



Service-Layer Commands

This module outlines the commands necessary to utilize the service layer.

For detailed information about Service Layer concepts, configuration tasks, and examples, see the *Use Service Layer API to Bring your Controller on Cisco IOS XR Router in the Cisco 8000 Series Router* module in the *Programmability Configuration Guide for Cisco 8000 Series Routers*.

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show service-layer mpls label

To display MPLS label information service-layer, use the **show service-layer mpls-label** command in EXEC mode.

show service-layer mpls label { *label-number* | **brief** | **client** { *client-id* | **all** | **detail** } }

Syntax Description	
<i>label-number</i>	Specifies a particular label by its number in the range of 16 to 1048575.
brief	Shows brief information about MPLS labels.
client <i>client-id</i>	Displays information about a particular client in the range of 0 to 65535.
client all	Displays information about all clients.
detail	Shows more detailed information about MPLS labels.

Command Default No specific guidelines impact the use of this command.

Command Modes EXEC

Command History	Release	Modification
	Release 24.4.1	This command was introduced.

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

Task ID	Task ID	Operation
	config-services	read

Example

This example shows output of **show service-layer mpls-label trace lib all** command.

```
Router#show service-layer mpls-label trace lib all

22 unique entries (512 possible, 0 filtered)
Oct 16 23:06:27.527 sl/mpls-label_debug 0/RP0/CPU0 1# t12931 ltrace init ok
Oct 16 23:06:27.537 sl/mpls-label_debug 0/RP0/CPU0 1# t12931 edm init ok
Oct 16 23:06:27.537 sl/mpls-label_debug 0/RP0/CPU0 1# t12931 request init ok
```

show service-layer path-groups

To display path group information in the service-layer, use the **show service-layer path-groups** command in EXEC mode.

```
show service-layer path-groups { brief | client { client-id | all } | detail | name | vrf { vrf-name | all } }
```

Syntax Description		
brief		Shows brief information about path-groups.
client <i>client-id</i>		Shows information about a particular client ID in the range of 0 to 65535.
client all		Shows information about all clients.
detail		Shows more detailed information about the path groups.
name		Displays information about path-group name.
vrf <i>vrf-name</i>		Displays vrf table information for a specific vrf-name.
vrf all		Displays all the information for all vrfs.

Command Default None

Command Modes EXEC

Command History	Release	Modification
	Release 24.4.1	This command was introduced.

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

Task ID	Task ID	Operation
	config-services	read

Example

This example shows output of **show service-layer path-groups client all detail** command.

```
Router#show service-layer path groups client all detail
```

```
bsid_lspgrp2_eb1_eb2_gold_class-ipv6--1, tag: 0, distance: 30, Route flags(0xc): [viable
paths only, active on viable path]
  path: 1, fe80::ebb:bb03 (nexthop in vrf default) via Bundle-Ether1303
    remote labels: 62303,
    load metric: 0, metric: 0, path flags: 0
    id: 0, protected bitmap: 0x0
```

show service-layer path-groups

```
ref count: 401
Client:50, Session:0, Operation ID:700000000001
RIB:Programmed, FIB:Programmed, Ack Type:RIB
Object Version:2
bsid_lspgrp2_eb1_eb2_gold_class-ipv6--10, tag: 0, distance: 30, Route flags(0xc): [viable
paths only, active on viable path]
  path: 1, fe80::ebb:bb03 (nexthop in vrf default) via Bundle-Ether1303
    remote labels: 62303,
    load metric: 0, metric: 0, path flags: 0
    id: 0, protected bitmap: 0x0
    ref count: 401
Client:50, Session:0, Operation ID:7000000000021
RIB:Programmed, FIB:Programmed, Ack Type:RIB
Object Version:2
```

show service-layer policy

To display policy based routing information in the service-layer, use the **show service-layer policy** command in EXEC mode.

```
show service-layer policy { internal database path-groups | rule-stats mappings { all | policy-name
name-of-the-policy } | trace { lib { all | debug | error } }
```

Syntax Description		
internal		Displays internal policy-based routing information.
database		Displays policy-based routing database information.
path-groups		Displays path group information in the policy-based routing database.
rule-stats		Displays rule-stats mapping data.
mappings all		Retrieves global-key to local-key mappings.
mappings policy-name <i>name-of-the-policy</i>		Gets data for a specific policy name.
trace		Shows policy-based routing trace info.
lib		Shows service-layer policy library general traces.
all		Shows all general traces.
debug		Shows general debug traces.
error		Shows general error traces.

Command Default None

Command Modes EXEC

Command History	Release	Modification
	Release 24.4.1	This command was introduced.

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

Task ID	Task ID	Operation
	config-services	read

Example

This example shows output of **show service-layer policy trace lib all** command.

```
Router#show service-layer policy trace lib all
```

```
22 unique entries (512 possible, 0 filtered)
```

```
Oct 16 23:06:27.527 sl/policy_debug 0/RP0/CPU0 1# t12931 ltrace init ok
```

```
Oct 16 23:06:27.537 sl/policy_debug 0/RP0/CPU0 1# t12931 edm init ok
```

```
Oct 16 23:06:27.537 sl/policy_debug 0/RP0/CPU0 1# t12931 request init ok
```

show service-layer rib notifications registrations

To display all incoming registration requests of route redistribution and nexthop tracking, use the **show service-layer rib notifications registrations** command in EXEC mode.

show service-layer route session *session-id*

Syntax Description	session Specify the route redistribution and next hop tracking session.
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<i>session-id</i> Specifies the session ID.

Command Default	None
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Command Modes	EXEC
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Command History	Release	Modification
	Release 24.4.1	This command was introduced.

Usage Guidelines	No specific guidelines impact the use of this command.
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Task ID	Task ID	Operation
	config-services	read

This example shows output of **show service-layer rib notifications registrations** command filtered by session ID.

```
Router#show service-layer rib notifications registrations session 1
```

```
IPv4 registrations:
  Session: 1, Client-id: 1, VRF: default
  Route Redistribution registrations:
    proto: local
  NextHop Tracking registrations:
    192.0.2.0/32
IPv6 registrations:
  Session: 1, Client-id: 1, VRF: default
  Route Redistribution registrations:
    proto: connected
  NextHop Tracking registrations:
    2001:0DB8:1:10B::/120, Allow-Default
```

This example shows output of **show service-layer rib notifications registrations** command filtered by session ID for Route redistribution registrations.

```
Router#show service-layer rib notifications registrations session 1 redistribution
```

```
IPv4 registrations:
  Session: 1, Client-id: 1, VRF: default
```

```
Route Redistribution registrations:
  proto: local
IPv6 registrations:
  Session: 1, Client-id: 1, VRF: default
    Route Redistribution registrations:
      proto: connected
```

This example shows output of **show service-layer rib notifications registrations** command filtered by session ID for nexthop only registrations.

```
Router#show service-layer rib notifications registrations session 1 next-hops
```

```
IPv4 registrations:
  Session: 1, Client-id: 1, VRF: default
    NextHop Tracking registrations:
      192.0.2.0/32
IPv6 registrations:
  Session: 1, Client-id: 1, VRF: default
    NextHop Tracking registrations:
      2001:0DB8:1:10B::/120, Allow-Default
```

show service-layer route

To display service-layer routing information, use the **show service-layer route** command in EXEC mode.

```
show service-layer route { ip-address | ip-address/mask | brief | client { client-id | all } | detail | ipv4
| ipv6 { ip-address | ip-address/length | client { client-id | all } | detail } | vrf { vrf-name | all } }
```

Syntax Description

<i>ip-address</i>	Specify the IP address of a network to display information about.
<i>ip-address/mask</i>	Specifies a network with a specific prefix length.
afi-all	Displays information for both IPv4 and IPv6 addresses.
multicast	Displays multicast routes.
safi-all	Displays both unicast and multicast routes
brief	Displays the brief information about service-layer routes.
ipv4	Displays route information for IPv4 addresses.
ipv6	Displays route information for IPv6 addresses.
standby	Displays standby route information.
summary	Displays a summary of all routes.
vrf <i>vrf-name</i>	Displays vrf table information for a specific vrf-name.
vrf all	Displays all the information for all vrfs.
client <i>client-id</i>	Displays service-layer client information for a specific client ID. Client ID can be in the range of 0 to 65535.
client all	Displays service-layer client information for all clients.
detail	Displays more detailed information.

Command Default

None

Command Modes

EXEC

Command History

Release	Modification
Release 24.4.1	The command was modified to include client and brief keywords. Also, afi-all , standby and summary keywords were removed.
Release 7.3.1	This command was introduced.

Usage Guidelines

The Command Syntax prior to Cisco IOS XR Software Release 24.4.1 was as follows:

```
show service-layer route { ip-address | ip-address/mask | afi-all { multicast | safi-all | standby | summary
| unicast } | ipv4 | ipv6 { ip-address | ip-address/length | client { client-id | all } | detail } | detail
| vrf { vrf-name | all } }
```

Task ID	Task ID	Operation
	config-services	read

Example

This example shows output of **show service-layer route ipv4 client all detail** command.

```
Router#show service-layer route ipv4 client all detail
```

```
VRF: default, Client 20
```

```
100.2.1.1/32, tag: 0, distance: 0
  path: 1, 102.12.1.2 (nexthop in vrf default) via Bundle-Ether1201
    load metric: 1, metric: 0, path flags: 0
    id: 0, protected bitmap: 0x0
    ref count: 52
  path: 2, 102.12.2.2 (nexthop in vrf default) via Bundle-Ether1202
    load metric: 1, metric: 0, path flags: 0
    id: 0, protected bitmap: 0x0
    ref count: 52
  path: 3, 102.12.3.2 (nexthop in vrf default) via Bundle-Ether1203
    load metric: 2, metric: 0, path flags: 0
    id: 0, protected bitmap: 0x0
    ref count: 52
  path: 4, 102.12.4.2 (nexthop in vrf default) via Bundle-Ether1204
    load metric: 3, metric: 0, path flags: 0
    id: 0, protected bitmap: 0x0
    ref count: 52
Client:20, Session:0, Operation ID:8985821339679570675
RIB:Programmed, FIB:Unavailable, Ack Type:RIB
Object Version:4
```

```
M=Multicast,Q=Qualified,GM=Grandmaster
```

Interface	Transport	Address	Priority	State
Gi0/2/0/0	IPv4	192.168.172.122	13	M,Q
	IPv4	192.168.172.123	17	M
Gi0/2/0/1	IPv6	fe80::2b0:4aff:fe6b:f4fc	1	Q,GM
	IPv6	fe80::2b0:4aff:fe6b:1234	18	Q
Gi0/3/0/0	Ethernet	00b0.4a6b.f4fc		