



MPLS Static Commands



Note All commands applicable for the Cisco NCS 5500 Series Router are also supported on the Cisco NCS 540 Series Router that is introduced from Cisco IOS XR Release 6.3.2. References to earlier releases in Command History tables apply to only the Cisco NCS 5500 Series Router.



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- Note**
- Starting with Cisco IOS XR Release 6.6.25, all commands applicable for the Cisco NCS 5500 Series Router are also supported on the Cisco NCS 560 Series Routers.
 - Starting with Cisco IOS XR Release 6.3.2, all commands applicable for the Cisco NCS 5500 Series Router are also supported on the Cisco NCS 540 Series Router.
 - References to releases before Cisco IOS XR Release 6.3.2 apply to only the Cisco NCS 5500 Series Router.
 - Cisco IOS XR Software Release 7.0.1 specific updates are not applicable for the following variants of Cisco NCS 540 Series Routers:
 - N540-28Z4C-SYS-A
 - N540-28Z4C-SYS-D
 - N540X-16Z4G8Q2C-A
 - N540X-16Z4G8Q2C-D
 - N540X-16Z8Q2C-D
 - N540-12Z20G-SYS-A
 - N540-12Z20G-SYS-D
 - N540X-12Z16G-SYS-A
 - N540X-12Z16G-SYS-D
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This module describes the commands used to configure static MPLS labels in a Multiprotocol Label Switching (MPLS) network on the .

For detailed information about MPLS concepts, configuration tasks, and examples, see *MPLS Configuration Guide for Cisco NCS 5500 Series Routers*, *MPLS Configuration Guide for Cisco NCS 540 Series Routers*, or *MPLS Configuration Guide*.

- [address family ipv4 unicast \(mpls-static\), on page 3](#)
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address family ipv4 unicast (mpls-static)

To enable static MPLS label binding on a specific IPv4 unicast destination address prefix and on the forwarding next-hop address, use the **address-family ipv4 unicast** command in MPLS static configuration mode. To remove MPLS static binding, use the **no** form of this command.

```
address-family ipv4 unicast local-label label_value allocate [per-prefix ipv4_prefix_value] forward
path path_value nexthop nexthop_information interface-type interface-path-id out-label {label_value
| pop | exp-null}
no address-family ipv4 unicast
```

| Syntax Description | | |
|--|--|--|
| local-label <i>label_value</i> | | Specifies MPLS local-label value for static binding and forwarding. The range is from 16 to 1048575. |
| allocate | | Displays local-label allocation options. |
| per-prefix <i>ipv4_prefix_value</i> | | Specifies IPv4 prefix value to which the specified MPLS label will be statically bound. |
| forward | | Configure forwarding for traffic with static MPLS label. |
| path <i>path-value</i> | | Specifies path-ID for MPLS cross-connect path. |
| nexthop <i>nexthop_information</i> | | Specifies the next-hop information that is either an IP address or interface. |
| <i>interface-type</i> <i>interface-id</i> | | Interface type. For more information, use the question mark (?) online help function. |
| out-label <i>label_value</i> | | Specifies mpls local-label value for static binding on the egress packet. |
| pop | | Removes label from egress packet. |
| exp-null | | Applies explicit null label on the egress packet. |

Command Default None

Command Modes MPLS static configuration

| Command History | Release | Modification |
|-----------------|---------------|------------------------------|
| | Release 5.1.1 | This command was introduced. |

Usage Guidelines No specific guidelines impact the use of this command.

| Task ID | Task ID | Operation |
|---------|-------------|-----------|
| | mpls-static | read |

Example

The following command sequence shows how to specify local label for an ip-prefix and define LSP.

```
RP/0/RP0/CPU0:router#configure
RP/0/RP0/CPU0:router(config)#mpls static
RP/0/RP0/CPU0:router(config-mpls-static)#address-family ipv4 unicast
RP/0/RP0/CPU0:router(config-mpls-static-af)#local-label 30500 allocate per-prefix 10.1.1.1/24
forward path 1 nexthop 12.2.2.2 out-label 30600
```

clear mpls static local-label discrepancy

To clear any discrepancy between statically allocated and dynamically allocated local labels, use the **clear mpls static local-label discrepancy** command in XR EXEC mode. A label discrepancy is generated when:

- A static label is configured for an IP prefix (per VRF) that already has a binding with a dynamic label.
- A static label is configured for an IP prefix, when the same label value is dynamically allocated to another IP prefix.

clear mpls static local-label discrepancy *{label-value | all}*

| | |
|---------------------------|---|
| Syntax Description | <i>label-value</i> A value that denotes the label for which the discrepancies need to be cleared. |
| | all Specifies that all discrepancies need to be cleared. |

Command Default None

Command Modes XR EXEC mode

| | | |
|------------------------|----------------|------------------------------|
| Command History | Release | Modification |
| | Release 6.0 | This command was introduced. |

Usage Guidelines No specific guidelines impact the use of this command.

| | | |
|----------------|----------------|------------------|
| Task ID | Task ID | Operation |
| | mpls-static | read |

```
RP/0/RP0/CPU0:router#clear mpls static local-label discrepancy all
```

interface (mpls-static)

To enable MPLS encapsulation on specified interfaces, use the **interface** command in MPLS static configuration mode. To disable MPLS encapsulation on specified interfaces, use the **no** form of the command.

```
interface interface-type interface-id
no interface interface-type interface-id
```

| | | |
|---------------------------|--------------------------|---|
| Syntax Description | <i>interface-type</i> | Interface type. For more information, use the question mark (?) online help function. |
| | <i>interface-path-id</i> | Physical interface instance. |

| | |
|------------------------|------|
| Command Default | None |
|------------------------|------|

| | |
|----------------------|---------------------------|
| Command Modes | MPLS static configuration |
|----------------------|---------------------------|

| | | |
|------------------------|----------------|------------------------------|
| Command History | Release | Modification |
| | Release 6.0 | This command was introduced. |

| | |
|-------------------------|--|
| Usage Guidelines | No specific guidelines impact the use of this command. |
|-------------------------|--|

| | | |
|----------------|----------------|------------------|
| Task ID | Task ID | Operation |
| | mpls-static | read and write |

Example

The following command sequence shows how to enable MPLS encapsulation on a HundredGigE port.

```
RP/0/RP0/CPU0:router# configure
RP/0/RP0/CPU0:router(config)# mpls static
RP/0/RP0/CPU0:router(config-mpls-static)# interface HundredGigE 0/1/0/0
```

show mpls static local-label

To display information about local labels allocated using **mpls static** command, use the **show mpls static local-label** command in XR EXEC mode.

```
show mpls static local-label {label-value | all [detail] | discrepancy [detail] | error [detail]}
```

| Syntax Description | local-label label-value | Specifies local label value to display MPLS static information for only that label. |
|--------------------|-------------------------|---|
| | all | Displays MPLS static information about all local labels. |
| | discrepancy | Displays label discrepancy between static labels and dynamic labels. |
| | error | Displays MPLS static labeling errors. |
| | detail | (Optional) Detailed information is displayed. |

Command Default None

Command Modes XR EXEC mode

| Command History | Release | Modification |
|-----------------|-------------|------------------------------|
| | Release 6.0 | This command was introduced. |

Usage Guidelines No specific guidelines impact the use of this command.

| Task ID | Task ID | Operation |
|---------|-------------|-----------|
| | mpls-static | read |

The following command sequence shows how to view label discrepancy information:

```
RP/0/RP0/CPU0:router#show mpls static local-label discrepancy detail
Tue Apr 22 18:20:47.183 UTC
Label  VRF          Type          Prefix          RW Configured  Status
-----
16003  default          Per-Prefix    172.16.0.1/32   No              Discrepancy
STATUS : Label has discrepancy
```

The following command sequence shows how to view MPLS static information for all local labels:

```
RP/0/RP0/CPU0:router#show mpls static local-label all
Tue Apr 22 18:21:41.813 UTC
Label  VRF          Type          Prefix          RW Configured  Status
-----
200    default          Per-Prefix    10.10.10.10/32  Yes             Created
16003  default          Per-Prefix    172.16.0.1/32   No              Discrepancy
```

show mpls static summary

To display MPLS static summary information, use the **show mpls static summary** command in XR EXEC mode.

show mpls static summary

| | |
|---------------------------|--|
| Syntax Description | summary Displays MPLS static binding information. |
|---------------------------|--|

| | |
|------------------------|------|
| Command Default | None |
|------------------------|------|

| | |
|----------------------|--------------|
| Command Modes | XR EXEC mode |
|----------------------|--------------|

| Command History | Release | Modification |
|------------------------|----------------|------------------------------|
| | Release 6.0 | This command was introduced. |

| | |
|-------------------------|--|
| Usage Guidelines | No specific guidelines impact the use of this command. |
|-------------------------|--|

| Task ID | Task ID | Operation |
|----------------|----------------|------------------|
| | mpls-static | read |

This is the sample output for **show mpls static summary** command:

```
RP/0/RP0/CPU0:router#show mpls static summary
Tue Apr 22 18:22:17.931 UTC

Label      : Total      2   Errored      0   Discrepancies      1
VRF        : Total      1   Active        1
Interface  : Total      7   Enabled       1   Forward-Reference  0

LSD        : CONNECTED
IM         : CONNECTED
RSI        : CONNECTED
```