ENFOCUS

SWITCH 2023 Fall

Quick Start Guide

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2. About this Quick Start Guide

The Switch Quick Start Guide explains the basic concepts of Switch and helps you to get started with Switch.

The Guide consists of three parts:

- *Understanding Switch* on page 6 explains what Switch is and how it works, without going into detail. Read this part if you're new to Switch.
- *Getting started* on page 14 guides you through installation and activation and explains how to set up your first flow.
- *Working with Switch* on page 42 elaborates on some specific topics, such as using sample jobs, working with folders and connecting different flows.

This Quick Start Guide contains a number of exercises. Try to make them yourself, before checking the example solution.

Do you want to know more?

Please refer to the Switch Reference Guide, available on the *Enfocus website*.

Tip: You can also access the help files from within Switch: press **F1** or select **Help** > **Switch help**.

3. Understanding Switch

Read this part if you want to know what kind of application Switch is, and how it works.

3.1. About Switch

Switch is an application that allows you to **automate** a number of tasks and processes, such as sorting and renaming files, converting files to PDF, preflighting PDFs, and so on.

Every aspect of the process can be automated:

- Switch can pick up input files wherever you stored them.
- The tasks are executed without any manual intervention.
- Processed files are automatically placed in the appropriate location.

Working with Switch can save you a lot of time.

Modules

Switch is a **modular** application. It consists of:

- A **core engine module**, which offers the basic functionalities (sorting, renaming, splitting, merging, ... files).
- A number of **additional modules**, which you can purchase if you need more advanced functionalities.

For example, if you want to pick up data from a database and use it in Switch, you need the Database Module; if you want to access Switch remotely, you need the SwitchClient Module.

For a complete overview, refer to the *Switch Reference Guide*.

Components

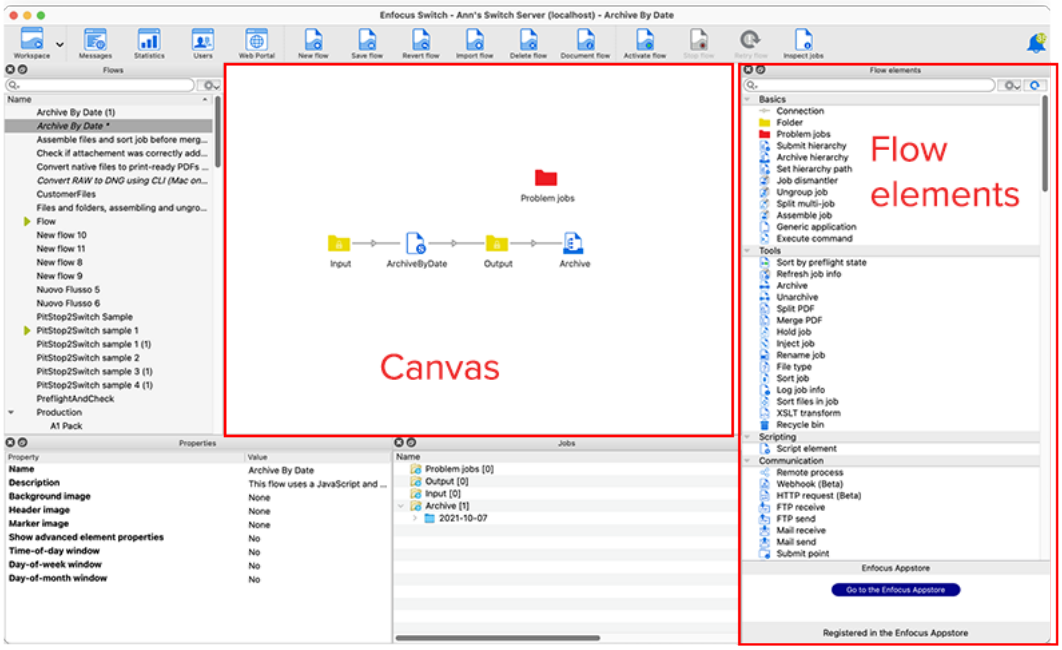
Switch consists of the following components:

- **Switch Server** is the core engine; it runs in the background, executing all processes. It has no user interface and it is started and terminated by the Switch Designer.
- **Switch Designer** is the user interface of Switch; the component you're using when working with Switch.
- **Switch Web Portal** allows you to connect to the Switch Server through a web browser interface, for example to view log messages or to submit and check jobs without having to use a Switch Designer.
- **Switch Web Services** takes care of all data communication between Switch and its client applications (the Switch Web Portal, our customers' own clients etc.). It's part of the default Switch installation.
- **SwitchScripter** is a separate application for use with Switch: it allows you to create and test scripts for Switch. Note that you can only use SwitchScripter if you have licensed the Scripting Module.

3.2. About working with Switch

Switch provides you with a workspace with a **canvas** and a number of **tools** (called *flow elements*) to design your own **workflows** (called *flows*).

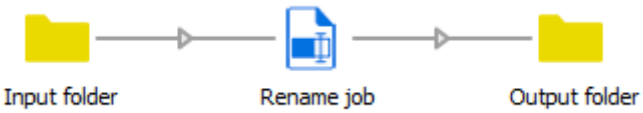
To create such a flow, you must select the flow elements you need from the right pane, and drag and drop them onto the canvas.



3.2.1. Flows

A flow (in its basic form) consists of the following elements:

- Some kind of input (can be files or folders) submitted to Switch
- One or more processes to be executed or tasks to be performed (e.g. renaming files, converting images, preflighting PDFs ...)
- Some kind of output (=processed files and/or folders)



Each of these elements is represented by a flow element, and the flow elements are interconnected via so called Connections (arrows). The direction indicates how the files will move (in this example from left to right).

3.2.2. Input

Switch allows you to process both single input files and file folders.

- **Examples of input files:** PDF files, MS Word files, all types of images ...
- **Example of input folders:** InDesign folders, a page layout with all images and fonts ...

Files and file folders that enter Switch and have to be treated as one entity are in Switch referred to as "jobs".

Ways to provide input

There are several ways to submit input to Switch:

- **Manually**: You can drag and drop your input files or folders onto an input folder element on the canvas. This is handy to test flows.
- **Automated**: You can configure Switch to download the input from a server (an FTP server, an e-mail server, or a network server), or to receive it via the Switch Web Portal.

Depending on the way you want to provide your input, you must select the appropriate flow element:

If you want to submit files ...	Use the following flow element
By dropping them onto the canvas (manually)	Folder **Note:** Switch will take care of the physical location of the submitted files. This location is not editable, as indicated by the small lock that appears on the Folder icon.
Via a location on a local computer or a network server	Folder (you will have to specify the location) Submit hierarchy This is a special type which remembers the folder structure. See *The Submit hierarchy flow element* on page 55.
Via FTP	FTP receive

If you want to submit files ...	Use the following flow element
Via e-mail	Mail receive
Via the Switch Web Portal	Submit point

Job data

Switch allows you to send extra data along with your input files, called *Job data*. This can be metadata, the file name, information about the user, or data from other systems, such as MIS systems, asset management systems... The format of the job data can be XML, JDF, Metadata...

Job data can be used to decide how files must be processed.

Example:

The paper type (coated versus uncoated) often determines whether or not a file must be sent to an ink optimizer. If this information is available in your MIS system, you can attach it to your files as job data. If the files arrives in Switch, Switch can use this information to sort the input files and only send them to an ink optimizer application if required.

3.2.3. Processes: standard processes

Switch provides you with a lot of **flow elements** for processing the files that are submitted to Switch.

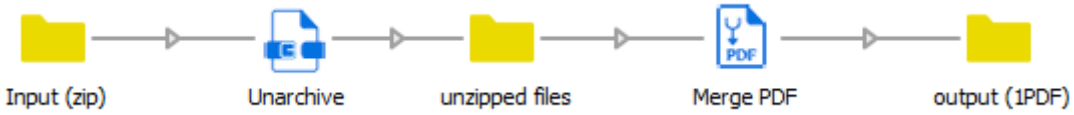
Some flow elements are default apps that are always available, because they are included in the Switch Core Engine. They allow you to perform **a number of standard tasks/processes**, such as the ones listed in the table below.

Processes	Flow element
Renaming a job or the files included in a job folder (e.g. to add a prefix or a suffix, replace part of the name with some other string, ...)	Rename job

Processes	Flow element
Sorting files in a job folder (for example renaming them so that they are sorted alphabetically)	Sort files in jobs
Combining multiple PDF files into one file for processing, or splitting one file into different PDF files.	Merge PDF Split PDF
Moving files into a ZIP package, or extracting files from a ZIP file.	Archive Unarchive

Just like other flow elements, you can select these elements from the Flow elements pane.

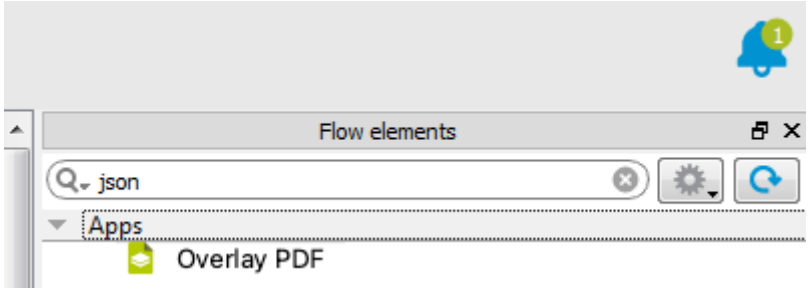
Note: You can combine several processes in one flow. In the example below, the input is first unzipped (using the Unarchive flow element) and afterwards merged into one PDF file (using the Merge PDF flow element).



3.2.4. Processes: Apps

Apps are small applications that can perform various tasks or connect to 3rd party software. They can be used as flow elements in Switch. They are developed by Enfocus or 3rd party providers and can be purchased and dowloaded from the Enfocus Appstore. Some apps are free for Switch users that have an active maintenance contract.

The downloaded apps can be found in the Flow elements pane in a separate category, under "Apps", as shown below.



How it works

Once downloaded and installed, apps are used just like the other, by default available flow elements.

Note that you will receive notifications in Switch to inform you about your apps, for example if a new version is available or if your subscription is about to expire. More information can be found in the Switch Reference Guide, available on the Enfocus website.

3.2.5. Processes: connections

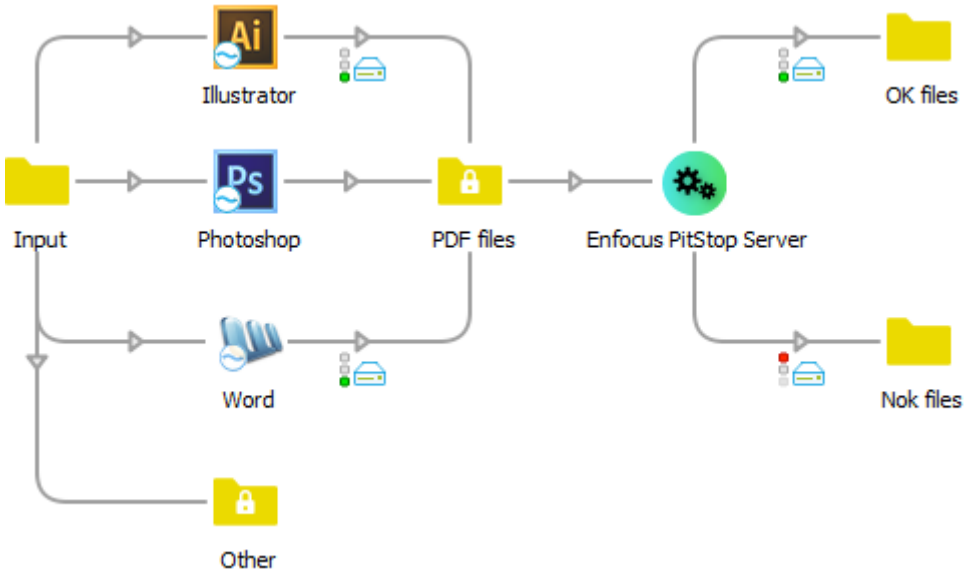
Whereas the flow elements are used to perform processes, the connections (= the lines between flow elements) allow you to **control the flow, i.e. to decide which files go where**.

The connections can be configured to:

- Hold files, or pass files through.
- Sort files by file type (for example PDF versus JPEG), file size, file pattern or by condition (author, color mode, and so on).

Example:

In the example below, the connections are configured to move the input files (based on their file type) to the correct app (Illustrator, Photoshop, Word, or other). Input that does not comply with one of the configured file types is moved to the “Other” folder and is (in this example) not processed.



Traffic light icons

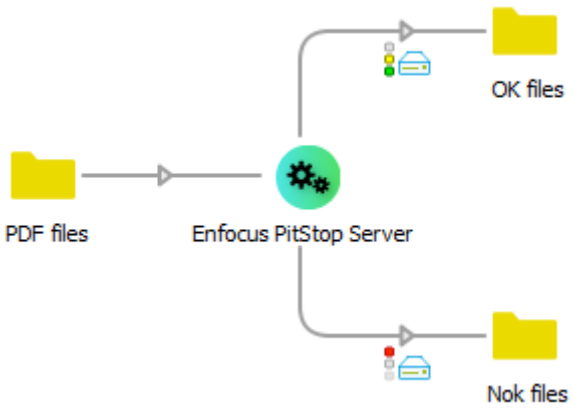
If flow elements generate a report or log, i.e. indicate whether or not the input was processed successfully (with or without warnings), this information can be used to sort the resulting output.

For example, if PitStop Server (a Switch app) preflights PDF files, you can configure the outgoing Connections in such a way that they include or exclude files based on their preflight status. The color of the traffic light indicates which files are passed through:

- **Green** is used for files that are processed successfully.
- **Yellow** is used for files that generate a warning.
- **Red** is used for files that generate an error.

Example:

In the following example, the first connection moves files that were preflighted successfully (green) or with warnings (yellow) to the *Ok files* folder, whereas the second connection moves erroneous files (red) to the *Nok files* folder.



3.2.6. Output

Once the files have been processed, they are moved to an output folder. This can be a physical folder somewhere on the network, a folder that's connected to another Switch workflow, or an input folder for a RIP or print controller. You can also upload the output to an FTP or mail server.

Depending on how you want to receive the output files, you can use one of the following flow elements:

If you want to receive the processed output files...	Use the following flow element
In a folder on the network, or on your own local computer	Folder Archive hierarchy This is a special type, which places the output in a folder structure. See *The Archive hierarchy flow element* on page 57.
Via an FTP server	FTP send
Via an e-mail server	Mail send

4. Getting started

Read this part if you are new to Switch. You will learn:

- How to install and activate Switch.
- What the GUI looks like.
- How to create your first, basic flow.

4.1. Installing, activating and opening Switch

Before you can start working with Switch, you must first install Switch and activate the modules for which you have a license.

Note that in this Quick Start Guide, only the main procedures are explained:

- We assume that you install Switch Server and Switch Designer on the same computer.
- We assume that this computer has internet access.

If this is not the case, for the appropriate procedures, refer to the Switch Reference Guide on the *Enfocus website*.

4.1.1. Installing Switch

Prerequisites: You must have administrator rights on your local computer to install and run Switch.

To install Switch

1. Use the link you received from your local reseller to download Switch.

   Switch is only sold via local resellers. Note that you can also download the installer through My Enfocus, our customer portal.

2. If necessary, double-click the Switch installer.

3. Follow the on-screen installation instructions.

   Make sure to install all Switch components (default installation).

   You have installed Switch. Next, you have to activate your Switch license(s).

4.1.2. Activating Switch

Once you have installed Switch, you must activate the modules for which you have a license.

Note: You need at least a license for the Switch Core Engine. Other modules are optional (and not required for the exercises in this Quick Start Guide).

This procedure describes how to activate Switch *on a computer with internet access*.

Note: It is also possible to install Switch on a computer without internet access (but you need to have another computer available to connect to the internet). For the offline procedure, refer to the *Switch Reference Guide*.

To activate Switch

1. Locate the application (Switch.exe or Switch.app) and double-click to start Switch.

   Switch is installed by default in the following directory:

   - Windows: C:\Program Files\Enfocus\Enfocus Switch
   - Mac OS: /Applications/Enfocus/Enfocus Switch

2. In the Connect to Switch Server dialog, select **Connect to local Switch Server**.

   It is also possible to connect to a Switch Server installed on another computer (on which Switch has been installed as well), but activation is only possible on a local Switch Server. For more information, refer to the *Switch Reference Guide*.

3. Click **OK**.
   The Switch Designer is opened and the Software Activation dialog appears.

4. Make sure the **Off-Line Mode** checkbox (in the top right corner) is cleared.

5. Enter your Enfocus ID and password.

   If you don't have an Enfocus ID yet, click the **Create Enfocus ID** link and enter the required information. Your account is created immediately, so you can proceed with the activation procedure.

6. To supply your product key(s), do one of the following:

   - Enter the product keys in the text area.
   - Drop the product key file into the text area.
   - Click **Browse** to select the product file from a location on your local system.

   A green check mark next to the product key indicates that the key is valid.

7. Click **Activate**.
   In the right part of the dialog, a green checkmark appears next to the activated module(s).

8. Click **Close**.

4.1.3. Opening Switch

This procedure assumes you are connecting to a local Switch Server.

To open Switch

1. Locate the application (Switch.exe or Switch.app) and double-click to start Switch.

   Switch is installed by default in the following directory:

   - Windows: C:\Program Files\Enfocus\Enfocus Switch
   - Mac OS: /Applications/Enfocus/Enfocus Switch

2. If the Connect to Switch Server dialog pops up:

a. Select **Connect to local Switch Server**.
b. Clear the **Show dialog at startup** checkbox.

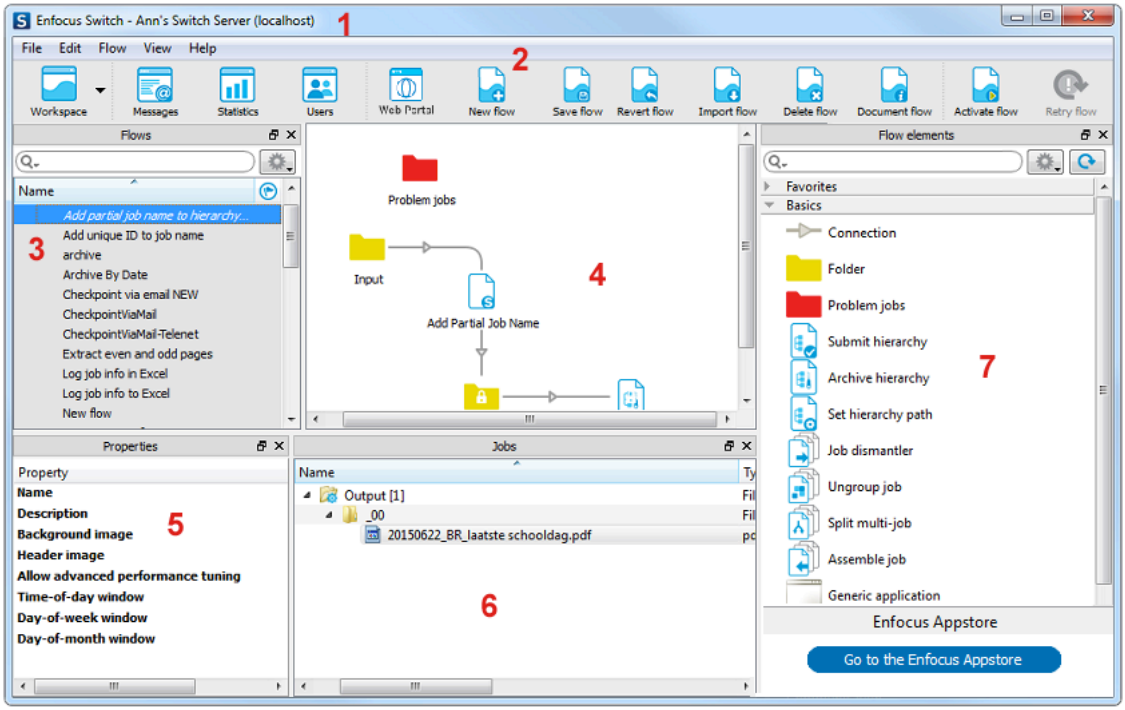
   Next time you open Switch, the selected connection (in this case: local connection) is considered the default. You can afterwards still change the connection from within Switch, by selecting **File** > **Connect to Switch Server**.
c. Click **OK**.

You have opened Switch.

Note: If you're launching Switch for the first time, the Switch Insight Dashboard dialog pops up. Read the text carefully and click **Yes, I'd like my Dashboard** to get your own personal dashboard. For more information, refer to the Switch Reference Guide.

4.2. The Switch workspace

When Switch Designer is launched for the first time, the following window (ie. the workspace) is displayed.



It consists of a title bar and a menu/toolbar (#1 en #2) at the top, and a number of panes (#3,#5,#6,#7) surrounding a central area, the canvas (#4). The table below gives a brief description of each of these screen parts.

	Screen part	Function
1	Title bar	Indicates whether or not you are connected locally or remotely. E.g. Ann's Switch Server (localhost) indicates that the Switch Server (in this example called Ann's Switch Server) is launched locally. The name of the

	Screen part	Function
		Switch Server can be changed by selecting **Edit** > **Preferences** > **Internal Communication** > **Switch Server Name** (Windows) or **Enfocus Switch** > **Preferences** > **Internal Communication** > **Switch Server Name** (Mac OS).

2	Menu/Toolbar	The menu bar gives access to the different panes and functions of Switch; for some of the main functions a *shortcut*, i.e. a button is available in the toolbar:
		• The **Workspace** button allows you to switch between different workspace *views* (i.e. combinations of panes). There are three preconfigured views (**Design** - which is the default -, **Run** and **Test**), but you can change the content of these views as required, by displaying/hiding pane(s) via the file menu **View** > **Show panes**.
		• The Messages, Statistics, and Users button allow you to switch to the corresponding screens:
		  • Click **Messages**, to check the log messages. They will be shown in a browser.
		  • Click **Statistics**, to learn more about the time needed for processing the input files in a particular folder. Note that only folders for which the property **Show in statistics** is enabled are shown in this pane. (See *About flow element properties* on page 23)
		  • Click **Users** to determine which users are allowed to use Remote Designer or have access to certain Checkpoints and Submit points via the Switch Web Portal.
		• The Web Portal button allows you to access the Switch Web Portal from within Switch.
		• The other buttons are used to work with flows (e.g. to save, activate, document,... a flow)
		Note: Not all buttons are available in all views. The above described buttons are displayed in the default Workspace - Design view.

3	Flows pane	Gives an overview of the flows in your workspace. The selected flow is shown on the canvas (#4). The properties of the selected flow are shown in the Properties pane (#5).
4	Canvas	Gives a visual representation of your flow and allows you to design flows.
5	Properties pane	Gives an overview of the properties of the flow selected in the Flows pane (#3) or the flow element selected on the Canvas (#4).
6	Jobs pane	Shows the content of the backing folder of a selected flow element. This allows you to see which files are where in the flow.

	Screen part	Function
7	Flow elements pane	Contains all flow elements (including built-in tools and installed apps) that can be used for designing flows. **Note:** The number of flow elements depends on the modules you have licensed. For example, the metadata elements (like XML Pickup, Export metadata etc.) are only available if you have licensed the Metadata module. When using the search function, matching results in the Enfocus Appstore are displayed at the bottom of the pane.

4.3. Before you start

If you want to automate a process, we recommend analyzing the process in detail first.

Think about:

- Where the files/jobs come from (the input).
- What you want to do with them (processes).
- Where you want them to go (output).

Tip:

- Use diagrams to visualize your flows, before actually configuring them in Switch!
- Try to break down your workflows into smaller flows, focused on one task: it's much easier to work with small flows than with large and complex flows, which are difficult to debug.

4.4. Creating your first flow

Working with flows always requires the following steps:

1. **Create a new flow** for the process you want to automate. You can start from a blank flow (and design it from scratch) or start from a sample flow.
2. **Design your flow**, by dragging the required flow elements onto the canvas. You must configure the properties of all flow elements and connections on the canvas.
3. **Run your flow**: i.e. save, activate and test the flow using test files, until you are happy with the result.

4.4.1. Step 1: Creating your flow

Although you could also start from a sample flow, for your first flow(s), we recommend starting from scratch (blank flow).

To create a blank flow

1. Do one of the following:
   - In the toolbar at the top of the screen, click

   - From the menu, select **Flow** > **New Flow...**.
   - In the Flows pane, right-click and select **New Flow**.

   A new flow is created. By default it is called "New flow" (followed by a number if it's not your first "New flow").

2. Enter a meaningful new name for your flow.

   Your cursor will automatically focus on the flow name in the Flows pane, so you can immediately type a new name. If you click outside the name field, the name will be displayed in italics and it will have an asterisk next to it, to indicate that the flow hasn't been saved yet.

You can now add flow elements as required.

4.4.2. Step 2: Designing your flow

You are now ready to design your flow:

1. Add flow elements to the canvas.
2. Connect them through Connections.
3. Configure the flow element properties.

4.4.2.1. About flow elements

Flow element types

Remember the difference between the flow elements available in the Flow elements pane:

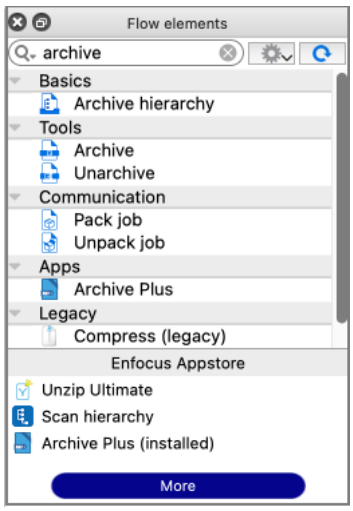
- The **Connection** flow element is a special type, connecting other flow elements and determining how jobs (i.e. files and file folders) can move from one flow element to another.
- The **Folder** flow element can be used to deliver input files and to store the processed files, but it is also used to (temporarily) store or modify jobs in between processes.
- Various other flow elements allow you to handle jobs. There are built-in flow elements (by default available in Switch) and apps that can be downloaded from the Enfocus Appstore (for free or paying).

For more information about the flow elements, refer to *About working with Switch* on page 7.

Search field

To find the flow element you need, you can use the Search field at the top of the Flow elements pane.

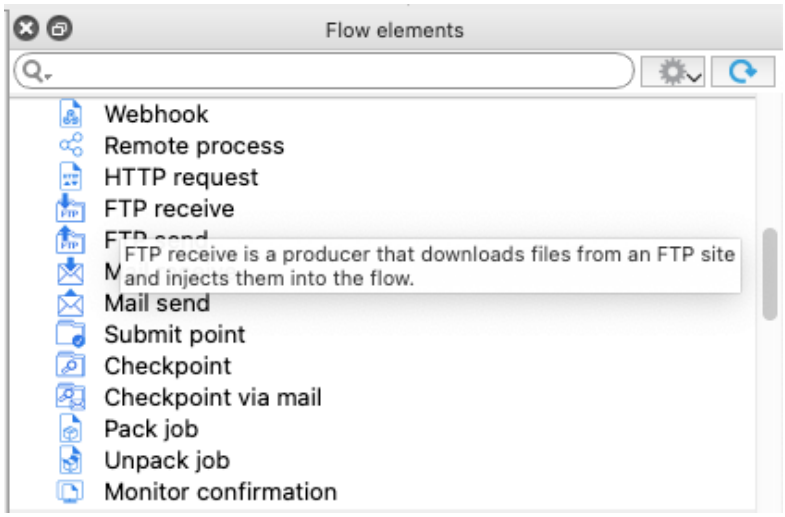
Just enter a keyword, and the associated flow elements will be shown. For example, if you enter the word *archive*, you will see all flow elements that can be used to (un)archive jobs. Note that built-in tools and installed apps as well as apps that are available on the Enfocus Appstore are included in the search.



Tooltips

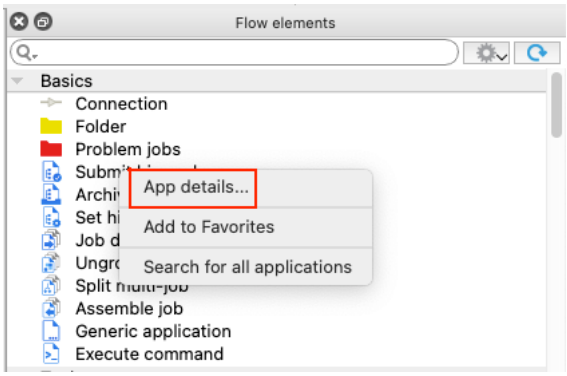
Switch provides you with tooltips for every field or element in the GUI.

So, if you are not sure about the meaning of a flow element, move your cursor over it and a tooltip will appear.



Documentation

To learn more about the default flow elements and apps, and what they are used for, select **App details** from the context menu.

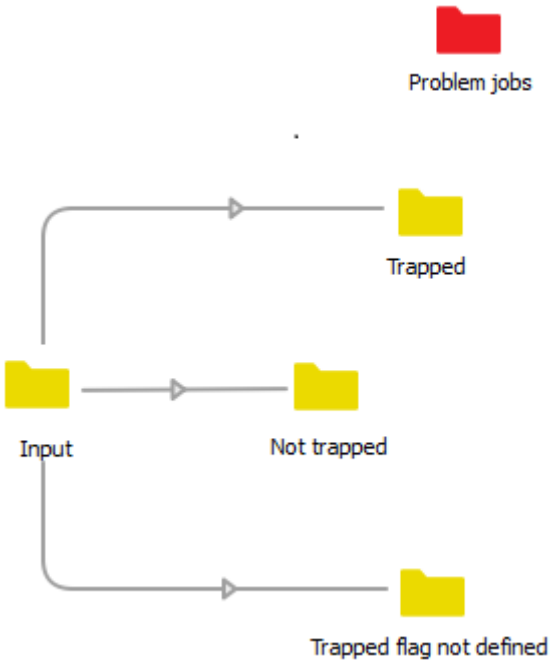


Problem jobs

The Problem jobs folder element is a special element that keeps track of jobs that cannot be processed. This is the case if a job matches none of the filters set on a Connection, if an invalid file format is sent to a particular flow element, and so on.

Always add this element to your flow; otherwise you may not be aware of the fact that there are problems with your flow...

Note: The Problem jobs folder element does not require any connections. It *can* have an outgoing connection that handles failed jobs, but if there is no outgoing connection, the failed jobs stay in the folder until a user handles them manually.



4.4.2.2. Adding flow elements to your flow

You need at least one flow element for the input and one for the output; additional elements may be required depending on the processes you want to automate.

Input and output: The most basic flow consists of two Folder elements, one for the input and one the output (see example below), but depending on the way you want to deliver your input and receive the output, you can select other elements, such as FTP receive, Mail receive, etc. (See *Input* on page 8 and *Output* on page 13).

Processes: A number of flow elements allow you to perform processes, such as Merge PDF, Archive, ... See *Processes: standard processes* on page 9 and *Processes: Apps* on page 10).

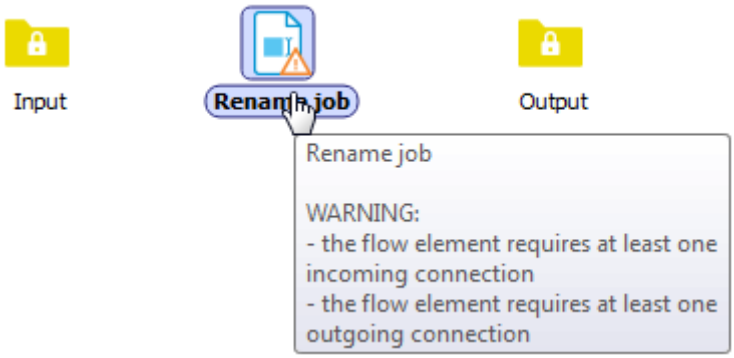
To add a flow element to your flow

Do one of the following:

- Drag the icon for the desired flow element from the **Flow elements** pane onto the canvas in the desired location.
- Right-click a blank area of the canvas and select **Add** > **<category>** > **<desired flow element>**.

4.4.2.3. Warning when adding flow elements

If you drop a flow element on the canvas, a warning icon may appear. To see what the problem is, move your cursor over the icon and check the tooltip.



Note that in some cases additional information (warnings or errors) is available in the log messages in the Log messages overview (See further: *Troubleshooting problems when running a flow* on page 34).

4.4.2.4. Connecting flow elements

Next step is connecting the flow elements on the canvas, using the Connection flow element.

To connect two flow elements that are already present on the canvas

Do one of the following:

- Drag the Connection icon from the **Flow elements** pane and drop it onto the first flow element; then click the second flow element.
- Double-click the first flow element; then click the second flow element.
- Right-click the first flow element and select **Start connection**; then click the second flow element.

A connection line connects the two flow elements.

4.4.2.5. About flow element properties

After you have placed the required flow elements on the canvas, and connected them as required, you must configure each flow element's properties.

Properties pane

The Properties pane displays the properties of the selected flow element.

Each flow element *type* has its own specific properties.

For example, FTP receive has properties to identify the FTP server, whereas the Folder element has a property for the file path.

Properties may also be different, depending on the flow element(s) the selected element is connected to.

Example of the properties of an FTP receive flow element:

Properties

Property	Value
Name	FTP receive
Description	Receive input files from Enfocus FTP
Server type	FTP
Passive mode	Yes
FTP server address	ftp.enfocus.com
Port	21
User name	user1
Password	*********
FTP directory	/
Leave originals on server	No
Minimum file size (KB)	None
Check every (minutes)	10
Time-of-day window	No
Day-of-week window	No
Day-of-month window	No
Subfolder levels	99
Process these folders	All Folders
Adjusted by (rule 1)	None
Adjusted by (rule 2)	None
Adjusted by (rule 3)	None
Adjusted by (rule 4)	None
Adjusted by (rule 5)	None
Attach hierarchy info	No
Attach email info	Email info map defined
Allow subfolder cleanup	Yes
Starting at level	2

Example of the properties of a Folder flow element:

Properties

Property	Value
Name	Output
Description	processed files (PDF)
Path	Auto-managed
Color	Yellow
Strip unique name	Yes
Duplicates	Add version number
Separator	_

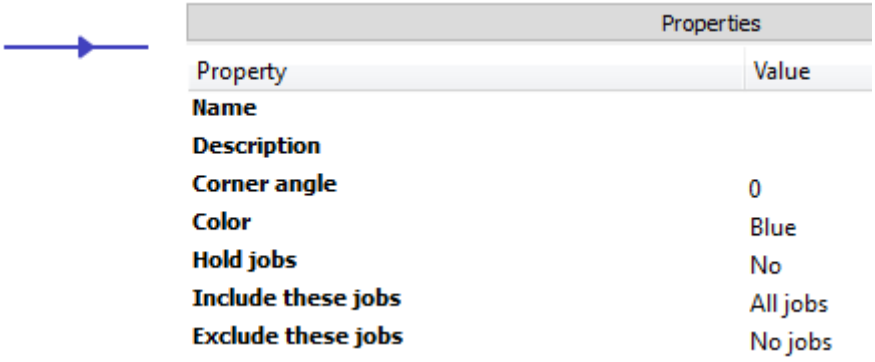
Tip: Remember that you can display a tooltip for each of the property fields.

Default values

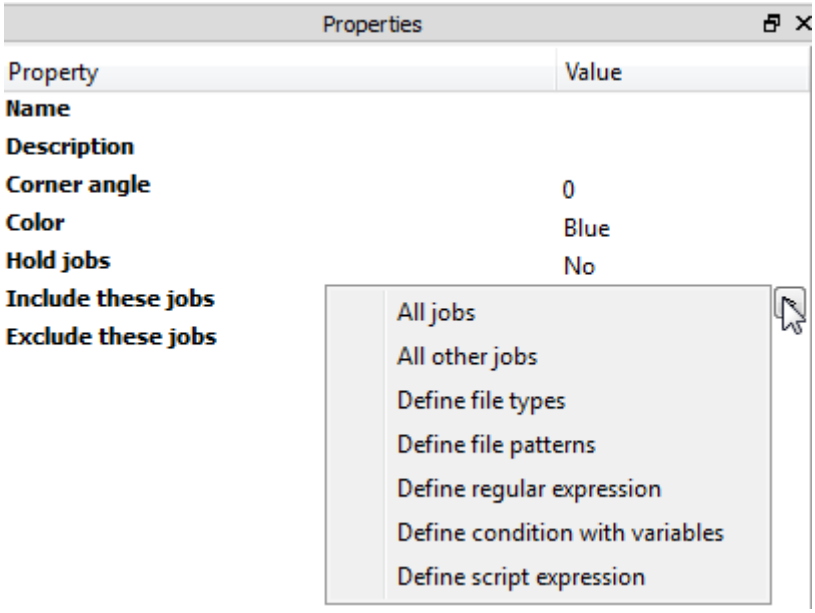
Switch fills the properties with meaningful/default values; you only have to specify values that Switch cannot know (e.g. FTP/e-mail server address, user names and passwords, e-mail addresses for notifications...) and values that are different from the default values.

Filters

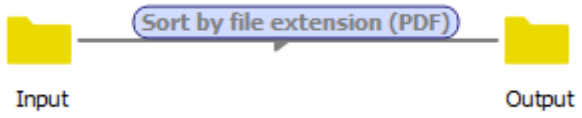
Example of the properties of a Connection flow element:



The Connection properties allow you to filter, i.e. exclude or include particular files (or file folders, depending on the connected elements) moving along the connection. Filter properties can be used to sort files, based on file types, file patterns ... (see image below).



Example of a flow with filtering via the Connection properties



Properties

Property	Value
Name	Sort by file extension (PDF)
Description	Only PDF
Corner angle	0
Color	Magenta
Hold jobs	No
Include these jobs	File types defined
Exclude these jobs	No jobs

In this example, only PDF files will be sent to the output folder; all other files will be sent to a Problem jobs element. Alternatively, you could add a second output folder, to take care of the non-PDF files. The connection to this second output folder should have the property Include these jobs set to All other jobs.

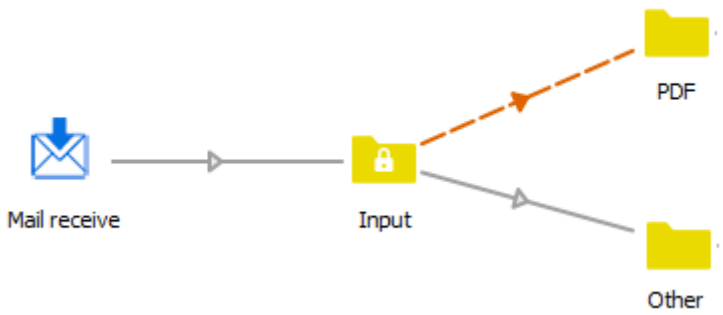
To see which file types are defined, you must click the **Include these jobs** property, select **File types defined** and check the dialog that pops up.

Tip: It's handy to mention the sorting method in the name of your Connection.

Hold jobs allows you to stop files from being routed to the next folder; the files remain in the source folder, and you can check their properties via the Jobs pane. See *About sample jobs* on page 43.

This also allows Switch to use the input as an example when defining variable parameters. For a use case, see exercise 3.

Note: If a connection is set “on hold”, the connection is shown as an orange dashed line.



4.4.2.6. Configuring flow element properties

To change the properties of a flow element

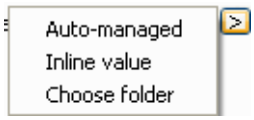
1. Select the flow element of which you want to change the properties.

   Note: If you select multiple (similar) flow elements at the same time, you can change the common properties.

   The properties of the selected flow element(s) are displayed in the Properties pane.

2. Click the property you want to change.
   Depending on the selected property, a text box, a button, or a drop-down menu appears.

3. Make the required changes:

If ... appears	Do the following:
A text box	Type the text in the displayed text field.
A drop-down menu	Select the appropriate option.
...	1. In the the property editor dialog that pops up, update the field(s) as required. 2. Click **OK**.
>	1. From the pop-up list, select one of the options.  Depending on the selected option, an inline editor or a dialog appears. 2. Configure the desired values.

   Your changes are applied immediately.

4.4.2.7. Adjusting the layout of your flow design

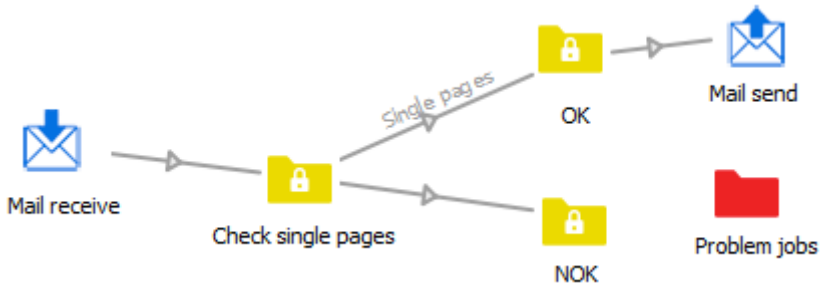
If you have designed a flow with many flow elements, it is important to keep it clear and well-arranged. Switch provides you with a number of tools to do this:

- You can align your flow elements (place them all on one line, horizontally or vertically).
- You can adjust the layout of the connections.
- You can change the color of the connections and folders, for example to distinguish between local and network folders.

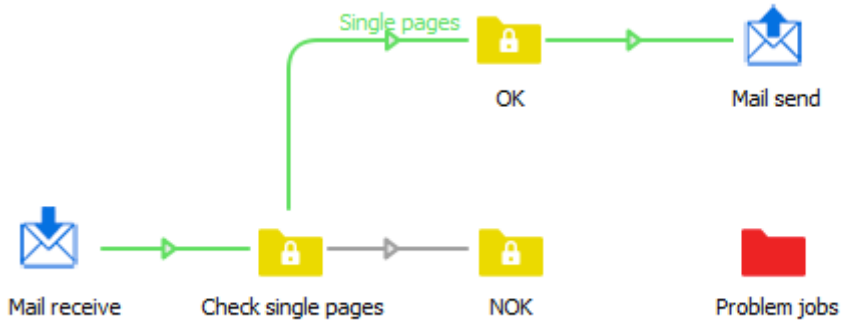
Tip: For a better overview, we recommend using meaningful names for flow elements and connections.

Example:

Before: Disorganized and sloppy...



After: A neat and well-arranged layout:



In the above example, the green color is used to indicate how the files should move if nothing goes wrong.

Aligning flow elements horizontally

To align flow elements horizontally

1. Select the flow elements to be aligned.
2. Do one of the following:
   - *On Windows OS:*

     Select **Edit** > **Align Horizontally**, or press **Ctrl** + **Shift** + **H**.
   - *On Mac OS:*

     Select **Enfocus Switch** > **Align Horizontally**, or press **Command** + **Shift** + **H**.

Aligning flow elements vertically

To align flow elements vertically

1. Select the flow elements to be aligned.
2. Do one of the following:
   - *On Windows OS:*

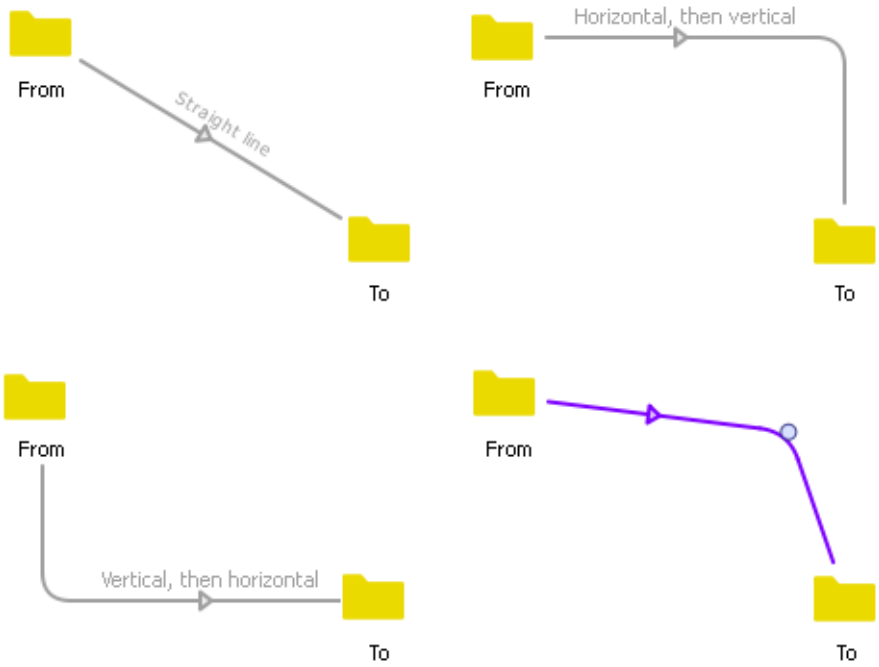
     Select **Edit** > **Align Vertically**, or press **Ctrl** + **Shift** + **V**.
   - *On Mac OS:*

     Select **Enfocus Switch** > **Align Vertically**, or press **Command** + **Shift** + **V**.

Adjusting the layout of a connection

By default, connections are drawn as straight lines between two flow elements. You can however adjust these lines to make a well-arranged design.

1. To draw the connection along the sides of a rectangle (with a rounded corner)
   a. Select the connection.
   b. Do one of the following:
      - Right-click the connection and select **Vertical, then horizontal** or **Horizontal, then vertical**.
      - In the Properties pane, set the connection's **Corner angle** to -90 or +90.
2. To draw the connection along a route somewhere in between these extremes
   a. Select the connection.
   b. Do one of the following:
      - Move your cursor over the connections's corner until a drag handle (blue circle) appears, and drag the handle to the desired direction.
      - In the Properties pane, set the connection's **Corner angle** to a value between -90 or +90.



Adjusting the colors of folders and connections

To make it easy to distinguish between different folder or connection types, for example between network and input folders, you can change the default color for folders (yellow) and connections (gray).

To adjust the colors of folders and connections

1. Select one or more connections or folders.

   Note: You cannot combine connections and folders in one selection.

2. Right-click to open the context menu.
3. Click **Choose color** and select the appropriate color from the list of predefined colors.

   You can choose one of the following colors:

   - Gray (default), Yellow, Green, Cyan, Blue, Magenta for *connections*.
   - Yellow (default), Orange, Green, Cyan, Blue, Magenta for *folders*.
   - Or click "Custom" and select the color of your choice using the color picker.

   Alternatively, you can set the color via the Properties pane.

Keep in mind that "conditional" colors (e.g. orange for connections on hold) will take priority over custom colors.

For example, even if you have chosen green for a particular connection, its color will change to orange when the connection is set on hold. When the connection is released, the chosen color (green) will be restored.

4.4.3. Step 3: Running your flow

Once you have configured the flow elements, you can save, activate and test the flow, to see if it does what you expect it to do. If this is not the case, Switch offers a couple of tools to investigate what's going on, so you can solve the problems.

4.4.3.1. Saving a flow

In the Flows pane, unsaved flows are displayed in italics, followed by an asterisk.

To save a flow

1. In the Flows pane, select the flow you want to save.

   Optionally, you can select several flows, to save them all in one go.

2. Do one of the following:

   - In the toolbar at the top of the screen, click

.
   - In the Flows pane, right-click and select **Save Flow(s)**.
   - From the menu, select **Flow** > **Save Flow(s)**.

   In the Flows pane, the flow name is no longer displayed in italics and the asterisk has disappeared.

   Note: As soon as you start making changes to the saved flow, the name is again displayed in italics, followed by an asterisk. Note that you can always go back to the last saved version, by clicking the **Revert Flow** button in the toolbar.

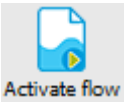
4.4.3.2. Activating a flow

If you want a flow to start processing jobs, you must activate it.

To activate a flow

1. In the Flows pane, select the (inactive) flow you want to start.

2. Do one of the following:

   - In the toolbar at the top of the screen, click 

.
   - In the Flows pane, click and select **Activate Flow**.
   - In the Flows pane, right-click and select **Activate Flow**.
   - In the Flows pane, double-click the selected flow (only possible in case of a single flow).

- From the menu, select **Flow** > **Activate Flow**.

If you haven't saved your flow yet and you haven't enabled automatic flow saving in the Switch preferences, a warning pops up. Note that clicking **Save**, will save all flows with unsaved changes. If you do not want to save all unsaved flows, click **Cancel** and manually save the flows as required.

The background of the flow is darkened. In the Flows pane, you can see an icon next to the name of the flow. The flow is now active and waits for input jobs to appear.

4.4.3.3. Testing a flow

Input for testing

To test the flow, make sure to provide Switch with some meaningful *input*:

- If you have chosen a **Folder** element for your input:
  - If you have entered a file path in the Folder element property **Path**, make sure it contains some appropriate input files or folders.
  - If you haven't configured a path in the Folder element property **Path**, drag and drop the input from your local computer onto the input element on the canvas.

    Note: In that case, the value of **Path** is *Auto-managed* (which is the default value). Auto-managed folders are folders that are created automatically (by Switch) in the application data root folder. Note that the the path to the application data root folder can be found in the **Preferences** > **Application data** > **Application data root**.

- If you have chosen a **Mail receive** or an **FTP receive** flow element, make sure that some input is available on the configured mail or FTP server.
- If you have selected a **Submit point**, you must provide your input using the Switch Web Portal. For more information, refer to the Switch Reference Guide.

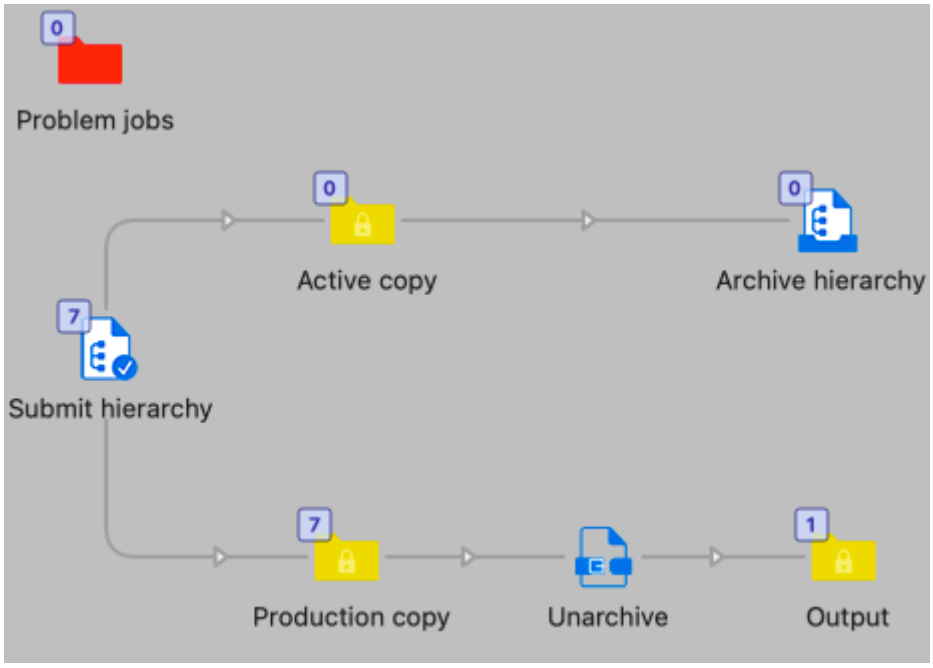
Switch will process the input as soon as the flow is activated.

Information while processing

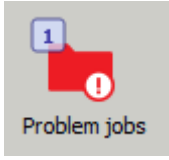
While the flow is running, Switch gives you information about the jobs being handled and their progress:

- The **number of jobs** being present in a folder is indicated on the canvas. This allows you to see how files move along a flow and where they are being hold.

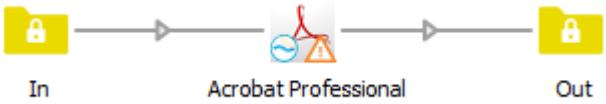
  If more than 100 jobs are present in a particular folder, Switch doesn't display the number, but instead displays the symbol for infinity.



- **Problem jobs and problem processes** are marked with an error mark icon.



If the icon appears next to a Problem jobs folder, the Problem jobs folder contains at least one file or file folder. This may be due to the fact that the job does not match the filters set on a Connection element.



If the icon appears next to a flow element for processes, there may be a problem with this element, for example a network error (so jobs can no longer be transported), or an invalid property.

If the icon appears next to a folder element, probably the backing folder is not accessible anymore, for example because it does not exist anymore, or because the local network connection is broken.

Output

Carefully check the output.

In case of problems:

1. Stop the flow, by clicking the

button.
2. Review the properties of the flow elements.
3. Activate the flow again, to see the result of your changes.

Tip: Not clear what the problem is? Have a look at *Troubleshooting problems when running a flow* on page 34.

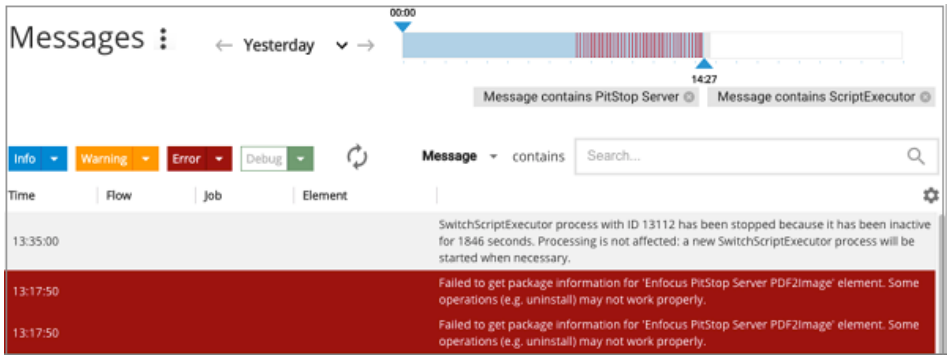
4.4.3.4. Troubleshooting problems when running a flow

In case of problems, have a look at the following panes.

The Log messages overview

The Log messages overview is actually not a pane, but a web page. It gives an overview of all messages issued by the Switch Server. There are different types of messages, e.g. info messages, warning messages and error messages. Warnings are shown in an orange background, errors in a red background.

You can filter the messages as required, for example by selecting a particular date or date range, a particular time or by searching for a particular string.



How to display the Log messages overview?

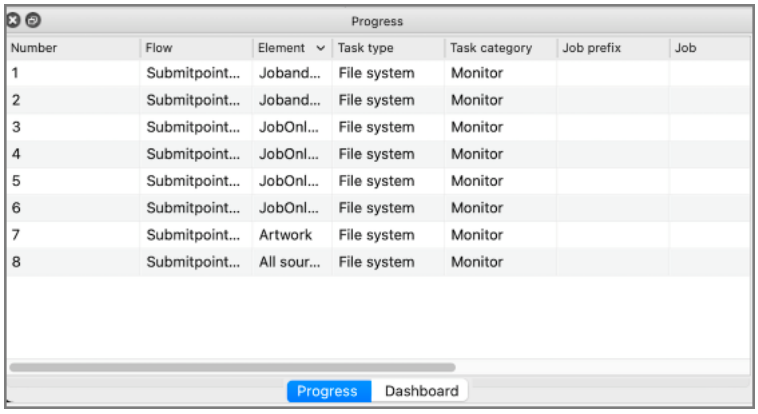
Do one of the following:

- Click

, or
- Click **View** > **Messages**.

The Progress pane

This pane displays progress information for tasks currently being executed by the Switch Server, for example downloading files from FTP or distilling a PostScript file.

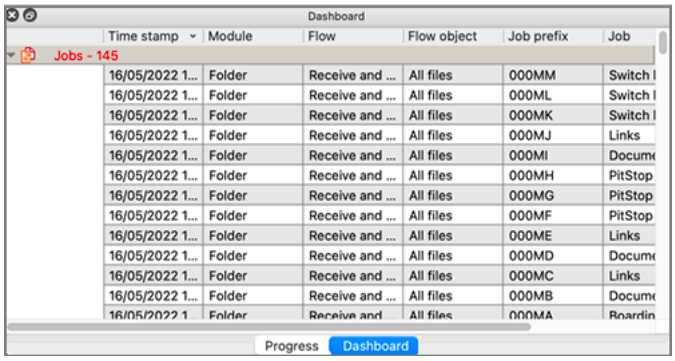


How to display this pane?

From the menu, select **View** > **Show panes** > **Progress**.

The Dashboard pane

The Dashboard pane displays an overview of current problems with the flow (opposed to the Messages pane, which gives an overview of problems in the past).



How to display this pane?

From the menu, select **View** > **Show panes** > **Dashboard**.

4.5. Exercise 1: Sorting files by file type

Instruction

Create a flow where files can be placed manually in an input folder. Switch should sort the input into two categories: PDFs and non-PDFs.

Test files

Download the test files: *http://www.enfocus.com/manuals/Extra/Switch/Switchtutorial.zip*

Solution

- Review the *step-by-step solution*.
- Check the result in your own copy of Switch. To do so, import Tutorial 1 Flow.sflow (included in the zip package, under Tutorial Flows) by selecting **Flows** > **Import Flows**.
- Have a look at the video explaining how to build this flow: *http://youtu.be/u8BT8llg3RI*.

4.5.1. Exercise 1: Solution

This topic explains how to create a basic flow, which sends all input files first to an intermediate folder and then sorts them into two categories (PDFs versus all other files).

1. Open Switch.
2. Create a new blank flow and rename it to `Tutorial 1 Flow`.
   a. Create a new blank flow.
   b. Make sure the flow is selected and in the Properties pane, click the **Name** field.
   c. Replace **New flow 1** with `Tutorial 1 Flow`.
3. Add a Folder flow element (for the input), and configure the properties as required.

   In this exercise, the input folder should be named *Input1* and linked to a physical folder on your desktop.

   a. From the **Flow elements** pane, select the Folder flow element and drag it onto the blank flow canvas.
      As you drag the item onto the flow canvas, you should see it drag with your cursor. You should place it on the left side of the canvas.
   b. Select the folder on the canvas.
   c. Change the name in the **Properties** pane to `Input 1`.
   d. Link the Folder element to a physical folder on your desktop.
      1. Make sure that the new folder is still selected.
      2. In the Properties pane, click **Path**.
      3. Click ...
      4. Select **Choose folder**.
      5. Select **Create new** and create a new folder on your desktop called `Input flow 1`.
      6. Click **Select folder**.

   Note: With a production workflow, the folder being linked to can be anywhere on the network. As long as the Switch Server can access the shared volume, it can link to the folder.

4. Add a second folder.

   Name this folder `Sort for PDF`. This will remain an *Auto-managed* folder. We recommend using auto-managed folders for intermediate folders within a workflow, so files are not moved unnecessarily over the network.
5. Add two more folders to the upper right and lower right of the *Sort for PDF* folder.

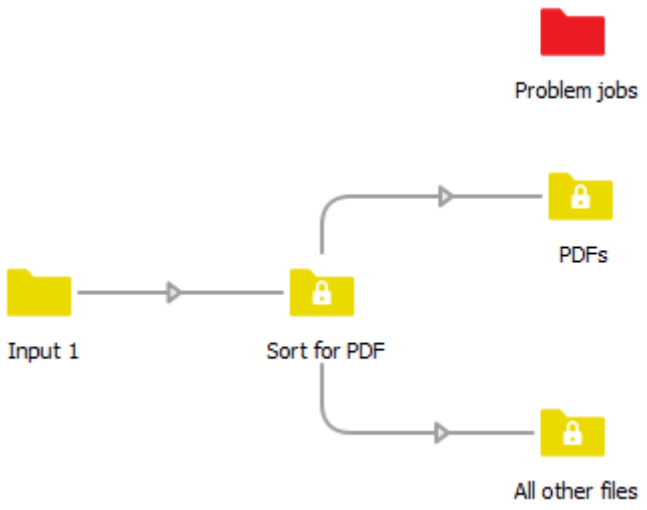
   Name the top folder `PDFs` and the bottom folder `All other files`.

6. To take care of files that (for any reason) cannot be processed, add a Problem jobs flow element.
   Your flow now looks like this:

7. Connect your Folder elements (but not the Problem jobs element!).
   a. Double-click the *Input 1* folder.
      A connection appears.
   b. Move your cursor to the *Sort for PDF* folder and click that folder.
      A connection is made between the two folders.
   c. Make a similar connection from *Sort for PDF* to the *PDFs* folder and the *All other files* folder.

   Note: Always start a connection with the folder from where the files will "flow from" and then connect to the folder they will move to. Connections have a direction of flow noted by the arrow in the middle of the connection.

   Your flow now looks like this:



8. Now change the connection settings, to make sure that PDF files are moved to the *PDFs* folder, and all other files to the *All other files* folder.
   a. Click the connection between the *Sort for PDF* and *PDFs* folder.
      The connection highlights in dark gray.
   b. In the Properties pane, select the **Include these jobs** property.
   c. Click and select **Define file types** from the pop-up menu.
      1. In the **Define file types: Include these jobs** dialog, select **Adobe PDF (*.pdf)**.
      2. To add it to the include list (right side), click **Add**.
      3. Click **OK**.
   d. Click the connection between the *Sort for PDF* and *All other jobs* folder.
   e. In the Properties pane, select the **Include these jobs** property.
   f. Click and select **All other jobs** from the pop-up menu.

   Now your flow is complete.

9. Save the flow.

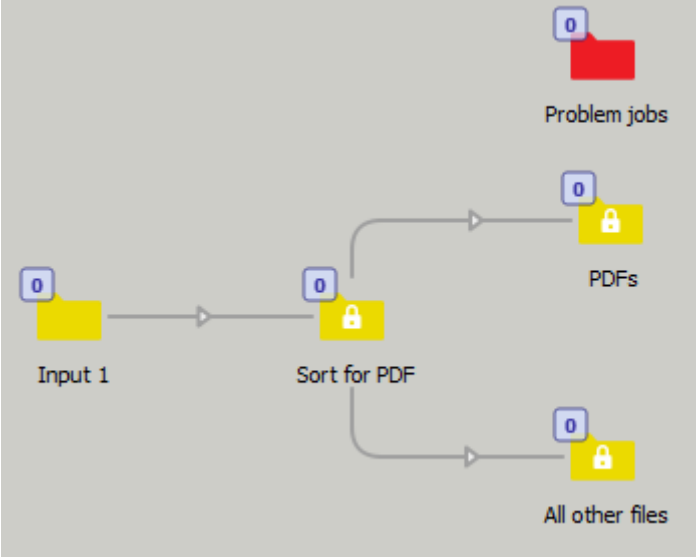
   To do so, click the **Save Flow** button at the top of the design window.

10. Activate the flow.

    To do so, click the **Activate Flow** button at the top of the design window.

    The design window with the flow should turn gray with numbers showing "0" for each folder in the flow. The numbers tell you how many files are in that folder at any given time.

    Your flow now looks like this:



11. Drop your test files in the flow input folder on your desktop.

    You can use your own files (PDF and non-PDF) or you can use the sample files found in "Tutorial Job Folder" folder.

    Switch will recognize these files within 10 seconds (which is the default scanning time for an input folder) and you will see the counter change to match the number of files in the folder. Shortly after, the end folder counters will increment with the proper number of files depending on the sorting.

12. To check the results, click the *PDFs* folder or the *All other files* folder.
    In the Jobs pane you can view what files are in these folders. PDFs should be in the *PDFs* folder and all other file types should be in the *All other files* folder. If they are not, then double-check the Connection settings (see step 7) and try the flow again.

    Note: You can delete files from the output folders by clicking the file name in the Jobs pane and pressing the **Delete** key.

4.6. Exercise 2: Sorting by file name pattern

Instruction

Duplicate the flow you created in exercise 1 and change the sorting method; instead of sorting based on file type, now the input should be sorted on file name pattern:

- If the file name contains *Part1* (e.g. JobsPart1.pdf or Part1_jobs.pdf), it should be moved to the *PDFs* folder.
- All other files should be moved to a folder named *All other files*.

Note: This type of flows can be useful when receiving files from a Web to Print system, or for any workflow where the file name can contain file name patterns to identify job type, color model or other characteristics that are important to your workflow.

Test files

Download the test files: *http://www.enfocus.com/manuals/Extra/Switch/Switchtutorial.zip*

Solution

- Review the *step-by-step solution*.
- Check the result in your own copy of Switch. To do so, import Tutorial 1B Flow.sflow (included in the zip package, under Tutorial Flows) by selecting **Flows** > **Import Flows**.
- Have a look at the video explaining how to build this flow *http://youtu.be/GlwDS8kvnvw*.

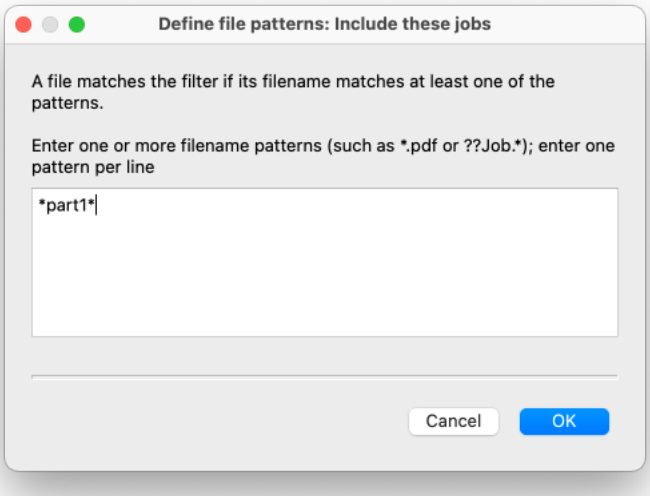
4.6.1. Exercise 2: Solution

This topic explains how to duplicate a flow and change the sorting method from sorting based on file type to sorting based on file name pattern.

In this example, if the file name contains *Part1* (or **part1**), it should be moved to the *PDFs* folder; all other files should be moved to *All other files*.

1. Duplicate *Tutorial 1 Flow*.
   a. In the Flows pane, click *Tutorial 1 Flow*.
   b. Right-click and select **Duplicate flow**.
2. Rename the flow.
   a. In the Properties pane, select **Name**.
   b. Replace Tutorial 1 Flow [Copy] with `Tutorial 1B flow`.
3. Define the new settings for sorting.
   a. Select the connection between *Sort for PDF* and *PDFs*.
   b. In the Properties pane, click the **Include these jobs** field.
   c. Click > and select **Define file patterns** from the pop-up menu.
   d. In the **Define file patterns: Include these jobs** dialog, type `*part1*` and click **OK**.

      The asterisk (*) is a wild card character. The case of the characters is not taken into account; **part1** will match *Part1*, *part1*, *PART1* and so on.



4. Check your results.
   a. Save and activate the flow.
   b. Add relevant input files, for example the two tutorial 1 PDF files.
   c. Check the content of the *PDFs* and *All other files* folder (in the Jobs pane).

   Job_Part1.pdf should be routed to the *PDFs* folder; Job_Part2.pdf should be routed to the *All other files* folder.

5. Working with Switch

This part of the QuickStart explains some more advanced topics, such as working with sample jobs, submitting job folders and passing data from one flow to another.

5.1. Using embedded metadata and file information

Switch allows you to use job information that is *embedded inside a job*, as part of the file, for example within XMP metadata, EXIF or IPTC tags. You can use this information to sort jobs, or use it as a reference in e-mail messages.

Note: Switch also supports metadata datasets stored as *external files* associated with the job. If this is XML, XMP or JDF metadata, then Switch offers convenient access to the metadata file content. For other file types (TXT etc.), script expressions can be used to access the file content.

Some examples of embedded metadata

- Number of pages
- Author
- Creation date
- Paper type
- ...

Example use cases

To decide whether or not a job must be sent to an ink optimizer, you can use the information about the paper type (coated versus uncoated) embedded inside the job; to sort jobs based on quantity, you can use the information about the number of copies...

If you want to send an e-mail notification to the customer, you can either manually enter the customer's e-mail address, or you can extract the customer's e-mail address from the job. You can also refer to the customer's reference number, or other relevant metadata.

Note: If the job was submitted via e-mail, the sender's e-mail address is automatically stored in the metadata dataset, associated with the job. So you can later extract this address to send e-mail notifications.

Variables

In Switch, metadata can be accessed by means of **variables**.

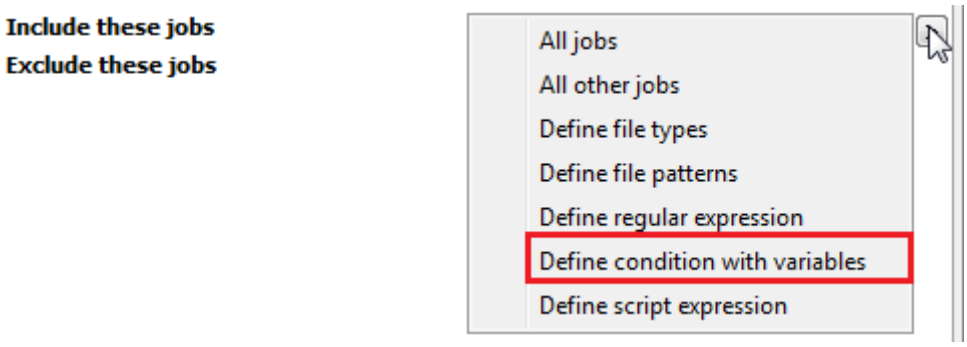
There are two types of variables:

- Switch variables, which are not related to a particular job, such as [Swich.FlowName], [Switch.Language], [Switch.ServerName] ...
- Job-related variables, such as [Job.Size], [Job.EmailAddress]...

When jobs are being processed, these variables are replaced with actual values. To see these variable values, you should run a "sample" or trial job. Refer to *About sample jobs* on page 43.

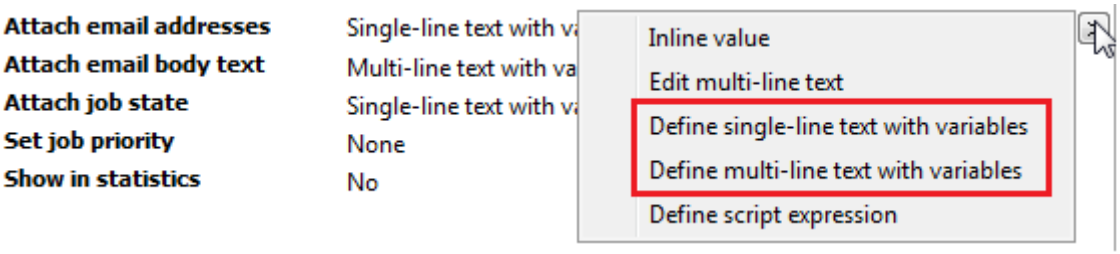
How to use embedded metadata in Switch

- If you want to use metadata to sort jobs, you must select a Connection flow element and exclude or include jobs using **Conditions with variables**.



Defining a condition with variables on page 45

- If you want to use metadata in e-mail notifications, you must select a flow element that supports attaching e-mail notifications to the job (e.g. Folder element) and select **Define multi-line or single-line text with variables**. The attached e-mail information (addresses, body text) can later be used by the Mail send tool to send the e-mail notifications.



Defining text with variables on page 47

5.1.1. About sample jobs

Sample jobs are *trial jobs*.

If you have used variables to configure conditions (for example to sort or rename jobs) or to define text (for example to customize e-mail notifications), sample jobs allow you to check the actual *values* of these variables for a particular job.

Note: Switch can only display variable values if the flow contains at least *one* valid sample job.

Sample jobs are also useful to check what's going on at each step of the flow.

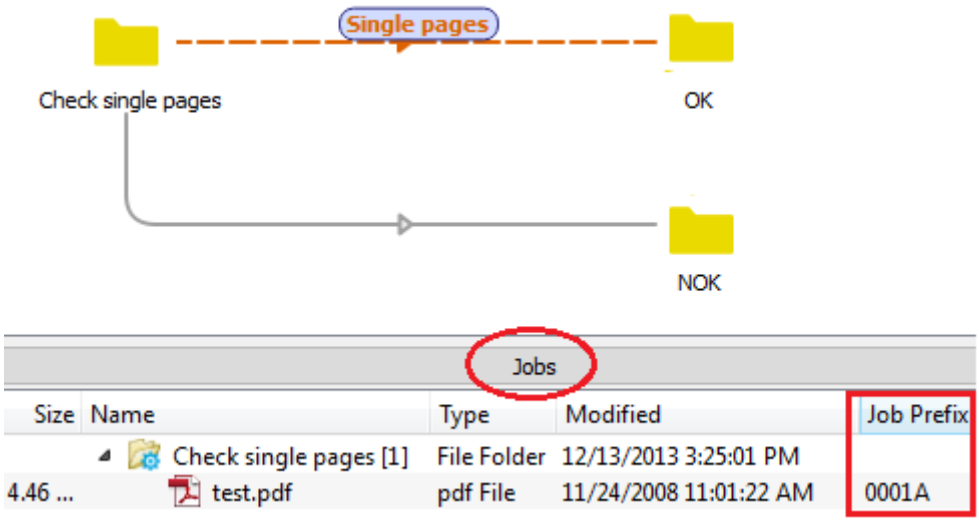
How does it work?

Once you have designed a flow, you must set one of the connections, before the end of the flow, on hold. When you activate the flow and input a job to the flow, the job will remain in the folder just before the “on hold” connection, and you will see it appear in the Jobs pane.

Note: As soon as a job is submitted to Switch, it receives a unique name prefix. Switch uses this prefix to identify jobs. Note that only jobs receive a prefixed name; files inside a job folder (e.g. an InDesign folder) do not receive a prefix.

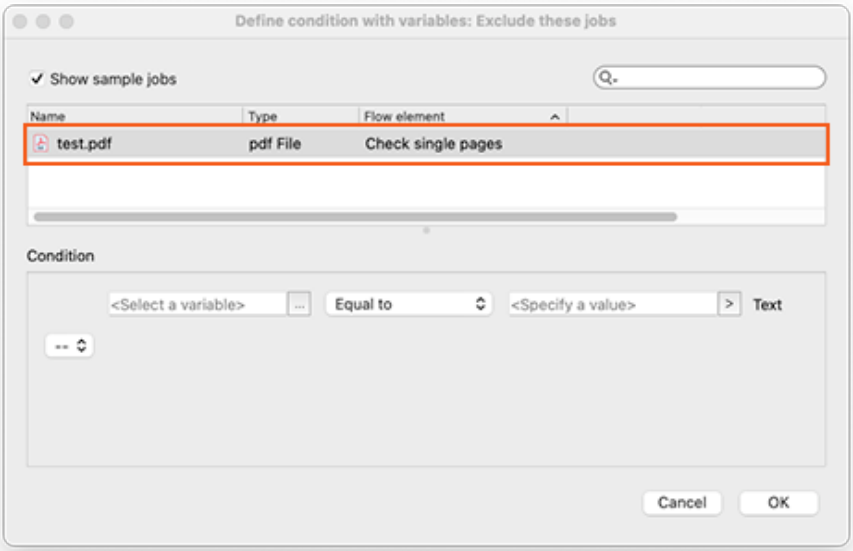
Prefixes can be stripped at the moment the job reaches the flow output folder (i.e. folder without any outgoing connections). When the prefix is stripped, the job is considered processed and Switch has no control over this job anymore.

Example



In the above example, the *Check single pages* folder element contains 1 file (test.pdf with prefix 0001A).

When you now click the **Inspect jobs** button in the toolbar or when you open an editor that supports variables (e.g. if you are selecting the Connection property **Include these jobs**), you will see that the sample jobs are available in the dialog, and can be used to define conditions for sorting the incoming files.



5.1.2. Creating a sample job

A sample job allows you to see sample variable values in a flow, for example to make it easier to define conditions for the connections or text/e-mail addresses that will be used in e-mail notifications.

For more information, refer to *About sample jobs* on page 43.

To create a sample job

1. Create and design the flow.
2. Save and activate the flow.
3. Put a connection at the end of the flow on hold.
4. Place test jobs in the flow and let them process to the desired stage.
5. Deactivate the flow.

The sample jobs are visible in the Jobs pane. They have a unique prefix. When you click the **Inspect jobs** button in the toolbar or choose the **Flow** > **Inspect jobs** menu option, you will see the sample jobs at the top of the property editor. This is also the case if you open a property editor that supports variables.

5.1.3. Defining a condition with variables

Variables allow you to use information embedded inside a job, and use this information to define conditions for example for including or excluding jobs. Conditions always consists of a variable, an operator, and a value (this can be a fixed value or another variable).

For example, if you want to sort jobs by the number of pages they contain (more or less than 100 pages), you should define conditions such as "[Number of pages] <= 100" (for the first connection) and "[Number of pages] > 100" (for the second connection).

To define a condition with variables

1. Select a Connection element.
2. In the Properties pane, click **Include/Exclude jobs** and select > **Define condition with variables**.
3. Select the sample job for which you want to see the sample values for variables.

   To be able to see the sample values, you need at least one valid sample job. Refer to *Creating a sample job* on page 45.
4. Define the condition, starting with the first element (always a variable).
   a. Under **Condition**, next to the first field at the left, click ...
   b. Search for the variable you need.

      Select a group (from the first column), and a variable belonging to that group (from the second column). In the third column you will find information about the selected variable and (at the bottom) the value of that variable as found in the sample job (if the variable is job-related).

      Note: If the variable is not job-related (like Switch.FlowName), the sample value of the variable will be the same, regardless of which sample job you select.

      For example, the variable "Number of pages" can be found in the group Stats.

      Depending on the selected variable, you may have additional options (displayed at the right), e.g. in case of dates, to define the format of that date.
   c. Click **Insert variable**.
      The **Text with variables** field (below the columns) shows the selected variable.
   d. Click **OK**.
5. Now select an operator from the list (next to the selected variable).
   For example: Equal to, Contains, Matches, ...
6. To enter a value, click > (next to the second field).
   - To enter a fixed value, select **Inline value** and type the required value in the text field.
   - To enter a variable value, i.e. a variable, select **Define single-line text with variables** and proceed as explained in step 4.

   The **Sample value** indicates whether or not the sample job matches the defined condition.

   For example, if the sample job has 20 pages and the condition states that *Number of pages > 100* , the value in this field will be "false".
7. To add more conditions as required, click ---- and define another condition (repeat steps 4-6).
8. Click **OK**.

The value of the **Include/exclude these jobs** property is set to **Condition with variables defined**.

5.1.4. Defining text with variables

Variables allow you to use metadata information for a job, and use this information (for example the customer or its reference number) in e-mail notifications.

To define text with variables

1. Select a flow element that supports attaching e-mail information, such as the Folder element.
2. In the Properties pane, click **Attach email addresses** or **Attach email body text** (depending on what you want to configure).
3. Select ... > **Define multi-line/single-line text with variables**.
4. If a dialog pops up, type the required text or e-mail addresses, and click **Define variables** to insert a variable.

   If you selected **Define single-line text with variables**, no dialog pops up. Proceed with the next step.
5. Select the sample job from which you want to see sample values for variables.

   You need at least one valid sample job. Refer to *Creating a sample job* on page 45.
6. Search for the variable you want to insert:
   a. Select a group (from the first column).
   b. Select a variable belonging to that group (from the second column).
   In the third column you will find information about the selected variable and (at the bottom) the value of that variable as found in the sample job. Depending on the selected variable, you may have additional options (displayed at the right), e.g. in case of dates, to define the format of that date.
   c. Click **Insert variable**.
   The **Text with variables** field (below the columns) shows the selected variable.

   Note: You can put more variables in this 'text with variables' field as well as any extra text. When the jobs will be processed in this flow, the variables will be replaced with their actual values. For example, a line like "The [Job.NameProper] has size [Job.Size] bytes" will be replaced with something like "The testfile has size 5412 bytes" and this new line will be used as the value of the property (for example, attached as e-mail body if the corresponding property is involved).

   d. Click **OK**.
7. If you selected **Define multi-line text with variables** in step 3, to insert more variables, repeat steps 4 to 6.

   If you selected **Define single-line text with variables**, all variables must be inserted at once.

8. To close the dialog as required, click **OK**.

5.1.5. Checking variables for a particular sample job

To check the value of a variable for a particular job

1. Create a sample job.

   See also *Creating a sample job* on page 45.

2. Do one of the following:

   - Click the **Inspect jobs** button in the toolbar.
   - Choose the **Flow** > **Inspect jobs** menu option.

   Make sure that the flow is deactivated, otherwise the **Inspect jobs** option/button will be grayed out.

   The Inspect jobs dialog pops up. In the upper part of the screen, all jobs that are present in the flow are shown.

3. Select the job that you want to inspect.

4. Select the variable you need by selecting the appropriate item in each column.
   For example, if you want to check the date the job was processed by Switch (represented by the Switch.Date variable):

   - In the first column (Groups), select Switch.
   - In the second column (Switch variables), select Date.
   - In the third column, enter the format of your choice, e.g. dd.MM.yyyy

   The value is shown in the lower part of the third column. If there's no value specified, you'll see the string 'Sample value'.

5.1.6. Exercise 3: Sorting files by information contained within the PDF file

Instruction

Duplicate the flow you created in exercise 1 and change the sorting method; instead of sorting based on file type or file name pattern (exercise 2), now the input should be sorted on information from within the PDF file. In this example, only documents with a trim box size of 144 x 252 pixels should be routed to the PDFs folder.

Note: Other information that could be used to sort files is for example: page width and height, page count or color model used.

This method can be useful to confirm or use information that is native to the PDF files you're processing.

For example, if you have a workflow for business card production, you may want to confirm the files entering the workflow are business card size. This would allow you to look at the actual size defined within the file and confirm it's correct before processing.

Test files

Download the test files: *http://www.enfocus.com/manuals/Extra/Switch/Switchtutorial.zip*

Solution

- Review the *step-by-step solution*.
- Check the result in your own copy of Switch. To do so, import Tutorial 1C Flow.sflow (included in the zip package, under Tutorial Flows) by selecting **Flows** > **Import Flows**.
- Have a look at the video explaining how to build this flow *http://youtu.be/GlwDS8kvnvw*.

5.1.6.1. Exercise 3: Solution

This topic explains how change the sorting method from sorting based on file type to sorting based on variables.

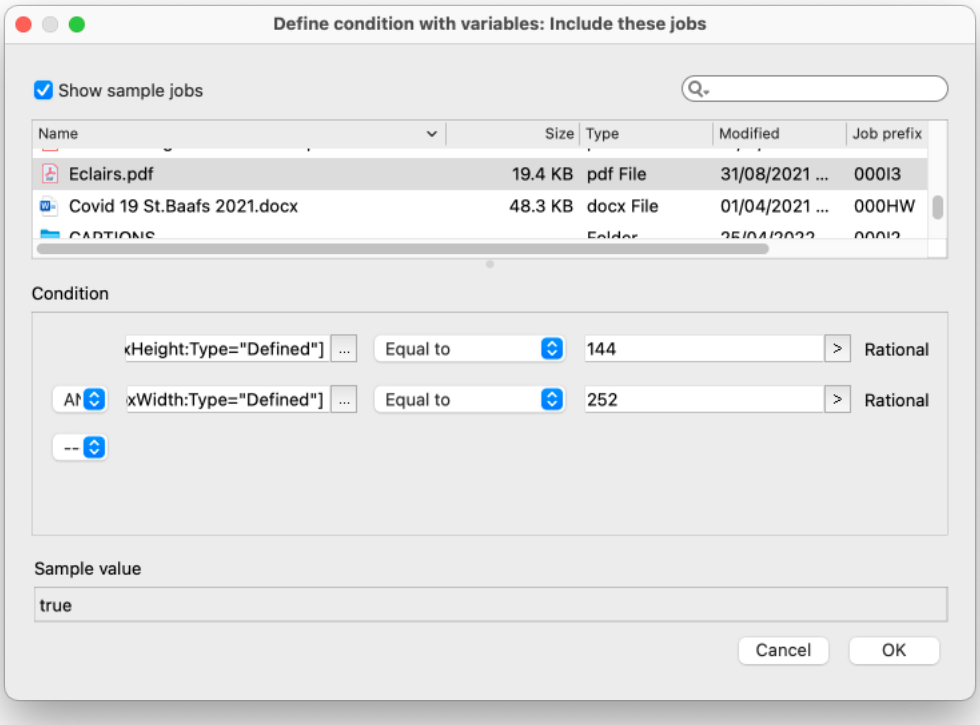
In this example, only files with a trim box size of 144 x 252 pixels should be moved to the *PDFs* folder; all other files should be moved to *All other files*.

1. Duplicate *Tutorial 1 Flow* and name it `Tutorial 1C flow`.
2. Set the connection between *Sort for PDF* and *PDFs on hold*.
   a. Select the connection between *Sort for PDF* and *PDFs*.
   b. Right-click and select **Hold**.

      Alternatively, you can set the Connection property **Hold jobs** to **Yes**.

      This stops the flow and holds the input in the *Sort for PDF* folder. This will allow Switch to use this PDF as an example when defining a condition with variables.
3. Save and activate the flow.
4. Add a PDF file (e.g. *Job_Part1.pdf*) to the flow.
5. Once the file has been moved to *Sort for PDF*, click

to stop the flow.
6. Define the sorting parameters.
   a. Select the connection between *Sort for PDF* and *PDFs*.
   b. In the Properties pane, select the **Include these jobs** field.
   c. Click and select **Define condition with variables** from the pop-up menu.



In the **Define condition with variables** dialog the test file is listed (as shown above).

d. Under **Condition**, next to the first field, click ... to edit the variable parameters.
The **Define text with variables** dialog lists all the variables available for selection.

e. Select the file at the top of the **Define text with variables** dialog and set the variable condition as follows:

1. From the **Groups** column, select **Stats**.
2. In the **Variables** column, select **TrimBoxHeight**.

   Note that the values in the column to the right change as you make your selection.The value of the selected variable in the test file (in this example: the height of the trim box in Job_Part1.pdf, i.e. 144 (pixels)) is displayed in the bottom part of the 3rd column.
3. Click **Insert variable**.

   The **Text with variables** field displays the variable that will be used for sorting the input files, in this example: [Stats.TrimBoxHeight].
4. Click **OK**.

f. In the **Define condition with variables** dialog, select **Equal to** and type `144`.
You have defined the first condition.

g. To add a second condition, click ---- and select AND.

h. Repeat the previous steps, to define an additional condition, i.e. set the required trim box width to 252.

i. Click **OK** to complete the setup.

7. Check your results.
   a. Select the connection between *Sort for PDF* and *PDFs*.
   b. Right-click and select **Release**.

      Alternatively, you can set the Connection property **Hold jobs** to **No**.
   c. Save and activate the flow.
   d. Drag and drop Job_1.pdf and Job_2.pdf into the *Input 1* folder within the flow.
      Job_1.pdf is moved to the *PDFs* folder and Job_2.pdf is moved to the *All other files* folder.

5.2. Working with job folders and subfolders

As explained earlier, Switch accepts both files and folders (such as InDesign folders) as input, and moves them along the flow as one entity. However, sometimes single files that have to be processed as separate files are also submitted in a hierarchy of subfolders, for example because the customer sorts them by project or by date.

Switch cannot distinguish between real job folders (to be processed as one entity) and files in a subfolder hierarchy (to be processed as separate files), unless you use one of the following flow elements dedicated for working with hierarchy structures:

- The Ungroup flow element
- The Submit hierarchy flow element
- The Set hierarchy path flow element
- The Archive hierarchy flow element.

5.2.1. The Ungroup flow element

The **Ungroup** element, used in combination with the **Assemble job** element, allows you to process files separately, while keeping track of their original place in the folder structure.

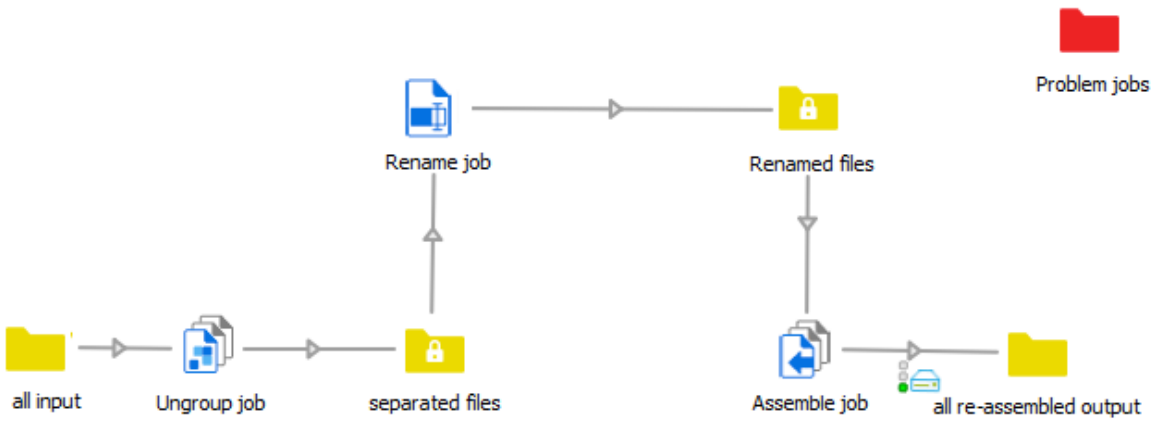
How does it work?

1. The **Ungroup** element, placed at the beginning of the flow, disassembles the input files that enter the flow in a particular subfolder structure into separate files.
2. Each of these files is processed separately (depending on the elements in the flow).
3. At the end of the flow, an **Assemble job** element is used to re-assemble the files into a job folder that is identical or similar to the incoming job folder.

Note: The **Assemble job** flow element offers different ways (*schemes*) for re-grouping the processed jobs. If you want to restore the original folder structure (=remembered by the Ungroup flow element), you should set the **Scheme** property to **Ungrouped job**.

The **Subfolder levels** property is another important property. To make sure that all subfolders are restored, we recommend entering a very high value (e.g. 999).

Example

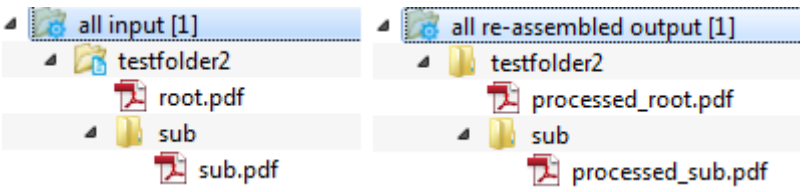


In this example, the input is:

- First ungrouped
- Then renamed
- Finally re-assembled

We need so many intermediate folders, because only folder elements can be interconnected directly; between two non-folder elements, you need to add at least one folder element.

Below you can see the result of this flow: all files have been processed separately (i.e. the file names have changed), but the folder structure is still the same.



Note:

A job cannot be reassembled until all the files for that job are available. For example, if some of the input files are sent to the **Problem jobs** folder, the job cannot be reassembled!

5.2.1.1. Exercise 4: Ungrouping and regrouping a folder with multiple files

Instruction

Create a new flow that supports file folders with multiple input files in subfolders. Sort the input files by file type; PDFs should be sent to one folder (*PDF*); all other files should be sent to another folder (*Other Files*). Then collect all files again in one folder and make sure the original folder gets restored. Use a sample job to check how the job folders are ungrouped.

Note: Ungrouping and reassembling folders helps you to save time, because you don't need to extract the files manually. This is useful if a folder hierarchy contains different file types that each require specific processing. For example, if you want to convert all images in an InDesign package to CMYK, you can sort out the images, process them using Photoshop (with the Photoshop app), and finally restore the original package, without any manual intervention.

Test files

Download the test files: *http://www.enfocus.com/manuals/Extra/Switch/Switchtutorial.zip*

Solution

- Review the *step-by-step solution*.
- Check the result in your own copy of Switch. To do so, import Tutorial 2 Flow.sflow (included in the zip package, under Tutorial Flows) by selecting **Flows** > **Import Flows**.
- Have a look at the video explaining how to build this flow *http://youtu.be/0Mxqci8oCuM*.

Exercise 4: Solution

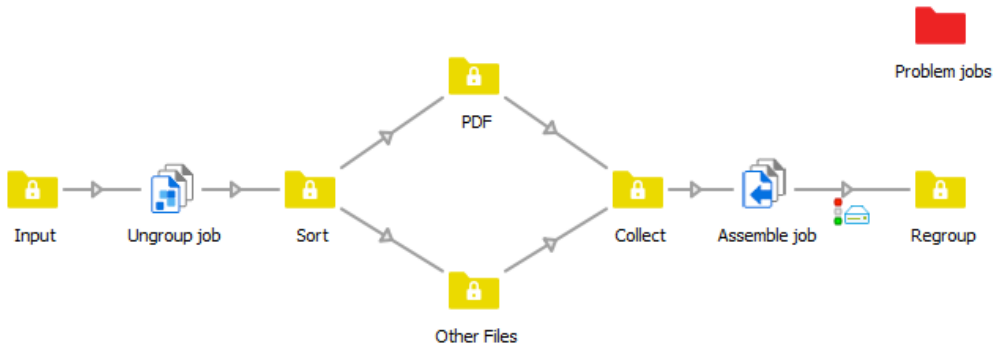
This topic explains how to group and ungroup a job folder.

1. Create a new flow (*Tutorial 2 Flow*) with an input folder (called *Input*).
2. From the Flow elements pane, add the Ungroup job element to the right of the Input folder.

   No settings are required. The job folders that flow through this element will be ungrouped into their individual files. Switch will automatically remember the structure and add it to the files as private data, so that they can be reassembled later if needed.
3. Add the following flow elements:
   - 4 job folders (Sort, PDF, Other files, Collect)
   - 1 Assemble Job flow element
4. Define settings to reassemble the job, This will tell the flow element to look for complete jobs that were "Ungrouped" before reconstructing them.
   a. Select the Assemble Job flow element.

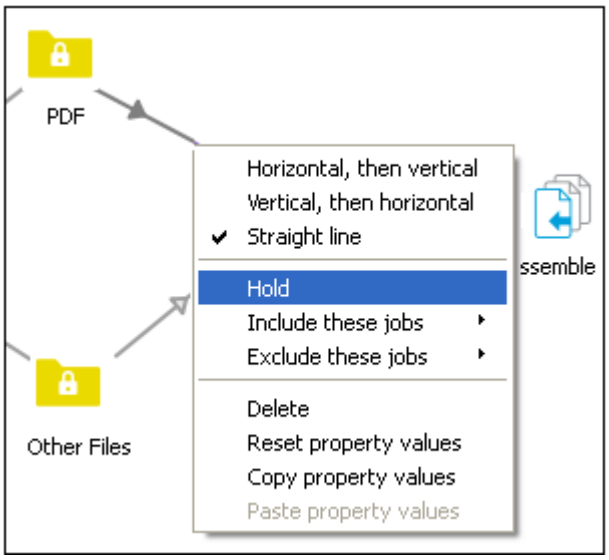
b. In the Properties pane, select the **Scheme** property and set its value to **Ungrouped job**.
c. Change the **Subfolder levels** property to `2`, so that it reassembles the job folder with up to two subfolder levels. If the original job folder contained less levels, the extra level will be ignored.

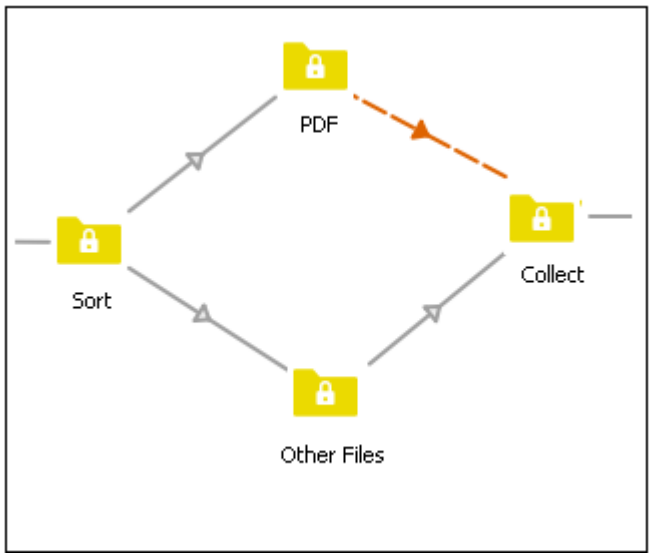
5. Add a new folder called `Regroup` to the right of the Assemble job flow element.
6. Connect all the elements (see screenshot).



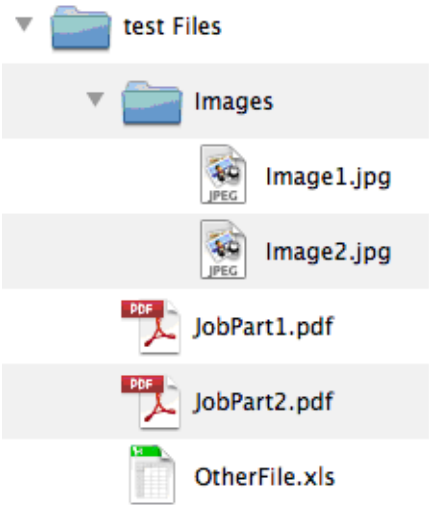
7. Change the connection properties to sort for PDFs (see exercise 1).
8. Check your results.

   Before this flow is activated, put one of the connections on hold, so that you can see how the job is disassembled and reassembled. The connection changes to a dashed line (see below).





a. Save and activate the flow.
b. Drag and drop the entire job folder, *Tutorial Job Folder* into the Tutorial 2 input folder. Note that the job folder is constructed as follows:



When the job processes, the number of files in the *PDF* folder increments to 2 and the *Collect* folder increments to 3.

c. Click each folder and review the Jobs pane to see how the job folder has been ungrouped.

d. Right-click the connection between the *PDF* folder and the *Collect* folder and select **Release**.
This will allow the PDF files to move forward in the flow to be reassembled. Note that the job is not reassembled until all the files for that job are available to reassemble.

e. Now review the *Regroup* folder.
The original folder structure has been restored.

5.2.2. The Submit hierarchy flow element

The **Submit hierarchy** element allows you to process files that are stored in a folder structure with different levels, and to remember the original location of each of these files. Different from the Ungroup element (which ungroups all files in a folder structure), you can configure this element to only pick up particular files in particular subfolders.

How does it work?

Switch picks up the required files, based on the properties configured for the Submit hierarchy element. The main properties are:

- The **Path** to the hierarchy root: Indicates the highest level where Switch must start searching for files or folders to be processed.
- The **Subfolder levels**: Indicates how many levels deep Switch must search for new files or jobs.

  Note that, if the specified level contains another subfolder, this subfolder will be considered as one job, i.e. it will be processed as one entity, and not as a separate job.

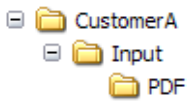
  Tip: If you are not sure about the number of levels, or if you want all files to be processed separately (regardless of their nesting level in the hierarchy), set the **Subfolder levels** property to a very high value (for example: 999).

- The **Process these folders** property: If not all folders on the selected level should be processed, you can set this property to **No** and use the following fields to include or exclude particular folders.
- **Attach hierarchy info**: By default, once the files have been processed, they are all placed in the same output folder, at the highest level, unless you set **Attach hierarchy info** to **Yes**. This ensures that the original location of the job in the hierarchy is stored with the file (in a so called “internal job ticket”), so that it can be used to recreate the hierarchy. Note that this property is available for other flow elements as well.

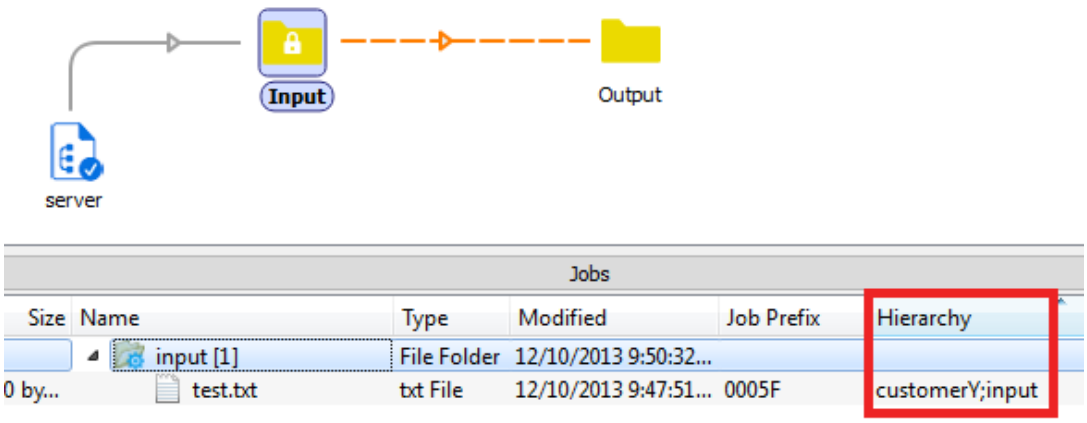
  Thanks to this mechanism, you can "on the fly" (so while the job is passing different flow elements) construct the path in which the processed job will be placed.

Hierarchy location path

The hierarchy information is stored as a hierarchy location path, consisting of one or more segments, each segment representing the name of a (sub)folder in a nested folder structure. The first segment represents the top-level folder. For example, the folder structure below is stored as a hierarchy location path consisting of the segments *CustomerA*, *Input* and *PDF* (in that order).



Tip: Use a sample job to see how the saved hierarchy location path looks like. The hierarchy is shown in the Hierarchy column of the Jobs pane.



The Hierarchy column is not by default available. To display this column, proceed as follows:

1. In the Jobs pane header, right-click one of the column headers and select **Show columns** > **Column1**.The new column (Column1) is now visible in the Jobs pane.
2. Right-click the Column1 header and select **Set column header**.
3. Type `Hierarchy` and click **OK**.
4. Right-click the Hierarchy column header and select **Set column value** > **Define text with variables**.
5. Select **Job** (from the first column) and **Hierarchy** (from the second column) and click the **Insert variable** button.
6. Click **OK**.

5.2.3. The Archive hierarchy flow element

The **Archive hierarchy** element allows you to move processed files into a subfolder hierarchy (instead of a flat structure, with all files in one root folder).

This output folder structure can be the subfolder hierarchy that was used to deliver the jobs (via a Submit hierarchy element), or a different subfolder hierarchy, for example based on which routes the job took in a flow. For example, you could move all jobs that were processed successfully to a subfolder *OK*, and files with problems to a subfolder *Not OK*.

How does it work?

The information needed to place the job in the appropriate location is retrieved from the job's internal job ticket. The hierarchy information is empty by default. It is created if the **Attach hierarchy information** property of a flow element is set to **Yes**; if the hierarchy information was not stored in the Submit hierarchy element, it is not available, hence it cannot be used to restore the original folder structure.

Note: Do not forget to set the **Subfolder levels** property!

5.2.4. The Set hierarchy path flow element

The **Set hierarchy path** element allows you to modify the hierarchy location path (stored in the internal job ticket). This is useful to organize processed jobs in a folder hierarchy, for example based on the result or the date of processing.

How does it work?

This element provides particular *actions* to change the hierarchy location path. You can add, remove, or reverse segments (i.e. parts) of the location path. Note however that you cannot combine different actions in one **Set hierarchy path** flow element. Hence, you may have to combine different elements of this type in order to build the new hierarchy path.

Example

- Original hierarchy location path: *Server\CustomerX\Input*
- New path (to be used to store the processed files): *Server\Customer X\Output\dd-mm-yy*

In this example, the highest levels (Server (0) & CustomerX (1)) must remain unchanged; there are two new sublevels; one with a fixed name (=Output (2)), the other with a variable name (indicating today's date) (3).

To create the new location path as in the example, two instances of the Set hierarchy path element are needed:

- Set hierarchy path1 will be used to remove the *Input* segment (level 2) from the location path. This results in *Server\Customer X*.

  Properties:

  - Action: Remove
  - Start index: 2 (subfolder level)
  - End index: 2 (subfolder level)

- Set hierarchy path2 will be used to add two new segments: *Output* (level2) and *today's date*. This results in *Server\Customer X\Output\dd-mm-yy*.

  Properties:

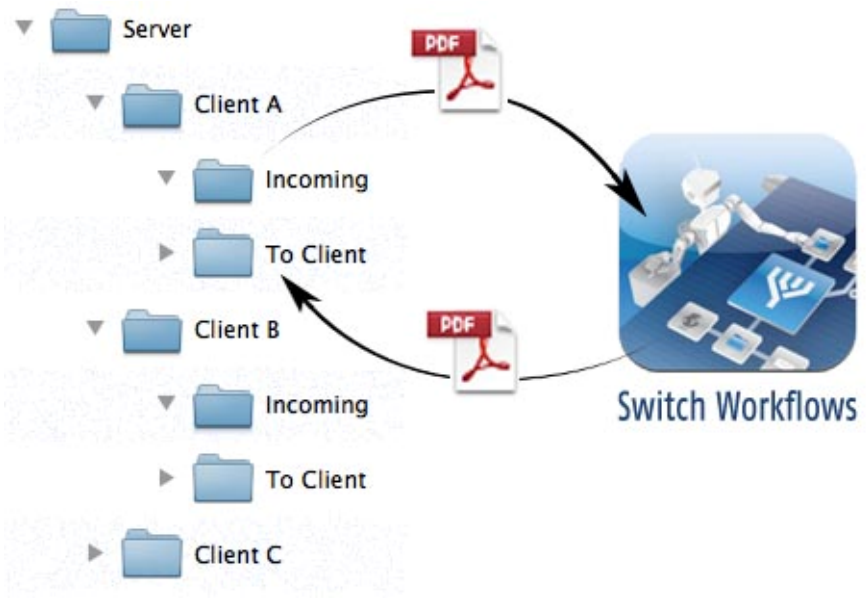
  - Action: Add at the bottom (= the new segment should be attached to the end of the current hierarchy path).
  - Path segment 1: Output (= entered as an inline value)

- Path segment 2: The [Switch.FileCreationDate] variable (entered using the **Define single-line text with variables** editor)

5.2.5. Exercise 5: Receiving jobs from within a server hierarchy

Instruction

Create a new flow that processes all files stored in the subfolders with the name *Incoming* (see image below). Once processed, the files must be moved to a new folder with the name *Completed*, under the appropriate client name.



Note: This type of flow is useful to work with folders with variable names (e.g. client A, client B, ...). If new client folders are added, the flow doesn't have to be changed; jobs will be processed automatically.

Test files

Download the test files: *http://www.enfocus.com/manuals/Extra/Switch/Switchtutorial.zip*

Solution

- Review the *step-by-step solution*.
- Check the result in your own copy of Switch. To do so, import Tutorial 3A Flow.sflow (included in the zip package, under Tutorial Flows) by selecting **Flows** > **Import Flows**.
- Have a look at the video explaining how to build this flow *http://youtu.be/-nu27qeXR-A*.

5.2.5.1. Exercise 5: Solution

This topic explains how to create a flow where:

- A new client job or job folder is recognized within a client input folder (in this example: Server/Client/Incoming).
- The job is processed in Switch.
- The processed files are placed back in an outgoing folder for client review (in this example: Server/Client/Completed).

1. Place *Tutorial 3 Desktop Folder* on your desktop.

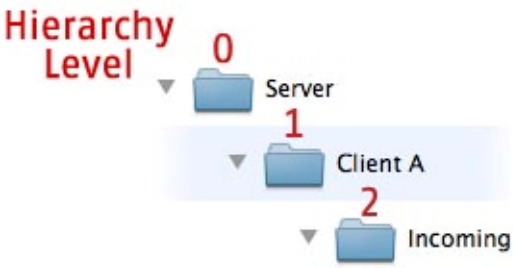
   This will be used to simulate a network server folder structure.

2. Create a new blank flow and rename it to `Tutorial 3A Flow`.

3. From the Flow elements pane, select and drag a Submit Hierarchy flow element onto the canvas.

4. In the Properties pane (with Submit Hierarchy selected), rename the flow element and define the actual location of the input files.

   You should indicate the top-level (level 0), the number of sublevels to be checked by Switch, the folder names that should be included or excluded, and whether or not the folder hierarchy should be remembered.



   In this example, Switch should pick up input from the *Incoming* folder of each *Client* folder (see image).

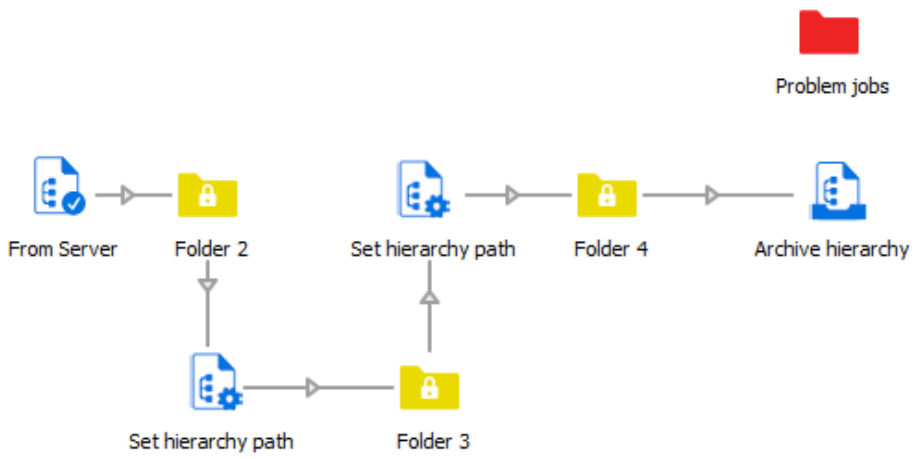
   a. To rename the Submit Hierarchy element to a meaningful name, set **Name** to `From Server`.
   b. To define the top-level directory path, select **Path** and **Choose folder** from the pop-up menu.

      Select the *Server* directory from the *Tutorial 3 Desktop Folder*.
   c. To have Switch look two levels deep, set **Subfolder levels** to `2`.
   d. To have Switch look for folder names starting with the string *Incomin*, but only on level 2:

      1. Set **Adjusted by (rule 1)** to **Excluding folders not named**.
      2. Set **Folder name** to **Define folder patterns** and enter `Incomin*` as value.
      3. Set **On levels** to `2`.
   e. To have Switch remember the complete path back where the job came from, set **Attach hierarchy info** to `Yes`. This information will be added to the job as private data (metadata) within Switch.
   f. Set **Include subfolder levels** to `2`.

      Since this is the same level Switch is looking for files, this will have Switch remember the entire hierarchy. It can be modified later.

5. Mimic the flow below, by adding flow elements and connecting them.



6. Define a new location for the processed files.

   Note: The *Set hierarchy path* flow elements are used to build a new location path, based on the original path. In this example, the original path is Server/Client/Incoming; the new path should be Server/Client/Completed.

   a. In the Properties pane of the first *Set hierarchy path* element:

      1. To remove *Incoming* from the original location path, set **Action** to **Remove**.
      2. To indicate the level of the hierarchy that will be removed (in this example: the second level, being *Incoming*), set **Start index** and **End index** to 2.

         This will change the path from Server - <Client> - Incoming to Server - <Client>.

   b. In the Properties of the second *Set hierarchy path* element:

      1. To add a segment at the end of the hierarchy path, set **Action** to **Add at the bottom**.
      2. To enter a name for the new segment, click **Path segment 1** and select **Inline value** from the pop-up menu.
      3. Enter a name, in this example: `Completed`.

7. Now define the properties for the Archive hierarchy element.

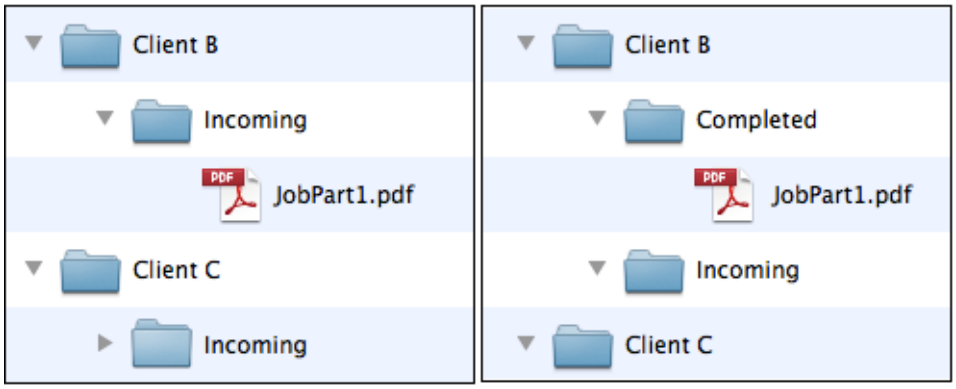
   a. Set the **Path** to the original input location (see the *Server* element in your flow).
   b. Change **Subfolder levels** to 3.

      The Subfolder level indicates the number of subfolder levels to be created. The embedded hierarchy will make sure that the original position is maintained (i.e. that files are stored in the correct Client folder), while taking into account the changes made in "Set hierarchy path" (i.e. so that output files are placed in the *Completed* instead of the *Incoming* folder).
   c. To maintain the file original names, set **Strip unique name** to **Yes**.

      This means that the unique prefix name added to the file name by Switch is removed before placing the job in the archive hierarchy.
   d. To indicate what should happen in case of duplicate file names, choose a value for **Duplicates**, for example: **Overwrite**.

8. Check the result.

a. Save and activate the flow.
b. Place a new job in one of the input folder (e.g. in Server/Client B/Incoming).
   This can be a folder or a single file (any file can be used).
c. Check the output.
   The output should be found in a new subfolder of the same Client folder (e.g. in Server/Client B/Completed).



Note: If you need to access a secure FTP server to receive your files, the procedure is similar. However, you will need to use FTP Receive (instead of Submit Hierarchy) and FTP Send (instead of Archive Hierarchy).

5.3. Connecting flows and retaining hierarchy information

Switch allows you to connect two flows (each doing part of the processing), while remembering the original folder structure, so the files can be placed in the right folder.This is useful if a process is divided over two different workflows, for example the images are processed in one workflow and then rejoined to a layout document so a PDF can be created with the modified images.

How does it work?

To connect two flows, you must make sure that:

- The **ouput folder of the first flow is linked to the input folder of the second**.
- The **Strip unique name** property of the output folder of the first flow is set to **No**. This way, the unique job prefix is preserved when jobs go from the first flow to the second flow.

If the first flow places the processed files in the output folder, these files can be picked up immediately by the second flow.

5.3.1. Exercise 6: Passing hierarchy info to another flow

Instruction

Modify two flows created in the previous exercises (*flow 3A* and *flow 2*) so that:

- The first flow captures and modifies the hierarchy data;
- The second job processes the result of the first flow and uses this hierarchy information to put the files back in the appropriate folder.

Test files

Download the test files: *http://www.enfocus.com/manuals/Extra/Switch/Switchtutorial.zip*

Solution

- Review the *step-by-step solution*.
- Check the result in your own copy of Switch. To do so, import Tutorial 3C Flow.sflow (included in the zip package, under Tutorial Flows) by selecting **Flows** > **Import Flows**.
- Have a look at the video explaining how to build this flow *http://youtu.be/-nu27qeXR-A*.

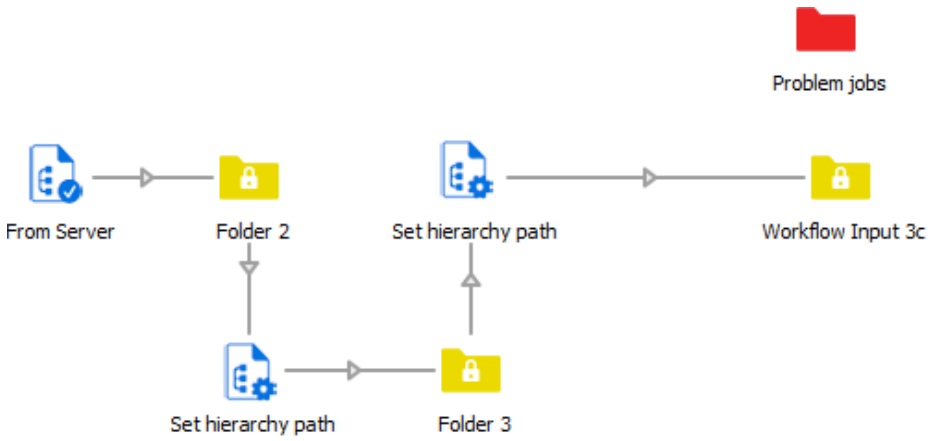
5.3.1.1. Exercise 6: Solution

This topic explains how to pass hierarchy information from one flow to another. This is done by linking the output folder of one flow to the input folder of the second flow, and by adding an Archive hierarchy element to the end of the flow.

1. Duplicate "Tutorial 3A Flow" and rename it `Tutorial 3B Flow`.
2. Duplicate "Tutorial 2 Flow" and rename it `Tutorial 3C Flow`.
3. From *Tutorial 3B Flow*, copy *Archive hierarchy* and paste it into the new *Tutorial 3C Flow*. .
   a. Select "Archive hierarchy".
   b. Right-click and select **Copy**.

      All properties will be retained.
   c. Switch to *Tutorial 3C Flow*, right-click in the canvas area and select **Paste**.
   d. Place the Archive hierarchy element near the end of the flow.
4. Switch back to *Tutorial 3B Flow* and delete the *Archive hierarchy* flow element.
5. Link the last folder in the flow (Folder 4) to an external folder called *Workflow Input 3C*.

   Your *Tutorial 3B Flow* should now look like this:



6. In the Properties pane of *Workflow Input 3C*, set **Strip unique name** to **No**.

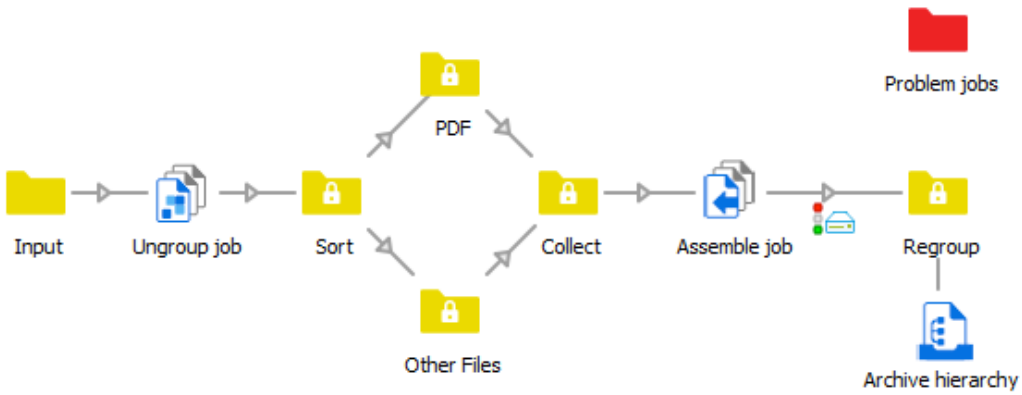
   This avoids that Switch removes private data (such as the hierarchy information) from the files.

7. Switch to *Tutorial 3C flow* for editing.

8. Link the input folder of *Tutorial 3C flow* to the output folder of *Tutorial 3B flow*.
   a. Select the Input folder.
   b. In the Properties pane, click **Path**.
   c. Click ... and select **Choose folder**.
   d. Select the *Workflow Input 3c* folder on your desktop.
      Now when the *Tutorial 3B flow* places a file in this folder, the *Tutorial 3C flow* will detect it for processing.

9. Make a connection between the Regroup folder and the Archive hierarchy element (copied from the *Tutorial 3C flow*).

   This makes sure that processed jobs are placed back in the correct folder.



10. Check the result.
    a. Save and activate both flows.

b. Place the *Tutorial Job Folder* folder in any of the Client *Incoming* folders within the tutorial hierarchy.
If successful, the processed *Tutorial Job Folder* folder is placed in a new subfolder called *Completed*. This should take about 20-30 seconds in total to process.