Global Counter

V1.0 Documentation

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About Significans Automation

Significans Automation is a software integrator specializing in delivering next-generation automation to the Printing and Packaging industry.

We offer programming and expertise in custom workflow development, deployment of communication and project management systems, color management, and end-to-end business integration. While upholding software neutrality, Significans Automation advises and tailors best in class software to optimally fit the environment.

The level of sophistication that is provided increases profitability, improved quality control, and enhanced production efficiency, enabling Artificial Intelligence and Robotics, while also facilitating new revenue opportunities in e-commerce. We are driven by the conviction that customized automation is the only path forward.

1. Overview

Global Counter allows you to generate unique serial numbers, track batch quotas, and perform round-robin load balancing across multiple flows or servers. Featuring robust JSON file locking, automatic formatting, and smart reset schedules, it ensures your data remains accurate and uncorrupted - even during high-volume parallel processing.

Compatibility

Switch 25.11 and higher. Windows and Mac OSX

Incoming Connections

At least one incoming connection is required.

Outgoing Connections

If any counters have a “Get” or “Get & Set” action, at least one outgoing traffic light connection is required.

If no “Get” or “Get & Set” action(s) are defined, no outgoing traffic light connection is required.

2. Storage Configuration

Property	Description	Default
Storage	The location of the JSON file (e.g., gc.json) used to store counter data. • Default: Creates a file in the Switch ScriptData backing folder. • Custom: Specify/Select a specific file path (useful for shared network storage).	Default
Safe mode	Enforces strict file locking for all operations. If disabled, 'Get' actions read without locking, unless a 'Set' action or a Counter Reset is active (which forces locking).	Yes
Advanced settings	Enables advanced tuning for file locking. specific mostly for network drives or slower hardware.	No

These settings determine where the counter database is stored and how the app handles file access contention.Advanced Storage Settings

*Visible only when "Advanced settings" is set to **Yes**.*

Property	Description	Default
Stale (seconds)	The maximum time a lock is considered valid before being forcibly broken (to prevent deadlocks).	60
Retries	The number of times the app will attempt to acquire a lock if the file is busy.	30
Min (seconds)	The minimum wait time between retry attempts.	1
Max (seconds)	The maximum wait time between retry attempts.	4

3. Counter Configuration

The app supports up to **5 distinct counters** per element. The settings below apply to each counter slot (Counter 1, Counter 2, etc.).

Base Counter Properties

Property	Description	Default
Counter [1-5]	The unique "key" name for the counter (e.g., InvoiceID, DailyCount). This key is used to retrieve or update the value in the database.	(Empty)
Action	Defines what operation to perform on this counter. • Get: Retrieve the current value to Private Data. • Set: Update the value in the database. • Get and Set: Perform both operations.	Get and Set

"Get" Properties

*Visible when Action includes **Get**.*

Property	Description	Default
Prefix	A string added to the beginning of the retrieved value (e.g., INV-).	(Empty)
Suffix	A string added to the end of the retrieved value.	(Empty)
Pad result	Enables adding leading characters to the number.	No
Length	(**If Pad=Yes**) The total target length of the number. E.g., a length of 4 turns 1 into 0001.	2
String	(**If Pad=Yes**) The character used for padding (usually 0).	0

"Set" Properties

*Visible when Action includes **Set**.*

Property	Description	Default
Type	Defines how the value changes. • Increment: Increase the value. • Decrement: Decrease the value. • Fixed: Overwrite with a specific static number.	Increment
Operator	(**If Type=Increment/Decrement**) The mathematical operation to apply. • **Positive**: Add, Multiply, Power. • **Negative**: Subtract, Divide, Root.	Add / Subtract
Value	The numeric value used in the operation (e.g., Increment by 1, Multiply by 10).	1

Bounds & Limits

*Visible when Action includes **Set**. These settings restrict the counter to a specific range (e.g., 1–100).*

Property	Description	Default
Bounds	Controls whether the counter is restricted to a specific range. • Yes: Enables Min/Max/Limit logic. • No: Counter can grow/shrink indefinitely.	No
Min	The floor (lowest allowed number).	0
Max	The ceiling (highest allowed number).	100
Limit	Defines what happens when the counter hits the Min or Max: • Error: The job fails (e.g., "Ticket allocation exhausted"). • Clamp: The value stays at the limit (e.g., stick at 100%). • Rollover: The value resets to the opposite end (e.g., 100 → 0). Useful for Round-Robin load balancing.	Rollover

4. Reset Functionality

You can configure counters to reset automatically based on time or intervals.

Property	Description	Default
Reset mode	Determines if/when the counter resets. • None: Never resets automatically. • Fixed Date: Resets at a specific calendar timestamp. • Periodic - Calendar: Resets based on calendar boundaries (e.g., New Year). • Periodic - Interval: Resets after a specific duration elapsed.	None

Reset Configuration Options

Depending on the selected Reset Mode, specific options will appear:

- **Fixed Date:**
  - **Date:** A specific timestamp (Default: Jan 1st of the next year).
- **Periodic - Calendar:**
  - **Cycle:** Choose from Daily (Midnight), Weekly (Monday or Sunday), Monthly (1st of month), Quarterly, or Yearly.
- **Periodic - Interval:**
  - **Interval:** The numeric duration (e.g., 7).
  - **Units:** The time unit (Seconds, Minutes, Hours, Days, Weeks, Months).

5. Output Data

The app writes the results to **Private Data** on the job.

- **[Key]-get**: The formatted value retrieved (e.g., INV-0010).
- **[Key]-set**: The raw numeric value after the update operation.

*(Replace [Key] with the name you entered in the **Counter [1-5]** property)*