

Layer 2 and Layer 3 Flex Port Support

Table 1: Feature History

Feature Name	Release Information	Description
Layer 2 and Layer 3 Flex Port Support	Cisco IOS XE Catalyst SD-WAN Release 17.11.1a Cisco vManage Release 20.11.1	Cisco SD-WAN Manager provides flex support on Layer 2 switchports on Cisco IOS XE Catalyst SD-WAN devices, allowing flexibility for LAN ports at Layer 2 to be converted to Layer 3 ports. You can configure the flex ports on Layer 2 as Layer 3 ports using feature profiles and CLI add-on profile.

- Information About Layer 2 and Layer 3 Flex Port Support, on page 1
- Prerequisites for Layer 2 and Layer 3 Flex Port Support, on page 2
- Restrictions For Layer 2 and Layer 3 Flex Port Support, on page 2
- Use Cases for Layer 2 and Layer 3 Flex Port Support, on page 2
- Configure Layer 2 and Layer 3 Flex Port Support using Cisco SD-WAN Manager, on page 2
- Troubleshoot Layer 2 and Layer 3 Flex Port Support, on page 4

Information About Layer 2 and Layer 3 Flex Port Support

With flex ports, you can configure a single switch port to operate as either a Layer 2 or Layer 3 port, depending on your specific requirements. The flex port connects the Cisco Catalyst SD-WAN device to a WAN link or another network device, and the operating mode (Layer 2 or Layer 3) is changed as needed to support different network topologies or connectivity requirements. You can configure flex ports using feature profiles and CLI add-on profile.

You can configure a port as either Layer 2 or Layer 3, depending on the requirements of the network. This provides greater flexibility in configuring the network and allows for a more optimized use of network resources.

Note

- The flex ports are set to Layer 2 interface by default for Cisco ISR1100 series routers.
- You can only convert Layer 3 ports back to Layer 2 ports that were previously Layer 2 flex ports.

Prerequisites for Layer 2 and Layer 3 Flex Port Support

A configuration group is mandatory to configure flex support. For more information on configuration groups see, Use the Configuration Group Workflows.

Restrictions For Layer 2 and Layer 3 Flex Port Support

- The last two ports of the front-panel fixed ports are the flex ports.
- Flex Layer 2 and Layer 3 interfaces do not have PoE support because PoE is enabled only on the half lower number interfaces.
- STP is disabled by default for Cisco ISR 1100 Series L2 switch modules.

Use Cases for Layer 2 and Layer 3 Flex Port Support

- The Layer 2 flex port support is helpful in scenarios where there is an existing Layer 2 network and needs to integrate with Cisco Catalyst SD-WANnetwork. In this case, the Cisco IOS XE Catalyst SD-WAN device can be configured to support Layer 3 connectivity, allowing the existing network to be seamlessly integrated with the Cisco Catalyst SD-WAN overlay network.
- The Layer 3 flex port support is helpful when there are multiple Layer 3 networks that need to be interconnected. With flex support, the Cisco IOS XE Catalyst SD-WAN device can be configured to support Layer 2 connectivity, allowing the different networks to be interconnected and route the traffic.

Configure Layer 2 and Layer 3 Flex Port Support using Cisco SD-WAN Manager

Create a Configuration Group

For more information on creating a configuration group see, Use the Configuration Group Workflows.

Configure Layer 2 Support on Flex Ports

1. From the Cisco SD-WAN Manager menu, choose **Configuration** > **Templates** > **Configuration Groups**.
2. Click **…** adjacent to the configuration group name and choose **Edit**.

3. Click the **Service Profile** in the **Feature Profiles** pane.
4. Click **Add Feature**.
5. From the feature drop-down list, choose **Switchport**. For more information on switchport see, Switchport.
6. In the **Add Feature** pane, Enter a name for the switchport in the **Name** field.
7. In the **Description** field, enter a description of the feature. The description can contain any characters and spaces.
8. Configure the **Basic Configuration** options as needed.
9. Navigate to the **Interface** tab and click **Add Interface** to add the flex interface. For more information on configuring the interface see, the table describing the options for configuring the switchport.
10. Click **Save**.

Note To change the mode of the flex port interface, remove all existing configurations associated with the flex port. If the flex port is referenced by other configurations, such as **ip ftp source interface GigabitEthernet0/1** ensure you remove these references to prevent conflicts during reconfiguration.

To configure an interface in Layer 3 mode, you must enable **negotiation auto** on the flex port interface. To turn off negotiation, you must configure **negotiation auto**, and then apply **no negotiation auto**.

Deploy the Device

Before You Begin

Ensure that one or more configuration groups are created so that you can choose a group from the list to deploy the associated devices.

Deploy Devices

1. From the Cisco SD-WAN Manager menu, choose **Configuration** > **Templates** > **Configuration Groups**.
2. Click the **…** icon adjacent to the respective configuration group and choose **Edit**.
3. Click **Associated Devices**.

Note Use the **CLI Preview** option to verify the configuration before deploying. The new configuration is highlighted in green color.

4. Choose one or more devices, and then click **Deploy**.

Configure Layer 3 Support on Flex Ports

1. Delete the flex port configuration from the switchport parcel in the configuration group to undo the layer 2 support configuration on flex ports. For more information on how to delete a feature see, Delete a Feature.

2. Configure the **Service Profile** or **Transport Profile** feature parcels to configure a LAN VPN or VPN 0 as an L3 interface. For more information see, Configure Service VPN.
3. Once the LAN VPN or VPN is configured, click the **...** icon in the respective VPN interface and choose **Add Sub Feature**.
4. In the **Add Sub Feature** drop-down list, choose **Ethernet Interface**. For more information see, Ethernet Interface.
5. Configure the **CLI Add-on Profile** feature parcel. You can add the route-target CLIs through the CLI add-on profile. For more information see, CLI Profile. Add **no switchport** under flex port interface to the CLI configuration.

```
no switchport
```

Note Use **no switchport** for Layer 3 mode and **switchport** for Layer 2 mode in the interface configuration.

Deploy Devices

1. From the Cisco SD-WAN Manager menu, choose **Configuration** > **Templates** > **Configuration Groups**.
2. Click **…** adjacent to the configuration group name and choose **Edit**.
3. Click **Associated Devices**.

Note Use the **CLI Preview** option to verify the configuration before deploying. The new configuration is highlighted in green color.

4. Choose one or more devices, and then click **Deploy**.

Troubleshoot Layer 2 and Layer 3 Flex Port Support

Problem

Configuring Layer 2 flex port support failed.

Solution

Ensure that the flex port support configuration parcel added to the VPN interface (WAN/LAN) is deleted before the flex support is configured on layer 2 port.

Problem

Configuring Layer 3 flex port support failed.

Solution

1. Ensure that the flex port support configuration is deleted from the switchport profile.

2. Ensure that the add-on CLI profile configuration attached to the flex port contains the code line, **no switchport** added to it.