Revised: August 13, 2025

Cisco Nexus Hyperfabric — Configure Port Channels

Port channels

The port channel is a powerful networking technology used to combine multiple physical Ethernet links into a single logical link. A basic port channel aggregates links from a single switch, while a multi-chassis port channel aggregates multiple physical links across a pair of switches, creating a single logical link.

A multi-chassis port channel creates redundancy for higher availability. You can configure one of the switches as active and the other as passive, then have the passive switch take over for the active switch when necessary.

Each port channel is identified a 10-byte number that is unique to the fabric. Every member link in a port channel is assigned the same identifier. This number is generated automatically, or you can specify the number when you create a port channel.

Guidelines for port channels

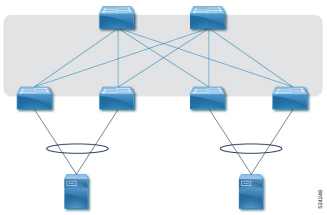
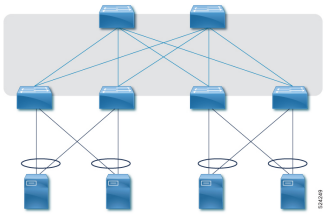
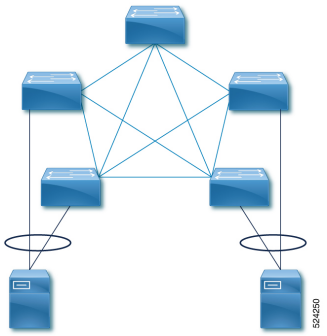
- Nexus Hyperfabric supports Link Aggregation Control Protocol (LACP) — active.
- Nexus Hyperfabric supports the following port channel topologies:
  - Simple link aggregation group (LAG) port channels, in which all physical links connect one device to another device
  - Multi-chassis link aggregation group (MLAG or MC-LAG), in which physical links across a pair of switches are aggregated to connect to another device
- The port channel ID must be unique within the fabric.
- All member ports of a port channel must have the same port speed and MTU.
- A LAG supports a maximum of four member ports and spans a maximum of two switches.
- The LACP timer rate is 3 times of 30 seconds.

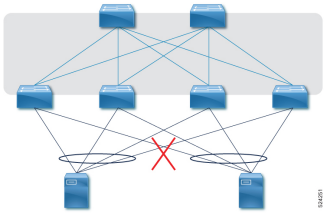
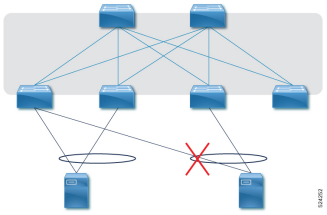
Limitations for port channels

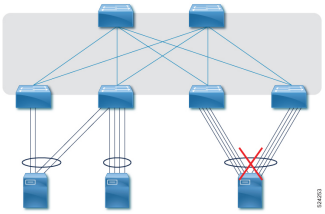
These limitations apply for port channels:

- A port channel's ID must be unique within the fabric.
- All member ports of a port channel must have the same port speed and MTU.
- A port channel supports a maximum of four member ports and spans a maximum of two switches. The switches can be either two leaf switches or two spine switches, but not a spine and a leaf switch.
- A switch may act as a peer in more than one port channel only if the other peer switch is the same for each port channel.
- You cannot mix different port channel pairs on the same switch.
- If you have a Cisco UCS C-series rack server with a virtual interface card (VIC), link layer discovery protocol (LLDP) or link aggregation control protocol (LACP) might not work without enabling the Physical NIC Mode. However, if you enable the Physical NIC Mode, ensure that your server is using a Cisco IMC release that contains the fix for CSCwk79922. For basic information about LLDP and LACP, see the "Terminology" section of the *Cisco Nexus Hyperfabric—Getting Started* document.

Examples of supported and unsupported MLAG topologies

Supported topologies	
	This example shows two MLAGs: • ESI1: Leaf1 and Leaf2 • ESI2: Leaf3 and Leaf4
	This example shows four MLAGs: • ESI1: Leaf1 and Leaf2 • ESI2: Leaf1 and Leaf2 • ES3: Leaf3 and Leaf4 • ESI4 Leaf3 and Leaf4
	This example shows two MLAGs: • ESI1: Leaf1 and Leaf2 • ESI2: Leaf3 and Leaf4

Unsupported topologies	
	An MLAG spans a maximum of two leaf switches. In this example, four leaf switches are aggregated.
	A leaf switch may act as a peer in more than one MLAG only if the other peer switch is the same for each MLAG. In this example, Leaf 1 and Leaf 2 are aggregated for one MLAG, and Leaf 1 and Leaf 3 are aggregated for another.

Unsupported topologies	
	An MLAG supports a maximum of four member ports. In this example, the third MLAG has eight aggregated ports.

Configure a port channel

A port must have the **Unused** role for you to be able to select it as member of a port channel. After you add a port channel, the role of the selected ports changes to **Port channel** and you cannot change the role in the port configuration page.

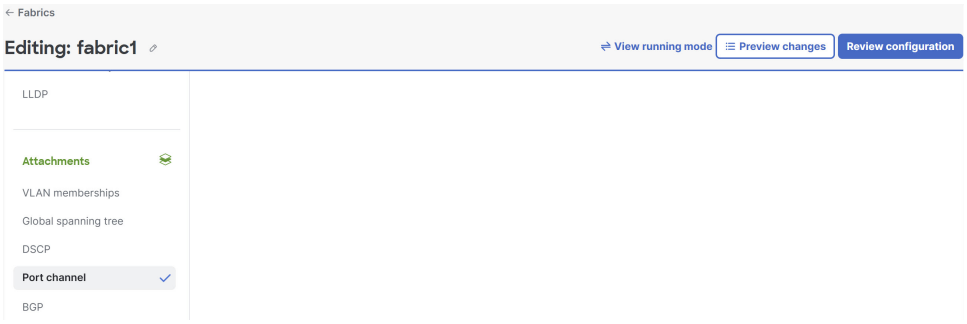
Follow these steps to configure a port channel.

Step 1 Select **Fabrics**, then click the desired fabric.

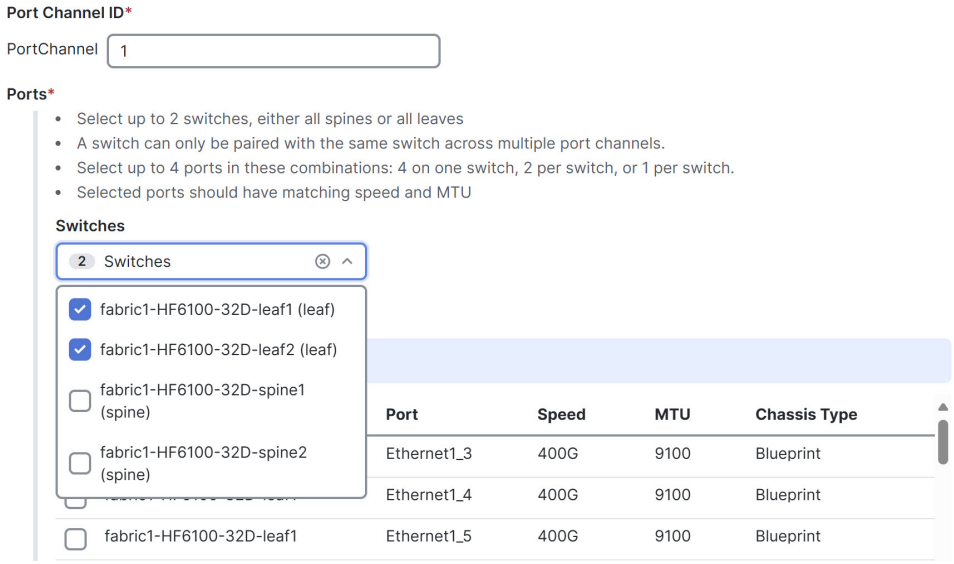
Step 2 If the fabric is not in the edit mode, click **Switch to edit mode**.

Step 3 In the **Attachments** area, click **Port channel**.

A table of existing port channels appears.



Step 4 Click **+ Add port channel** and follow these substeps.



a) For **Port channel**, enter an ID that is unique within the fabric.

   If you do not add an ID, Cisco Nexus Hyperfabric automatically generates one.

b) For **Switches**, select one switch for a single-chassis port channel or two switches for a multi-chassis port channel.

c) In the table of unused ports, select up to four ports.

   For a multi-chassis port channel, select ports from both switches.

d) For **Description**, enter a description of the port channel.

e) For **Label**, click **Add**, enter the text for the label, and press **Enter**.

f) For **Annotations**, click **Add** and enter a key value pair.

Step 5 Click **Save**.

Finish and commit your changes

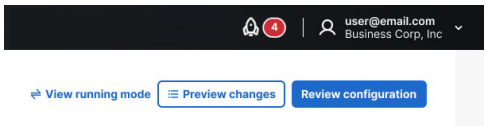
Your changes are not applied to the fabric until you review, commit, and push them.

Note

For a more detailed description of this procedure, see "Workflow for making changes to the fabric" in *Cisco Nexus Hyperfabric—Getting Started*.

Follow these steps to finish and commit your changes.

Step 1 Click **Review configuration**



Step 2 Verify your changes in the review list.

Step 3 Click **Comment and push**.

Step 4 In the **Comment before pushing configuration** dialog box, enter the reason for the change.

Step 5 Click **Push configuration**.

View port channel properties

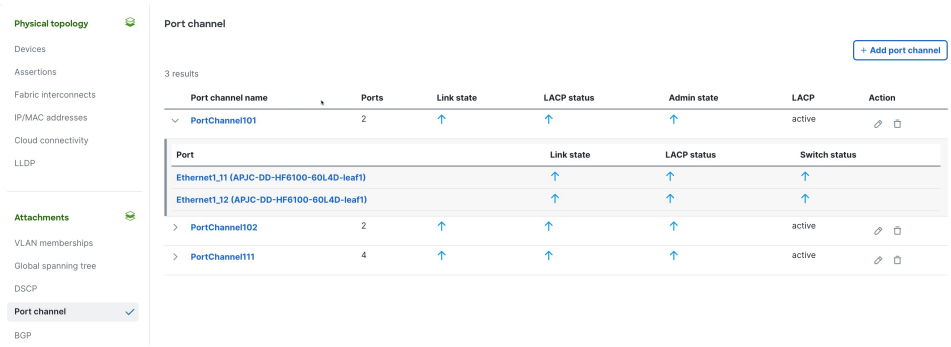
You can view port channel properties such as member ports, link status, topology, labels, annotations, LACP status, and LACP counters.

Follow these steps to view port channel properties.

Step 1 Select **Fabrics**, then click the fabric whose properties you want to view.

Step 2 In the **Attachments** area, click **Port channel**.

A table of existing port channels appears.



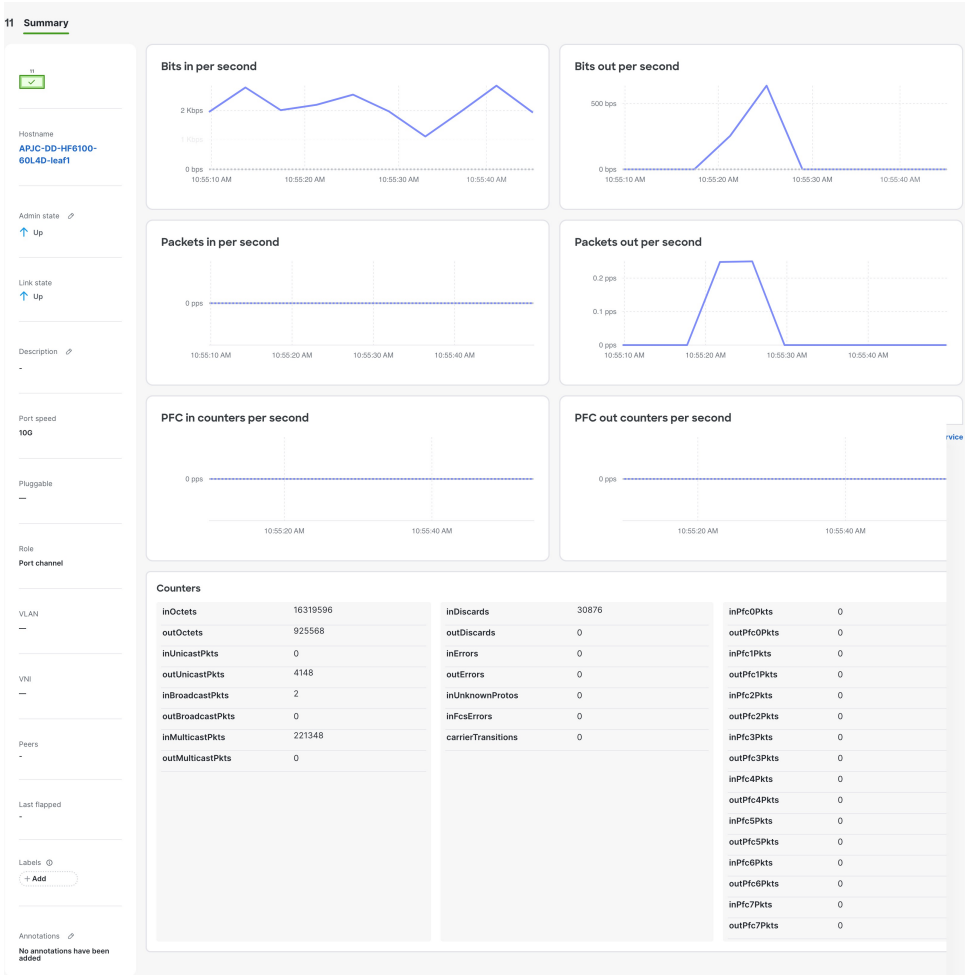
The table shows this information for port channels:

- **Ports**—Specifies the quantity of ports in the port channel.
- **Link state**—An up arrow indicates that the links in the port channel are up, while a down arrow indicates that the links are down.
- **LACP status**—An up arrow indicates that the ports are up and are operating as members of the port channel, while a down arrow indicates that one or more ports are operating as an individual ports and not as a members of the port channel.
- **Admin state**—An up arrow indicates that the port channel is configured as enabled, while a down arrow indicates that the port channel is configured as disabled.
- **LACP**—Specifies the LACP mode. Currently, Nexus Hyperfabric only supports the "active" mode.

The table shows this information for ports:

- **Link state**—An up arrow indicates that the link is up, while a down arrow indicates that the link is down.
- **LACP status**—An up arrow indicates that the port is up and is operating as a member of the port channel, while a down arrow indicates that the port is operating as an individual port and not as a member of the port channel.

Step 3 Expand a port channel to see the related ports and click the name of a port to view information about that port.



Step 4 While you are viewing the information about a port channel, you can click **Edit port channel** to edit that port channel.

Step 5 Click a port channel's name to view detailed information about that port channel, such as LACP status, link status, and switch status.