Folder apps

Description

This is a bundle of six apps that do interesting things with folders.

- **Filetypes Counter** counts the files in a job folder per filetype and adds these counters and some extra info to the job folder as private data and dataset.
- **Delete Files** deletes files from a job folder.
- **Hot Folder Monitor** checks a certain folder every so often to see if files disappear from the folder. If not, it means that the application that should be processing those files is not running.
- **File Pool Cleanup** allows to remove files from a file pool that are older than a certain number of days.
- **File Sorter and Spacer** puts files inside a job folder in a certain alphabetical order based on a property of the file, and optionally injects them as new jobs spaced apart.
- **Submit Filespec** can be used to submit files from a hierarchy, but only those that match a certain file specification.

Compatibility

Switch 2021 Fall and higher. Windows or Mac OSX.

Compatibility third-party applications

There are no dependencies on third-party applications.

Filetypes Counter

Filetypes Counter counts the files in a job folder per filetype, and adds these counters and some extra info to the job folder as private data and dataset.

For each filetype private data will be added with the number of files.

The name of the private data is built like this: <key>.<filetype>.count

Private data will always be added for all the filetypes you define in the properties, even if there is no file of that filetype, so that you can use this information further in your flow.

The other files will be counted together in <key>.others.count, unless you choose to add separate private data for each filetype found. An extra 'noExtension' filetype will be added if necessary.

Depending on your OS, some invisible files can be present in the job folder, so these special filetypes are always counted as well: startingWithDot, .DS_Store, and thumbsdb.

Extra stats private data will always be added:

- <key>.folders.count: number of subfolders found
- <key>.stats.count: count of all files
- <key>.stats.hidden: count of startingWithDot, .DS_Store, and thumbsdb files
- <key>.stats.visible: count - hidden
- <key>.stats.folderLevels: number of sublevels found in the job folder

A dataset will also be attached to the job with files names and paths on top of the info above. See screenshot on next page.

Connections

Filetypes Counter has incoming connections and a single outgoing connection.
Jobs that are not folders pass unchanged.

Properties detailed info

Properties

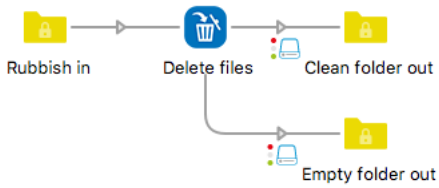
Property	Value
Element type	Filetypes Counter
Name	Filetypes Counter
Description	
Subfolder levels	All
Filetypes	File types defined
Count other found filetypes	Together (others)
Private data key prefix	filetypes
Dataset name	filetypes
Dataset model	JSON

Flow element properties

- **Subfolder levels:** Which subfolder level(s) should be scanned?
  All, Root level only or Custom
  If Custom: From (top level), *considering root level = 1*
  To (bottom level), *must be greater than or equal to From (top) level*
- **Filetypes:** Select the filetypes to count.
  If custom, one per line, format must be of type *.pdf
- **Count other found filetypes:**
  - Together (others)
  - Add separate private data
- **Private data key prefix:** name of private data key prefix, default 'filetypes'
- **Dataset name:** name of dataset, default 'filetypes'
- **Dataset model:** JSON (default) or XML

Sample result

Delete Files



This app deletes certain files from a job folder. This can be done by specifying the files that have to be kept, for example, keep all PDF files and delete the rest, or inversely by specifying the files that have to be deleted, for example, delete all files that do not start with a number.

The specification of files that have to be kept or deleted can be done in three ways: by file types, by file patterns, or by regular expressions. The three methods can be combined.

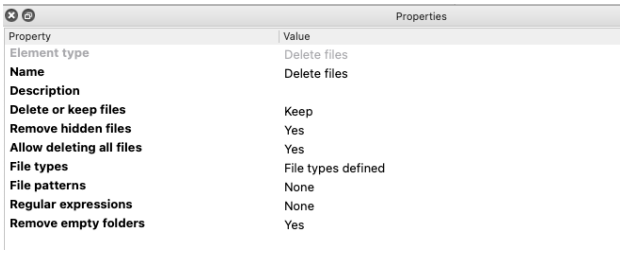
There is an additional property to remove hidden files.

When the job is not a folder it is ignored and passed along the outgoing connection.

Connections

Delete Files has outgoing traffic-light connections: Success and Error. The error connection is used in case the criteria you have defined for deleting the files would delete ALL files from the job folder and the property to allow deleting all files is set to “No”. In all other cases, the job folder is sent along the success connection, also when no files have been deleted.

Properties detailed info



Flow element properties

- **Delete or keep files**: this is a drop-down of “Delete” and “Keep”. It determines whether the files matched by the properties below will be deleted or kept. The default is “Delete”.

- **Remove hidden files:** files that start with a dot are considered hidden files and are not always shown in the Finder/Explorer. When choosing “Yes” they are removed.

- **Allow deleting all files:** when set to “No” (default) the job folder will be sent to the Error connection should the setup be such that ALL files would be deleted from the job folder. Setting the value to “Yes” allows the folder to become empty and it will be sent along the Success connection.

- **File types**: here you define the file types that have to be deleted or kept using the file types dialog. Default: None.

- **File patterns**: here you can define file patterns using wildcards, ? standing for 1 unknown character, and * for any number of unknown characters. There can be multiple file patterns, one per line. Default: None.

- **Regular expressions**: this property works in the same way as the file patterns property, except of course that here you define multiple regular expressions, one per line. Default: None.

- **Remove empty folders**: when set to “Yes” (default: No) the empty folders will be removed recursively, i.e. folders that contain empty subfolders will also be removed.

The three methods can be combined. When the “Delete” option is chosen a file is marked for deletion as soon as it matches one of the criteria. When the “Keep” option is chosen a file is marked for deletion if it matches none of the criteria.

Hot Folder Monitor

Hot Folder Monitor checks a certain folder structure every so often and remembers the list of files that are present in that folder structure. When there are files that have not disappeared the next time around an HTML file is created listing those files. This file can then be used to trigger a mail to alert somebody to the fact that the application that should be processing the files from the folder may not be running. The app also sets the e-mail body to the same contents. This is convenient if you prefer to put the list of files in the mail body rather than attach the text file.

For the HTML-savvy people: there is a title enclosed in <p class='hot-folder-monitor'> and a list of file paths as an unordered list <ul class='hot-folder-monitor'>, so you can add this class to the CSS of the HTML template used in "Mail send" to format the text to your liking.

Some hot folder-based systems have a configuration file in the hot folder and that file will of course always be there. There are three properties with which files to be ignored can be specified.

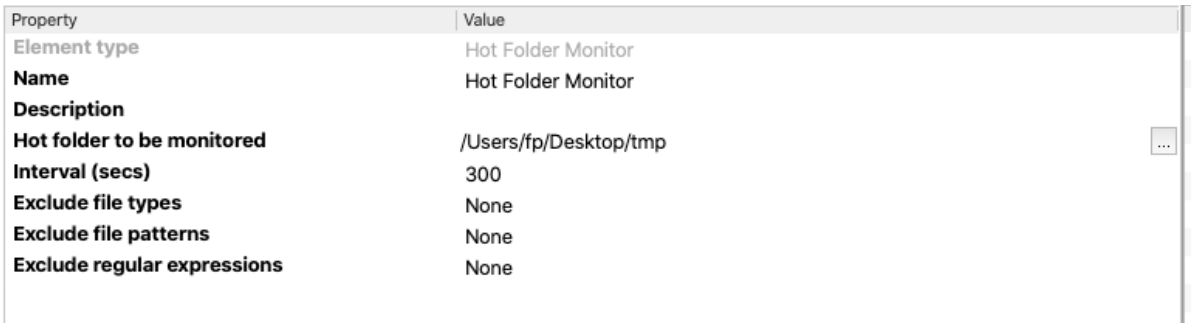
When the app sees that all files have disappeared, no text file is created.

The app checks the hot folder recursively. In other words, when all the hot folders monitored by an application share the same root folder, it is not necessary to create an app instance for every single folder, it is enough to monitor the root folder.

Connections

Hot Folder Monitor does not have any input connections. It has a single output connection along which the text file is sent when necessary.

Properties detailed info



Property	Value
Element type	Hot Folder Monitor
Name	Hot Folder Monitor
Description	
Hot folder to be monitored	/Users/fp/Desktop/tmp
Interval (secs)	300
Exclude file types	None
Exclude file patterns	None
Exclude regular expressions	None

Flow element properties

- **Hot folder to be monitored**: choose the folder to be monitored. There is no default. It is also possible to use a string to define the path. If the path does not exist (it could be removed as the flow is running), the element will go into an fail state and a notification will be sent if that is set up in the Preferences.

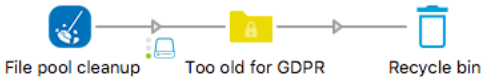
- **Interval (secs)**: make sure to choose a value that is higher than that used by the application that scans the monitored folder. Also allow for some extra processing time to reduce the chance of false alarms. Default: 300. Note that when the application is not running for a longer period the app will trigger the notification every time it runs!

- **Exclude file types**: Default: None.

- **Exclude file patterns**: Default: None.

- **Exclude regular expressions**: Default: None.

File Pool Cleanup



File Pool Cleanup checks a certain root folder every so often and scans it and all its subfolders looking for files that are older than a certain period. These files can be removed from their location and injected into the flow for further processing, e.g. archiving them in a different location, or they can be deleted in situ. One use case for this tool is to clean up the location where you store customer files to be GDPR-compliant.

To avoid files being removed from important locations, the definition of the root folder as / on Mac, or C: on Windows is not allowed! If you want to use other root folders or network drives, you must allow this specifically.

Another safety measure is that you can specify the maximum number of files to be processed. When the limit is passed the files are not removed but instead a log file is created containing a list of the files that should have been removed. During the setup phase it is therefore a good idea to set the limit to 1. This will most probably generate a log file that you can analyze to verify you are using the correct settings. When everything is OK, you can set the limit to 0 which stands for no limit.

There is a choice of selecting files based on the modification date or the creation date, and two properties to define certain files and/or folders that must not be removed.

There is an option to remove empty folders. Note that only folders that are empty when the app runs are removed. Folders that become empty because of the cleanup are not immediately removed, but they will be the next time.

The app can inject the files as new jobs into the flow and delete the original file, or it can also just delete the file without injecting anything. If the strategy is to physically remove the files, the latter choice is better (see further in the properties).

The app can also create a log file, both in the case of success and in the case of errors. The user can define a couple of error conditions (see further in the properties) but deleting a file can also fail when Switch does not have sufficient access rights. In both cases a very simple HTML file is created. The same content is also added as the job's mail body so it can easily be used in a "Mail send".

For the HTML-savvy people: a class is defined for the p, ul and li tags (<p class='file-pool-cleanup-p'>, <ul class='file-pool-cleanup-ul'>, <li class='file-pool-cleanup-li>). This allows you to define those classes in the CSS of the HTML template used in "Mail send" and in this way you can format the text to your liking.

The app can set the hierarchy path of the injected job.

Connections

File Pool Cleanup can be used with an incoming connection or without it. Without it, the cleanup is triggered at regular time intervals as defined in the properties; with it, the cleanup is triggered by an incoming job.

The app has outgoing traffic-light connections, a Data Success one for the files that have been cleaned up from the file pool, a Log Success connection with a logfile that lists all the files that have been removed from the file pool, and a Log Error one to which an error log file is sent, e.g. when a limit has been exceeded or a file could not be deleted. The names of the log files depend on the error and they are self-explanatory.

Properties detailed info

Property	Value
Element type	File pool cleanup
Name	File Pool Cleanup
Description	
Root folder	/Users/fp/Desktop/tmp
Allow root and network folders	Yes
Start time	Custom
Time of day	04:00
Scan interval	1
Unit of time	Days
Remove files older than	31
File date type	Modification date
Unit of time	Days
Remove empty folders	Yes
Ignore files	None
Ignore folders	None
Maximum number of files	0
Delete method	Inject
Maximum file size (GB)	10
Attach hierarchy info	Yes

Flow element properties

- **File pool root folder**: choose the root folder to be cleaned up. There is no default.
    - **Allow root and network folders**: when set to No, there is a check that the chosen root folder is not a drive letter or some folder on a network drive. This is to avoid whole disks being accidentally erased. Note that / on Mac and C: on Windows are never allowed for obvious reasons. Any other choice is at your own responsibility!

- **Start time**: Default: Now
    - **Now**: when the flow starts the cleaning is started immediately and repeated as defined in the Interval property.
    - **Custom**: a time of day can be defined at which the first cleaning will start. When this time is earlier than the moment at which the flow is started, the first cleaning will only take place the next day. It is not mandatory, but it is logical to combine this choice with an interval of 1 day. The app checks every 5 minutes if the current time is later than the expected next run time. This means that the actual run time can be a couple of minutes later than the defined one.

- **Interval**: Default: 1.

    - **Unit of time**: there is a choice of Days (default), Hours and Minutes. When choosing minutes, it is not possible to define an interval value of less than 10.

- **Remove files older than**: Default: 30.
    - **File date type**: this is a drop-down of “Modification date” and “Creation date”. Default: Modification date.
    - **Unit of time**: there is a choice of Days (default), Hours and Minutes.

- **Remove empty folders**: Yes or No, default: Yes.

- **Ignore files**: This property allows the use of the File types and File patterns editors for defining file specifications that should never be cleaned. Default: None.

- **Ignore folders**: This property allows the use of the Folder patterns editor. Default: None.

- **Maximum number of files**: When the number of files eligible for cleanup is higher than this number, the files are not removed, but logged in a file that is sent along the log error connection. Default: 0.

- **Delete method**: Default: Inject
    - **Inject**: the file is injected into the flow and deleted from the file pool. This is interesting if the files must be archived somewhere else. This option comes with two extra properties:
        - **Maximum batch file size (GB)**: when injecting jobs into the flow they take up disk space where the Switch application data root is stored. If the file pool is on a disk that is much larger than the application data root disk it is theoretically possible that the cleaning process fills up the disk bringing Switch to a halt. If the combined file size of the files to be removed is larger than this value, nothing is deleted. If you are in such a case, it is advised to use the Delete option (see below) or to use multiple instances of *File Pool Cleanup* that scan smaller parts of the file pool. Default: 1.
        - **Attach hierarchy info**: when set to “Yes” the hierarchy path to the file that was cleaned up will be added to the job ticket.

    - **Delete**: the file is not injected in the flow but deleted from the file pool. If the cleaned-up files do not have to be archived, but only physically removed, this option is faster and does not have the risk of filling up the application data root disk.

File Sorter and Spacer

There is an element *Sort files in job* that sorts files in a job based on the file name. The sorting is achieved by adding a prefix to the file names inside the job folder. If you have a list of files that are alphabetically ordered like this:
abc_2.pdf
def_4.pdf
ghi_1.pdf
jkl_3.pdf
and you use the number at the end for sorting the files, the result will look like this:
1_ghi_1.pdf
2_abc_2.pdf
3_jkl_3.pdf
4_def_4.pdf
By adding the prefix, the files are also alphabetically sorted in the desired order.

This app works similarly but it cannot only use the file name, but also a file property. The properties currently supported are the file creation date, the file modification date, the file size, the number of pages and the page surface of the first page.

Another difference is that the app allows to sort in ascending or descending order.

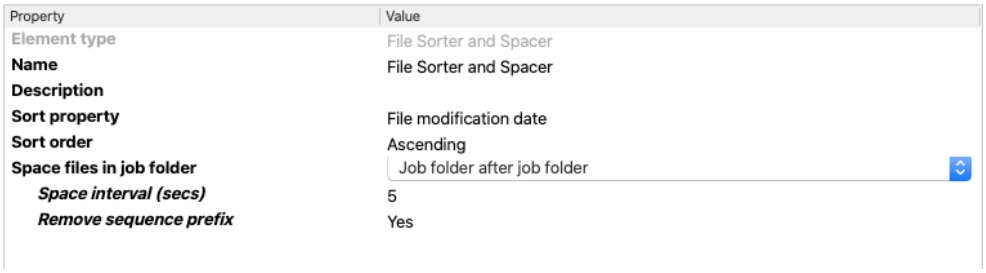
And a final difference is that the app allows to inject the files and first-level folders inside the job folder as individual jobs with a time space in between. This can be interesting when the contents of the job folder must be handed off to a hot folder-based system and you want to ensure that this is done in specific order.

The app only scans the root folder of the job. Subfolders, if any, are treated as files. The sorting on the number of pages and the page surface only works for PDF and images files. Other file types will be treated as having 0 pages and 0 surface, meaning they will come out on top.

Connections

File Sorter and Spacer has incoming connections and a single outgoing connection. Jobs that are not folders pass unchanged.

Properties detailed info



Flow element properties

- **Sort property:** a drop-down list of
  - File creation date
  - File modification date
  - File size
  - File name
  - Number of pages
  - Page surface

  Default: File modification date

- **Sort order**: a drop-down of “Ascending”, “Descending”. Default: Ascending.

- **Space files in job folder**: a drop-down of “None”, “Job folder after job folder”, “Multiple job folders at the same time”. Default: None. When the value is to process job folder after job folder, all files of all waiting job folders trickle through one file at a time. When multiple job folders are processed simultaneously there will be one file from every waiting job folder that is injected as a new job at every space interval.
  - **Space interval (secs)**: the default value is 5.
  - **Remove sequence prefix**: the files in the job folder are sorted by adding a prefix. Setting this option to “Yes” ensures that this prefix is removed when a file is injected into the flow as a new job.

Submit Filespec

Submit Filespec works similarly to *Submit hierarchy*, but of course somewhat differently. *Submit hierarchy* allows you to ignore certain folders, but it always processes all the files in the folders that should be processed. This app allows to define file name characteristics for submitting files, e.g. only PDF files, or only files that start with a number, etc. Contrary to *Submit hierarchy* this app does not allow a level selection, it always searches to the bottom of the hierarchy.

The file name specifications can be defined as file types, file patterns, and regular expressions. All three can be used at the same time: when a file matches one of the criteria, it is submitted into the flow.

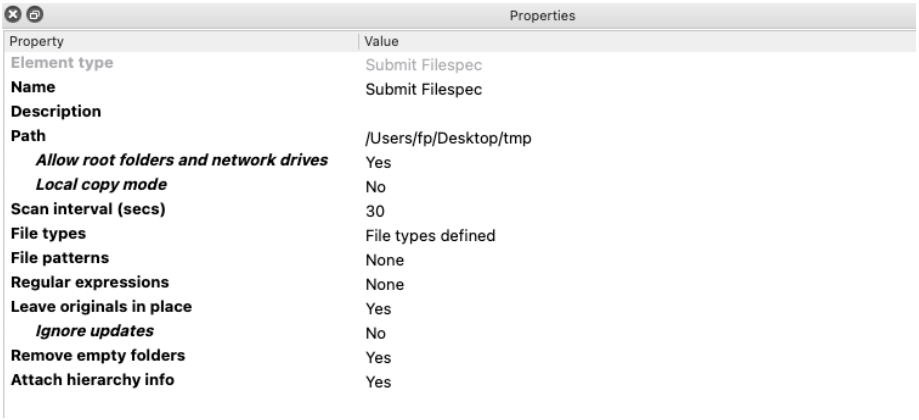
Similar to *Submit hierarchy* this app allows to leave the original files in place without being injected a second time and it also sets the hierarchy of the input file.

Finally, there is an option to remove empty folders. Note that only folders that are empty at the moment the app scans the hierarchy are removed. Folders that become empty as a result of all files in the folder having been submitted are not immediately removed, but they will be the next time the app scans the hierarchy and they are still empty.

Connections

Submit Filespec does not have any incoming connections, and it has a single outgoing connection.

Properties detailed info



Flow element properties

- **Path**: choose the root folder of the hierarchy to be scanned. There is no default.
    - Allow root folders and network drives: when set to No, there is a check that the chosen root folder is not a drive letter or some folder on a network drive. This is to avoid whole disks being accidentally erased. Note that / on Mac and C: on Windows are never allowed for obvious reasons. Any other choice is at your own responsibility!

- **Scan interval (secs)**: Default: 30.

- **File types**: here you define the file types that have to be submitted into the flow using the file types dialog. Default: None.

- **File patterns**: here you can define file patterns using wildcards, ? standing for 1 unknown character, and * for any number of unknown characters. There can be multiple file patterns, one per line. Default: None.

- **Regular expressions**: this property works in the same way as the file patterns property, except of course that here you define multiple regular expressions, one per line. Default: None.

- **Remove empty folders**: Yes or No, default: Yes.

- **Leave originals**: Yes or No, default: No. When set to “Yes” the files are injected into the flow, but they are left in the original location and will not be injected again during later iterations, also when the flow has been stopped and started in the meantime, and also when the file is overwritten.

- **Attach hierarchy info**: when set to “Yes” the hierarchy path to the file that was injected will be added to the job ticket.

What's new in v3

For this version all apps have been ported to NodeJS. At the same time all known feature requests have been implemented as well as some additional functionality.

- Filetypes Counter: the information gathered about the filetypes is now also added as an XML dataset
- File Pool Cleanup: allow network folders, ignore certain files and folders, allow triggering by an incoming job
- Submit Filespec: allow network folders, allow a local copy to check that a file has been correctly removed from its source location before injecting it.
- File Spacer and Sorter: allow file spacing when injecting the files as new jobs.
- Hot Folder Monitor: allow the exclusion of certain files and folders, the hot folder root is now scanned recursively.
- Delete files: there is now a separate property to delete hidden files.

What's new in v4

- Filetypes Counter: there is now a choice of the dataset model, JSON or XML
- File Pool Cleanup: allow the use of an inline text for the path to the root folder. Allow a custom time for starting the scanning, allow deleting the files in situ instead of injecting them into the flow and when injecting them into the flow there is an option to limit the combined size of the files to be injected to avoid the application data root disk from filling up for very large file pools.
- Delete files: when all files were deleted from a folder, the files were not deleted, and the job was sent to the error connection. There is now an option to allow this. Empty folders were not correctly removed when there were multiple levels of empty folders. This is now done recursively.
- Hot Folder Monitor: it is now possible to use an inline text for the path to the hot folder to be monitored and the error handling has been improved. When the hot folder does not exist, the element will not just log a message, but it will go into a fail state so an error notification can be sent (if so configured in the Preferences).
- Submit Filespec: you can now specify that the original files have to be left in their original location with an additional property to ignore updates or not.