MPLS Static Commands

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 5000 Series Routers*.

- address family ipv4 unicast (mpls-static), on page 2
- clear mpls static local-label discrepancy, on page 4
- interface (mpls-static), on page 5
- show mpls static local-label, on page 6
- show mpls static summary, on page 7
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 label_value`: 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 ipv4_prefix_value`: Specifies IPv4 prefix value to which the specified MPLS label will be statically bound.
- `forward`: Configure forwarding for traffic with static MPLS label.
- `path path-value`: Specifies path-ID for MPLS cross-connect path.
- `nexthop nexthop_information`: Specifies the next-hop information that is either an IP address or interface.
- `interface-type interface-id`: Interface type. For more information, use the question mark (?) online help function.
- `out-label label_value`: 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**

<table>
<thead>
<tr>
<th>Release</th>
<th>Modification</th>
</tr>
</thead>
<tbody>
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</table>

**Usage Guidelines**

No specific guidelines impact the use of this command.

**Task ID**

<table>
<thead>
<tr>
<th>Task ID</th>
<th>Operation</th>
</tr>
</thead>
<tbody>
<tr>
<td>mpls-static</td>
<td>read</td>
</tr>
</tbody>
</table>
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**

- `label-value` 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**

<table>
<thead>
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<th>Release</th>
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**Usage Guidelines**

No specific guidelines impact the use of this command.

**Task ID**

- 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**

- `interface-type`: Interface type. For more information, use the question mark (?) online help function.
- `interface-path-id`: Physical interface instance.

**Command Default**

None

**Command Modes**

MPLS static configuration

**Command History**

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<tr>
<td>mpls-static</td>
<td>read and write</td>
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</table>

**Example**

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

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

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

```
RP/0/RP0/CP0: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 1.1.1.1/32 No Discrepancy

STATUS : Label has discrepancy
```

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

```
RP/0/RP0/CP0: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 1.1.1.1/32 No Discrepancy
```
show mpls static summary

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

**Syntax Description**

| summary | Displays MPLS static binding information. |

**Command Default**

None

**Command Modes**

XR EXEC mode

**Command History**

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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
```
show mpls static summary