



Layer 2 and Layer 3 Flex Port Support



Note To achieve simplification and consistency, the Cisco SD-WAN solution has been rebranded as Cisco Catalyst SD-WAN. In addition, from Cisco IOS XE SD-WAN Release 17.12.1a and Cisco Catalyst SD-WAN Release 20.12.1, the following component changes are applicable: **Cisco vManage** to **Cisco Catalyst SD-WAN Manager**, **Cisco vAnalytics** to **Cisco Catalyst SD-WAN Analytics**, **Cisco vBond** to **Cisco Catalyst SD-WAN Validator**, **Cisco vSmart** to **Cisco Catalyst SD-WAN Controller**, and **Cisco Controllers** to **Cisco Catalyst SD-WAN Control Components**. See the latest Release Notes for a comprehensive list of all the component brand name changes. While we transition to the new names, some inconsistencies might be present in the documentation set because of a phased approach to the user interface updates of the software product.

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 2](#)
- [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 3](#)
- [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

- Flex port support is enabled only on Cisco 1000 Series ISRs that have four or eight front-panel switch ports.
- 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.

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-WAN network. 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**.

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
```

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.

