ETH Events - Transferring states between IOs

When requesting to transfer the state of inputs to outputs in the system, we use 2 basic methods:

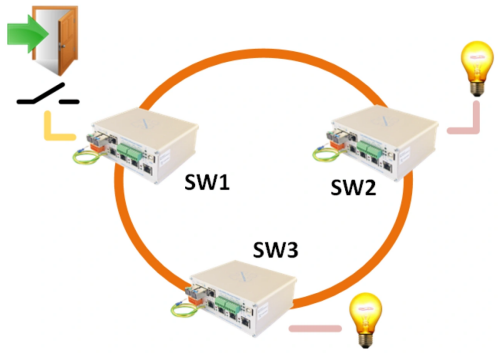
- Multicast address transfer and ETH events, which can be used within the LAN-RING system.
- MODBUS-TCP transfer, which can be used within both LAN-RING and IPLOG systems.

This manual describes typical examples of the use of ETH events.

ETH events using multicast addresses

Example 1: Setting up IO transmission in UDP (Multicast) mode
After activating the digital input on SW1 and on the remote switch SW2, a relay is activated.

1. In the **"Extension/ETH-IO"** menu, set the receive and transmit addresses in the range 239.0.0.0 - 239.255.255.255 (multicast).

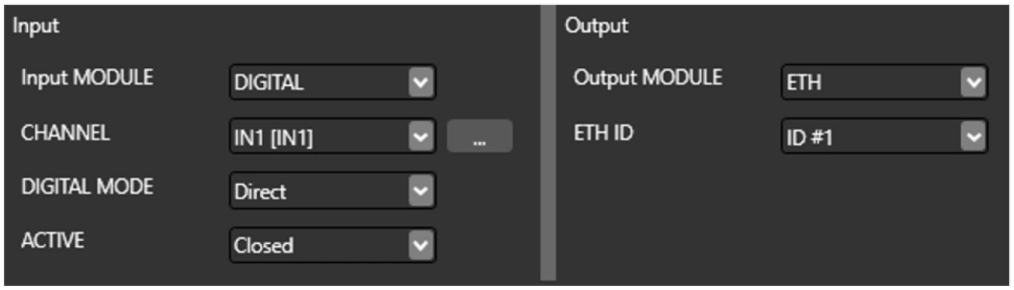


Example:
SW 1: Receiving address - not necessary in this case.
Transmit address 1 - 239.191.168.20

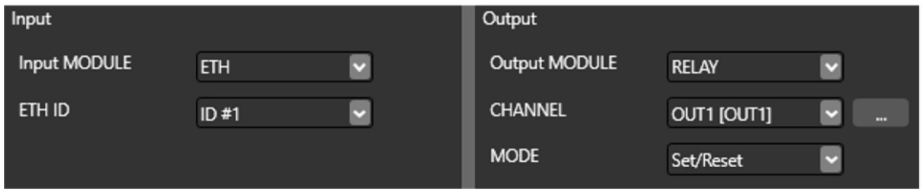
SW 2: Receiving address - 239.191.168.20
Transmitting address 1 - not necessary in this case.

Event settings

SW1:



SW2:



SW1 sends the input information to the network as a so-called ETH event with ID 1. ETH with ID 1 should therefore not be used repeatedly elsewhere in the system. Event management switches allow the use of ETH events with IDs 1 to 999. For each event that is set up, even if the input event is the same, an ETH event with a unique ID must be created. A switch that has the correct receive multicast address set and the correct ETH ID set in the event will process the frame.

For more information regarding the available inputs, outputs, and their options, see the SIMULand manual.

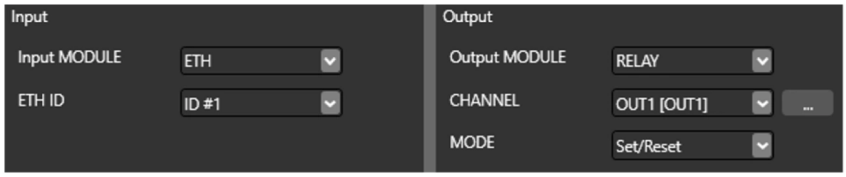
Example 2: When a digital input is activated on SW1, the relays on switches SW2 and SW3 are activated.

SW 1: Rx - not necessary in this case , Tx 1 - 239.191.168.20
SW 2: Rx - 239.191.168.20 , Tx 1 - not necessary in this case.
SW 3: Rx - 239.191.168.20 , Tx 1 - not necessary in this case.
...or...
SW 1: Rx - not necessary in this case, Tx 1 - 239.191.168.20, Tx 2 - 239.191.168.30.
SW 2: Rx - 239.191.168.20, Tx 1 - not necessary in this case.
SW 3: Rx - 239.191.168.30, Tx 1 - not necessary in this case.

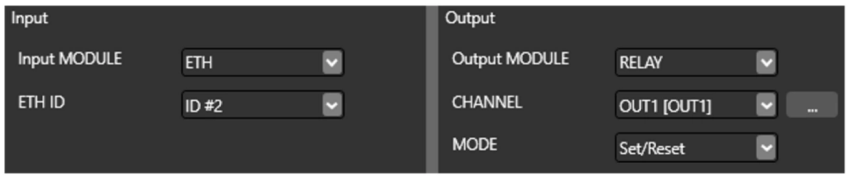
SW1:

Event 1	DIGITAL:IN1 [IN1]:Direct:Closed	ETH:ID #1
Event 2	DIGITAL:IN1 [IN1]:Direct:Closed	ETH:ID #2

SW2:



SW3:



Example 3: When the digital input is activated on SW1, the relay on switches SW2 and SW3 is activated. SW2 also sends information about the activation of the digital input to SW1, where the relay output is activated.

SW 1: Rx - 239.191.168.10, Tx 1 - 239.191.168.20
SW 2: Rx - 239.191.168.20, Tx 1 - 239.191.168.10
SW 3: Rx - 239.191.168.20, Tx 1 - not necessary in this case.

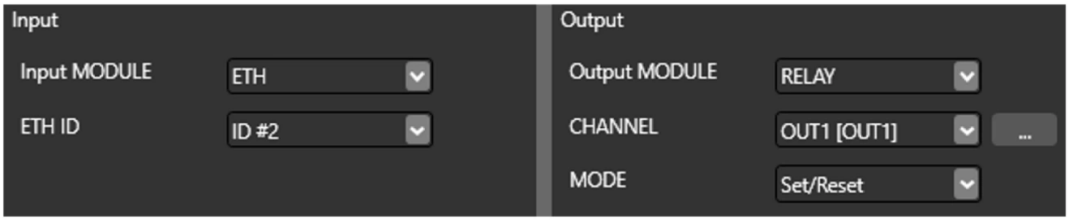
SW1:

Event 1	DIGITAL:IN1 [IN1]:Direct:Closed	ETH:ID #1
Event 2	DIGITAL:IN1 [IN1]:Direct:Closed	ETH:ID #2
Event 3	ETH:ID #3	RELAY:OUT1 [OUT1]:Set/Reset

SW2:

Event 1	ETH:ID #1	RELAY:OUT1 [OUT1]:Set/Reset
Event 2	DIGITAL:IN1 [IN1]:Direct:Closed	ETH:ID #3

SW3:


Input
Input MODULE
ETH
ETH ID
ID #2
Output
Output MODULE
RELAY
CHANNEL
OUT1 [OUT1]
...
MODE
Set/Reset