



Configuring the MPLS Feature Set

This chapter describes how to install and enable the Multiprotocol Label Switching (MPLS) feature set on Cisco NX-OS devices.

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Finding Feature Information

Your software release might not support all the features documented in this module. For the latest caveats and feature information, see the Bug Search Tool at <https://tools.cisco.com/bugsearch/> and the release notes for your software release. To find information about the features documented in this module, and to see a list of the releases in which each feature is supported, see the “New and Changed Information” chapter or the Feature History table below.

Information About the MPLS Feature Set

MPLS functionality is grouped into a feature set. A feature set is a collection of components that performs a specific set of functions.

You must install and enable the MPLS feature set before you can configure the components that make up the feature set. To do so, follow the instructions in this chapter before configuring the other MPLS components documented in this guide.

Licensing Requirements for the MPLS Feature Set

Product	License Requirement
Cisco NX-OS	MPLS requires an MPLS license. For a complete explanation of the Cisco NX-OS licensing scheme and how to obtain and apply licenses, see the <i>Cisco NX-OS Licensing Guide</i> .

Prerequisites for the MPLS Feature Set

The MPLS feature set has the following prerequisites:

- You must install an MPLS license before you can enable and configure any features that belong to the MPLS feature set.

Guidelines and Limitations for the MPLS Feature Set

The MPLS feature set has the following configuration guidelines and limitations:

- You must install the MPLS feature set in the default VDC before you can enable the feature set in any VDC (including the default VDC).
- The MPLS feature set operation might cause the standby supervisor to reload if it is in an unstable state, such as following a service failure or powering up. You can check whether the standby supervisor is stable with the **show system redundancy ha status** command, which shows the high-availability state for all VDCs. When the standby supervisor is stable, it is indicated as “HA standby.”

Default Settings for the MPLS Feature Set

Table 2-1 lists the default settings for the MPLS feature set parameters.

Table 2-1 Default MPLS Feature Set Parameters

Parameters	Default
MPLS feature set	Uninstalled and disabled

Configuring the MPLS Feature Set

This section includes the following topics:

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Installing the MPLS Feature Set

You must install the MPLS feature set in the default VDC.

Prerequisites

Ensure that you are in the default VDC.

SUMMARY STEPS

1. **configure terminal**
2. **[no] install feature-set mpls**
3. (Optional) **show feature-set**

DETAILED STEPS

	Command	Purpose
Step 1	configure terminal Example: switch# configure terminal switch(config)#	Enters global configuration mode.
Step 2	[no] install feature-set mpls Example: switch(config)# install feature-set mpls	Installs the MPLS feature set in the default VDC. Note Use the no form of this command to uninstall the MPLS feature set. You cannot uninstall the feature set if it is enabled in any VDC.
Step 3	show feature-set Example: switch(config)# show feature-set	(Optional) Displays the status of the MPLS feature set on the device.

Enabling the MPLS Feature Set

You can enable the installed MPLS feature set in any VDC on the device.

Prerequisites

Ensure that you have installed the MPLS feature set in the default VDC.

Ensure that you are in the correct VDC or use the **switchto vdc** command.

SUMMARY STEPS

1. **configure terminal**
2. **[no] feature-set mpls**
3. (Optional) **show feature-set**

DETAILED STEPS

	Command	Purpose
Step 1	<code>configure terminal</code> Example: <code>switch# configure terminal</code> <code>switch(config)#</code>	Enters global configuration mode.
Step 2	<code>[no] feature-set mpls</code> Example: <code>switch(config)# feature-set mpls</code>	Enables the MPLS feature set. Note The feature set must be installed before it shows as an option to this command. Note Use the no form of this command to disable the MPLS feature set. This command might take some time to complete if the size of the configuration is very large. The command must clean up all of the configurations associated with the MPLS feature set.
Step 3	<code>show feature-set</code> Example: <code>switch(config)# show feature-set</code>	(Optional) Displays the status of the MPLS feature set on the device.

Allowing the MPLS Feature Set in a VDC

By default, the installed MPLS feature set is allowed in all VDCs on the device. You can disallow the installed MPLS feature set in a specific VDC, and you can subsequently allow that disallowed MPLS feature set in the VDC.

Prerequisites

Ensure that you have installed the MPLS feature set in the default VDC.

SUMMARY STEPS

1. `configure terminal`
2. `vdc vdc-id`
3. `[no] allow feature-set mpls`

DETAILED STEPS

	Command	Purpose
Step 1	<code>configure terminal</code> Example: switch# <code>configure terminal</code> switch(config)#	Enters global configuration mode.
Step 2	<code>vdc vdc-id</code> Example: switch(config)# <code>vdc 1</code> switch(config-vdc)#	Specifies a VDC and enters VDC configuration mode.
Step 3	<code>[no] allow feature-set mpls</code> Example: switch(config-vdc)# <code>allow feature-set mpls</code>	Allows the MPLS feature set in the VDC. Note Use the no form of this command to disallow the MPLS feature set in the VDC. You cannot disallow the MPLS feature set if it is enabled in the specified VDC.

Verifying the MPLS Feature Set Configuration

To display the MPLS feature set configuration, perform one of the following tasks:

Command	Purpose
<code>show feature-set</code>	Displays the status of the feature sets on the device.
<code>show feature-set services mpls</code>	Displays the services used by the MPLS feature set.

For detailed information about the fields in the output from these commands, see the *Cisco Nexus 7000 Series NX-OS MPLS Command Reference*.

Configuration Examples for the MPLS Feature Set

The following example shows how to install and enable the MPLS feature set in the default VDC on the device:

```
switch# configure terminal
switch(config)# install feature-set mpls
switch(config)# feature-set mpls
switch(config)# exit
switch#
```

The following example shows how to install the MPLS feature set on the device and then switch to a VDC and enable the feature set in that VDC:

```
switch# configure terminal
switch(config)# install feature-set mpls
switch(config)# exit
switch# switchto vdc vdc1
```

```
switch-vc1# configure terminal
switch-vc1(config)# feature-set mpls
switch-vc1(config)# switchback
switch#
```



Note Instead of the **switchto** command, you can use the **ssh** command to connect to the management port of the VDC.

The following example shows how to display the status of the feature sets on the device:

```
switch# show feature-set
Feature Set Name      ID      State
-----
fcoe                  1      installed
fabricpath           2      enabled
fex                   3      disabled
mpls                  4      enabled
switch#
```

The following example shows how to display the services used by the MPLS feature set:

```
switch# show feature-set services mpls
ulib
rsvp
mpls_te
mpls_oam
mpls
ldp
6 services in feature set mpls
switch#
```

Additional References for the MPLS Feature Set

This section includes additional information that is related to the MPLS feature set commands.

Related Documents

Related Topic	Document Title
Cisco NX-OS licensing	<i>Cisco NX-OS Licensing Guide</i>
CLI commands	<i>Cisco Nexus 7000 Series NX-OS MPLS Command Reference</i>
VDCs	<i>Cisco Nexus 7000 Series NX-OS Virtual Device Context Configuration Guide, Release 5.x</i>
Cisco IOS MPLS LDP	MPLS Label Distribution Protocol (LDP)

Feature History for the MPLS Feature Set

[Table 2-2](#) lists the release history for this feature.

Table 2-2 Feature History for the MPLS Feature Set

Feature Name	Releases	Feature Information
MPLS feature set	5.2(1)	This feature was introduced.

