IATCHING	Revision	0.40
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Latching overview

The **Latching** node in Toolset setups allows a device to retain a value over a power cycle after a specified event. You can create these events on the **System Status** node or use default events that are calculated on the device.

Latching values

Generating custom events

You can create custom events on the <u>System Status</u> node. Click + to create a custom event (1). You can import and export custom events between existing setups using the import and export tools (2). You can delete custom events with the 'bin' tool. To disable a custom vvent without deleting it from the setup, deselect the 'enable' box (4).

System Status			
Moving			
Speed Channel Sp	peed		
Threshold	20.0		kph ¥
Guard Times:			
Start after		1.00 seconds	
Stop after		5.00 seconds	
Custom 2			
	3 🔞		
+ U System State	JS 0		



Multiple custom events can be added. In the example below, a custom event is created based on a Maths channel counter, so that repeatable events are present in the data (that is every 10 seconds). The channel used 'Latching Counter', simply generates value between 0-10 (1). On a vehicle, other events can be used such as 'Drive Out' or 'Car Halt', if more applicable.

General					
Configure the	e basic properties that define this r	nath channel.			
Name	Latching Counter	Quantity/Unit	user type v		
		Data Type	F32 ~		
Comment					
Manufacturer	Status O This is a normal item.				
Protection _					
Protecting the	e channel prevents users without a	an appropriate dongle f	from viewing channel data.		
Protecting the	e channel prevents users without a	an appropriate dongle f	from viewing channel data.		
Protecting the	e channel prevents users without a t	in appropriate dongle f	from viewing channel data.		
Protecting the	e channel prevents users without a	an appropriate dongle f	rom viewing channel data.		
Protecting the	e channel prevents users without a tt (f) Remove protection tion that determines the value of f	an appropriate dongle f	rom viewing channel data.		
Protecting the	e channel prevents users without a et Remove protection tion that determines the value of f choose (@a0 < 10, @a0 +	 an appropriate dongle f this math channel. 1, 0)); 	rom viewing channel data.		Function: "@a0"

You can name the custom event (1) and add an optional description for the event (2). You can also name the bit-field definition states, apply a colour for each state (3), and define a trigger condition (4).

Custom			
$\oplus $	٦	System State	
✓ Latch Event		Name	Latch Event 1
	_	Enabled	\checkmark
🧭 Choose a Channel — 🗆	×	Description	Example Latch Event for User Guide 2
lap_time_sim Latching Counter LED 1	^ ~	Definition	
start typing to filter the selection Sourced from Logic Channels node.	8	Start in a state named Change to a state named	Default
Show All OK OK	ancel		Channel ^v Latching Counter ⁽ⁱ⁾ is ^v 10.000

You need to supply a name for the 'transition' between 'Default to Set' and 'Set to 'Default'. The events channels are then generated.

In the example below, when the latching counter reaches 10, an event called 'Set Latch' is generated when the transition from 'Default to Set' occurs as the latch conditions become true. Conversely, an event called

Transition: Default to Set			
Optionally, define an event to be raised when transitioning to Set			
Name	Set Latch		
Description	When Latching Counter = 10		
Transition: Set to Default			
Optionally, define an event to	be raised when transitioning to Default		
Name	Reset Latch		
Description	When Latching Counter ≠ 10		



Add a latching channel

occurs.

Once an event is being generated, you can create the latching channel. On the **Latching** node, click the **+** tool (1). Use the import and export tools (2) to import and export latching channels between existing setups. Use the 'bin' tool (3) to delete latching channels.

Latching	Ø
Latched channels provide a method of pen over a power cycle. When the trigger occur input's value.	sisting channel values even rs, the latch will be set to the
1 2	3

You can define a name for the latching channel (1) and add an optional description of it (2). Click the **Browse** menu to select an input channel for the latch trigger from the available channels (3). Select the required trigger (Button or Event) from the dropdown menu (4). From the **Browse** menu, select the latching event from the available events (5).

	General				
	Define the properties of this channel latch.				
1	Name Latching Example				
2	Description Example latched channel for User Guide				
	Manufacturer Status Manufacturer Status This is a normal item.				
	Configure the trigger that will cause the latch to be updated to the input's value.				
3	Input Late	hing Counter			
4	Trigger Eve	ent Y Set Latch 😳 5			

The latched value is updated at a maximum rate of 1Hz. Once the device is power cycled the non-volatile memory checks that the channel is equal to the latched channel value. If these values are different then the channel retrieves the latched channel value.

When the device is power cycled, the latching node retains the last latched value for each defined channel.

The Latch Status is a bit-field channel with the following definitions.





Note: The current max number of latched channels is 42. The logging rate is capped at 1hz, but the calculation rate is driven from the source channel.