

Hold job



Hold job is a default Switch app that offers various time-based schemes for holding and releasing jobs and for distributing jobs across multiple outgoing connections.



Note: When designing a flow, do NOT use folders with *network paths* prior to the Hold job element.

Keywords

Keywords can be used with the search function above the Elements pane.

The keywords for the **Hold job** element are:

- delay
- file
- balancer
- priority
- queue
- distribute

Connections

Hold job allows any number of outgoing move connections and offers additional properties on each of those connections.

Properties

Properties	Description
Element type	The flow element type: Hold job. This property is useful to identify renamed flow elements. It cannot be changed.
Name	The name of the flow element displayed in the canvas
Description	A description of the flow element displayed in the canvas. This description is also shown in the tooltip that appears when moving your cursor over the flow element
Job priority	The priority assigned to each incoming job; jobs with higher priority are released first; a greater number indicates a higher priority

Properties	Description
	<p>Default means: use the job priority defined in the job ticket</p> <p>The value of this property is converted to a floating point number; the Boolean value True and string values that commonly represent True convert to 1, the Boolean value False and any string values that don't represent a number or True convert to 0</p>
Delay scheme	<p>Select "Delay", "Release condition" or "None" in this drop-down menu to define the type of delay scheme you want to define.</p> <p>Delay: When you select "Delay", jobs are delayed for a certain period of time (specified in the subordinate properties), and a job becomes eligible for release only after it has resided in the input folder for at least the specified period of time (as set in the subordinate properties).</p> <p>Release condition: When you select "Release condition", jobs become eligible for release only after the release condition has been evaluated to true (that is, it has satisfied the conditions which have been set in the subordinate properties).</p>
	<p><i>The following subordinate properties are present if Delay scheme is set to Delay.</i></p>
<i>Unit</i>	Select the unit for the time delay: Seconds, Minutes, Hours, Days
<i>Delay</i>	<p>Provide the job delay in the units indicated by the previous property.</p> <p>You can enter an explicit value in the field or specify using the Define single-line text with variables or Define script expression dialogs available from the pop-up menu.</p>
	<p><i>The following subordinate properties are present if Delay scheme is set to Release condition.</i></p>
<i>Release condition</i>	<p>Specify the condition which should be evaluated to true before the job is released.</p> <p>You can specify the value using the "Define condition with variables" or "Define script expression" dialogs available from the pop-up menu (making it possible for you to use values from Switch variables, metadata, a database or script expressions).</p> <p>The release condition is executed repeatedly using N units. For example: if we set the delay as 5 minutes, the release condition will be checked every 5 minutes</p>
<i>Retry unit</i>	Select the unit for the time delay: Seconds, Minutes, Hours, Days

Properties	Description
<i>Retry after</i>	<p>Provide the job delay in the units indicated by the previous property.</p> <p>You can enter an explicit value in the field or specify using the Define single-line text with variables or Define script expression dialogs available from the pop-up menu</p>
<i>Release attempts threshold</i>	<p>Determines when the job will fail (hence will be sent to the Problem jobs folder):</p> <ul style="list-style-type: none"> • 0 (default): The job will never fail due to unsuccessful release attempts. • Number > 0: The job will fail after the given number of unsuccessful release attempts.
Output order	<p>Determines the order in which outgoing connections receive jobs (relevant only if there is more than one):</p> <ul style="list-style-type: none"> • Cyclic: always in the same cyclic order • Random: in pseudo-random order

Outgoing connection properties

The following properties are provided for each of the outgoing connections in addition to the basic connection properties.

Property	Description
Connection priority	The priority of this connection; a greater number indicates a higher priority; at any given time only the eligible connections with the highest priority will receive jobs
Folder constraint	If set to yes, this connection is eligible to receive jobs only when certain constraints on the target folder (specified in the subordinate properties) are met
Maximum job count	This connection receives a job as long as its target folder contains no more than this number of jobs after adding the job; a zero value means this constraint is disabled
Maximum file count	This connection receives a job as long as its target folder contains no more than this number of files after adding the job; a zero value means this constraint is disabled
Maximum folder size (MB)	This connection receives a job as long as its target folder's size does not exceed this limit after adding the job; a zero value means this constraint is disabled
Target folder	The absolute path of the folder that should be checked for job count and/or size; Default means the connection's target folder

Property	Description
	 Note: Whenever a job arrives in the Hold job tool, Switch checks the Target folder. Jobs that are in between the Hold job tool and the Target folder are not taken into account for the constraint. To make sure that there are no jobs in between the Hold job tool and the Target folder, space the jobs apart for a certain period of time.
Time-of-day window	If set to yes, this connection is eligible to receive jobs only during a certain time of the day (specified in the corresponding properties)
Allow from (hh:mm)	The time-of-day window during which to receive jobs; the values are structured as "hh:mm" (hours, minutes) indicating a time of day on a 24 hour clock; an empty value means midnight; two identical values mean the connection is always eligible
Allow to (hh:mm)	
Day-of-week window	If set to yes, this connection is eligible to receive jobs only during certain days of the week (specified in the subordinate properties)
Allow from	The days of the week (Monday, Tuesday, Wednesday, Thursday, Friday, Saturday, Sunday) during which to receive jobs; two identical values mean the connection is eligible for that 1 single day
Allow to	
Day-of-month window	If set to yes, this connection is eligible to receive jobs only during a certain day of the month (specified in the subordinate properties)
Day	The day in the month during which to receive jobs, as a number in the range [1 .. 31]; the default value of one means the first or the last day of the month (depending on the following property)
Relative to	Determines whether the day of the month is relative to "Start of month" or "End of the month"
Space jobs apart	If set to yes, jobs moving over this connection are spaced apart by a minimum period of time (specified in the subordinate properties); example: after the connection receives a job it becomes eligible to receive another job only after the specified period of time has passed
Unit	Select the unit for the subsequent property: Seconds, Minutes, Hours, Days
Delay	The spacing delay in the units indicated by the previous property

Scheduling algorithm

The scheduling algorithm is executed whenever a new job arrives, at regular intervals:

1. Determine J, the set of eligible jobs, to include all incoming jobs that have fully arrived and that have waited for at least the delay specified for the job (if any).
2. If J is empty, there are no jobs to be moved – terminate.

- 3.** Sort the jobs in J on priority (higher priority first) and within the same priority on arrival stamp (earliest arrival first).
- 4.** For each job in J , in the sorted order, perform these steps:
 - a.** Consider A to be the set of outgoing connections.
 - b.** Determine B as the subset of A containing connections that can accept the job at this time (that is, the connection is not on hold and none of its constraints are violated).
 - c.** If B is empty, the job can not be moved at this time – skip to next job.
 - d.** Determine C as the subset of B containing all connections with the highest priority that occurs within B . By definition all connections in C have the same priority and C is non-empty.
 - e.** Select one of the connections in C according to the selected algorithm (cyclic or random).
 - f.** Move the job along this connection.