archiveFlows

Description
archiveFlows takes scheduled backups of every flow on the Switch Server, or of the flows you choose, so a deleted flow, a bad edit or a lost server can be recovered.

Each backup can hold two kinds of copy, alone or together:

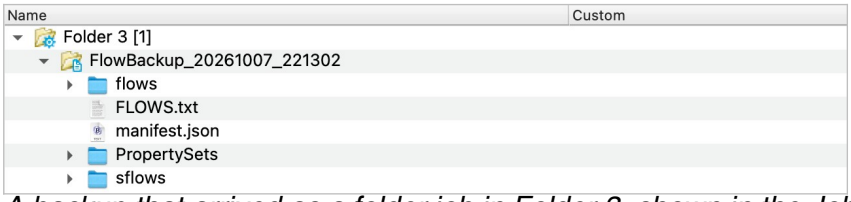
- **One .sflow file per flow.** It has the same format as File > Export Flow and includes the script packages, action lists and images the flow references. Restore a single flow with File > Import Flow, on the same Switch Server or on another one.
- **A raw snapshot.** This is a byte-for-byte copy of the flows folder (and, optionally, the PropertySets folder) from the Switch application data root. Use it to restore every flow of a server at once.

Each backup can also hold a readable HTML page per flow, like Flow > Document flow in Switch Designer: the flow's properties, an image of the flow and the properties of every element.

Backups run daily, weekly, monthly or every few hours, at a time of day you choose. When no flow has changed since the last backup, the scheduled backup can be skipped. Each backup is either kept in a folder, where the oldest backups are deleted automatically, or sent out of the element as a folder job, so the rest of the flow decides where it goes: an archive folder, an FTP server or cloud storage.

Every backup is a folder named FlowArchive_YYYYMMDD_HHMMSS (date and time of the backup) containing:

- **sflows/<flow name>.sflow:** one importable file per flow (.sflow format). Two flows with the same name are told apart by their flow number, e.g. Orders (Flow_12).sflow.
- **flows/Flow_N.xml:** the flow definitions as Switch stores them (raw snapshot).
- **PropertySets/:** files referenced by flows (raw snapshot with Include property sets = Yes).
- **html/<flow name>.html:** one documentation page per flow (Flow documentation (HTML) = Yes). Open html/index.html for a list of all flows in the backup, by group, with links to their pages and .sflow files.
- **FLOWS.txt:** which Flow_N.xml holds which flow, with its last-modified date and .sflow file.
- **manifest.json:** the same list in JSON, with each flow's group, plus the server name, Switch version and any files a flow references that no longer exist.



A backup that arrived as a folder job in Folder 3, shown in the Jobs pane of Switch Designer.

A backup is written under a temporary name and only renamed to FlowArchive_… once it is complete, so an interrupted backup never looks like a finished one. Leftovers of an interrupted backup are deleted at the next run.

Restoring a backup
One or a few flows, from the .sflow files. Use this when a flow was deleted or broken, or to move flows to another Switch Server.

1. Open the backup folder and find the flow in sflows/. The files are named after the flows; FLOWS.txt lists which file holds which flow.
2. In Switch Designer, choose File > Import Flow and select the .sflow file. Switch copies the bundled script packages, action lists and images into its own storage and points the flow at them.
3. The flow is added as a new flow. If the broken version is still in Designer, delete or rename it first so the two aren't confused.
4. Check the flow's settings and activate it.

If the flow is listed under missingReferences in manifest.json, those files did not exist when the backup was taken; select them again in the flow.

All flows, from the raw snapshot. Use this to return the whole server to the state of the backup, for example after a lost or damaged server.

1. Quit Switch Server completely.
2. Open the Switch application data folder (Switch Preferences > Application data; the backup's manifest.json records it as applicationDataRoot).
3. Move the existing flows and PropertySets folders to a safe place.
4. Copy flows and PropertySets from the backup into the application data folder.
5. Start Switch Server. All flows return as they were at the time of the backup.

This replaces every flow: flows created or changed after the backup are lost, so restore single flows from their .sflow files instead. Only flows and the files they reference are restored, not jobs, users, preferences or licenses. Flows refer to their files by full path, so a raw snapshot can only be restored to an application data folder at the same location; on a new machine with a different location, import the .sflow files instead.

Compatibility
Switch 2024 Fall and higher.

Compatibility third-party applications
No third-party application is needed. The app backs up the flows of the Switch Server it runs on.

Application discovery details
No third-party application is located. The app reads the flows from the Switch application data root, which it finds automatically when **Application data root** is set to Default: it uses the folder set in Switch Preferences > Application data, so a data root moved with the Application Data Root Tool is found too. If that setting can't be read, it falls back to the default location:

- macOS: ~/Library/Application Support/Enfocus/Switch Server
- Windows: %APPDATA%\Enfocus\Switch Server

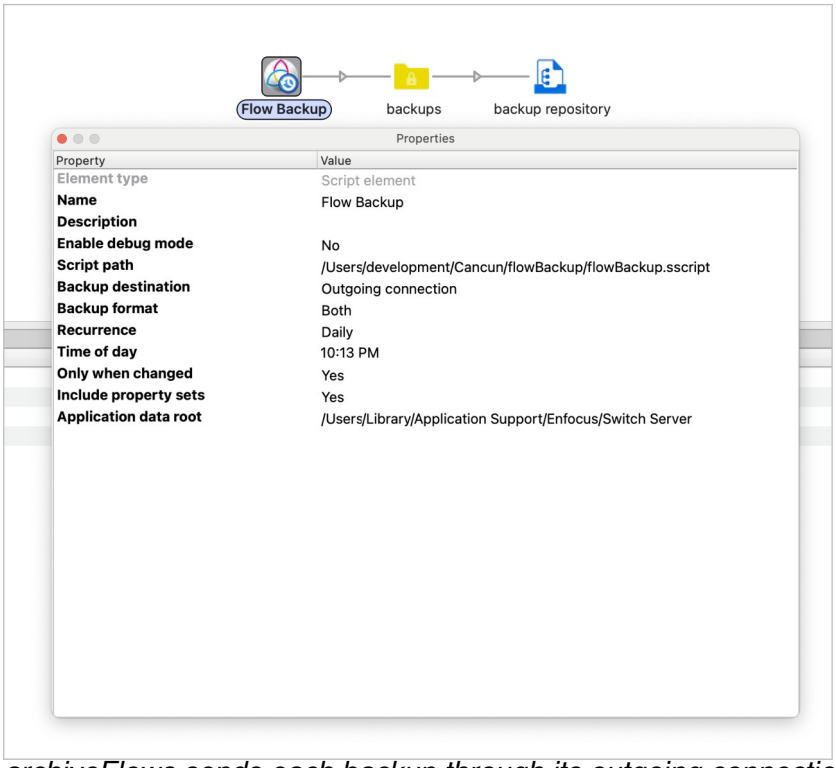
To back up a different Switch data folder, choose it in **Application data root**. When no flows folder is found, the app logs an error that names the path it tried.

Connections
Incoming: none. The element starts each backup on its own schedule, so it can be placed in any active flow, on its own or next to other elements. Backups run for as long as that flow is active.

Outgoing: at least one connection is required; the flow cannot be activated without one.

What the connections receive depends on **Backup destination**:

- **Outgoing connection:** each backup is sent as a folder job named FlowArchive_YYYYMMDD_HHMMSS to every outgoing connection. Connect the element to an archive folder, an FTP Send element, a cloud storage element or any other element that accepts folder jobs. Nothing is kept on the Switch Server.
- **Backup folder:** the backup stays in the backup folder, and every outgoing connection receives a JSON report (FlowArchive_YYYYMMDD_HHMMSS.json, the same content as manifest.json), for example to e-mail a notification or keep a log of backups.



archiveFlows sends each backup through its outgoing connection to the backups folder; the rest of the flow archives it.

Nothing is sent when a scheduled backup is skipped because no flow changed, or when a backup fails. A failed backup is logged as an error and retried every 15 minutes until it succeeds.

Properties detailed info

The element has one set of properties. Properties marked as shown for a specific value appear only when the property they depend on has that value.

Property	Value
Name	Flow Backup
Backup destination	Outgoing connection
Backup format	Both
Recurrence	Daily
Time of day	10:13 PM
Only when changed	Yes
Include property sets	Yes
Application data root	/Users/Library/Application Support/Enfocus/Switch Server

archiveFlows properties for a daily backup at 10:13 PM, sent to the outgoing connection.

Flow elements properties

- **Backup destination**
  Where each backup goes. *Backup folder* keeps backups in the folder set below and deletes the oldest per Backups to keep. *Outgoing connection* sends each backup as a folder job to every outgoing connection and keeps nothing on the server; use it to store backups on another machine or service. Changing this property makes the next scheduled backup run even if no flow has changed.

- **Backup folder**
  Shown when Backup destination is Backup folder. The folder that receives the backups; it is created if it doesn't exist. Each backup is a new subfolder <Backup name>_YYYYMMDD_HHMMSS. Choose a folder on another disk or a network share, so the backups survive the loss of the Switch server's disk.

- **Backup name**
  The start of each backup's folder or job name: <Backup name>_YYYYMMDD_HHMMSS. The default is FlowArchive. When several archiveFlows elements write to the same backup folder, give each its own name: Backups to keep only deletes backups that carry this element's name. Changing it makes the next scheduled backup run even if no flow has changed.

- **Backups to keep**
  Shown when Backup destination is Backup folder. How many of the most recent backups to keep. After each backup, older backups with this element's Backup name are deleted from the backup folder. 0 keeps every backup. Other files and folders in the backup folder are never touched.

- **Flows to back up**
  Which flows each backup holds:
  - *All flows:* every flow on the server, including flows added later.
  - *Selected flows:* only the flows chosen in Flows.
  - *All flows except selected:* every flow except those chosen in Flows; flows added later are included.
  - *Selected groups:* the flows in the groups chosen in Groups, including their subgroups. Flows later added to those groups are included.
  - *All flows except selected groups:* every flow outside the groups chosen in Groups.

  To back up different flows on different schedules, add one archiveFlows element per schedule, each with its own selection and Backup name.

- **Flows**
  Shown when Flows to back up is Selected flows or All flows except selected. Click the button next to the property and choose the flows from the list of flows on this Switch Server. Each flow is listed with its group in front, for example Customers /

Prestone / Orders, so the list is ordered alphabetically by group, then by flow name; flows that are in no group come last. Two flows with the same name in different groups can be told apart. A flow moved to another group stays selected. After renaming a flow, choose it again. A chosen flow that no longer exists is logged as a warning at each backup, and a backup that would hold no flow fails with an error. A raw snapshot then holds only the chosen flows' Flow_N.xml files; to restore it, copy those files back into the flows folder instead of replacing the whole folder.

- **Groups**
  Shown when Flows to back up is Selected groups or All flows except selected groups. Click the button next to the property and choose groups from the Flows pane of this Switch Server. Nested groups are listed as Group / Subgroup, and choosing a group includes the flows in all its subgroups. Groups are matched by name: after renaming a group, choose it again. A chosen group that no longer exists is logged as a warning at each backup, and a backup that would hold no flow fails with an error. As with Flows, a raw snapshot then holds only the chosen flows' Flow_N.xml files.

- **Backup format**
  - *Importable .sflow per flow:* one .sflow file per flow, for restoring single flows with File > Import Flow, on this or another Switch Server. If a flow references a file that no longer exists, its .sflow file is still created, without that file; a warning is logged and the missing paths are listed in manifest.json.
  - *Raw snapshot:* a copy of the flows folder (and of PropertySets, see Include property sets), for restoring every flow of this server at once with Switch Server stopped.
  - *Both:* both of the above in each backup.

  See Restoring a backup (under Description) for both procedures.

- **Flow documentation (HTML)**
  Yes also writes one HTML page per flow into the backup's html folder, modelled on Flow > Document flow in Switch Designer: the flow's properties, an image of the flow, and the properties of every element and connection. Click an element in the image to jump to its properties. Password properties are shown as ********; other text, such as a password typed into a script expression, appears as written. The image is drawn from the flow definition, so it closely follows the canvas but is not a pixel-perfect copy. html/index.html lists every flow in the backup. The pages are for reading only: restore flows from the .sflow files or the raw snapshot. Works with every Backup format. The default is No.

- **Recurrence**
  How often a backup is taken:
  - *Daily:* every day at Time of day.
  - *Weekly:* at Time of day on the Days of week.
  - *Monthly:* at Time of day on Day of month.
  - *Every N hours:* every Interval (hours), starting at Time of day each day.

  When Switch Server is not running at a scheduled time, the missed backup is taken as soon as the flow is active again; several missed backups result in one backup, not several. After the schedule is changed, or when the flow is activated for the first time, the first backup runs at the next scheduled time, not immediately.

- **Time of day (hh:mm)**
  The time of the backup, in the local time of the Switch server, entered as hours and minutes (24-hour clock) like the other time-of-day properties in Switch. The backup starts within a few seconds of the set time.

- **Days of week**
  Shown when Recurrence is Weekly. The days on which to back up, separated by commas, e.g. Mon, Mon,Wed,Fri or Sat,Sun. Full day names such as Monday also work.

- **Day of month**
  Shown when Recurrence is Monthly. A whole number from 1 to 31. In months that have fewer days, a day past the end of the month means the last day: 31 backs up on 30 April and on 28 or 29 February.

- **Interval (hours)**
  Shown when Recurrence is Every N hours. Hours between backups; decimals are allowed (0.5 is every 30 minutes). The sequence restarts at Time of day each day: 6 with Time of day 00:00 backs up at 00:00, 06:00, 12:00 and 18:00.

- **Only when changed**
  Yes skips a scheduled backup when nothing has changed since the last backup. A change is any flow added, removed or edited, or any change to a file that a backed-up flow references (or to the PropertySets folder, for a raw snapshot). A skipped backup is noted in the log; nothing is written or sent. Changing Backup destination, Backup folder, Backup name, Backup format or turning on Flow documentation (HTML) always counts as a change. *No* takes a backup at every scheduled time.

- **Include property sets**
  Applies to the raw snapshot only. *Yes* also copies the PropertySets folder, which holds the script packages, images and other files that flows reference. It is needed for a complete raw restore and makes each backup larger. The .sflow files always include the files their flow references, whatever this property is set to.

- **Application data root**
  Default finds the Switch application data folder automatically: the folder set in Switch Preferences > Application data (see Application discovery details). Choose a folder, or type its path, only to back up a different Switch data folder.

Outgoing connections properties
This app adds no properties to its outgoing connections.

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