter template using `{Dept.Dept}`, and a filter will be created for each department value that belongs to the region. For example:



If departments 200, 300, and 600 all belong to the current pass region, then this file filter template will create the following filter:

```
200*.xlsx, 300*.xlsx, 600*.xlsx
```

All xlsx files that start with these values will be collected into the report package.

Using Scheduler to perform file collect

You can use Scheduler to run one or more reports, collect the results into report packages, and then save and/or email the packages.

In the majority of cases, this is accomplished by creating a single batch report, and then running that report using a File Processing task in Scheduler. The batch report lists each report to process, and then the last report in the list would be the file collect report. For more information on setting up a report for batch processing, see Batch Processing.

However, there may be times when you want the file collection to be a separate operation, not included within a batch report. For example, you may have decided to create a "batch" of reports by using multiple File Processing tasks in a Scheduler job, instead of using one batch report. In this case, there are two ways that you can perform file collect using Scheduler:

- You can create another File Processing task in the Scheduler job, and use it to process the file collect report.
- You can use the Collect Worksheets Scheduler task. This is a special task that is only available within Scheduler.

The basic file collect functionality is the same for both options. However, the file processing option has more robust features, and offers some additional setup advantages. For example, when using file processing to perform file collect, you can:

- Use additional features such as multipass processing, common files, email priority, email CC list, and the ability to send a notification email without attaching the file. You can also pull source files from the Axiom file system, and save the output file to the Axiom file system.
- Create settings and file lists using a spreadsheet interface. This allows use of formulas to complete settings, and may be a preferable user experience for some users.

On the other hand, the Scheduler task has fewer settings and therefore may be simpler to set up for smaller, on-the-fly jobs. Additionally, because all of the file collect settings are defined within Scheduler instead of a source file, you can use Scheduler job variables.

NOTE: When using file processing to perform file collect, you will *not* be able to override any file collect settings in the Scheduler task because they are defined in the special File Collect Configuration sheet, not in the File Processing Control Sheet. The only setting that you can override is the sheets to process. Alternatively, you may be able to use batch variables to "override" certain settings if necessary.

File collect examples

The following examples are intended to show common file collect configurations. These examples use batch processing to generate snapshots and then collect the snapshots into report packages. The second example also uses the "attach files separately" option to email collected files at a different level than the file collect operation.

Simple file collect example

This example does the following:

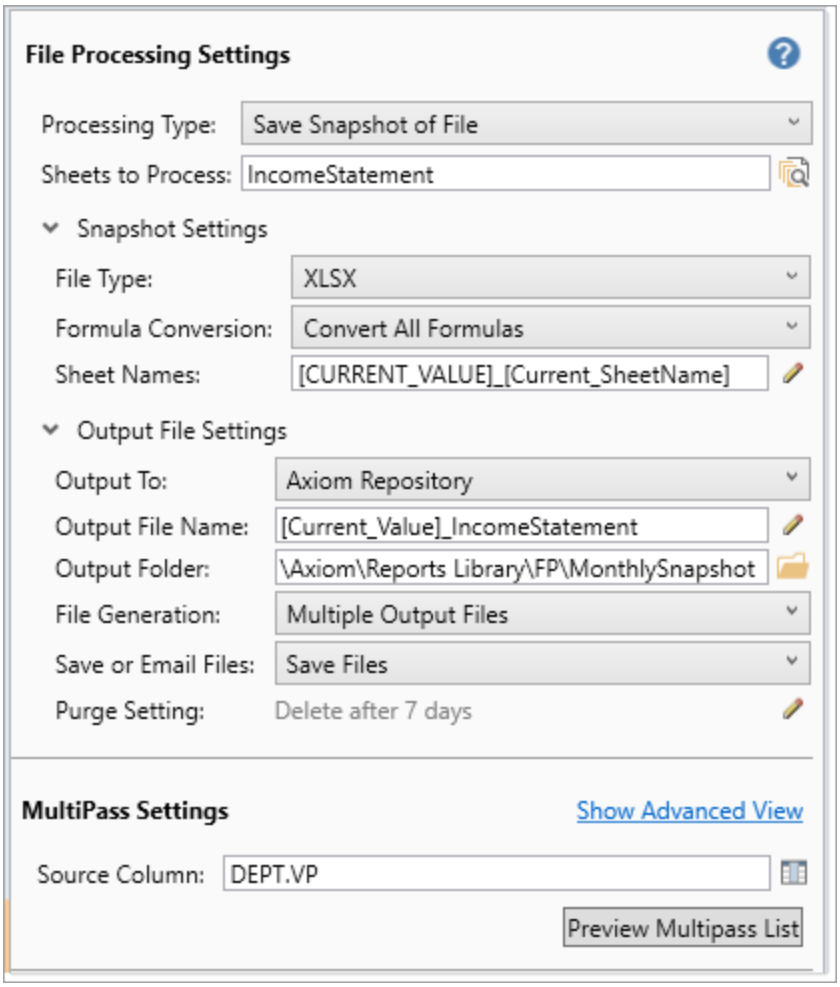
- Snapshot file processing on three different reports, using multipass to generate snapshots per region
- File collect processing to collect the region snapshots into a report package, and email the package to the region owner

The batch file lists the three snapshot reports, then the file collect report at the end.

	C	D	E
5	BATCH CONTROL SHEET		
6			
7	File Path	Enabled	Process Multipass
8	\Axiom\Reports Library\Monthly Reports\Income Statement.xlsx	On	On
9	\Axiom\Reports Library\Monthly Reports\Budget Variance.xlsx	On	On
10	\Axiom\Reports Library\Monthly Reports\Forecast.xlsx	On	On
11	\Axiom\Reports Library\Monthly Reports\FileCollect\File Collect Monthly Packages.xlsx	On	On

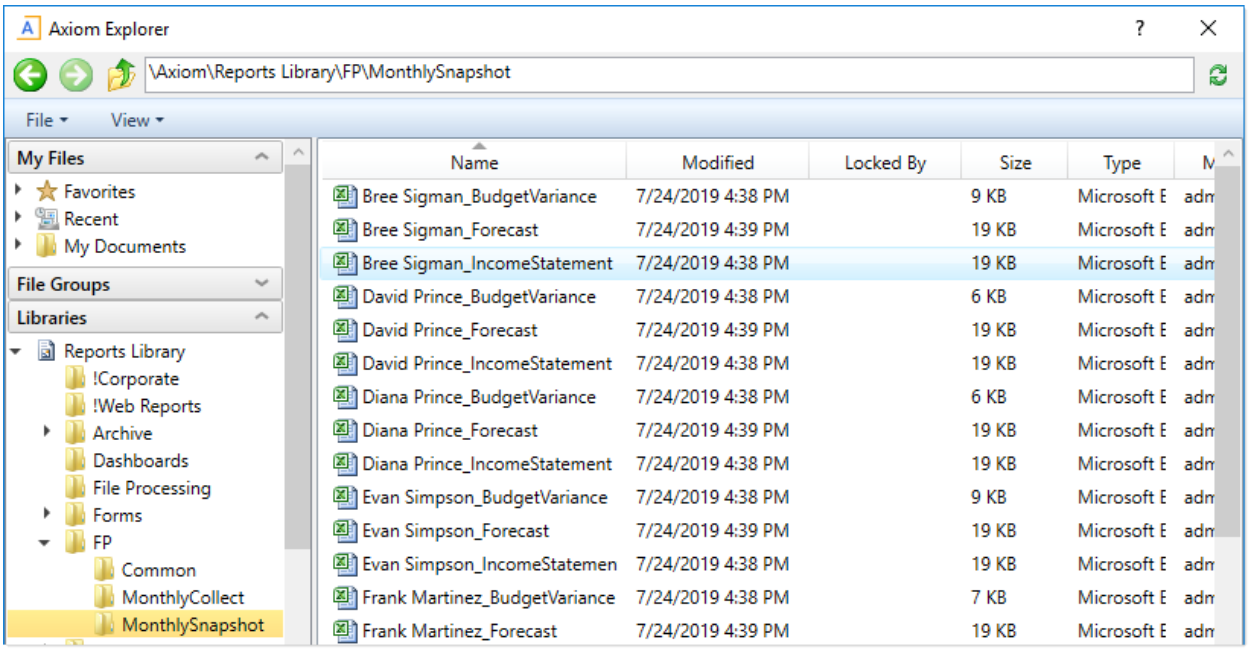
Batch file to create snapshots and then collect them into packages

The first three reports are set up using standard snapshot processing, to process each report by VP and then create a snapshot. The snapshot output files are prefixed with the VP name and saved to a designated output folder. The following screenshot shows an example of the snapshot settings.



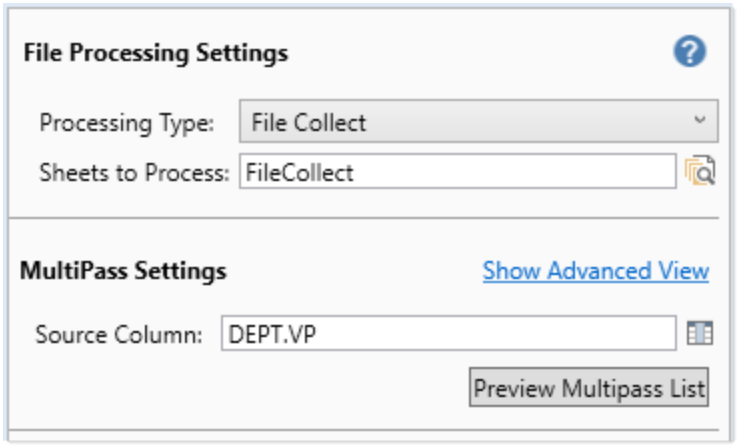
Snapshot settings to generate reports by VP

After the first three reports in the batch are processed, the folder containing the snapshot output files looks something like the following screenshot. There are three snapshot reports for each VP. The file collect report will collect the three reports into a report package for each VP.



Output files after running the three snapshot reports using multipass processing

In this example, the file collect setup is fairly straightforward, because the goal is to create one report package for each VP and deliver that package to the VP. In the File Processing task pane, the process is configured for multipass processing by Dept.VP.

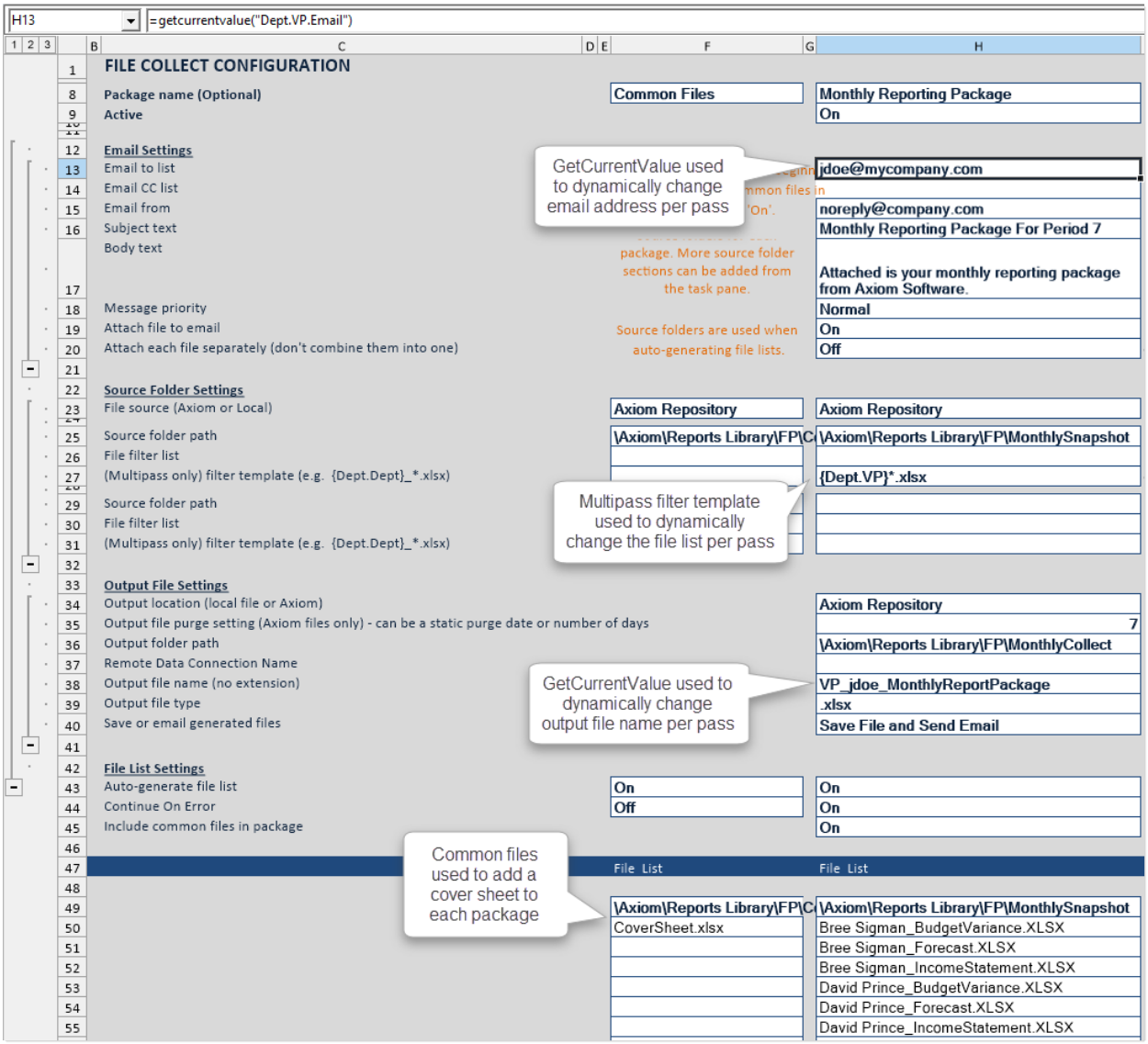


Multipass settings for the file collect operation

The File Collect Configuration Sheet is set up as follows:

- The Common Files column is used to start each report package with a cover sheet.
- The GetCurrentValue function is used in the **Email to** field, to dynamically change the email for each pass. In this example, the target email addresses for each VP are being held in a table column, so we can use `GetCurrentValue ("Dept.VP.Email")` to return the relevant email address.

- A **(Multipass only) Filter template** of `{Dept.VP}*.xlsx` is used to dynamically filter the file list to only return the snapshots that start with the current VP name. For example, when the current VP is Bree Sigman, the filter template is resolved as `Bree Sigman*.xlsx`, which will collect the first three files in the example snapshot folder shown previously.
- The GetCurrentValue function is used in the output file name, to prefix the name of the resulting report package with the VP name.



File Collect Configuration sheet to create and deliver the report packages to VPs

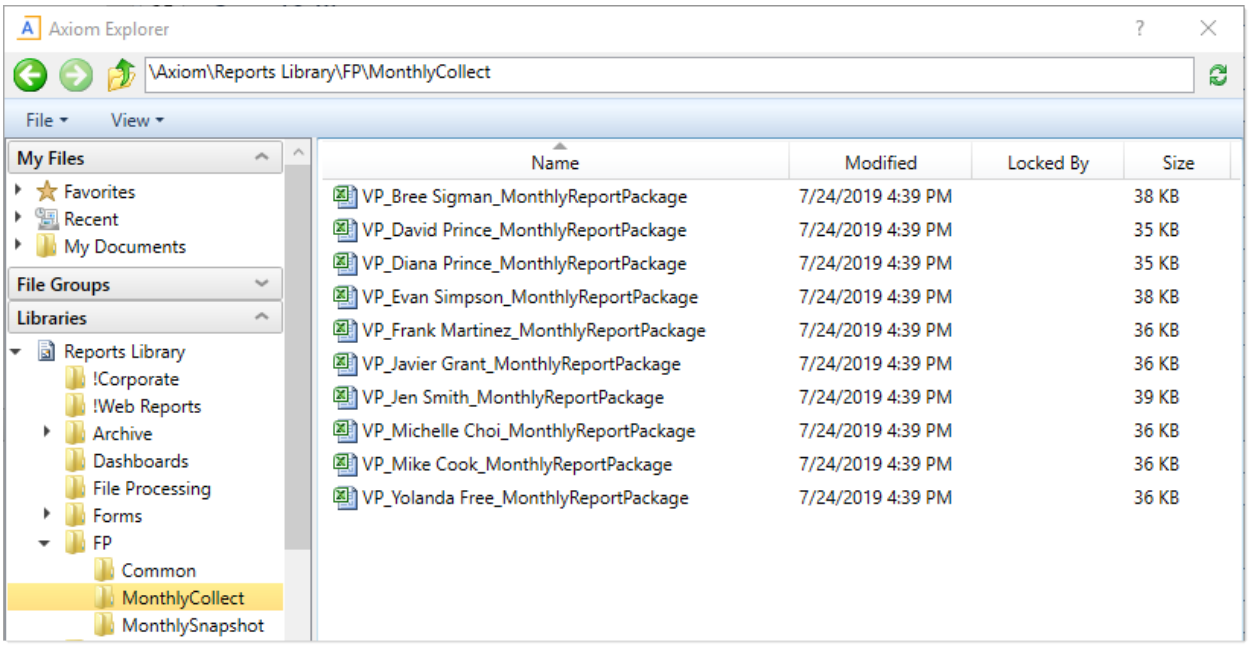
Note the following about this example File Collect Configuration Sheet:

- The file list currently shows all files in the source folder path, because the multipass filter template is only applied during multipass processing. If you refresh the list manually as shown here, the filter template is ignored. Unfortunately there is no way to preview the resulting file lists when

using the filter template.

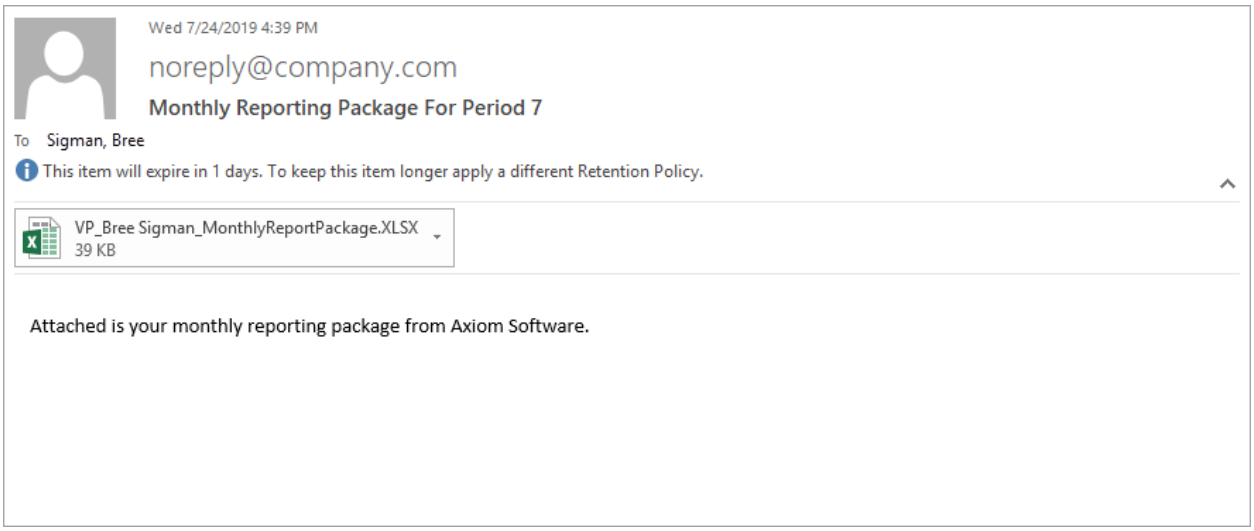
- The GetCurrentValue functions currently return information for user jdoe, because that is what is set as the **Current Value Defaults** for the source columns on the File Processing Control Sheet. When multipass processing is performed, the functions will return the values relating to the current pass VP. It can be useful to set current value defaults so that the functions do not return errors when multipass processing is not being performed.

When the file collect report is processed at the end of the batch, it creates the report packages for each VP. The cover page and the three report snapshots for each VP have been placed in the output files.



Output files after running file collect

Additionally, each report package has been emailed to the appropriate VP:



Email to VP after running file collect

Two-phase file collect example

This example is similar to the first example, except that now we want to create the file collect packages at a different level than the email recipients. To do this, we need to use a two-phase file collect operation, where the first file collect phase creates the report packages, and the second file collect phase attaches multiple individual report packages into emails. This example does the following:

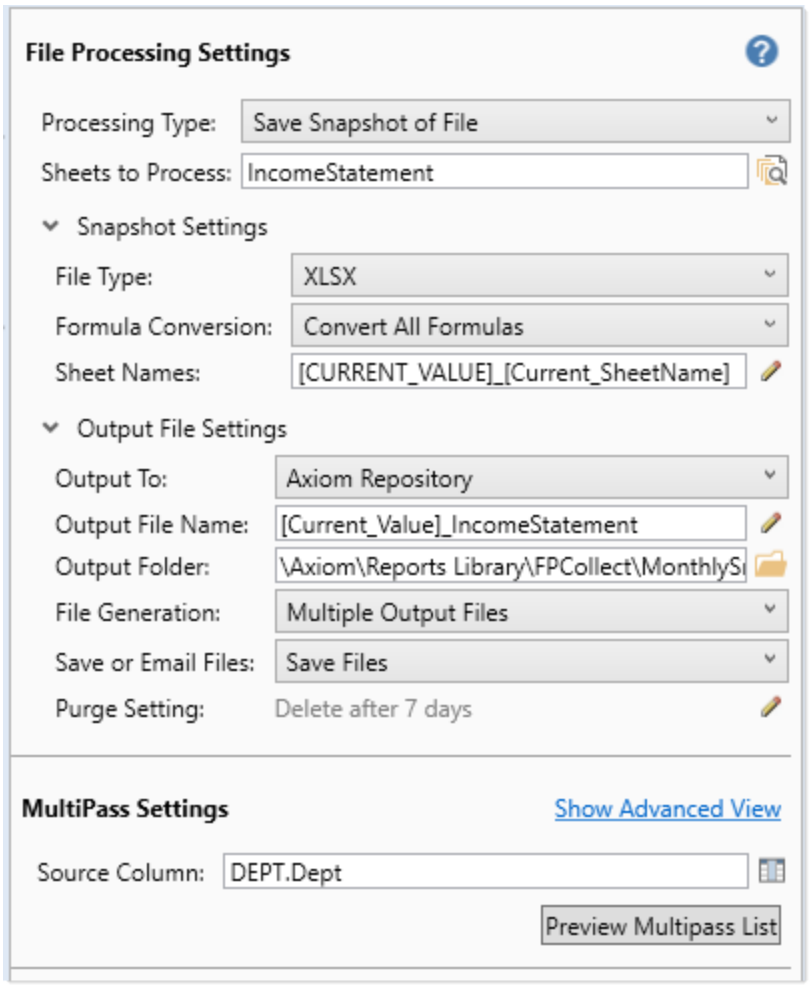
- Snapshot file processing on three different reports, using multipass to generate snapshots per department
- File collect processing to collect the department snapshots into a report package by region
- File collect processing to email the region snapshots to the appropriate VPs, where some VPs are responsible for multiple regions

The batch file lists the three snapshot reports, then two file collect reports at the end.

	C	D	E
5	**BATCH CONTROL SHEET**		
6			
7	**File Path**	**Enabled**	**Process Multipass**
8	\Axiom\Reports Library\Monthly Reports\Income Statement.xlsx	On	On
9	\Axiom\Reports Library\Monthly Reports\Budget Variance.xlsx	On	On
10	\Axiom\Reports Library\Monthly Reports\Forecast.xlsx	On	On
11	\Axiom\Reports Library\Monthly Reports\FileCollect\File Collect Monthly Packages Phase1.xlsx	On	On
12	\Axiom\Reports Library\Monthly Reports\FileCollect\File Collect Monthly Packages Phase2.xlsx	On	On

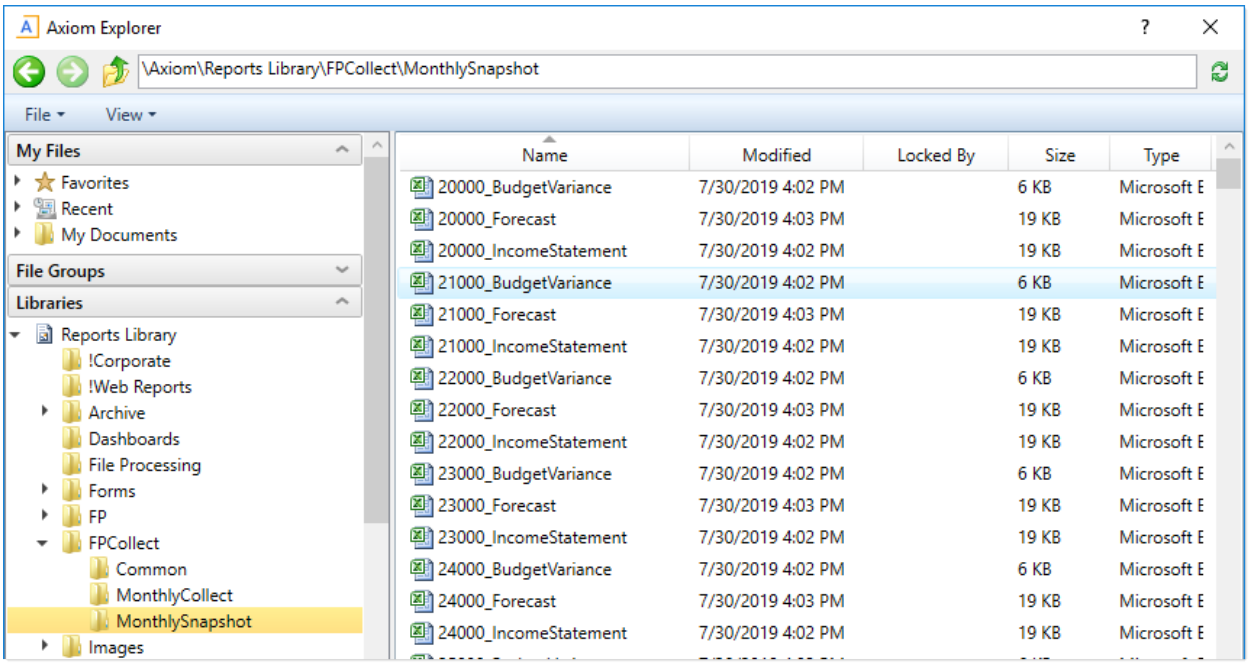
Batch file to create snapshots, then collect snapshots into region packages, then email the packages to VPs

The first three reports are set up using standard snapshot processing, to process each report by department (Dept) and then create a snapshot. The snapshot output files are prefixed with the department code and saved to a designated output folder. The following screenshot shows an example of the snapshot settings.



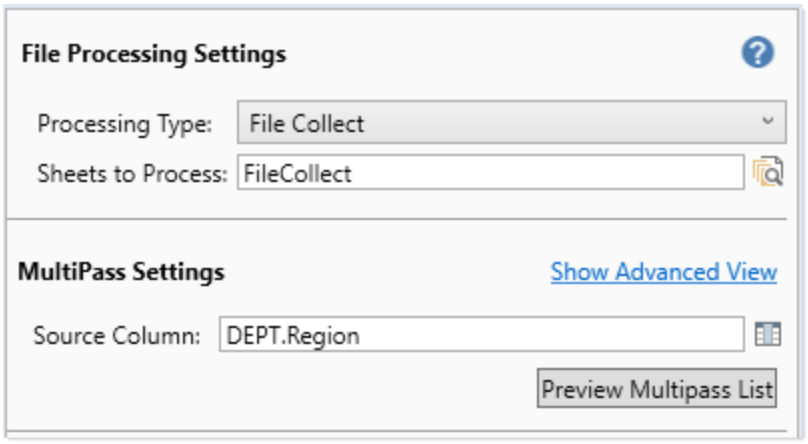
Snapshot settings to generate reports by department

After the first three reports in the batch are processed, the folder containing the snapshot output files looks something like the following screenshot. There are three snapshot reports for each department.



Output files after running the three snapshot reports using multipass processing

The first file collect report (phase 1) will collect the department reports into a report package per region. In the File Processing task pane, the process is configured for multipass processing by Dept.Region.

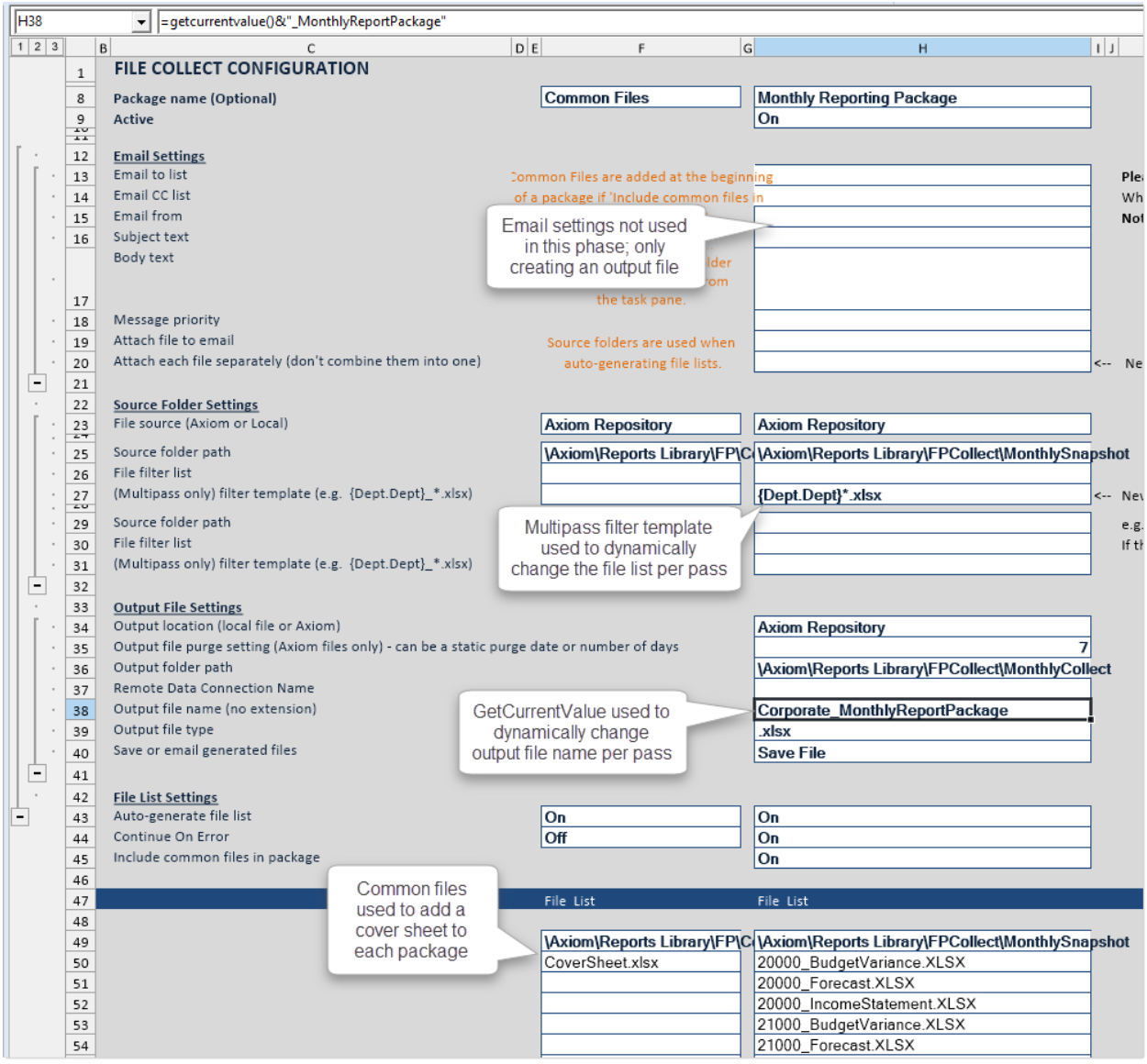


Multipass settings for the phase 1 file collect operation, to create region packages

For phase 1, the File Collect Configuration Sheet is set up as follows:

- The Common Files column is used to start each report package with a cover sheet.
- There are no email settings configured, because phase 1 just creates the report package files. Phase 2 emails them.

- A **(Multipass only) Filter template** of `{Dept.Dept}*.xlsx` is used to dynamically filter the file list to only return the snapshots that start with the department codes for the current region. For example, when the current region is US West, the filter template will be resolved using department codes such as 40000*.xlsx, 40500*.xlsx, 44000*.xlsx (and so on, depending on which department codes belong to the current region).
- The GetCurrentValue function is used in the output file name, to prefix the name of the resulting report package with the region name.



File Collect Configuration sheet to create the region report packages

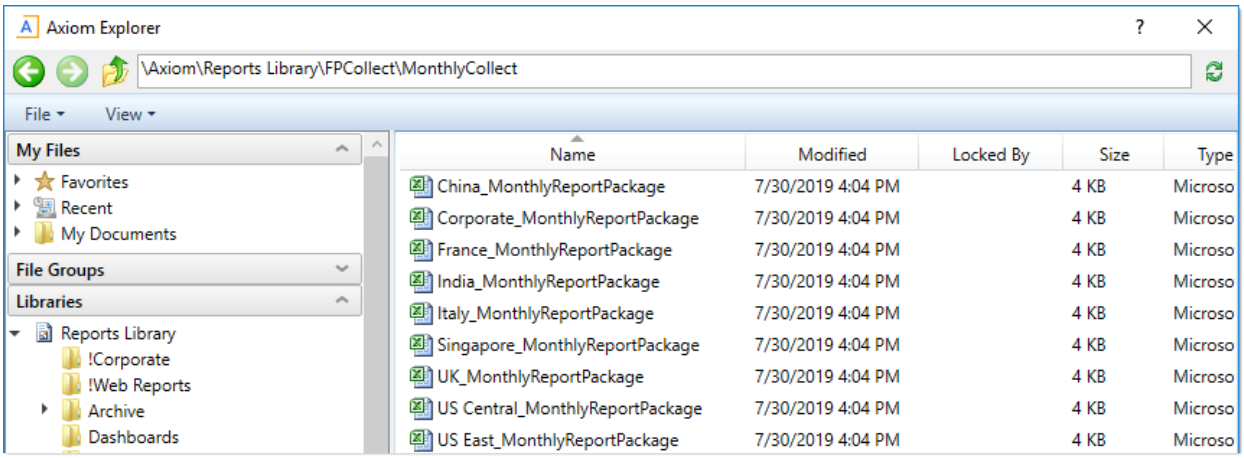
Note the following about this example File Collect Configuration Sheet:

- The file list currently shows all files in the source folder path, because the multipass filter template

is only applied during multipass processing. If you refresh the list manually as shown here, the filter template is ignored. Unfortunately there is no way to preview the resulting file lists when using the filter template.

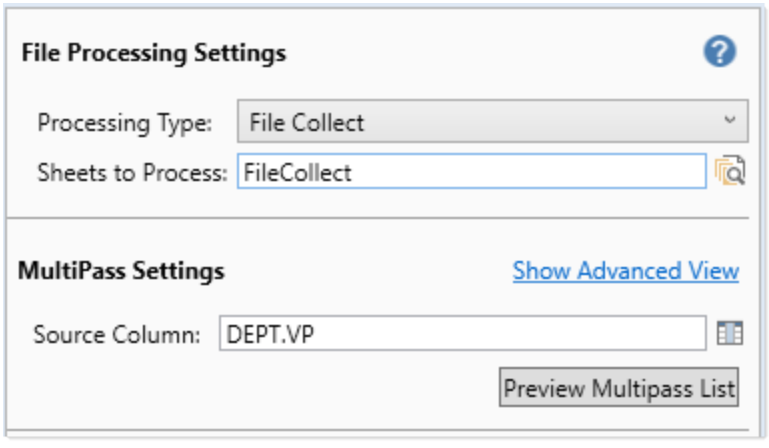
- The GetCurrentValue functions currently return information for region Corporate, because that is what is set as the **Current Value Defaults** for the source column on the File Processing Control Sheet. When multipass processing is performed, the functions will return the values relating to the current pass region. It can be useful to set current value defaults so that the functions do not return errors when multipass processing is not being performed.

When the phase 1 file collect report is processed at the end of the batch, it creates the report packages for each region. The cover page and the report snapshots for all departments in the region have been placed in the output files.



Output files after running file collect

The second file collect report (phase 2) will send an email to each VP and attach the appropriate region files to the email, where some VPs are responsible for multiple regions. In the file processing task pane, the process is configured for multipass processing by Dept.VP.

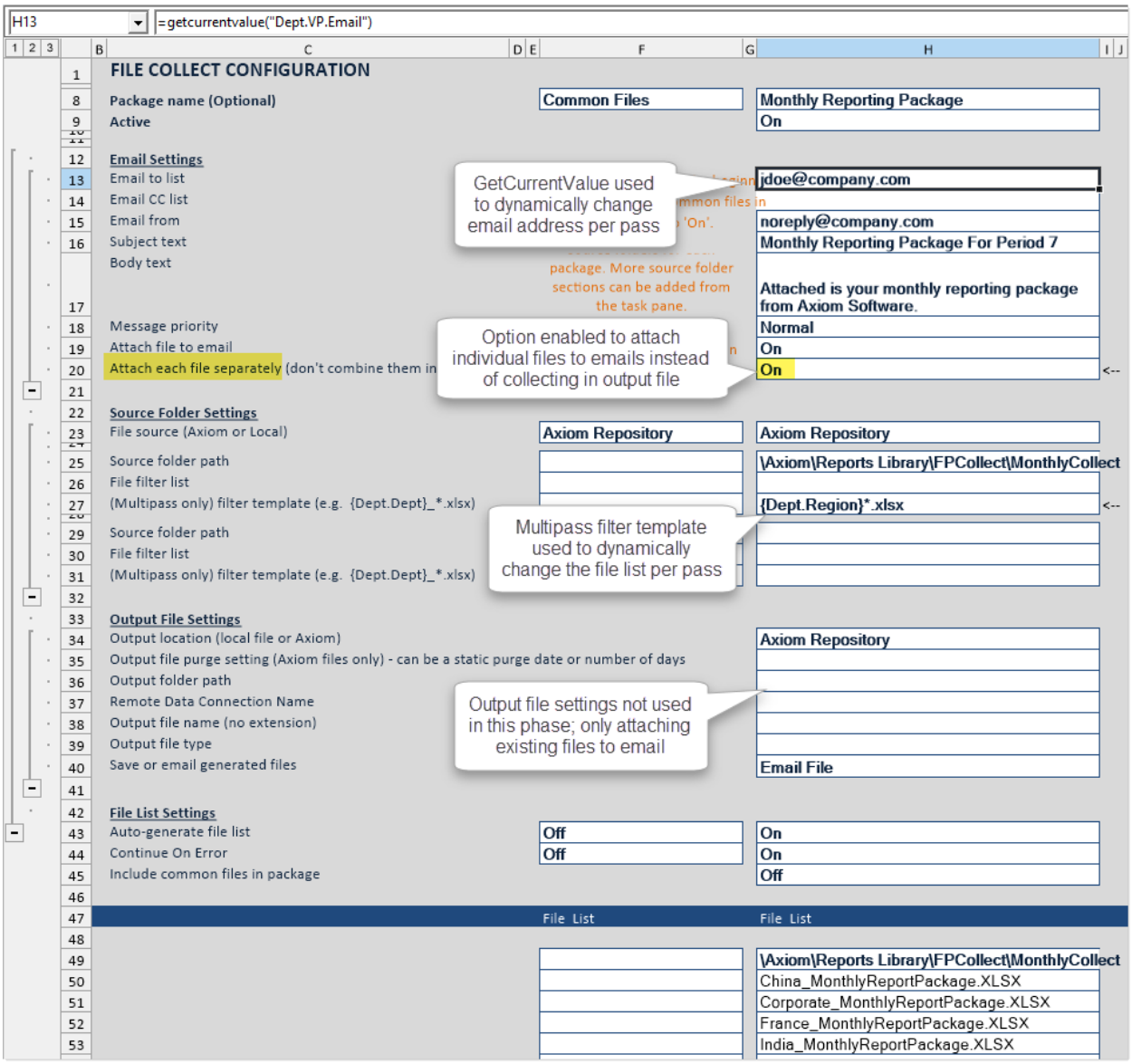


Multipass settings for the phase 2 file collect operation, to email packages to VPs

An email could have been sent as part of the phase 1 file collect, but in that case there would be one email per region, so some VPs would have received multiple emails. If you want to consolidate the emails in cases where there is not a one-to-one correlation between the output files and the email recipients, you can use this two-phase collect approach instead.

For phase 2, the File Collect Configuration Sheet is set up as follows:

- The GetCurrentValue function is used in the **Email to** field, to dynamically change the email for each pass. In this example, the target email addresses for each VP are being held in a table column, so we can use `GetCurrentValue ("Dept.VP.Email")` to return the relevant email address.
- The option **Attach each file separately** is enabled, so that the files in the file list will be attached to the email as individual files, rather than being collected into an output file. This option is only valid when **Save or email generated files** is set to **Email File**.
- A **(Multipass only) Filter template** of `{Dept.Region}*.xlsx` is used to dynamically filter the file list to only return the files that start with the region names for the current VP. For example, when the current region is Bree Sigman, the filter template will be resolved using region names such as France*.xlsx, UK*.xlsx (and so on, depending on which regions belong to the current VP).
- The output file settings are blank, because no output file is being generated in this phase. The files in the file list are being attached to the email directly.

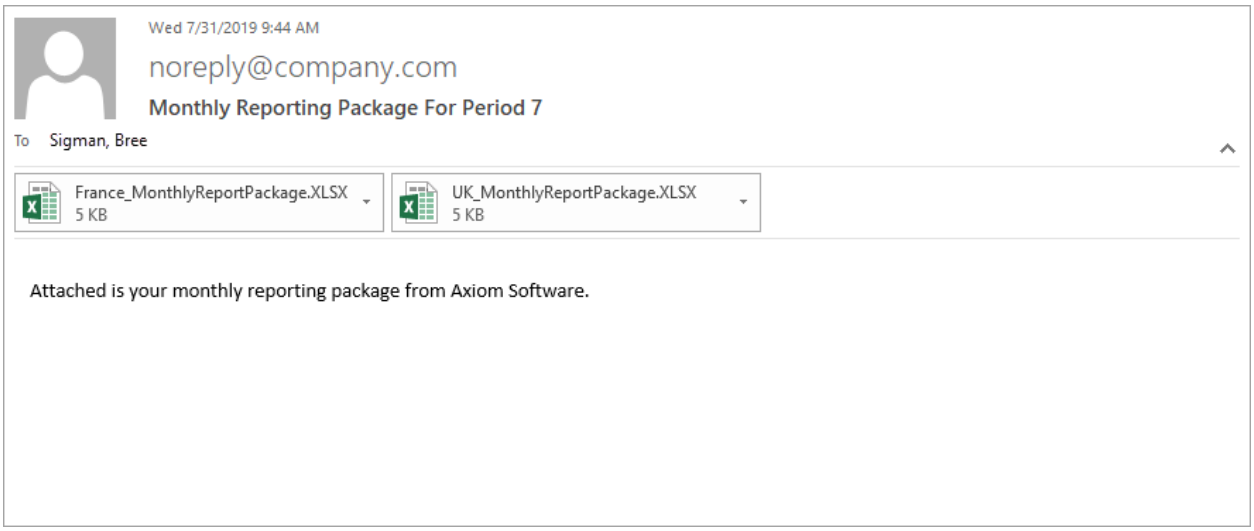


File Collect Configuration sheet to email the region report packages to VPs

Note the following about this example File Collect Configuration Sheet:

- The file list currently shows all files in the source folder path, because the multipass filter template is only applied during multipass processing. If you refresh the list manually as shown here, the filter template is ignored. Unfortunately there is no way to preview the resulting file lists when using the filter template.
- The GetCurrentValue functions currently return information for user jdoe, because that is what is set as the **Current Value Defaults** for the source column on the File Processing Control Sheet. When multipass processing is performed, the functions will return the values relating to the current pass VP. It can be useful to set current value defaults so that the functions do not return errors when multipass processing is not being performed.

When the phase 2 file collect report is processed as the last item in the batch, the relevant region report packages are emailed to the appropriate VPs. In the following example, this VP is responsible for two regions, so two report packages were attached to the email.



Email to VP after running file collect (two region packages attached as individual files)

6

Batch Processing

Using the batch processing feature, you can perform file processing on multiple files in batch. Each file can use its own native file processing settings, or you can override certain settings and use batch variables.

For example, you might have several reports that you want to run at the end of each month. You can set up these reports in a batch, and then run the batch manually or schedule it for execution using Scheduler. Each report can be processed once or multiple times, using different settings—for example, you might have an income statement that you want to run by country, then by region, then by VP.

Batch processing allows you to:

- Create a list of files to be run in a single batch process. Files can be enabled or disabled for each particular execution of the batch. The files must already be set up to use file processing.
- Define alternate file processing settings for each file as desired, or use the native settings defined in the file itself. Batch variables can also be used to impact the file processing.
- Process the same file multiple times, using different file processing settings for each execution.
- Combine multiple file processing types within a batch, for an "end-to-end" process. For example, you can process several files to create various snapshot copies, and then run a file collect report to combine all the snapshots into a single report package.

Batch processing is a special feature of file processing. Unlike other file processing types, where you are refreshing sheets in the file with data and then performing actions on those sheets, batch processing uses special control sheets to define the settings of the batch operation. Although the file can contain other sheets, they are essentially ignored for the batch operation (unless the control sheets reference those sheets to determine batch settings). In most cases, the only purpose of the file is to contain the batch settings.

When you set up file processing for batch, you specify the processing type and the sheets to process. All other file processing settings, including multipass, do not apply to the batch process itself. All batch settings are managed within the special Batch Control Sheets.

Setting up a batch

Using batch processing, you can perform file processing on multiple files in batch. To set up batch processing, you must enable the file for file processing, and then complete one or more special Batch Control Sheets.

Enabling batch processing within a file

It is recommended to use a dedicated report file to hold the batch settings. Using a report file allows the file to be scheduled using Scheduler's File Processing task.

1. Open or create a report to contain the batch settings. The report must first be enabled for file processing before you can configure the batch settings:

   - On the **Axiom** tab, in the **File Output** group, click **File Processing > Enable File Processing in this workbook**.

   The **File Processing** pane opens, and a sheet named **Control_FileProcessing** is added to the file.

2. In the **File Processing** pane, for **Processing Type**, select **Batch**.

3. A message box is displayed, asking if you want to add a batch sheet to the file. Click **Yes**.

   A Batch Control Sheet, named **Batch**, is added to the file. This sheet will hold the configuration settings for the batch processing.

Only one setting displays in the File Processing pane: **Sheets to Process**. By default, the Batch sheet is listed here. This means that when the file is processed, it will process all of the enabled files listed on the Batch Control Sheet.

If desired, you can add multiple Batch Control Sheets to the file, and process them in the same operation. In the **File Processing** pane:

- To add more Batch Control Sheets to the file: In the **Actions** section, click **Add batch sheet**. If you are using multiple Batch Control Sheets, it is recommended to rename the sheets to something that indicates the purpose of each sheet.
- To process multiple Batch Control Sheets: Click the **Select worksheets** icon to the right of the **Sheets to Process** box, and then select the desired sheets. Only Batch Control Sheets are eligible for processing.

No other file processing settings apply to batch processing. All information relating to the batch process is defined on the Batch Control Sheet.

Setting up the batch file list

Each row in the Batch Control Sheet represents a file that you want to process as part of the batch. For each file, you specify:

- The folder path and name of the file. The Reports Library is assumed as the location unless a full repository path is specified.

- Whether the report is enabled or not within the batch.
- Whether the report is to be processed using multipass processing. If multipass processing applies, you can use the settings defined in the report or specify optional override settings.
- If batch variables are defined in the report, you can specify values for the batch variables, to be used when the report is processed.

For more information on the batch settings, see Batch Control Sheet.

The files in the batch can run any file processing action. For example, the batch could contain several reports to be processed using snapshot, and then the last report in the batch could be a report that is set up for file collect.

	C	D	E	F	G	
5	**BATCH CONTROL SHEET**					
6						
7	**File Path**	**Enabled**	**Process Multipass**	**Multipass Source Column**	**Multipass Data Filter**	**Batch Variables**
8	MonthlyReports\Income_statement.xlsx	On	On		Dept.Country='USA'	
9	MonthlyReports\Income_statement.xlsx	On	On	Dept.VP	Dept.Country='USA'	
10	MonthlyReports\Income_statement.xlsx	On	On	Dept.Region	Dept.Country='USA'	
11	MonthlyReports\Income_statement.xlsx	On	On	Dept.Manager	Dept.Country='USA'	
12	MonthlyReports\CollectMonthly.xlsx	On				
13						

Example Batch Control Sheet

Once you have set up the list of batch files, you can validate it using the **Validate batch configuration** action in the **File Processing** pane. The validation process checks for issues such as:

- Invalid file paths or names
- Invalid source column or data filter entries
- Invalid batch variable entries

The validation process reports the first error that it finds in the list. Once you have corrected that error, run the validation again to ensure that no additional errors exist.

The validation process only checks rows where a file is listed and enabled for processing.

Batch Control Sheet

The Batch Control Sheet defines settings for the batch action of file processing. Each row in the control sheet lists a file to be processed as part of the batch. If desired, you can list the same file multiple times, using different configuration settings.

NOTE: All files listed for batch processing must already be set up to use file processing. If a file is not set up to use file processing, an error will occur during processing.

Batch Control Sheets can only be added to a file that is enabled for file processing and where **Batch** has been specified as the processing type. When you initially select the processing type, you will be prompted to add a Batch Control Sheet to the file. You can subsequently add more control sheets to the file by using the **Add batch sheet** action in the **File Processing** pane.

When the batch processing is performed, only the control sheets listed in the file processing **Sheets to Process** will be processed.

To validate entries in the Batch Control Sheet, use the **Validate batch configuration** action in the File Processing pane.

The Batch Control Sheet is only visible to administrators and to users with the **Allow File Processing** permission to the file. Otherwise, it is hidden by default.

The following settings are defined for each file in the batch:

Item	Description

File Path	The folder location and file name of the file to be processed, including the file extension.
	
	The Reports Library is assumed as the file location and can be omitted from the file path (however, full paths can be used as well). However, if you want to process a non-report file, you must specify the full repository path. Only files in the Axiom file system can be processed.
	
	For example:
	• If the report is located in a subfolder of the Reports Library, specify the subfolder name and the file name. Do not place a slash before the folder name.
	`MonthlyReports\IncomeStatement.xlsx`
	• If the report is located in the root of the Reports Library, specify only the file name.
	`IncomeStatement.xlsx`
	• If you want to process a non-report file, specify the full repository path.
	`\Axiom\File Groups\Budget 2021\Drivers\US_Drivers.xlsx.`
	
	To look up a report file path, right-click and select **Select Report**. In the **Select Report to Process** dialog, navigate to the desired report and then click **OK**. The file path and report name is inserted into the cell.

Enabled	Specifies whether the file will be processed as part of the batch (**On**/**Off**). If blank, Off is assumed. You can use this setting to temporarily exclude files from a batch process, or to conditionally include files based on some other selection in the file (if the cell is set up to use an IF formula to return either On or Off).

Item	Description
Process Multipass	Optional. Specifies whether the file is processed using multipass processing. • If **On**, then the file is processed using multipass processing. The file must have valid multipass settings defined, and/or you can define multipass settings within the Batch Control Sheet. If the processing type of the target file is Save Data in Batches, then only multipass processing is supported and this setting must be On. • If **Off** or blank, then the file is processed using normal non-multipass processing. Any multipass settings in the file or in the Batch Control Sheet are ignored. If the processing type of the target file is Batch, then multipass processing does not apply and this setting must be Off.
Multipass Source Column	Optional. Specifies the source column for the multipass processing. For example: `DEPT.DEPT` to process the file once for each department. This setting only applies if **Process Multipass** is set to **On**. This setting must use Table.Column format to specify the column. If left blank, then the multipass process will use the source column settings defined in the report. **IMPORTANT:** This override is equivalent to specifying a source column in the multipass "basic" view, meaning that advanced settings such as the source table and the "group by" are automatically configured based on the source column. If the file to be processed uses advanced multipass settings (including additional source columns), then using the override may not return results as expected. For example, if the source report uses a data table as the source table, and you specify a batch override of DEPT.VP, then the source table will be changed to DEPT. If this does not meet your needs, you may be able to use batch variables instead to override specific multipass settings.
Multipass Data Filter	Optional. Specifies a filter for the multipass processing, to limit the items to be processed. This setting only applies if **Process Multipass** is set to **On**. For example, you could specify `DEPT > 5000` to only process departments greater than 5000, or `DEPT.Region='North'` to only process departments in the North region. If left blank, then the multipass process will use the source filter settings defined in the report.

Item	Description

Batch Variables	Optional. Specifies values for one or more batch variables, to be applied to the file during processing.
	
	Batch variables use the following syntax:
	
	`VariableName=VariableValue`
	
	The variable name must be defined in the source file, and the file must be set up to use the value in some way. When the batch is processed, the variable value defined in the Batch Control Sheet will be placed into the corresponding Variable Value cell within the source file, and then the file will be processed.
	
	You can list multiple variable name/value pairs, separated by semicolons. For example:
	
	`VariableName1=Value1;VariableName2=Value2`

Processing a batch

When you process a batch, Axiom processes each enabled file listed in the Batch Control Sheet. Reports are processed in the order that they are listed.

In order to run the batch, you must have rights to the file that contains the batch settings, as well as all of the files to be run by the batch. If you do not have rights to one of the files in the batch, then an error will occur during processing.

NOTE: You can also process a batch using Scheduler, using the File Processing task. For more information, see Batch processing using Scheduler.

To process a batch manually:

1. Open the file that contains the batch settings. The file must already be set up for batch processing and at least one file in the batch must be enabled.
2. On the **Axiom** tab, in the **File Output** group, click **File Processing > Process File**.

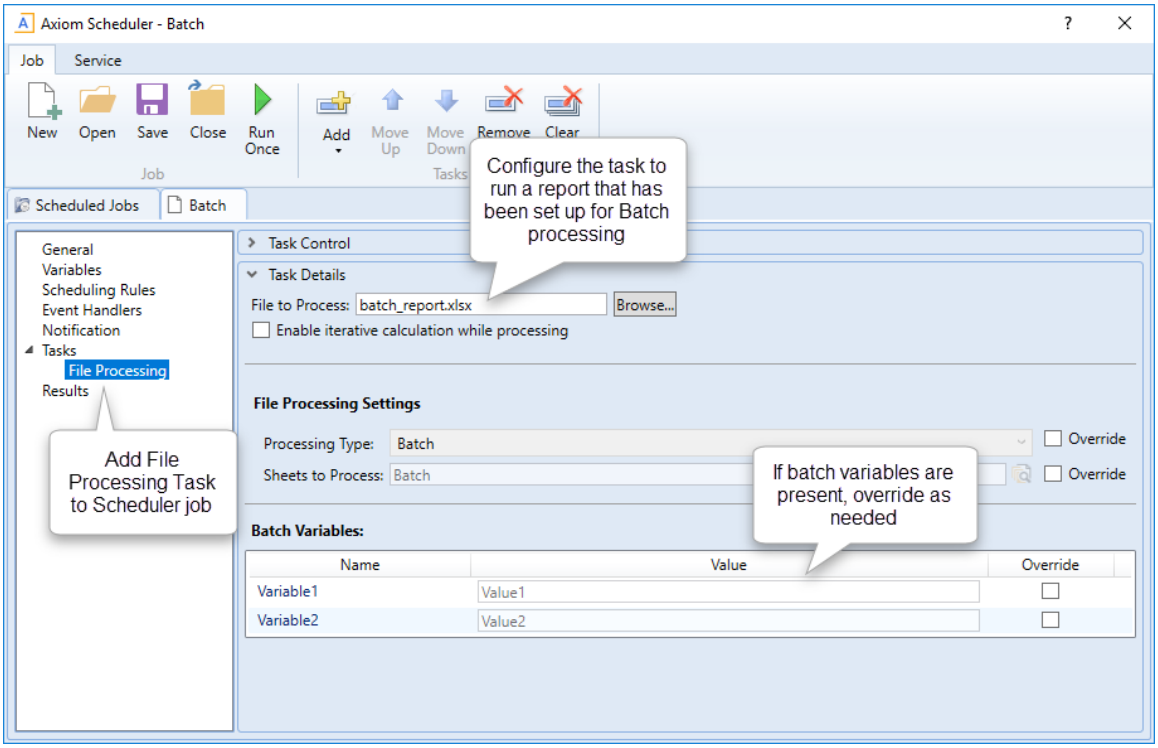
   TIP: You can also perform batch processing using the **File Processing** pane. In the **Actions** section, click **Process batch**.

When the process is complete, a confirmation message displays information about the files that were processed and the results.

Batch processing using Scheduler

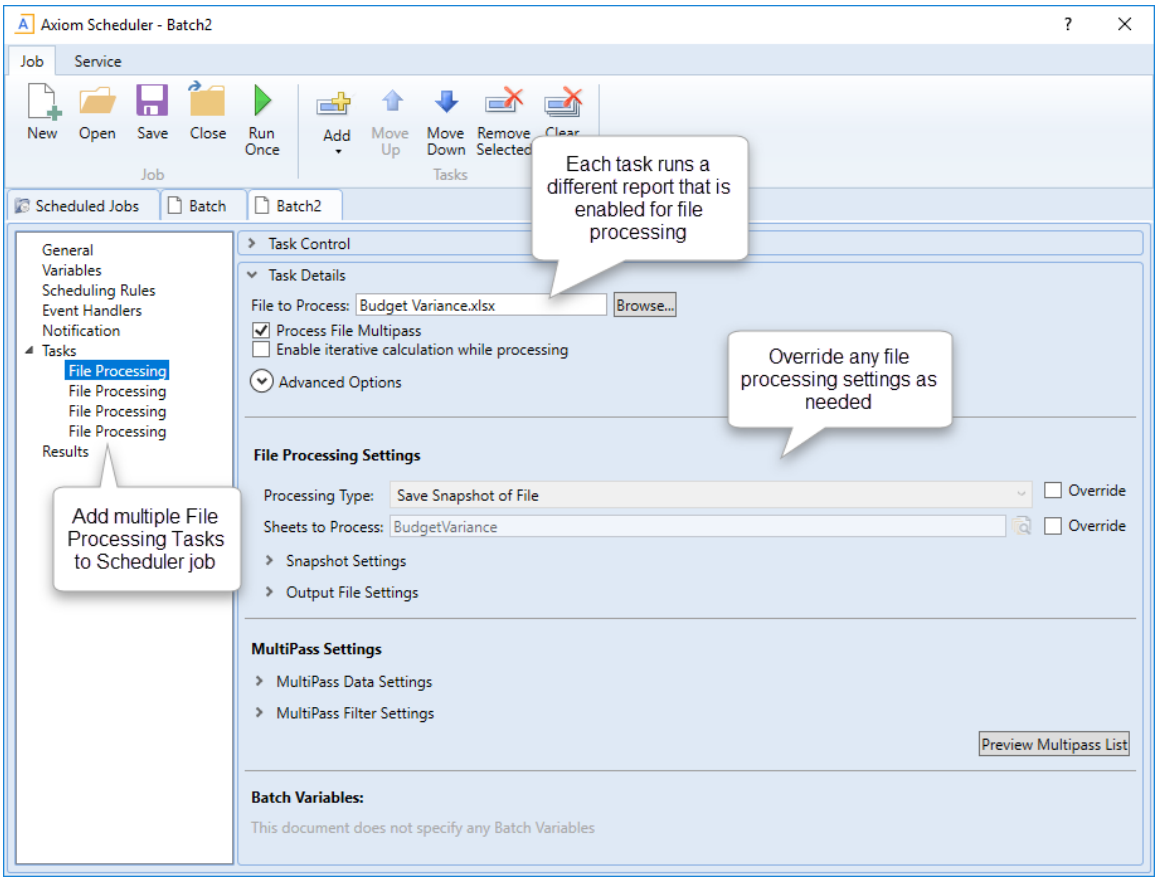
You can use Scheduler to perform batch processing of files. There are two options to perform batch processing in Scheduler:

- **Run batch report using a File Processing task.** You can set up a report file for batch processing, using a Batch Control Sheet. Then in Scheduler, you use a File Processing task to run the single report that is set up for batch. That batch report then processes all the files in the list.



OR

- **Run multiple File Processing tasks in the same job.** You can set up multiple File Processing tasks in a Scheduler job, each one processing a different report (or the same report with different settings). In this scenario, no Batch Control Sheet is used—effectively, the Scheduler job defines the batch.



In most cases, it is more intuitive and flexible to set up a file for batch processing, rather than use multiple File Processing tasks. Using the Batch Control Sheet, you can easily see all of the files in the batch and review their settings side-by-side. You can list a file collect report as the last file in the batch, to collect the results of the prior files in the batch. Additionally, you have the option of processing the batch manually, without Scheduler.

Generally, only certain edge cases will gain advantages from using multiple Scheduler tasks to define a batch. For example:

- You can process the reports in parallel instead of consecutively. When using the Batch Control Sheet, reports are processed consecutively, in the order listed. If you instead create a batch by using multiple Scheduler tasks, you can configure the tasks to run as parallel sub-jobs, which may improve the performance of the overall job. This would only be a significant advantage if the batch contained several reports with lengthy processing times. For more information on how to set up Scheduler tasks to run in parallel, see the *Scheduler Guide*.
- You can easily override any file processing setting for any file. When using the Batch Control Sheet, the only "built-in" override settings are for the multipass source column and the source filter. It is possible to override other settings, but you must set up batch variables to do so. If you instead use File Processing Scheduler tasks for each report, you can directly override any file processing setting.

Batch processing and file collect

If batch processing is used to generate snapshot copies of various reports, you can use file collect to combine those snapshot copies into report packages and then deliver the packages to the appropriate recipients (and/or save the packages to a file share).

There are a variety of ways that you can incorporate file collect as part of a batch process. The most common method is to create a file collect report (using the file collect option of file processing), and then list that report as the last file in the batch. This way, the entire batch process—from generating snapshots, to creating report packages, to delivering the packages—is contained within a single file that can be processed manually or via Scheduler.

If desired, you can use any of the alternate methods for incorporating file collect. For example:

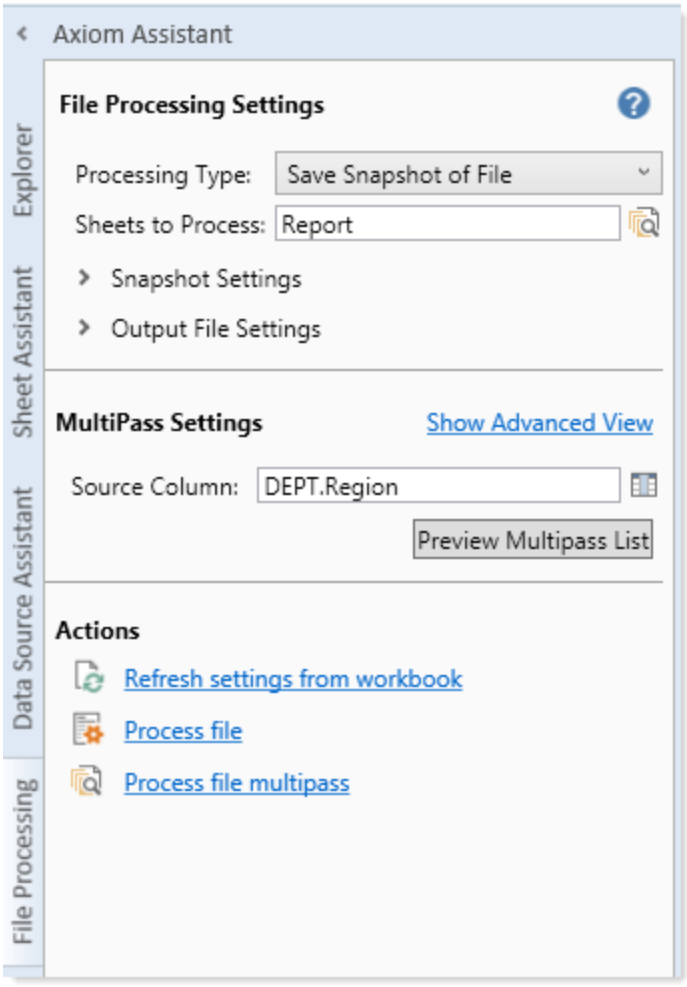
- If you are using the multiple-Scheduler-task method of creating a "batch," the last task in the job can perform the file collect operation. This task can be either a File Processing task that processes a file collect report, or it can be the Scheduler-specific Collect Worksheets task.
- You could still use a batch report to define the files to process, but maintain file collect separately. When running the batch report via Scheduler, you could use either the Collect Worksheets task or a separate File Processing task to perform the file collect. For example, you might want to separate the file collect operation from the batch list if you wanted to process multiple batch reports and then have only one file collect process at the very end. If your file collect process is set up to dynamically generate file lists, then you could optionally include or exclude reports or entire batches, and still generate file collect packages.

For more information on the differences between using file collect reports and the Scheduler-specific Collect Worksheets task, see Using Scheduler to perform file collect.

Reference

File Processing task pane

The **File Processing** task pane is provided to assist you in completing file processing settings.



Example task pane

NOTE: Access to the File Processing pane is controlled by Security for plan files and reports. Administrators always have access to the pane for managed files. The File Processing task pane is not available for non-managed files.

As you select options in the pane, such as the processing type, the pane updates to display only the relevant settings. In most cases, it is easier to use the pane rather than editing the File Processing Control Sheet directly.

The pane displays the file processing settings as currently defined in the control sheet. As you edit the settings in the pane, the control sheet is updated for your changes, and vice versa. Ultimately you must save the file in order to save any changes made within the current session.

You can use cell references and formulas just as you can when defining settings in the control sheet. The pane displays formula results by default, but if you click in a field that contains a formula, you can edit the formula.

You can use file processing variables in the pane. These variables will return values when the file is processed, such as returning the item being processed in the current pass (for multipass processing).

File processing settings are validated as you complete them. If an entry is invalid, a red outline appears around the box of the invalid entry. To get more information about the error, hover your cursor over the box, and the error message will display in a tooltip.

NOTE: Certain advanced file processing settings cannot be made in the File Processing pane; they can only be made in the control sheet:

- Enabling or disabling file processing (conditional processing)
- Enabling or disabling screen updating
- Enabling the output file to open in Axiom after processing
- Defining current value defaults for source columns
- Defining batch variables

Once you have completed the file processing settings, you can initiate file processing directly from the pane. In the **Actions** section, click **Process File** or **Process File Multipass**. These are the same actions available in the Ribbon, in **File Output > File Processing**.

The pane updates automatically in response to changes in the workbook—for example, changes made to the File Processing Control Sheet directly, or changes made to cells that are referenced by formulas in the pane. However, you can also click **Refresh Settings from Workbook** in the **Actions** section of the pane to manually refresh the pane.

File Processing Control Sheet

The File Processing Control Sheet defines settings for file processing. Using file processing, you can automate certain processes for a file, including file delivery, exporting data, and saving data to the database. Files can be processed "as is," or you can use multipass processing to process the file using a unique filter for each pass.

To add a File Processing Control Sheet to an Axiom file:

- On the **Axiom** tab, in the **File Output** group, click **File Processing > Enable File Processing in this workbook**.

  NOTE: In systems with installed products, this feature may be located on the **Main** tab (either directly on the tab, or on the **Publish** menu).

The **File Processing** pane opens, and a sheet named **Control_FileProcessing** is added to the file. In most cases, it is easiest to use the **File Processing** pane instead of the control sheet. The control sheet is updated for changes made in the pane, and vice versa. However, there are certain configuration settings that cannot be made in the pane:

- Enabling or disabling file processing (conditional processing)
- Enabling or disabling screen updating
- Enabling the output file to open in Axiom after processing
- Defining current value defaults for source columns
- Defining batch variables

The File Processing Control Sheet is only visible to administrators or to users with the **Allow File Processing** permission to the file. Otherwise, it is hidden by default.

Multipass Columns and Current Value Defaults

The following settings apply when using multipass processing:

Item	Description
Source Columns	The source columns for multipass processing. Each source column must be placed in a separate cell in this row. For more details on source columns, see Configuring advanced multipass settings.

Item	Description
Current Value Defaults	The corresponding current value default for each source column. Current value defaults are optional. If defined, each current value default must be placed directly underneath its corresponding source column. If a current value default is defined for a source column, then that value will be returned by the GetCurrentValue function (and the `[Current_Value]` variable) when the file is processed using standard, non-multipass processing (**Process File**). If no current value default is defined for a source column, then the function and the variable will return nothing (blank) when the file is processed using standard, non-multipass processing. For more information, see Defining default values for current value. The only way to edit current value defaults is on the control sheet. Current value defaults cannot be defined in the File Processing pane.

General Settings

The following general settings apply to all configurations of file processing:

Item	Description
Processing Enabled	Determines whether or not the file processing action occurs once the file refresh is complete. If **True**, the action (snapshot, export, save data) occurs. If **False**, the action does not occur and the process either ends (if not using multipass processing) or continues to the next pass (if using multipass processing). The purpose of this setting is to allow turning the file processing action on or off based on a condition in the file. For example, if the data in the file is all zeros for a particular pass, you may not want to send that file. You can set up a formula that returns True if the file has data, and False if the file has no data. The **Processing Enabled** setting is checked after the file refresh occurs. The file refresh always occurs when you execute file processing, regardless of this setting.

Item	Description
Processing Type	Specifies the action to be taken on the file when it is processed. Select from one of the following: • **Snapshot File**: Take a snapshot of the file and deliver it. For more information, see Setting up file processing: Snapshot. • **Snapshot Forms**: Generate a PDF of an Axiom form and deliver it. For more information, see Setting up file processing: Snapshot Forms. • **Export to Delimited Text File**: Export data in the file to a text file and deliver it. For more information, see Setting up file processing: Export to file. • **Save Data**: Save data in the file to the database using standard processing features. For more information, see Setting up file processing: Saving data. • **Save Data in Batches**: Save data in the file to the database using a specialized processing style where multiple records are processed in batch. For more information, see Setting up file processing: Saving data in batches. • **File Collect**: Collect the contents of multiple spreadsheet files into a single file and deliver it. For more information, see File Collect. • **Batch**: Process multiple files in a batch process, and/or the same file using different settings. For more information, see Batch Processing. • **Alerts**: Process alerts in the file and generate alert notifications. For more information, see Setting up file processing: Alerts. • **Print**: Apply a print view to the file and then print the specified sheets. For more information, see Setting up file processing: Printing. **NOTE:** The file is always refreshed before the action is performed.
Screen Updating	Specifies whether the screen is updated during file processing, or whether all actions take place using background processing. By default, this is set to **Off**. Updating the screen can be resource-intensive and slow the process, particularly when performing multipass processing. If set to **On**, then the screen refreshes as if you were performing the process manually. If using multipass processing, the screen updates for each pass of data. This setting is primarily for demonstration or testing purposes.

Multipass Settings

For more information on these settings, see Configuring advanced multipass settings. For more information on how multipass processing works, see How the multipass list of items is determined and How data is filtered during multipass processing.

These settings do not apply and will be ignored if the processing type is File Collect, Batch, or Save Data in Batches.

Item	Description
Primary Table	The primary table for the multipass query that determines the list of items to process.
Sum data by these columns	The sum level for the multipass query that determines the list of items to process.
Sort results by these database columns	The sort for the multipass query that determines the list of items to process. The sort determines the order in which items are processed.
Limit MultiPass iterations by this filter	A filter criteria statement to filter the list of items to process.
Apply MultiPass Data Filter to these Tabletypes Apply MultiPass Data Filter to these Tables	Specifies the tables and/or table types that you want filtered by the current pass item, when multipass processing occurs. **IMPORTANT:** These settings are optional and are only used if you want to override the default multipass filter behavior. If these settings are used, then only the tables or table types listed here are filtered, and the default multipass filtering behavior no longer applies.

Snapshot Settings

These settings only apply if the file processing type is Snapshot File.

Item	Description
Snapshot file type	The file type for the snapshot: **XLSX** (default), **XLSM**, **XLS**, or **PDF**. **NOTE:** If you select XLS, and the spreadsheet contains features that are not supported by the XLS format, the compatibility warning is not displayed during file processing. You may want to test saving the file to XLS to ensure that the end result will be as expected.

Item	Description
Formula Conversion	Specifies how formulas are handled in the snapshot: • **Convert All Formulas** (default): All formulas are converted to values. • **Convert Axiom Formulas Only**: Axiom formulas are converted to values, but Excel formulas are left as is. Note that if an Excel formula references a sheet that is not included in the snapshot, that formula will be converted to a value. This option is shown as **Retain Excel Native Formulas** in the File Processing task pane. **NOTE:** If the file contains a pivot table, this option must be selected in order for the pivot table to work in the snapshot copy. This option does not apply if PDF is the selected file type.

Export to Text File Settings

These settings only apply if the file processing type is Export.

Item	Description
Delimiter and File Type	The file type and delimiter for the output file. You can select CSV (comma-delimited), or a variety of different TXT formats using different delimiters.
Include Headers	Specifies whether to include the header row in the export file. By default, this is **On**. The header row uses the tags in the export-to-file control row. If you do not want a header row in the export file, change this setting to **Off**.

File Settings

These settings only apply if the file processing type is Snapshot or Export.

Item	Description
Sheets to Process	The sheets to include in the output file. Separate multiple sheet names with semicolons.

Item	Description
Output To Local File System or Axiom Repository	The location for the output file, either: • **Local File System** (default): The output location is outside of Axiom, to either your local computer or a network share. The specific path is detailed in the **Output Folder** setting. Access to output files is not controlled by Axiom. • **Axiom Repository**: The output location is the Axiom file system, within the Reports Library. The specific path is detailed in the **Output Folder** setting. Access to output files is controlled by security access to the designated folder within Axiom.
Remote Data Connection Name	Specifies the name of the remote data connection to use for the file processing operation. This option only applies when snapshot or export file output is being saved to your local file system, and only for Axiom Cloud systems that are using remote data connections. When the output file is created, the designated remote data connection will be used to access the local file system and save the file to the designated location. A remote data connection is required to save files locally from an Axiom Cloud system. For more information, see the section on remote data connections in the *Scheduler Guide*.
Purge Files Setting	Specifies whether and when the file output will be automatically purged by Axiom. This only applies if the file output is saved to the Axiom Repository. If blank, then file output is not purged. Otherwise, specify either of the following: • A date, to delete output after that date. For example, specify `12/10/2014` (or the appropriate date format for your locale) to delete the output after that date is passed. • A number representing the number of days to keep the output after it is generated. For example, specify `20` to keep the output for 20 days and then delete it. The deletion is performed by the System Data Purge job in Scheduler.

Item	Description
Output Folder	The folder location for the output files. For more information, see Defining the output folder for file processing. Microsoft Sharepoint support You can specify a Sharepoint URL for the folder location, to save the output files to a Sharepoint portal. This feature is only available when running file processing locally via the Excel Client, and when the processing type is snapshot. The user executing the processing must have the appropriate permissions to the target folder in Sharepoint. Note that if the specified folder does not already exist in Sharepoint, this will not be detected by Axiom during the file processing, but a Microsoft error will report the location as not found.
Output Filename	The file name for the output file. For more information, see Defining the file name for file processing.
Output Sheet Name	Specifies how the sheets to process will be named in the output file. The sheet name setting takes a single entry that applies to all sheets being processed. For more information, see Defining sheet names for file processing.
Save or Email Generated Files	Specifies a delivery option for the output file (or files): • **Save Files**: The output files are saved to the specified output folder. • **Email Files**: The output files are emailed to the specified recipients. The output files are not saved anywhere on the file system. • **Save and Email Files**: The output files are both saved and emailed. If you select an option that includes emailing, then the **Email Settings** section displays in the **File Processing** pane.
Multipass File Generation Mode	Select one of the following: • **Create a Single Output File** (default): The results of each pass are collected into a single output file. • **Create an Output File for Each Pass**: The results of each pass are saved as individual output files. For example, if the multipass settings result in 10 passes, then 10 output files are created (one file for each pass). Note that if you are exporting data to a file, and you selected multiple sheets to process, then you will get one file per sheet (and also per pass, if you selected to create an output file for each pass).

Item	Description
Open Output File after Processing	Optional setting to open the output file in Axiom after processing. By default, this is set to **Off**. If **On**, and if the processing results in a single file, then the output file is opened after processing. If an output folder is specified, then the file is saved as normal and then opened. If no output folder is specified, then the file is opened as a temporary file and must be manually saved if you want to retain it.

Save Data Settings

These settings only apply if the processing type is Save Data or Save Data in Batches.

Item	Description
Save Data Mode	Specifies how data is saved: • **Save After Each Pass**: A save-to-database occurs after each pass. • **Save Once at the End**: The data from each pass is saved in memory until all passes are complete, and then the save-to-database occurs. You should save at the end if the process could result in multiple rows of data with the same key codes, so that the rows are summed before saving to the database, rather than having the data from one pass overwrite the other. • **Save to Output Sheet**: The data from each pass is collected and saved to an "output sheet" within the file being processed. No data is saved to the database. The output sheet is named **SaveData_*SheetName***, where sheetname is the name of the sheet set up to save to the database. This option is primarily intended for testing the file setup, so that you can review the data that would be saved without actually saving it.

Item	Description
Use Cached Settings	Specifies whether save data tags and other settings are read once at the start of the process, or whether they are refreshed and evaluated for each pass. By default this option is not enabled, which means that the tags and settings are refreshed each pass. (This is the same setting as **Save data tags are static for all passes** on the File Processing task pane.) This option should only be enabled if you are bringing in data using functions or update-only Axiom queries, so that the number of rows and the placement of the save-to-database tags remain static for each pass. Enabling this option allows Axiom to read the save-to-database tags once at the start of the process. The File Processing Control Sheet settings and the default Control Sheet settings are also cached at the start of the process and will not be refreshed for each pass. Eliminating the need to refresh these settings speeds up processing for each individual pass. If instead you are using rebuild Axiom queries to bring in your data, or if you are dynamically enabling or disabling save-to-database tags or other settings for each pass, then you should not enable this option.
Batch Mode Batch Size	The number of records to process in each batch. Only applies when using Save Data in Batches. By default, this is set to 7,000. In most cases, you can leave the default batch size. However, you might consider making the batch size smaller if your in-sheet calc method uses many rows. For example, if your calc method is 1 row and the batch size is 7,000, that means the Axiom query will return and process 7,000 rows of data per pass. However, if the calc method is 20 rows and the batch size is 7,000, that means the Axiom query will return and process 140,000 rows of data per pass. In the latter case, the processing performance may be improved if you lower the batch size to lower the overall rows of data to per processed per pass.
Batch Mode Source Sheet	The sheet that contains the source Axiom query for the process.
Batch Mode Source AQ	The source Axiom query for the process. Only applies when using Save Data in Batches.

Print Settings

These settings only apply if the file processing type is Print.

Item	Description
Print views	Specifies the print views (and sheets) to print. Print views are specified using the following syntax: `SheetName:ViewName`. Separate multiple view names with semicolons. You can specify multiple print views for a single sheet if applicable. If a sheet does not have any defined Axiom print views, specify the `Default` view, which uses the native spreadsheet print settings. You can print any sheet except control sheets and hidden sheets.
Printer	The name of the printer to use. Leave this setting blank to use the default printer.

Email Settings

These settings only apply if an email option is selected for **Save or Email Generated Files**. For more information, see How email is delivered for file processing.

Item	Description
Distribution List	The email addresses to receive the output file via email. (This corresponds to the "To:" field on the File Processing task pane.) Separate multiple addresses with a semicolon. If the file will be processed using multipass processing, to multiple output files, then you should use formulas to dynamically generate the appropriate email recipients for each pass (otherwise each pass will be sent to the same recipients). See Using dynamic email addresses with file processing.
Bcc	The email addresses to be blind copied on the email. Separate multiple addresses with a semicolon. If the file will be processed using multipass processing, to multiple output files, then you should use formulas to dynamically generate the appropriate email recipients for each pass (otherwise each pass will be sent to the same recipients). See Using dynamic email addresses with file processing.

Item	Description
From	Select one of the following to specify the From address: • **System User**: The From address is the default From address specified for Axiom in the system configuration settings. • **Current User**: The From address is the email address for the user who performs the file processing, as defined in Security.
Subject Line	Enter a subject line for the email. **NOTE:** If you want to use bracketed text in the subject line, you must escape this text with an additional set of brackets, so that Axiom does not try to evaluate the bracketed text as a file processing variable. For example, if you want the text "[Axiom Message]" in the subject line of the email, you must enter `[[Axiom Message]]` in the Subject Line field. The extra set of brackets is removed when the email is generated.
Body Text	Enter body text for the email. **NOTE:** If you want to use bracketed text in the body text, you must escape this text with an additional set of brackets, so that Axiom does not try to evaluate the bracketed text as a file processing variable. For example, if you want the text "[Sent from Axiom]" in the body text of the email, you must enter `[[Sent from Axiom]]` in the Body Text field. The extra set of brackets is removed when the email is generated.

Batch Variables

Batch variables can be used when processing the file using batch processing, or when processing via Scheduler. You can specify variable values in the Batch Control Sheet or in the Scheduler **File Processing** task, and those values will be placed in the corresponding value cells on the File Processing Control Sheet. If the file is set up to reference those cells and use the value in some way, then the file can be processed differently for each batch or File Processing task.

For more information, Using batch variables with file processing.

Item	Description
Variable Names	The names of the batch variables. Each variable must be in a separate cell. When the file is processed via batch processing or via Scheduler, the value for the variable will be placed in the cell directly underneath the variable name.
Variable Values	The cells where the variable values will be placed by Scheduler. Each cell corresponds to the variable name directly above it. You can reference these cells in the report, to change the report in some way based on the variable value.

GetCurrentValue function

Returns information about the current filter context applied to the file, for either multipass processing or for a temporary sheet filter.

Temporary filters supported by this function include:

- Sheet filters applied by use of the Quick Filter feature.
- Sheet filters applied by use of a GetDocumentHyperlink URL.

This function is most commonly used for report titles and headers, so that the information updates dynamically when different filters are applied to the file.

Syntax

`GetCurrentValue("ColumnNameorCode")`

The valid entries for *ColumnNameorCode* depends on whether you are using the function in conjunction with multipass processing or with a temporary sheet filter.

Multipass processing

Value	Description
Blank	If the parameter is left blank (open parentheses), the function returns the item being processed for the current pass. For example, if the multipass process is by department, then the function returns the department code for the current pass.
ColumnName	You can specify any column listed as a **Source Column** for the multipass process, and the function returns the value in that column, for the current pass. You can also specify columns that are listed only in the **Group By** and **Sort By** settings for the multipass process, but in this case no values can be returned for standard (non-multipass) processing. See GetCurrentValue behavior during non-multipass processing for more information. For example, if the multipass process is by department, and you specify DEPT.VP as the column name, then the function returns the VP of the department for the current pass. You can use fully qualified Table.Column syntax to specify the column, or you can use column-only syntax.
PassNumber	You can enter the keyword `PassNumber` to return the number of the current pass in the context of the overall multipass operation. For example, if the multipass process has 10 items to process, and the current item is the fifth item to be processed, the function returns 5.

Value	Description
Filter	You can enter the keyword `Filter` to return the full filter criteria statement being applied for the current pass. For example, this would return Dept.Region='West' when processing by Dept.Region and the current pass is for the West region.
Table	You can enter the keyword `Table` to return the table being used for the multipass process. For example, this would return Dept when processing by Dept.Region.
Column	You can enter the keyword `Column` to return the column being used to determine the list of values for the multipass process. For example, this would return Region when processing by Region. When using the Column keyword, an optional Boolean parameter is available to specify whether to return just the column name or the fully qualified column name. By default, this parameter is False, which means the column name is returned. To return the fully qualified column name, specify True. For example: `GetCurrentValue("Column",True)` to return Dept.Region instead of just Region.

Temporary sheet filter

Value	Description
QuickFilter	You can enter the keyword `QuickFilter` to return the filter criteria statement that is being applied by a temporary sheet filter. For example, if the sheet filter uses the filter criteria statement `Dept.VP='Jones'`, that value is returned. If no temporary sheet filter is currently applied to the file, the function returns `None`. **NOTE:** The prior version of this keyword is `Temp_Filter_Value`.
Temp_Filter_Key	You can enter the keyword `Temp_Filter_Key` to return the table or table type that is being used as the "key" for a temporary sheet filter. For example, if the filter uses the table type GL, that table type name is returned. If no temporary sheet filter is currently applied to the file, the function returns `None`.

All non-numeric entries must be placed in double quotation marks, unless you are using cell references to reference the text held in another cell.

Remarks

- The return values for multipass processing and temporary sheet filters are mutually exclusive. The codes used for multipass processing do not recognize temporary sheet filters, and the codes used for temporary sheet filters do not recognize multipass processing. The function cannot be constructed in a way to return a filter value in both contexts.

- When using the file processing type of Save Data in Batches, the only valid use of GetCurrentValue is to return the pass number. The other options do not apply in this context and will not return data.
- GetCurrentValue is a non-volatile function.

Multipass examples

```
=GetCurrentValue()
```

This example returns the value of the current item being processed. For example, "Jones" if processing by DEPT.VP.

```
=GetCurrentValue("DEPT.VP")
```

This example returns the value in the DEPT.VP column for the current item being processed.

The difference between this example and the first one is that DEPT.VP does not have to be the column that defines the multipass list of items. For example, you may be processing by departments, but you have included DEPT.VP as an additional source column. As each department is processed, this example returns the name of the VP associated with that department.

Note that you could accomplish the same result by passing the current item value into GetData: `=GetData("vp","dept="&GetCurrentValue()&"","dept")`

```
=GetCurrentValue("PassNumber")
```

This example returns the number of the current pass. For example, "5" if the current pass is the fifth pass of the process. If the multipass process has 10 passes, this function will return 1-10 for each successive pass.

```
=GetCurrentValue("Filter")
```

This example returns the filter being applied for the current pass. For example, "Dept.Region='West'".

Temporary sheet filter examples

```
=GetCurrentValue("QuickFilter")
```

This example returns the filter criteria statement of the temporary sheet filter applied by the Quick Filter feature or GetDocumentHyperlink. For example: `DEPT.Region='West'`.

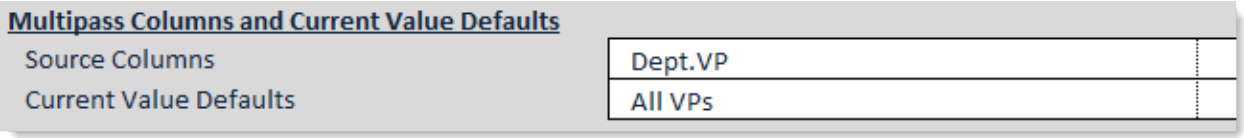
```
=GetCurrentValue("Temp_Filter_Key")
```

This example returns the table or table type that the temporary sheet filter applies to. For example: `DEPT`.

GetCurrentValue behavior during non-multipass processing

Although the primary intent of the GetCurrentValue function is to return information during multipass processing, you can configure the multipass settings so that the function also returns relevant values when using non-multipass processing (**Process File**). This applies when using GetCurrentValue with open parentheses or with a source column name.

The top of the File Processing Control Sheet has a section to define source columns and their current value defaults. For each source column listed in the top row, you can define a corresponding current value default in the bottom row. For example:



In this example, when using multipass processing, `GetCurrentValue("DEPT.VP")` returns the name of the VP currently being processed. When using non-multipass processing, the same function returns the text "All VPs". If the default value was left blank, then the function would return nothing (blank) during non-multipass processing.

You can define a default value for each source column as desired, or leave it blank to return blank.

If you use the GetCurrentValue function with open parentheses—`GetCurrentValue()`—then a value will only be returned during non-multipass processing if the **Group By** column is also listed as a source column (this happens automatically when using basic mode multipass settings), and the source column has a default value defined on the control sheet. Otherwise, the open parentheses function returns nothing during non-multipass processing.

When no file processing is occurring, using open parentheses or a column name returns the default values if defined; otherwise the function returns blank.

NOTES:

- You must use the File Processing Control Sheet if you want to define current value defaults for your source columns. The File Processing pane does not have a section to define these values.
- The other options for GetCurrentValue are only intended to return values during multipass processing. This applies to the keywords PassNumber, Filter, Table, and Column. All of these options return blank when multipass processing is not occurring, except for PassNumber. PassNumber returns 0 if no processing is occurring, and 1 when non-multipass processing is occurring.

IsRunningMultiPass function

Returns True if the file that contains the function is currently being processed using multipass processing. Can be used to create dynamic headers or change file settings based on whether multipass processing is occurring.

Syntax

```
IsRunningMultiPass()
```

This function does not take any parameters.

Remarks

IsRunningMultiPass is a non-volatile function.

Examples

```
=IsRunningMultiPass()
```

This example returns "False" when multipass processing is not occurring, and "True" when it is occurring.

```
=IF(IsRunningMultipass()=TRUE,GetCurrentValue(),"Consolidated")
```

In this example, the IsRunningMultiPass function is used within an IF function to change the result depending on whether multipass processing is occurring. This function returns the current pass item during multipass processing, and returns the text "Consolidated" otherwise. (You can get the same end result by using just the GetCurrentValue function, if you define the current value default as "Consolidated" for the column that defines the multipass list of items.)

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