



Configuring vPC Fabric Peering, Release 12.1.3

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New and Changed Information

The following table provides an overview of the significant changes up to this current release. The table does not provide an exhaustive list of all changes or of the new features up to this release.

Release Version	Feature	Description
NDFC release 12.1.3	Reorganized content	Content within this document was originally provided in the <i>Cisco NDFC-Fabric Controller Configuration Guide</i> or the <i>Cisco NDFC-SAN Controller Configuration Guide</i> . Beginning with release 12.1.3, this content is now provided solely in this document and is no longer provided in those documents.

vPC Fabric Peering

vPC Fabric Peering provides an enhanced dual-homing access solution without the overhead of wasting physical ports for vPC Peer Link. This feature preserves all the characteristics of a traditional vPC. For more information, see *Information about vPC Fabric Peering* section in *Cisco Nexus 9000 Series NX-OS VXLAN Configuration Guide*.

You can create a virtual peer link for two switches or change the existing physical peer link to a virtual peer link. Cisco NDFC support vPC fabric peering in both greenfield as well as brownfield deployments. This feature is applicable for **Data Center VXLAN EVPN** and **BGP Fabric** fabric templates.



The **BGP Fabric** fabric does not support brownfield import.

Guidelines and Limitations

The following are the guidelines and limitations for vPC fabric pairing.

- vPC fabric peering is supported from Cisco NX-OS Release 9.2(3).
- Only Cisco Nexus N9K-C9332C Switch, Cisco Nexus N9K-C9364C Switch, Cisco Nexus N9K-C9348GC-FXP Switch as also the Cisco Nexus 9000 Series Switches that ends with FX, and FX2 support vPC fabric peering.
- Cisco Nexus N9K-C93180YC-FX3S and N9K-C93108TC-FX3P platform switches support vPC fabric peering.
- Cisco Nexus 9300-EX, and 9300-FX/FXP/FX2/FX3/GX/GX2 platform switches support vPC Fabric Peering. Cisco Nexus 9200 and 9500 platform switches do not support vPC Fabric Peering. For more information, see *Guidelines and Limitations for vPC Fabric Peering* section in *Cisco Nexus 9000 Series NX-OS VXLAN Configuration Guide*.
- If you use other Cisco Nexus 9000 Series Switches, a warning will appear during **Recalculate & Deploy**. A warning appears in this case because these switches will be supported in future releases.
- If you try pairing switches that do not support vPC fabric peering, using the **Use Virtual Peerlink** option, a warning will appear when you deploy the fabric.
- You can convert a physical peer link to a virtual peer link and vice-versa with or without overlays.
- Switches with border gateway leaf roles do not support vPC fabric peering.
- vPC fabric peering is not supported for Cisco Nexus 9000 Series Modular Chassis and FEXs. An error appears during **Recalculate & Deploy** if you try to pair any of these.
- Brownfield deployments and greenfield deployments support vPC fabric peering in Cisco NDFC.
- However, you can import switches that are connected using physical peer links and convert the physical peer links to virtual peer links after **Recalculate & Deploy**. To update a TCAM region during the feature configuration, use the hardware access-list tcam ingress-flow redirect512 command in the configuration terminal.

QoS for Fabric vPC-Peering

In the **Data Center VXLAN EVPN** fabric settings, you can enable QoS on spines for guaranteed delivery of vPC Fabric Peering communication. Additionally, you can specify the QoS policy name.

Note the following guidelines for a greenfield deployment:

- If QoS is enabled and the fabric is newly created:
 - If spines or super spines neighbor is a virtual vPC, make sure neighbor is not honored from invalid links, for example, super spine to leaf or borders to spine when super spine is present.
 - Based on the Cisco Nexus 9000 Series Switch model, create the recommended global QoS config using the **switch_freeform** policy template.
 - Enable QoS on fabric links from spine to the correct neighbor.
- If the QoS policy name is edited, make sure policy name change is honored everywhere, that is, global and links.
- If QoS is disabled, delete all configuration related to QoS fabric vPC peering.
- If there is no change, then honor the existing PTI.

For more information about a greenfield deployment, see the section "Creating a VXLAN EVPN Fabric Using the Data Center VXLAN EVPN Template" in [Data Center VXLAN EVPN](#).

Note the following guidelines for a brownfield deployment:

Brownfield Scenario 1:

- If QoS is enabled and the policy name is specified:



You need to enable only when the policy name for the global QoS and neighbor link service policy is same for all the fabric vPC peering connected spines.

- Capture the QoS configuration from switch based on the policy name and filter it from unaccounted configuration based on the policy name and put the configuration in the **switch_freeform** with PTI description.
 - Create service policy configuration for the fabric interfaces as well.
 - Greenfield configuration should make sure to honor the brownfield configuration.
- If the QoS policy name is edited, delete the existing policies and brownfield extra configuration as well, and follow the greenfield flow with the recommended configuration.
 - If QoS is disabled, delete all the configuration related to QoS fabric vPC peering.



No cross check for possible or error mismatch user configuration, and user might see the diff.

Brownfield Scenario 2:

- If QoS is enabled and the policy name is not specified, QoS configuration is part of the unaccounted switch freeform config.
- If QoS is enabled from fabric settings after **Recalculate & Deploy** for brownfield, QoS configuration overlaps and you will see the diff if fabric vPC peering config is already present.

For more information about a brownfield deployment, see the section "Creating a VXLAN EVPN Fabric Using the Data Center VXLAN EVPN Template" in [Data Center VXLAN EVPN](#).

Fields and Description

To view the vPC pairing window of a switch, from the fabric topology window, right-click the switch and choose **vPC Pairing**. The vPC pairing window for a switch has the following fields:

Field	Description
Use Virtual Peerlink	Allows you to enable or disable the virtual peer linking between switches.
Switch name	Specifies all the peer switches in a fabric. NOTE: When you have not paired any peer switches, you can see all the switches in a fabric. After you pair a peer switch, you can see only the peer switch in the vPC pairing window.
Recommended	Specifies if the peer switch can be paired with the selected switch. Valid values are true and false . Recommended peer switches will be set to true .
Reason	Specifies why the vPC pairing between the selected switch and the peer switches is possible or not possible.
Serial Number	Specifies the serial number of the peer switches.

You can perform the following with the **vPC Pairing** option:

Creating a Virtual Peer Link

To create a virtual peer link from the Cisco NDFC Web UI, perform the following steps:

1. Choose **LAN > Fabrics**.

The **LAN Fabrics** window appears.

2. Choose a fabric with the **Data Center VXLAN EVPN** or **BGP Fabric** fabric templates.
3. On the **Topology** window, right-click a switch and choose **vPC Pairing** from the drop-down list.

The window to choose the peer appears.



Alternatively, you can also navigate to the **Fabric Overview** window. Choose a switch in the **Switches** tab and click on **Actions > vPC Pairing** to create, edit, or unpair a vPC pair. However, you can use this option only when you choose a Cisco Nexus switch.

You will get the following error when you choose a switch with the border gateway leaf role.
`<switch-name> has a Network/VRF attached. Please detach the Network/VRF before vPC Pairing/Unpairing`

4. Check the **Use Virtual Peerlink** check box.
5. Choose a peer switch and check the **Recommended** column to see if pairing is possible.

If the value is **true**, pairing is possible. You can pair switches even if the recommendation is **false**. However, you will get a warning or error during **Recalculate & Deploy**.

6. Click **Save**.
7. In the **Topology** window, choose **Recalculate & Deploy**.

The **Deploy Configuration** window appears.

8. Click the field against the switch in the **Preview Config** column.

The **Config Preview** window appears for the switch.

9. View the vPC link details in the pending configuration and side-by-side configuration.
10. Close the window.
11. Click the pending errors icon next to **Recalculate & Deploy** icon to view errors and warnings, if any.

If you see any warnings that are related to TCAM, click the **Resolve** icon. A confirmation dialog box about reloading switches appears. Click **OK**. You can also reload the switches from the topology window. For more information, see *Guidelines and Limitations for vPC Fabric Peering and Migrating from vPC to vPC Fabric Peering* sections in *Cisco Nexus 9000 Series NX-OS VXLAN Configuration Guide*.

The switches that are connected through vPC fabric peering, are enclosed in a gray cloud.

Converting a Physical Peer Link to a Virtual Peer Link

Before you begin

- Perform the conversion from physical peer link to virtual peer link during the maintenance window of switches.
- Ensure the switches support vPC fabric peering. Only the following switches support vPC fabric peering:
 - Cisco Nexus N9K-C9332C Switch, Cisco Nexus N9K-C9364C Switch, and Cisco Nexus N9K-C9348GC-FXP Switch.
 - Cisco Nexus 9000 Series Switches that ends with FX, FX2, and FX2-Z.
 - Cisco Nexus 9300-EX, and 9300-FX/FXP/FX2/FX3/GX/GX2 platform switches. For more information, see *Guidelines and Limitations for vPC Fabric Peering* section in *Cisco Nexus 9000 Series NX-OS VXLAN Configuration Guide*.

Procedure

To convert a physical peer link to a virtual peer link from the Cisco NDFC Web UI, perform the following steps:

1. Choose **LAN > Fabrics**.

The **LAN Fabrics** window appears.

2. Choose a fabric with the **Data Center VXLAN EVPN** or **BGP Fabric** fabric templates.
3. On the **Topology** window, right-click the switch that is connected using the physical peer link and choose **vPC Pairing** from the drop-down list.

The window to choose the peer appears.



Alternatively, you can also navigate to the **Fabric Overview** window. Choose a switch in the **Switches** tab and click on **Actions > vPC Pairing** to create, edit, or unpair a vPC pair. However, you can use this option only when you choose a Cisco Nexus switch.

You will get the following error when you choose a switch with the border gateway leaf role.
`<switch-name> has a Network/VRF attached. Please detach the Network/VRF before vPC Pairing/Unpairing`

4. Check the **Recommended** column to see if pairing is possible.

If the value is **true**, pairing is possible. You can pair switches even if the recommendation is **false**. However, you will get a warning or error during **Recalculate & Deploy**.

5. Check the **Use Virtual Peerlink** check box.

The **Unpair** icon changes to **Save**.

6. Click **Save**.



After you click **Save**, the physical vPC peer link is automatically deleted between the switches even without deployment.

7. In the **Topology** window, choose **Recalculate & Deploy**.

The **Deploy Configuration** window appears.

8. Click the field against the switch in the **Preview Config** column.

The **Config Preview** window appears for the switch.

9. View the vPC link details in the pending configuration and the side-by-side configuration.

10. Close the window.

11. Click the pending errors icon next to the **Recalculate & Deploy** icon to view errors and warnings, if any.

If you see any warnings that are related to TCAM, click the **Resolve** icon. A confirmation dialog box about reloading switches appears. Click **OK**. You can also reload the switches from the fabric topology window.

The physical peer link between the peer switches turns red. Delete this link. The switches are connected only through a virtual peer link and are enclosed in a gray cloud.

Converting a Virtual Peer Link to a Physical Peer Link

Before you begin

Connect the switches using a physical peer link before disabling the vPC fabric peering.

Procedure

To convert a virtual peer link to a physical peer link from the Cisco NDFC Web UI, perform the following steps:

1. Choose **LAN > Fabrics**.

The **LAN Fabrics** window appears.

2. Choose a fabric with the **Data Center VXLAN EVPN** or **BGP Fabric** fabric templates.
3. On the **Topology** window, right-click the switch that is connected through a virtual peer link and choose **vPC Pairing** from the drop-down list.

The window to choose the peer appears.



Alternatively, you can also navigate to the **Fabric Overview** window. Choose a switch in the **Switches** tab and click on **Actions > vPC Pairing** to create, edit, or unpair a vPC pair. However, you can use this option only when you choose a Cisco Nexus switch.

4. Uncheck the **Use Virtual Peerlink** check box.

The **Unpair** icon changes to **Save**.

5. Click **Save**.
6. In the **Topology** window, choose **Recalculate & Deploy**.

The **Deploy Configuration** window appears.

7. Click the field against the switch in the **Preview Config** column.

The **Config Preview** window appears for the switch.

8. View the vPC peer link details in the pending configuration and the side-by-side configuration.
9. Close the window.
10. Click the pending errors icon next to the **Recalculate & Deploy** icon to view errors and warnings, if any.

If you see any warnings that are related to TCAM, click the **Resolve** icon. The confirmation

dialog box about reloading switches appears. Click **OK**. You can also reload the switches from the fabric topology window.

The virtual peer link, represented by a gray cloud, disappears and the peer switches are connected through a physical peer link.

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