Mapping a Lost Link Output

Technical Note

Initial Steps and Equipment Needed

Follow these steps to map a lost link output between a slave radio and its master.

Required equipment includes:
- Performance Node and Gateway; or
- Wireless DXM Controller master with a Gateway radio module
- Windows-based PC running the User Configuration Tool (UCT) or DXM Configuration Tool v3 (downloaded from the Banner website)

Because of heartbeat and polling, the link loss notification is not immediate. There is some time between when the radio loses communication and when it drops out of the wireless network. For more information on heartbeat and polling, please refer to *Monitoring System Health*.

1. Plug the Gateway into the computer running the UCT or connect to the DXM Controller with the master radio using serial or TCP/IP.
2. Launch the configuration software and connect to the master radio.
3. Follow the instructions in the appropriate section.
4. Repeat these steps for each slave radio you'd like to monitor.

Map a Node's Lost Link Output to a Gateway

Mapping a Node's lost link output to a Gateway allows you to trigger an alarm or light.

1. Go to the Linking > Linking Configuration screen.
2. Click GET all I/O links to retrieve the network information.
3. Click the arrow next to the Node you'd like to map from. In this example, we are using Node 11.
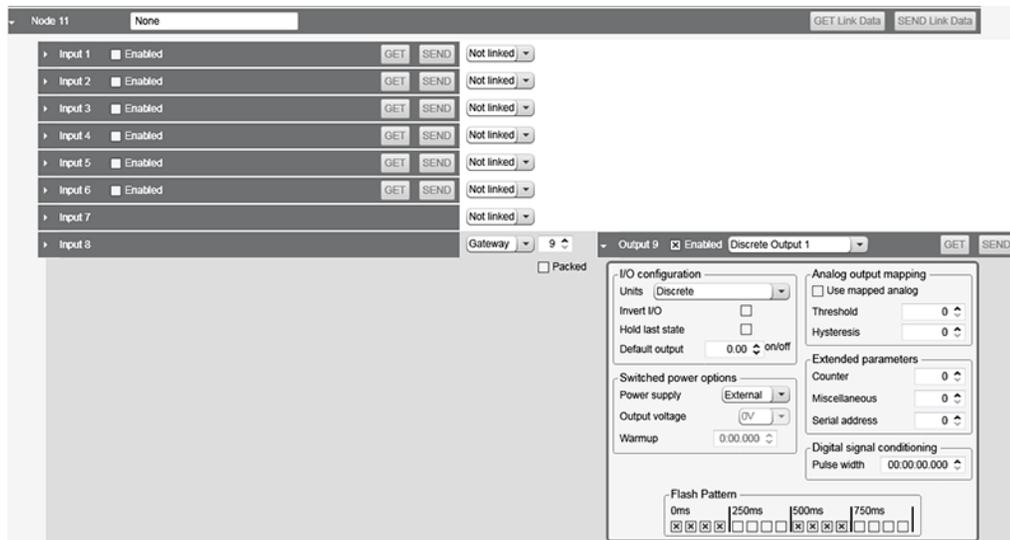
    The list of Node 11's inputs displays.

4. Click the arrow next to Node 11's Input 8. Input 8 is the network health input register.
5. Use the drop-down list to select the device to map this input to. In this example, we are mapping Node 11's input 8 back to the Gateway.
6. Select the Gateway's output to map to. In this example, we are mapping to Gateway output 9.
7. Use the drop-down list for Gateway I/O 9 to configure it to be a discrete output.
8. Connect a warning light, alarm, or other notification device to the Gateway's discrete output on I/O point 9. In this example, we have created a flash pattern for a light connected to this output.
9. Click SEND Link Data to send the configuration to the devices.

Map a Node's Lost Link Output to a DXM100 Controller

Mapping a Node's lost link output to its master radio allows you to trigger an alarm or light or to send email or text message notifications.

Because of heartbeat and polling, the link loss notification is not immediate. There is some time between when the radio loses communication and when it drops out of the wireless network. For more information on heartbeat and polling, please refer to *Monitoring System Health*.

It is important to know that I/O 8 on every Node is reserved as the "health" register. If there is a 128 in this register, there is good communication between the Node and the DXM. Any other value indicates a communication issue.

1. Go to the Register Mapping > Read Rules screen.
2. Click Add Read Rule.
   A new read rule opens and is read to be defined.
3. Name your read rule.
   For this example, the rule is named Node 1 Health.
4. Define the read rule to read From slave ID 1 read 1 registers starting at 24.

Node 1's I/O point 8 (the health register) is in register 24 for the wireless network. This rule stores the data from the health register of Node 1 into the DXM's local register 1.

5. Go to the **Action** Rules > Thresholds screen.
6. Click Add Threshold Rule and click the arrow next to the new rule to display the parameters.
7. Name and define a threshold rule for the DXM's local register 1 to determine when the value is 128 (good communication) or something other than 128 (lost link).
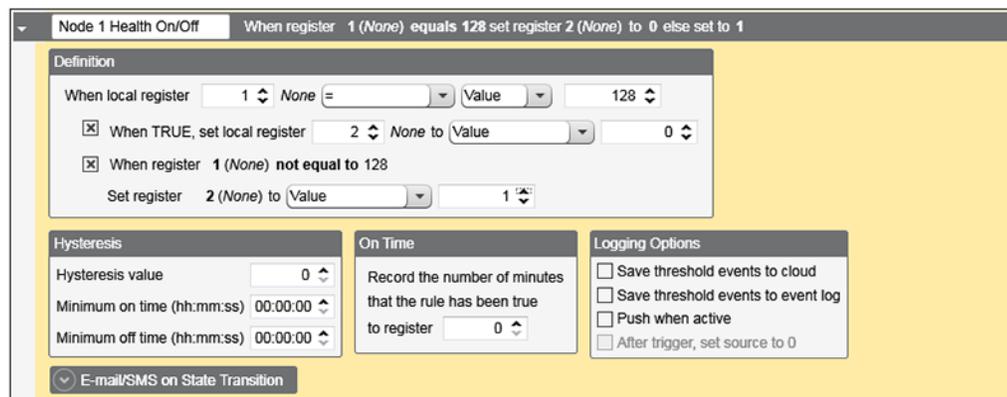
This threshold rule sets local register 2 to 0 when Node 1 is in the network and sets local register 2 to 1 when Node 1 has dropped out of the network. Use local register 2 to turn on an LED when the Node has lost its radio link with its master radio.

8. To turn on a DXM LED, go to the Register Mapping > Write Rules screen.
9. Click Add Write Rule.
10. Define a Write Rule to write a local register from 2 (Node 1 Health On/Off), to slave ID 201 (Slave ID of the DXM display) starting at register 1103 (Output LED 2, red light on DXM display) through 1103.

When Node 1 drops out of the wireless network, the red light (LED 2) on the DXM display turns on.