Port-to-Port Forwarding

This chapter contains the following sections:

About Port-to-Port Forwarding

The Cisco Extensible Network Controller (XNC) Virtual Patch Panel (port-to-port forwarding) application allows you to manage port-to-port (P2P) traffic within a switch or across the network without any need for physical connection changes or rewiring. Port-to-port forwarding reduces the time-consuming, manual process of interconnecting two ports, either within a switch or between switches, across the network to forward traffic. With the Cisco XNC port-to-port forwarding application, you can programmatically create a virtual patch panel.

The principal benefits of the Cisco XNC port-to-port forwarding application are as follows:

- The ability to automate a P2P path
- Automatic VLAN assignment and tagging for traffic that originates in the port
- No need to take the device offline
- Capability to scale the process across the data center network

Configuring EtherTypes for Ports

The `config.ini` file for Cisco Extensible Network Controller (XNC) is pre-provisioned with some parameters for the P2P feature to work properly on Cisco supported switches. There are two parameters:

- p2p.nonConventionalNodes—This parameter should not be modified without first contacting Cisco support.

- p2p.nonConventionalNodesEthertypes—This parameter specifies the comma-separated list of frames for which the P2P paths are applicable. The default frame type is IPv4, which means that each P2P path is only applicable for IPv4 packets.

Step 1 Open the `config.ini` file for editing and locate the `p2p.nonConventionalNodesEthertypes` parameter.

Step 2 Modify the `p2p.nonConventionalNodesEthertypes` parameter to suit your needs. An example of a valid configuration follows:
`p2p.nonConventionalNodesEthertypes=IPv4,IPv6,ARP`

Step 3 Save your work and close the file.

Step 4 Restart Cisco Extensible Network Controller (XNC).

Logging in to the Cisco XNC Port-to-Port Forwarding GUI

You must log into the Cisco XNC port-to-port forwarding GUI using HTTPS.

The default HTTPS web link for the Cisco XNC port-to-port forwarding GUI is *https://Controller_IP:8443/p2p*

Note Before you can use HTTPS, you must manually specify the https:// protocol in your web browser.

Step 1 In your web browser, enter the Cisco XNC port-to-port forwarding GUI web link.

Step 2 On the launch page, enter your username and password.
The default username and password is admin/admin.

Step 3 Click **Log In**.

Adding a Port-to-Port Forwarding Path

You can add P2P paths and view them in the topology diagram.

Step 1 On the **Paths** tab, click **Add Path**.

Step 2 In the **Add P2P Path** dialog box, complete the following fields:

Name	Description
Path Name field	The name that you want to give the forwarding path. The name can contain between 1 and 256 alphanumeric characters including the following special characters: underscore ("_"), hyphen ("-"), plus ("+"), equals ("="), open parenthesis ("("), closed parenthesis (")"), vertical bar ("|"), period ("."), or at sign ("@"). **Note** The path name cannot be changed once it has been saved.
Source Node drop-down list	Choose the source node that you want to use in the forwarding path.
Source Port drop-down list	Choose the source port of the node that you want to use in the forwarding path.
Destination Node drop-down list	Choose the destination node that you want to use in the forwarding path.
Destination Port drop-down list	Choose the destination port of the node that you want to use in the forwarding path.
Source VLAN field	The source VLAN ID that you want to use in the forwarding path. **Note** This field is optional.
Destination VLAN field	The destination VLAN ID that you want to use in the forwarding path. **Note** This field is optional.

Step 3 Click **Add Path**.
The path is installed.

Step 4 On the **Paths** tab, click any **Path Name** in the list.
The path is highlighted in the topology diagram.

Editing a Port-to-Port Forwarding Path

You can edit an existing port-to-port forwarding path.

Step 1 On the **Paths** tab, click **Edit** next to the path you want to update.

Step 2 In the **Edit P2P Path** dialog box, complete the following fields:

Name	Definition
Path Name field	The name of the P2P path. **Note** You cannot change the path name in this dialog box.
Source Node drop-down list	Choose the new source node that you want to use in the forwarding path.
Source Port drop-down list	Choose the new source port of the node that you want to use in the forwarding path.
Destination Node drop-down list	Choose the new destination node that you want to use in the forwarding path.
Destination Port drop-down list	Choose the new destination port of the node that you want to use in the forwarding path.
Source VLAN field	The new source VLAN ID that you want to use in the forwarding path. **Note** This field is optional.
Destination VLAN field	The new destination VLAN ID that you want to use in the forwarding path. **Note** This field is optional.

Step 3 Click **Edit Path**.

Deleting a Port-to-Port Forwarding Path

You can delete one or more existing port-to-port forwarding paths.

Step 1 On the **Paths** tab, check the check box next to the path or paths that you want to delete.

Step 2 Click **Delete Path**.

Step 3 In the **Delete Path** confirmation dialog box, click **Remove Path**.